Draft Environmental Impact Statement

Horse Heaven Wind Farm

Chapter 2 - Proposed Action and Alternatives

December 2022

Table of Contents

TABLES

FIGURES

This Page Intentionally Left Blank

2.0 CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Horse Heaven Wind Farm (Project, or Proposed Action) proposed by Horse Heaven Wind Farm, LLC[1] (Applicant) and the alternatives to the Proposed Action that are being considered in this Draft Environmental Impact Statement (EIS). Section 2.1 summarizes the proposed facility site, Proposed Action, and considerations concerning the construction, operation, and decommissioning stages of the Project. Unless otherwise noted, the information presented in Section 2.1 is sourced from the Application for Site Certification (ASC) (Horse Heaven Wind Farm, LLC 2021) and summarizes the Applicant-committed measures for the Project. Section 2.2 describes the alternatives considered for evaluation.

2.1 Description of the Proposed Action

The Applicant is proposing to construct a renewable energy generation facility that would be located in the Horse Heaven Hills area of Benton County, Washington. The Project would have a nameplate generating capacity[2] of up to 1,150 megawatts (MW) and would utilize both wind turbines and solar photovoltaic panels to convert energy from the wind and sun into electric power. The power would then be either directly transferred to the electric power grid or stored in up to three[3] battery energy storage systems (BESSs). The final number of turbines and the extent of solar arrays used for the Project would not total more than 244 turbines and three solar arrays. The final number of turbines and solar arrays would depend on the turbine models and solar modules selected and selection of a final array layout.

2.1.1 Proposed Facility Site

The Project's Lease Boundary incorporates all of the parcels in which the Applicant has executed a lease to construct the turbines, solar arrays, and associated facilities. The Lease Boundary encompasses approximately 72,428 acres and is depicted in **Figure 2-1**.

The Project's Wind Energy Micrositing Corridor encompasses 11,850 acres within the Lease Boundary and consists of the areas where the turbines and supporting facilities would be sited during the final design. The Project's Solar Siting Areas, which are three locations under consideration for the proposed solar arrays, encompass 10,755 acres within the Lease Boundary. Proposed disturbance areas are shown in **Figure 2-2**. The Micrositing Corridor and the Solar Siting Areas are larger than the Project's permanent, designed footprint of the individual components to allow minor rerouting to optimize the design and avoid any sensitive resources discovered during the final design and pre-construction process.

[1] An entity of Scout Clean Energy.

[2] Nameplate generating capacity is the amount of electricity a generator can produce when running at its maximum designed output.

[3] The Applicant indicated in the ASC that there is the potential for fewer than three BESS to be constructed but has requested analysis for all the components and distinct parts as presented in Table 2.1-1 of the ASC.

This Page Intentionally Left Blank

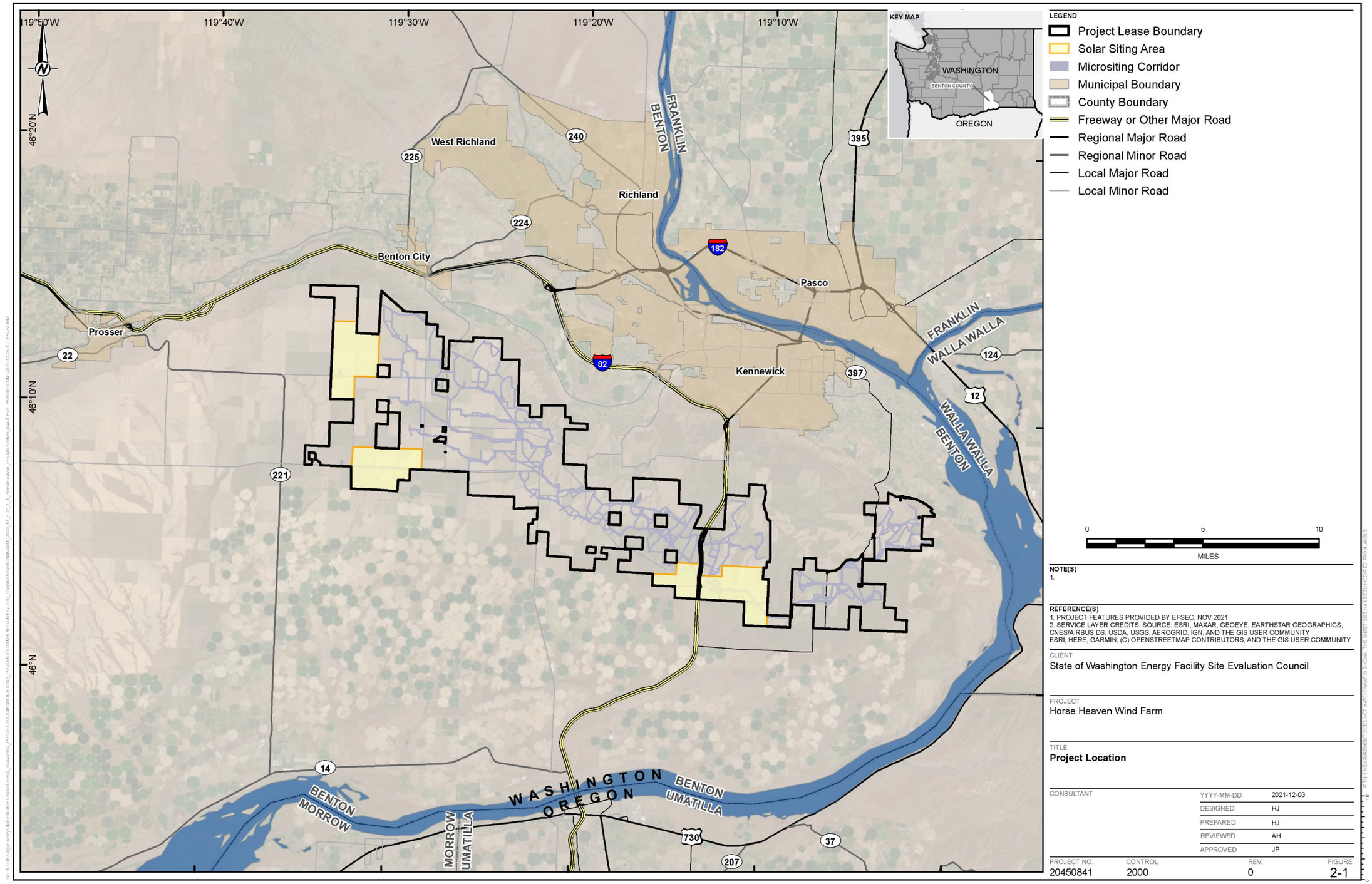
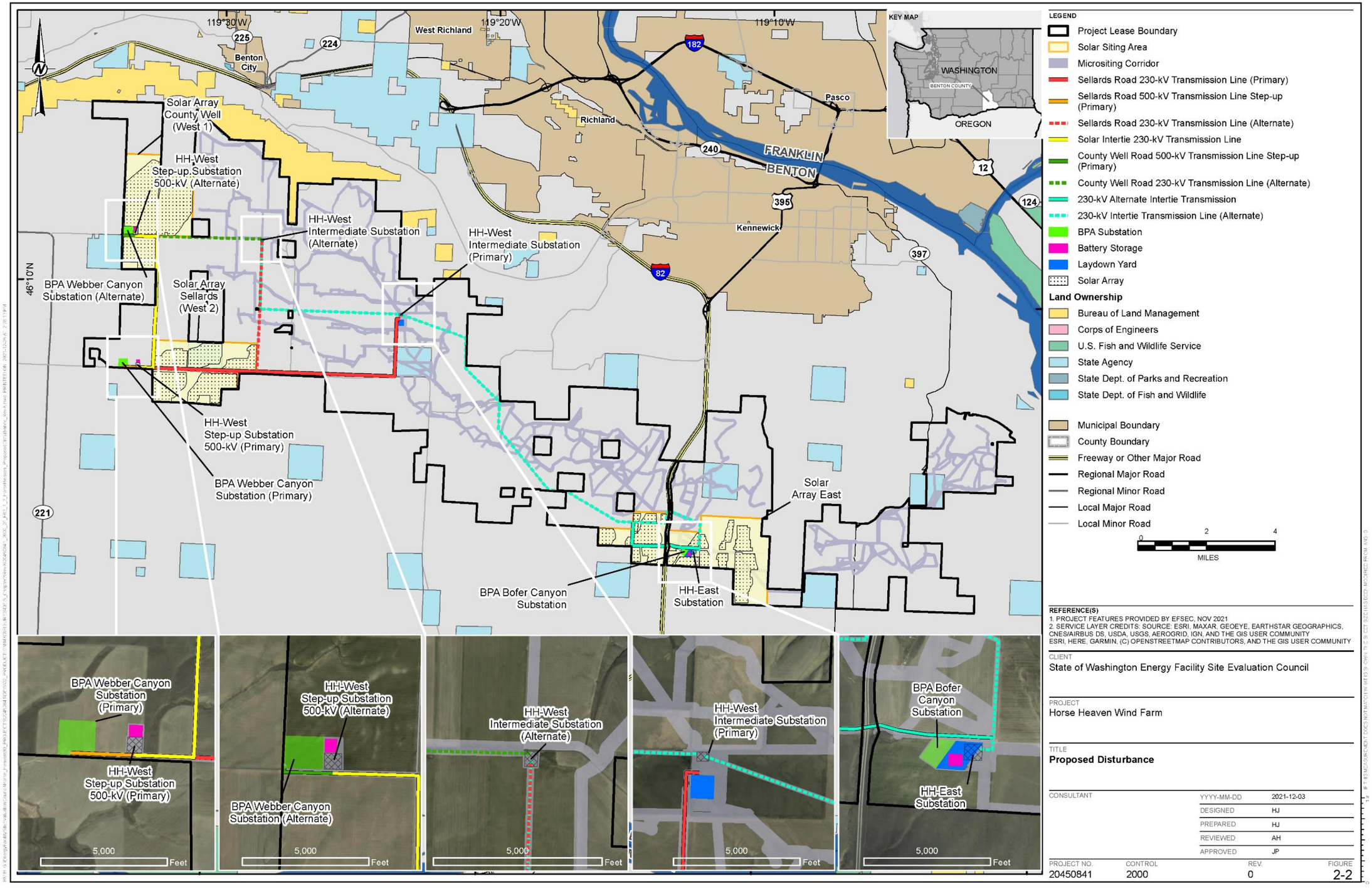


Figure 2-1: Project Location



REFERENCE(S)
1. PROJECT FEATURES PROVIDED BY EFSEC, NOV 2021
2. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

CLIENT
State of Washington Energy Facility Site Evaluation Council

PROJECT
Horse Heaven Wind Farm

TITLE
Proposed Disturbance

CONSULTANT

YYYY-MM-DD	2021-12-03
DESIGNED	HJ
PREPARED	HJ
REVIEWED	AH
APPROVED	JP

PROJECT NO.	CONTROL	REV.	FIGURE
20450841	2000	0	2-2

Figure 2-2: Proposed Disturbance

Much of the Project's Lease Boundary is privately owned; however, five Washington Department of Natural Resources parcels that are state trust lands fall within the Lease Boundary. Four of these parcels include proposed turbines and supporting facilities, and one could be crossed by the proposed transmission line and is a possible site for a Project solar component. Additionally, portions of the Lease Boundary may currently be enrolled in the U.S. Department of Agriculture's Conservation Reserve Program. The Project would be located on land designated as agricultural per the Growth Management Act as part of the Benton County Comprehensive Plan and outside any Urban Growth Area (Benton County 2021).

The Applicant's ASC seeks authorization for up to 244 turbine locations and a maximum of three solar arrays, with all possible turbine locations and solar arrays cumulatively reviewed to analyze potential resource impacts. Fewer turbines and solar arrays may be constructed for the Project and still achieve the nameplate generating capacity.

The maximum number of turbines and maximum turbine height carried forward for analysis as components of the Proposed Action are reflected in Turbine Option 1 and Turbine Option 2, as summarized in **Table 2-1**. Option 1 is shown in **Figure 2-3**, and Option 2 is shown in **Figure 2-4**. The final number and location of turbines within the proposed Wind Energy Micrositing Corridor would reflect the final engineering design, model selection, and any additional avoidance and mitigation identified in this Draft EIS. The specific model used would depend on the commercial availability and technology at the time of construction. The number of turbines would not exceed 244, and the maximum turbine height (at blade tip) would not exceed 671 feet. This Draft EIS assumes that the road disturbance associated with Turbine Option 1 and Turbine Option 2 would be identical.

Table 2-1: Proposed Action - Wind Turbines

	Turbine Option 1	Turbine Option 2
Wind Turbines	244 turbines up to a maximum blade tip height of 499 feet[(a)]	150 turbines up to a maximum blade tip height of 671 feet[(a)]
Temporary Disturbance	1,070 acres	
Permanent Disturbance	30 acres	
Lease Boundary	72,428 acres	

Source: ASC Table 2.3-1 (Horse Heaven Wind Farm, LLC 2021)
Note:
[(a)] As proposed in the ASC

This Page Intentionally Left Blank

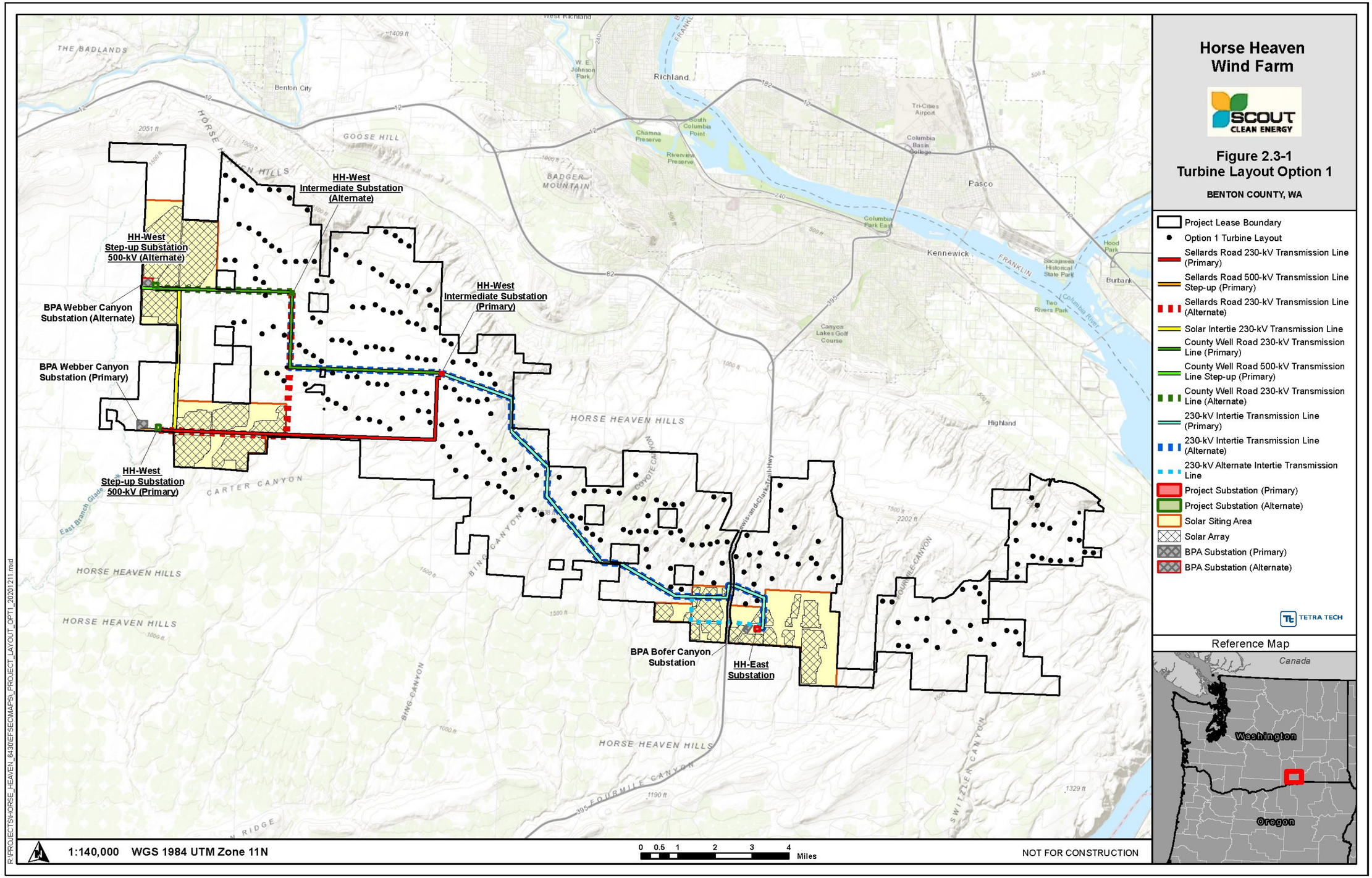


Figure 2-3: Turbine Layout - Option 1 (Horse Heaven Wind Farm, LLC 2021)

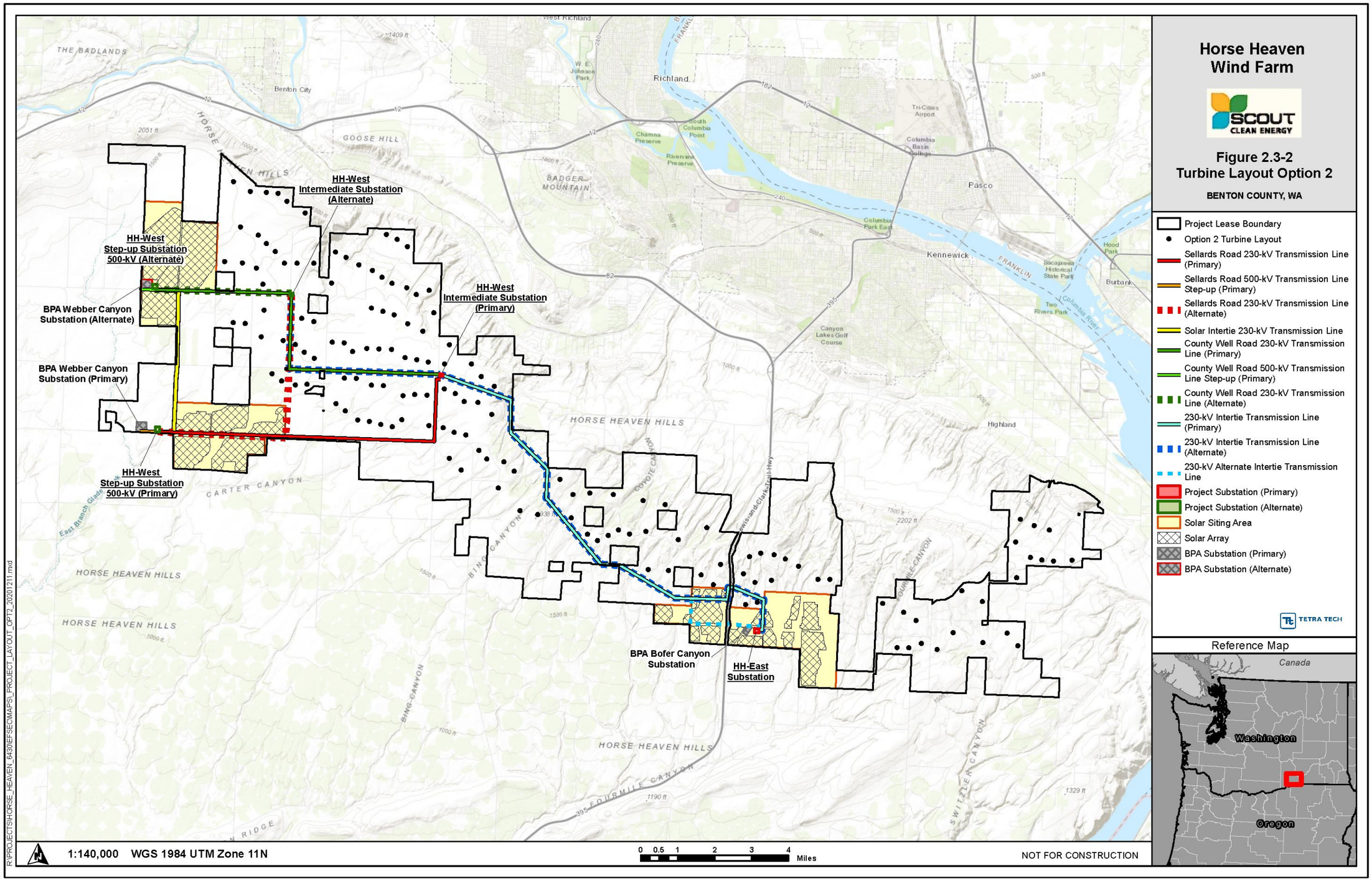


Figure 2-4: Turbine Layout - Option 2 (Horse Heaven Wind Farm, LLC 2021)

The wind energy components would be combined with the solar arrays, BESSs, and other infrastructure supporting solar and wind energy, and are summarized in **Table 2-2**. The disturbance, including supporting infrastructure, would only occur within the disturbance areas proposed in the ASC. The disturbance associated with the Project would not total more than 2,957 acres of temporary disturbance and 6,869 acres of permanent disturbance. The combination of components selected would not have a greater disturbance footprint than allowed for in the site certification agreement (if approved) and must satisfy all pre-construction conditions.

The Draft EIS describes potential impacts specific to each proposed turbine option, solar array, substation, and BESS where the information was available in the ASC and supporting documents for individual components. Potential impacts related to the Project's components are generalized for the analysis of the Proposed Action when impacts are common within the Micrositing Corridor or Solar Siting Areas

Table 2-2: Proposed Action - Solar Siting and Supporting Infrastructure for Wind and Solar Facilities[a]

	Temporary Disturbance (acres)	Permanent Disturbance (acres)
Solar Arrays in Fields		
East Solar Field	37	1,994
County Well Solar Field	18	2,641
Sellards Solar Field	22	1,935
Total Disturbance Acreage of Solar Arrays in Fields	**77**	**6,570**
BESSs[4]		
BESS adjacent to the Bofer Canyon - HH-East Substation	1	18
BESS adjacent to the Primary HH-West Step-Up Substation		
BESS adjacent to the Alternate HH-West Step-Up Substation		
Substations		
HH-East Substation	3	38
Primary HH-West Intermediate Substation		
Alternate HH-West Intermediate Substation		
Primary HH-West Step-Up Substation[b]		
Alternate HH-West Step-Up Substation[b]		
Supporting Infrastructure		
Roads,[c] Crane Paths, Laydown Yards, O&M Facilities, Met Towers	870.9	218.5
Collector Lines		
Overhead	0.5	0.01
Underground	787	0.06
Transmission Lines		
230 kV	235	0.02
500 kV	12	<0.01
Total Disturbance Acreage of Supporting Infrastructure	**1,905.4**	**218.6**

Source: Horse Heaven Wind Farm, LLC 2021

Note:

[a] As proposed in the ASC, Table 2.1-1

[b] May alternatively be used as the HH-West Alternate Solar Substation (ASC Table 2.3-2) to support solar operations, depending on the location where the Bonneville Power Administration elects to construct the Webber Canyon Substation.

[c] Includes new access roads and road modification (turning radius widening). This Draft EIS assumes that road disturbance would be identical under both Option 1 and Option 2.

ASC = Application for Site Certification; BESS = battery energy solar station; HH = Horse Heaven; kV = kilovolt; met tower = meteorological tower; O&M = operations and maintenance

The temporary and permanent disturbances, calculated independently using spatial data provided by the Applicant, are provided for the Wind Energy Micrositing Corridor for Turbine Option 1 and Solar Siting areas in **Table 2-3**. Temporary and permanent disturbance acreage was not provided for Turbine Option 2 in the ASC.

[4] The Applicant indicated in the ASC that there is the potential for fewer than three BESSs to be constructed but has requested analysis for all the components and distinct parts as presented in Table 2.1-1 of the ASC.

Turbine Option 2 includes fewer turbines within the same corridors as Turbine Option 1, and the requirements for roads and collector lines for Turbine Option 2 are expected to be similar to or less than the requirements for Turbine Option 1. Therefore, the temporary and permanent disturbance acreage for Turbine Option 1 is conservatively used as an upper bound for expected disturbance from Turbine Option 2. Disturbance includes the supporting infrastructure required for each component.

Table 2-3: Temporary and Permanent Disturbance for Turbine Option 1 and Solar Siting Areas

Habitat Type	Micrositing Corridor (Turbine Option 1)		Solar Siting Areas	
	Temporary Disturbance (acres)	Permanent Disturbance (acres)	Temporary Disturbance (acres)	Permanent Disturbance (acres)
Agriculture Land	2,263.9	391.2	200.6	5,589.5
Developed/Disturbed	19.3	1.5	3.5	0.01
Grassland	411.1	40.2	32.6	312.5
Shrubland	185.3	43.8	46.6	706.4
Total	**2,879.6[(a)]**	**476.7[(a)]**	**283.3[(a)]**	**6,608.4[(a)]**

Source: Calculations were completed using the spatial layers provided by the Applicant.
Note:
[(a)] Areas of overlap between temporary and permanent disturbance are only counted toward permanent disturbance. The sum of the acres within disturbance areas of the Micrositing Corridor and Solar Siting Areas will not equal the disturbance of the comprehensive Project due to overlapping areas.

2.1.2 Project Construction, Operation, and Decommissioning Activities

Three stages would occur if the Project were authorized:

- Construction (including pre-construction)
- Operation
- Decommissioning

Chapter 4 presents analysis of impacts for each of the three Project stages concerning the elements of the environment identified in Chapter 3. This analysis is largely based on information provided in the Project's ASC and supporting documents, additional information obtained from publicly available sources, and communications with stakeholders, including other agencies and tribes.

2.1.2.1 Project Construction

Before construction could commence, a site survey would be performed during the micrositing process to stake out the final locations of the turbines, solar arrays, site roads, electrical cables, transmission line poles, access entryways, substations, BESSs, and other supporting infrastructure. Once the survey is complete, the following would occur:

- Detailed geotechnical investigation
- Installation of stormwater pollution prevention measures
- Flagging of sensitive areas to be avoided during clearing activities

- Completion of any pre-construction surveys required by the Washington Energy Facility Site Evaluation Council (EFSEC) or applicable regulatory agencies

Next, construction would be performed in several steps and would include the following main elements and activities:

- Grading the field construction office area (also used for operations and maintenance [O&M] facilities)
- Constructing site roads, turnaround areas, and 36-foot-wide crane paths
- Constructing the turbine tower foundations and transformer pads
- Assembling and erecting the turbines
- Installing the electrical collection system – underground and some overhead lines
- Constructing the foundations and installing the posts and tracking system for the solar arrays
- Assembling the solar arrays
- Constructing and installing the substations
- Assembling the BESS(s)
- Erecting the security fence around the solar arrays, substations, and O&M facilities
- Plant commissioning and energization

Construction material and equipment would be transported to the site primarily via road systems. The primary transportation route would follow Interstate 82 before reaching local and county roads that lead into the Project's Lease Boundary. Section 4.14 discusses the effects of improvements to the road systems required to transport construction materials and equipment. Up to two laydown yard areas would be established within the Lease Boundary to facilitate the delivery and assembly of materials and equipment. The laydown yards would be located within the Micrositing Corridor. Equipment typically used in the construction of wind and solar facilities is listed in **Table 2-4**.

Table 2-4: Construction Equipment

Type of Equipment	Construction Use
Heavy Vehicles	
Bulldozer (medium)	Access road and driveway leveling
Scraper	Access road and driveway leveling
Drum Compactor	Compacting
Skid Steer Loader	Light soils work for slabs and foundations
Road Grader	Access road and driveway leveling
Excavator	Trenching and foundations
Trenching Equipment/Cable Plows	Trenching
Backhoe Loader	Moving materials
Tracked Pile Driver	Driving piles into ground
Cable Reel Truck	Dispensing cable
Concrete Pump Truck	Delivering concrete
Mobile Hydraulic Crane/Truck-mounted Crane	Moving materials
2,000 kW Generators	Turbine commissioning
Load Banks	Turbine commissioning
Large Crawler Crane	Moving materials
Water Trucks	Dust control
Fuel Trucks	Refueling equipment
Non-heavy Vehicles	
Forklifts/Telehandler	Moving materials, loading and unloading of trucks
Personnel Transport Vehicles	Transporting workers
Other Material Handling Equipment	Moving materials
Service Trucks	Maintaining heavy equipment
Other Equipment	
Disposal Containers	Disposing of and removing construction debris
Other General Industrial Equipment	Assembling structures
Plate Compactors/Jumping Jacks	Compacting soil for concrete slabs and foundations
Pressure Washers	Cleaning
Storage Containers	Storing on-site materials
Welders	Assembling structures
Air Compressors	Miscellaneous maintenance

Source: Horse Heaven Wind Farm, LLC 2021
kW = kilowatt

Turbines

The Applicant would construct up to 244 turbines within the Wind Energy Micrositing Corridor. Wind turbines are composed of three major components: the tower, the nacelle (the housing for electrical and mechanical structures that sits atop the tower), and the blades. The tubular towers proposed for the Project would be conical steel structures or a combination of steel and concrete, depending on final turbine selection. Each tower would have a

lockable access door, internal lighting, and an internal ladder and lift to access the nacelle. The towers would be painted off-white per Federal Aviation Administration (FAA) regulations. Turbine blades, composed of laminated fiberglass and carbon fiber, would be attached to the rotor hub mounted to the nacelle's front. Aviation lighting would be mounted on turbine nacelles per FAA requirements. Each turbine tower is secured to a foundation, typically of reinforced concrete, spread-foot style design. Each tower's actual foundation type and design may differ depending on the on-site geotechnical studies and in-situ soil properties.

Solar Facilities

The major components of the proposed solar energy generation systems are solar modules, tracking systems, posts, and related electrical equipment. The Applicant would construct solar arrays within the Solar Siting Areas. Three potential Solar Siting Areas are analyzed:

- East Solar Siting Area, located on the east side of the Lease Boundary near Bofer Canyon
- County Well Solar Siting Area, located on the west side of the Lease Boundary near County Well Road
- Sellards Solar Siting Area, located on the west side of the Lease Boundary near Sellards Road

A 6-foot-tall security fence would enclose the solar arrays constructed in these siting areas. To calculate impacts, it is assumed that all acreage (up to 6,570 acres, a summation of permanent acreage included in **Table 2-2**) within the fenced area would be permanently impacted by the construction and operation of the solar arrays.

Battery Energy Storage Systems

Up to three BESSs would be constructed. Each would consist of a series of containers and would be placed adjacent to the substations, enclosed by a separate fence. Each BESS would be capable of storing and later deploying up to 150 MW of energy generated by the Project using lithium-ion batteries. The BESSs would help provide consistent and predictable power to the grid; for example, by minimizing short-term fluctuations in power generation from solar arrays. The details for the BESSs would depend on the final system selected. Each BESS would include, but not be limited to, the following components:

- Battery storage equipment, including batteries and racks or containers, inverters, isolation transformers, and switchboards
- Plant equipment, which may include medium-voltage and low-voltage electrical systems
- Fire suppression
- Heating, ventilation, and air conditioning systems
- Building auxiliary electrical systems
- Network/supervisory control and data acquisition (SCADA) systems
- Cooling system, which may include a separate chiller plant located outside the battery racks with chillers, pumps, and heat exchangers
- High-voltage (HV) equipment, including a step-up transformer, HV circuit breaker, HV current transformers and voltage transformers, a packaged control building for the HV breaker and transformer equipment, HV towers, structures, and HV cabling

These components are commonly placed in standard-sized shipping containers on a concrete slab. By connecting multiple containers, the BESSs can be scaled to the desired capacity. Containers may be stacked up to two levels high, with an estimated maximum height of approximately 40 feet above grade.

Substations

This Draft EIS analyzes the impacts of the construction of substations at five locations, including alternate locations. Up to four substations would be constructed for the Project. **Table 2-5** summarizes the five substation locations and their purposes. Two of the substations would be co-located with the Project's O&M facilities. Each substation would permanently occupy a 4-acre site enclosed within a security wire mesh fence and consist of the following:

- Substation transformers
- Circuit breakers
- Switching devices
- Auxiliary equipment
- A control enclosure
- Other associated equipment and facilities

The area within the Project substations' fence lines would be graded/flattened and contain a bed of crushed rock.

Table 2-5: Substation Descriptions

Project Region	Substation Name[(a)]	Purpose
Eastern Project Area	HH-East Substation	Connects the eastern portion of the Project to the grid via the existing 230-kV BPA transmission line.
Western Project Area	HH-West Intermediate Substation (Primary – Badger Canyon Road)	An intermediate western substation, connected to the electrical collection system, would step up the voltage of the 34.5-kV collection system to 230 kV before sending the power to the secondary substation.
	HH-West Intermediate Substation (Alternate – County Well Road)	An alternate location for the intermediate western substation, located east of the primary substation, would connect to the electrical collection system and step up the voltage of the 34.5-kV collection system to 230 kV before sending the power to the HH-West Step-Up Substation.
	HH-West Step-Up Substation 500 kV (Primary – Sellards Road)[(b)]	The primary location for the HH-West Step-Up Substation, which would step up the voltage from 230 to 500 kV before connecting to the grid, via an existing 500-kV transmission line to BPA's proposed Webber Canyon Substation (if BPA's substation is located on Sellards Road).
	HH-West Step-Up Substation 500 kV (Alternate – County Well Road)[(b)]	An alternate location for the HH-West Step-Up Substation, located north of the primary HH-West Step-Up Substation, would step up the voltage from 230 to 500 kV before connecting to the grid via an existing 500-kV transmission line to BPA's proposed Webber Canyon Substation (if BPA's substation is located on County Well Road).

Source: Horse Heaven Wind Farm, LLC 2021
Notes:
(a) As proposed in the Application for Site Certification, Table 2.3-2
(b) May alternatively be used as the HH-West Alternate Solar Substation (ASC Table 2.3-2) to support solar operations, depending on the location where the Bonneville Power Administration (BPA) elects to construct the Webber Canyon Substation.
BPA = Bonneville Power Administration; HH = Horse Heaven; kV = kilovolt; O&M = operations and maintenance

If the Bonneville Power Administration (BPA) elects to build its Webber Canyon Substation on Sellards Road, the HH-West Step-Up Substation 500 kV (Alternate – County Well Road) would be required to support the County Well Solar Siting Area, if constructed as part of the Proposed Action. If BPA elects to build its Webber Canyon Substation on County Well Road, the HH-West Step-Up Substation 500 kV (Primary – Sellards Road) would be required to support the Sellards Solar Siting Area, if constructed. Only one Intermediate Substation, either Primary – Badger Canyon Road or Alternate – County Well Road, would be constructed. For purposes of analysis, with the exception of analyses for transportation, socioeconomics, and air impacts, this Draft EIS conservatively assumes impacts from construction and operation of substations at all five potential locations.

Supporting Infrastructure

Supporting infrastructure includes existing roadway improvements and new roads, crane paths, laydown yards, O&M facilities, meteorological towers (met tower), collector lines, transmission lines, and any SCADA and

communication systems. The ASC identified up to approximately 34 miles of 36-foot-wide crane paths that would be constructed between turbine locations. Crane paths would be placed within the Micrositing Corridor.

Where necessary, existing public and private roads may be temporarily widened and the turning radii increased. New access roads would be constructed within the Micrositing Corridor between existing roadways and the Project's components. The permanent access roads would be all-weather, gravel surfaces, and generally 16 feet in width for the drivable area and additional width for the shoulder and drainage (if necessary).

The Project would require two O&M facilities, each of which would be located directly adjacent to the Project's substations. One O&M facility would be located adjacent to the Project's eastern substation, and a second would be located adjacent to one of the western Project substations. Each facility would comprise a one- or two-story building that would house operating personnel, offices, operations and communication equipment, parts storage and maintenance activities, and a vehicle parking area. An area for outdoor storage of larger equipment and materials would also be included within the fenced area, permanently occupying approximately 4 acres.

Up to four permanent met towers would be installed as part of the Project. These met towers would be used to obtain wind data for performance management once the Project is operational. The final locations of the met towers would be within the Micrositing Corridor on land leased for the Project. The towers would be free-standing, with heights not to exceed the maximum hub height of the turbines (up to 411 feet). The permanent met towers would be marked and lighted as specified by the FAA. Construction of each met tower would temporarily disturb a 150-foot radius area, and each tower and its foundation would occupy a permanent footprint of up to approximately 42 by 42 feet, for a total of 1,764 square feet for each tower.

Project Phasing

The Project may be built using a "phased approach"[5] with distinct, fully functional portions of the Project potentially being built and implemented sequentially. **Table 2-6** provides the Applicant's example of the phased construction approach that is considered in the analysis of air, transportation, and socioeconomics in Chapters 3 and 4. For all other elements of the environment analyzed in this Draft EIS, the Project as a whole (reflecting the potential for all components to be built irrespective of the Applicant's phased construction approach) was analyzed.

[5] This Draft EIS is not providing a phased, or tiered, review as defined by Washington Administrative Code 197-11-060(5)(b).

This Page Intentionally Left Blank

Table 2-6: Example of Project Phasing

Project Components	Phases		
	Phase 1	**Phase 2 (Alternative A)**	**Phase 2 (Alternative B)**
Energy Generation	650 MW with 350 MW generated via wind (consisting of 58 to 124 turbines, depending on the turbine size selected, plus 300 MWac generated via solar (consisting of the eastern solar siting area)	500 MW, with 250 MW generated via wind (consisting of up to 89 turbines, depending on the turbine size selected), plus 250 MWac generated via solar (consisting of the western solar siting area adjoining the BPA Webber Canyon Substation)	500 MW generated via wind (consisting of up to 177 turbines, depending on the size selected)
BESS	150 MW AC-coupled BESS (600 MW-hr) located at the HH-East substation	150 MW AC-coupled BESS (600 MW-hr) located at the BPA Webber Canyon primary or alternate (north) substation	
BPA POI Location	Bofer Canyon Substation	Webber Canyon primary or alternate (north) substation location	Webber Canyon primary or alternate (north) substation location
Project Substations	HH-East Substation	HH-West Intermediate Substation, collects and steps up to 230 kV and HH-West Step-Up Substation (adjacent to BPA Webber Canyon Substation), steps up to 500 kV and (optional) solar substation, collects and steps up to 230 kV if western solar array is not co-located with HH-West Step-Up Substation	HH-West Intermediate Substation, collects up to 230 kV
O&M Facilities	One O&M facility located directly adjacent to the HH-East Substation	One O&M facility located directly adjacent to the HH-West Intermediate Substation	One O&M facility located directly adjacent to the HH-West Intermediate Substation
Transmission	Up to 500 feet of 230-kV transmission line would be built during Phase 1. HH-East Substation would be sited adjacent to BPA Bofer Canyon Substation	Up to 10.2 miles of 230-kV gen-tie from the HH-West Intermediate Substation to the HH-West Step-Up Substation, and Solar Intertie, connects solar array to HH-West Step-Up Substation if not co-located	Up to 19.4 miles of 230-kV intertie between the HH-East Substation and HH-West Substation
Transportation	I-82 to Coffin Road and Bofer Canyon Road; I-82 to Hwy 397 to Nine Canyon Road and S. Finley Road, to Kirk Road and Beck Road and local farm roads and new Project access roads	I-82 to Wine Country Rd, Frontier Road, Highway 221, County Well Road, Sellards Road, Webber Canyon Road, and Badger Canyon Road for substation and solar components. For wind components, I-82 to Locust Grove Road to Nicoson Road, Plymouth Road, Sellards Road, local farm roads, and new Project access roads.	I-82 to Wine Country Road, Frontier Road, Highway 221, County Well Road, Sellards Road, Webber Canyon Road, and Badger Canyon Road for substation and solar components. For wind components, I-82 to Locust Grove Road to Nicoson Road, Plymouth Road, Sellards Road, local farm roads, and new Project access roads.

Source: Table 2.15-1, Horse Heaven Wind Farm, LLC 2021

Notes:

(a) Two potential locations are shown in the ASC for substations, with corresponding potential transmission line options. The southern location, located on Sellards Road, is identified for purposes of the ASC as the “primary location” while the northern location, located on County Well Road, is identified as the “north alternative location.” Impact analysis for most resources (except socioeconomics, transportation, and air) conservatively assumes that both substations would be constructed.

ASC = Application for Site Certification; BESS = battery energy storage system; BPA = Bonneville Power Administration; I-82 = Interstate 82; kV = kilovolts; MW = megawatts; MWac = megawatts of alternative current; MW-hr = megawatt hours; O&M = operations and maintenance; POI = point of interconnection

2.1.2.2 Project Operation

The Project is anticipated to have an operating life of up to 35 years, which may be extended by repowering. An on-site operations team of up to 20 personnel would be employed at the Project to operate and maintain Project components. The team would perform scheduled preventative maintenance on the turbines, solar modules, BESSs, and any support infrastructure. The on-site team would coordinate with off-site operations staff at a Remote Operation Control Center in accordance with Federal Energy Regulatory Commission guidelines. The off-site team would assist in identifying Project components operating at non-peak efficiency and help on-site staff quickly locate potential operating issues.

Project operations would require water for solar panel washing and limited needs at the O&M facilities. Solar modules require little routine maintenance but would be washed periodically during operations, requiring an estimated 2,025,000 gallons of water per year.

The Project is expected to generate approximately one or two dumpsters of solid, non-hazardous waste per week at the O&M facilities. All waste would be stored within designated temporary waste collection areas until it is collected for transport to an approved landfill. Materials that can be recycled would be stored and transported separately.

2.1.2.3 Project Decommissioning

The Applicant would comply with Washington Administrative Code (WAC) 463-72, Site Restoration and Preservation requirements. The Applicant submitted a preliminary Decommissioning Plan with the ASC for EFSEC's review and would submit an initial Site Restoration Plan to EFSEC at least 90 days before the beginning of construction. Upon Project decommissioning, the Applicant would restore occupied land for agricultural use or as consistent with zoning requirements and landowner agreement, and would remove all aboveground infrastructure and belowground infrastructure to 3 feet or more below grade. The Applicant would replace topsoil and areas where concrete pads were located would be reseeded with native grasses and other vegetation approved by the landowner(s). Financial assurance would remain in place until decommissioning is completed to the satisfaction of EFSEC.

2.1.3 Applicant Commitments

The Applicant has committed to specific measures during the Project's pre-construction, construction, operation, and decommissioning stages. Applicant-committed measures presented in the ASC and taken into consideration in the characterization of potential impacts in each resource impact analysis (provided in Chapter 4) are summarized below. Some Applicant-committed measures may be existing requirements in rule or law. Those requirements that were listed by the Applicant in the ASC are included here. No Applicant-committed measures were proposed for wetlands, energy, and natural resources, or light and glare; however, commitments for other elements of the environment (described in Chapters 3 and 4) may have qualities that provide protection for these resources.

Agency-recommended mitigation measures are provided in Chapter 4 for each element of the environment. A high-level summary of agency-recommended mitigation measures is also provided in the executive summary of this Draft EIS.

2.1.3.1 Earth Resources

The following commitments are proposed by the Applicant and described in detail in Section 3.1 of the ASC.

- The Project would comply with the National Pollutant Discharge Elimination System through pursuance of a Construction Stormwater General Permit.
- An Erosion and Sediment Control Plan (ESCP) would be developed and implemented, detailing specific best management practices (BMPs) that would be used and where they would be placed, as well as the total disturbance area. The ESCP includes measures to prevent erosion, contain sediment, and control drainage. The ESCP would also include installation details of the BMPs.
- A Stormwater Pollution Prevention Plan would be required, detailing the activities and conditions at the site that could cause water pollution and the steps the facility would take to prevent the discharge of any unpermitted pollution.
- A stabilized construction entrance/exit would be installed at locations where construction vehicles would access newly constructed roads and/or disturbed areas from paved roads. The stabilized construction entrance/exits would be inspected and maintained for the duration of the Project's lifespan.
- Clearing, excavation, and grading would be limited to the parts of the Project area where these activities are necessary for construction and decommissioning of the Project. Areas outside the disturbance limits would be marked in the field, and equipment would not be allowed to enter these areas or disturb existing vegetation. To the extent practicable, existing vegetation would be preserved. Where vegetation clearing is necessary, root systems would be conserved if possible.
- Vegetated areas that are disturbed or removed during construction and decommissioning would be restored as near as reasonably possible to pre-disturbance conditions.
- Excavated soil and rock from grading would be spread across the site to the natural grade and would be reseeded with native grasses to control erosion by water and wind.
- Silt fencing would be installed throughout the Project as a perimeter control, and on the contour downgradient of excavations, the O&M facilities, and substations.
- Straw wattles would be used to decrease the velocity of sheet flow stormwater to prevent erosion. Wattles would be used along the downgradient edge of access roads adjacent to slopes or sensitive areas.
- Mulch would be used to immediately stabilize areas of soil disturbance, and during reseeding efforts.
- Jute matting, straw matting, or turf reinforcement matting would be used in conjunction with mulching to stabilize steep slopes that were exposed during access road installation.
- Soil binders and tackifiers would be used on exposed slopes to stabilize them until vegetation is established.
- Concrete chutes and trucks would be washed out in dedicated areas near the foundation construction locations. This would prevent concrete washout water from leaving a localized area. Soil excavated for the concrete washout area would be used as backfill for the completed footing.
- To facilitate installation of the wind turbine generator footings, large excavations would be created. Soil from these excavations would be temporarily stockpiled and used as backfill for the completed footing. Silt fencing

would be installed around the stockpile material as a perimeter control. Mulch or plastic sheeting would be used to cover the stockpiled material. Soils would be stockpiled and reused in order to prevent mixing of productive topsoils with deeper subsoils.

- After construction and decommissioning are each completed, the site would be revegetated with an approved seed mix. When required, the seed would be applied in conjunction with mulch and/or stabilization matting to protect the seeds as the grass establishes. Revegetation would take place as soon as site conditions and weather allow following construction and decommissioning.
- If water crossings are needed, check dams and sediment traps would be used during the construction of low-impact ford crossings or culvert installations. The check dams and sediment traps would minimize downstream sedimentation during construction of the stream crossings.
- During construction and operation, source control measures would be identified in the Spill Prevention, Control, and Countermeasures (SPCC) Plan to reduce the potential of chemical pollution to surface water or groundwater during construction.
- To the extent practicable, construction activities would be scheduled to occur in the dry season, when soils are less susceptible to compaction. Similarly, soil disturbance should be postponed when soils are excessively wet such as following a precipitation event.
- Equipment oil-filling, fueling, or maintenance activities would take place a substantial distance from waterways or wetlands to prevent water quality impacts in the event of an accidental release. Any oily waste, rags, or dirty or hazardous solid waste would be collected in sealable drums at the construction yards, to be removed for recycling or disposal by a licensed contractor.
- All structures would be built in accordance with current code requirements and state-of-practice methods to limit potential for issues from slope instability/topography, liquefaction, and geologic hazards, including seismic events.

2.1.3.2 Air

The following commitments are proposed by the Applicant and described in detail in Section 3.2 of the ASC.

- Construction and operations vehicles and equipment would comply with applicable state and federal emissions standards.
- Vehicles and equipment used during construction would be properly maintained to minimize exhaust emissions.
- Operational measures such as limiting engine idling time and shutting down equipment when not in use would be implemented.
- Watering or other fugitive dust-abatement measures would be used as needed to control fugitive dust generated during construction.
- Construction materials that could be a source of fugitive dust would be covered when stored.
- Traffic speeds on unpaved roads would be limited to 25 miles per hour to minimize generation of fugitive dust.
- Truck beds would be covered when transporting dirt or soil.

- Carpooling among construction workers would be encouraged to minimize construction-related traffic and associated emissions.
- Erosion-control measures would be implemented to limit deposition of silt to roadways, to minimize a vector for fugitive dust.
- Replanting or graveling disturbed areas would be conducted during and after construction to reduce wind-blown dust.

2.1.3.3 Water

The following commitments are proposed by the Applicant and described in detail in Section 3.3 of the ASC.

- Water conservation would be implemented to the extent practicable by use of less water-intensive methods of dust suppression when possible, including use of soil stabilizers, tightly phasing construction activities, staging grading and other dust-creating activities, and/or compressing the entire construction schedule to reduce the time period over which dust suppression measures would be required.
- Impacts on waters of the state may be avoided by spanning (e.g., with the transmission line) or otherwise micrositing away from the streams. If these impacts cannot be avoided, indirect impacts on water quality can be minimized by working within the ordinary high water line during the dry season when no rain is predicted.
- To control erosion and surface-water runoff during construction and operation, the Applicant would comply with a Construction Stormwater General Permit.
- A Stormwater Pollution Prevention Plan meeting the conditions of the Construction Stormwater General Permit for Construction Activities would be prepared and implemented prior to construction and again during decommissioning.
- All final designs would conform to the applicable Stormwater Management Manual.
- An SPCC Plan would be prepared to prevent discharge of oil into navigable waters.

2.1.3.4 Habitat, Vegetation, Fish, and Wildlife

The following commitments are proposed by the Applicant and described in detail in Section 3.4 of the ASC.

- To minimize impacts on wildlife, baseline studies were conducted for the Project consistent with the following guidance:
  - Washington Department of Fish and Wildlife (WDFW) Wind Power Guidelines (WDFW 2009)
  - U.S. Fish and Wildlife Service's (USFWS) 2012 Final Land-Based Wind Energy Guidelines (USFWS 2012)
  - 2013 USFWS Eagle Conservation Plan Guidance Module 1 – Land Based Wind Energy (USFWS 2013)
  - USFWS 2016 Eagle Rule Revision (USFWS 2016)
- Project facilities were sited on previously disturbed (e.g., cultivated cropland) areas to the extent feasible to avoid impacts on native habitats and associated wildlife species.
- The Project would use industry standard BMPs to minimize impacts on vegetation, waters, and wildlife.

- The Project was sited outside of wetlands and waters to the extent feasible to avoid and minimize impacts on these resources, as described in Section 3.3 and Section 3.5 of the ASC, which would also avoid impacts on fish and minimize impacts on wildlife species that use these habitats.
- If the final design results in impacts on waters of the state that cannot be avoided, the Applicant would work with EFSEC and WDFW to determine whether a Hydraulic Project Approval is required and would prepare an application accordingly.
- During construction, WDFW-recommended seasonal buffers (per Larsen et al. 2004) for ferruginous hawk nests would be observed to avoid disturbing nesting ferruginous hawks.
- During construction, WDFW-recommended seasonal buffers (per Larsen et al. 2004) for burrowing owl nests would be observed to avoid disturbing nesting burrowing owls, if present. If impacts on potentially suitable habitat cannot be avoided during final design, the Applicant would consult with WDFW regarding the need for burrowing owl surveys prior to construction, including surveys to determine habitat suitability for burrowing owls, and surveys for breeding owls if suitable habitat is present.
- The Applicant would minimize bird and bat collision with Project infrastructure by implementing down-shield lighting (e.g., for permanent lighting at the substations and O&M facilities) that would be sited, limited in intensity, and hooded in a manner that prevents the lighting from projecting onto any adjacent properties, roadways, and waterways; lighting would be motion activated where practical (i.e., excluding security lighting).
- All permanent met towers would be unguyed to minimize collision risk for wildlife.
- The Applicant would acquire any required federal approvals as described in Section 2.23 of the ASC. The Applicant would continue ongoing coordination with the USFWS (Matthew Stuber, Eagle Coordinator, Columbia Pacific Northwest Region) regarding an eagle take permit for incidental take of bald and golden eagles and would continue to evaluate eagle risk to determine if an eagle take permit is appropriate considering the use of the Project area by bald and golden eagles. The Applicant does not plan to pursue an eagle take permit but would re-evaluate eagle risk and the need for an eagle take permit throughout the life of the Project.
- Sagebrush shrub-steppe habitat would be avoided to the extent possible. If avoidance is not possible, mitigation for impacts on sagebrush shrub-steppe habitat would be developed in consultation with the applicable agencies.
- If special status plant species are observed during pre-construction surveys, individuals and populations would be avoided to the extent possible. If avoidance is not possible, mitigation measures for impacts would be developed in consultation with the applicable agencies.
- Following construction, temporarily disturbed areas would be revegetated with native or non-invasive, non-persistent non-native plant species as described in the Revegetation and Noxious Weed Management Plan (Appendix N of the ASC).
- The Applicant does not anticipate using pesticides during Project construction or operation. If unforeseen circumstances arise that require the use of pesticides, the Applicant would consult with WDFW and EFSEC regarding use of pesticides to avoid and minimize impacts on burrowing owl (per Larsen et al. 2004).

- The Applicant would limit construction disturbance by flagging any sensitive areas (e.g., wetlands, rare plant populations) and would conduct ongoing environmental monitoring during construction to ensure flagged areas are avoided.
- The Applicant has prepared a Bird and Bat Conservation Strategy that describes the surveys conducted, avoidance and minimization, and potential impacts on birds and bats and their habitat as a result of construction and operation of the Project (Appendix M of the ASC).
- The Applicant would conduct two years of standardized post-construction fatality monitoring to assess impacts of turbine operation on birds and bats. Proposed post-construction fatality monitoring is described in the Applicant's Bird and Bat Conservation Strategy (Appendix M of the ASC).
- The Applicant developed a Habitat Mitigation Plan (Appendix L of the ASC) for the wind energy generation areas of the Project, consistent with the WDFW Wind Power Guidelines, where applicable (WDFW 2009). The Habitat Mitigation Plan separately addressed mitigation for the solar and battery storage facility elements, consistent with best available industry practices.

2.1.3.5 Noise

The following commitments are proposed by the Applicant and described in detail in Section 4.1.1 of the ASC.

- Maintain all construction tools and equipment in good operating order according to manufacturers' specifications.
- Limit use of major excavating and earth-moving machinery to daytime hours (7 a.m. to 10 p.m.).
- To the extent practicable, schedule construction activity during normal working hours[6] on weekdays when higher sound levels are typically present and are found acceptable. Some limited activities, such as concrete pours, would be required to occur continuously until completion.
- Equip any internal combustion engine used for any purpose on the job or related to the job with a properly operating muffler that is free from rust, holes, and leaks.
- For construction devices that utilize internal combustion engines, ensure that the engine's housing doors are kept closed and install noise-insulating material mounted on the engine housing consistent with manufacturers' guidelines, if possible.
- Limit possible evening shift work to low noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment.
- Utilize a complaint resolution procedure to address any noise complaints received from residents.
- For the Option 1 layout using 2.82-MW turbines, to demonstrate compliance with the applicable nighttime WAC regulatory limits (WAC 173-60-040) at the Project property boundary adjacent to Class A lands, select turbines would need to operate in noise-reduced operation mode. For the Option 1 layout using 3.03-MW turbines, select turbines may need to be equipped with low noise trailing edge or other noise-reducing technology.

[6] The Applicant has identified normal working hours as the hours outside the limitations provided under WAC 173-60-040.

2.1.3.6 Safety

The following commitments are proposed by the Applicant and described in detail in Section 4.1.2 of the ASC.

- All facilities would be designed per recommendations of the Institute of Electrical and Electronics Engineering Guide for Substation Fire Protection (979-2012) and the Unified Facilities Criteria (UFC) for Fire Protection Engineering for Facilities (UFC 3-600-01).
- During construction, trees and vegetation that pose a hazard to the collector lines may be topped or cleared from the right-of-way. During operation and maintenance of the Project, vegetation that is overgrown and could pose a hazard to the transmission line would be topped or cleared as needed.
- BESSs would include fire-suppression measures.
- Appropriate coordination with local emergency personnel would be conducted.
- Precautionary measures would be taken during construction to reduce fire risk.
- Construction equipment would be monitored where activities may present safety issues.
- A Draft Emergency Response Plan that addresses fire and other emergency procedures has been developed and included as part of the ASC (see Appendix P of the ASC). A finalized plan would be developed and implemented, in coordination with appropriate agencies before construction.
- All Project vehicles would be equipped with fire extinguishers.
- Fire station boxes with appropriate fire suppression equipment (e.g., shovels, water tank sprayers, sand) would be installed at multiple locations within the Project.
- No gas-powered vehicles would be allowed outside of graveled areas.
- High clearance vehicles would be used on site if required to be operated off road. Low-clearance vehicles with catalytic converters would not be parked in tall grasses.
- Any construction personnel required to handle explosives would be state-licensed explosive specialist contractors. All explosives would be secured on site in compliance with federal, state, and local requirements.
- Areas directly surrounding turbines and substations would be cleared of vegetation and graveled.
- All portable generators would be fitted with spark arrestors on the exhaust system and not allowed to operate in open grass areas.
- Hazardous material storage, spill prevention, and waste handling BMPs would be implemented and utilized during construction and operation of the Project in compliance with the construction stage and an operational stage SPCC Plan.

2.1.3.7 Land-Use Plans and Zoning Ordinance

The following commitments are proposed by the Applicant and described in detail in Section 4.2.1 of the ASC.

- Project construction, operation and decommissioning stages would follow site-specific BMPs to minimize potential impacts on noise, traffic, vegetation, and air quality, as described in the respective resource sections of the ASC.

- Upon decommissioning of the Project, the Applicant would remove all above-grade infrastructure, as well as belowground infrastructure to 3 feet or more below grade.
- The Applicant would replace topsoil and reseed areas where facilities were located with grasses and/or other vegetation reasonably acceptable to the landowner.

The following commitments are proposed by the Applicant and described in detail in Section 4.2.6 of the ASC.

- Upon Project decommissioning, occupied land would be restored for agricultural use or as required by then-current land use and zoning and landowner agreement.
- The Applicant would make arrangements with property owners and livestock owners to keep livestock out of areas where blasting or heavy equipment operations take place during construction and decommissioning.

2.1.3.8 Aesthetics

The following are commitments proposed by the Applicant and described in detail in Section 4.2.3 of the ASC.

- Active dust suppression would be implemented during construction.
- Following completion of construction, temporarily disturbed areas (e.g., laydown yards, crane paths not used as Project access roads) would be returned to their previous conditions once construction is complete.
- Restoration of the laydown yards would involve pre-construction stripping and storing topsoil, including weed avoidance, as well as removing the gravel surface, regrading to pre-construction contours, restoring topsoil and decompaction of subsoils as needed, and reseeding with approved seed mixes.
- Following completion of construction, the temporary crane paths would be removed and the area restored, in accordance with the Project's Revegetation and Noxious Weed Management Plan (Appendix N of the ASC).
- The Applicant would provide a clean-looking facility free of debris and unused or broken-down equipment by storing equipment and supplies in designated areas within the O&M facilities and promptly removing damaged or unusable equipment from the site.
- The turbines and solar arrays would be uniform in design to present a trim, uncluttered, aesthetically attractive appearance.
- The only exterior lighting on the turbines would be aviation warning lights and, potentially, mid-tower lighting, depending on the size of the tower, as required by the FAA.
- The Applicant would construct support facilities with non-reflective materials in muted tones, as well as the use of white or light gray, non-reflective paint to eliminate the need for daytime aviation lighting and eliminate glare from the turbines.
- Sensors and switches would be used to keep security lighting turned off when not required, and all lights except aviation safety lighting would be hooded and directed downward to minimize light pollution.
- Any perimeter lighting at the O&M facilities and BESSs would be activated only during maintenance or emergency activities at night.

2.1.3.9 Recreation

Commitments specific to recreation were not proposed. Site-specific BMPs implemented during construction and operation to minimize potential impacts on noise, traffic, and visual surroundings (as described in the respective resource sections of the ASC) would minimize impacts on recreational users (Section 4.2.4 of the ASC).

2.1.3.10 Historic and Cultural Resources

The following are commitments proposed by the Applicant and described in detail in Section 4.2.5 of the ASC.

- Prior to construction of the Project, a qualified archaeologist would be retained and would provide a cultural resource briefing that includes:
  - All applicable laws and penalties pertaining to disturbing cultural resources
  - A brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area
  - Types of cultural resources found in the area
  - Instruction that Project workers would halt construction if a cultural resource is inadvertently discovered during construction
  - Procedures to follow in the event an inadvertent discovery (Inadvertent Discovery Plan discussed below) is encountered, including appropriate treatment and respectful behavior of a discovery (e.g., no posting to social media or photographs).

  If requested, a local tribal representative(s) would be invited to participate in the environmental training to discuss or provide text from a tribal cultural perspective regarding the cultural resources within the region.
- The Applicant would retain a qualified archaeologist to prepare and implement a Cultural Resource Pre-construction Survey and Avoidance Plan. The plan would provide protocols for pre-construction surveys of areas that have not been previously surveyed (e.g., during final design, construction needs, etc., extend beyond previously surveyed areas) and outline cultural resource avoidance measures. Tribal representatives would be invited to monitor the site during construction.
- Recorded cultural and historic resources would be avoided through modification of Project design and through buffers and protective signage or flagging, as well as monitoring, as appropriate. If a resource cannot be avoided, a qualified archaeologist would develop additional archaeological investigation measures and additional mitigation in coordination with the Department of Archaeology and Historic Preservation (DAHP) and tribes, as appropriate.
- An Archaeological Excavation and Removal Permit would be pursued if any alteration of any pre-contact archaeological site were to occur, regardless of the level of disturbance. For historic-era archaeological sites, permits would be pursued for any removal or excavation of those that are eligible for or listed on the National Register of Historic Places.
- The Applicant would retain a qualified archaeologist to prepare an Inadvertent Discovery Plan for the Project and avoidance procedures. During Project-level construction, should subsurface archaeological resources be discovered, all activity in the vicinity of the find would stop and a qualified archaeologist would be contacted to assess the significance of the find according to Washington Heritage Register and National Register of Historic Places criteria (as applicable). If any find is determined to be significant, the archaeologist would determine, in consultation with the implementing agencies and local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. If a resource cannot be avoided, a

qualified archaeologist would develop additional archaeological investigation measures, such as data recovery or other appropriate measures, in consultation with the implementing agency, DAHP, and appropriate Native American representatives.

- If evidence of human burials is encountered, all ground-disturbing activity in the vicinity would be halted immediately, and the DAHP, Benton County Planning and Community Development Department, Benton County Sheriff's Office, Applicant, and appropriate tribes would be notified immediately. No work would resume within a 100-foot radius (or appropriate distance) of the find until all the appropriate approvals are received.

2.1.3.11 Transportation

The following commitments are proposed by the Applicant and described in detail in Section 4.3 of the ASC.

- Any road improvements made during the Project's construction would be removed and the area restored to pre-construction conditions to the extent practical unless otherwise requested by the landowner.
- All road improvement and construction would be done in conjunction with Benton County Public Works requirements following Benton County standards. The Applicant would maintain new access roads to access the turbine structures during operations.
- Prior to commencement of construction, the Applicant would consult with the Washington State Department of Transportation (WSDOT) and Benton County to develop a construction-stage Traffic Management Plan.
- A detailed haul plan would be developed once turbines have been selected and a construction schedule developed. The haul plan would confirm source locations and routes to be used during Project construction, as well as anticipated loads and haul schedule.
- The Transportation Study (Appendix V of the ASC) would be verified and updated to include detailed condition assessments of roads to be used, structural assessments, and plans for improvement and maintenance.
- Ingress and egress points would be located and improved (if needed) to ensure adequate capacity for existing and projected traffic volumes and to provide efficient movement of traffic, including existing and anticipated agricultural traffic.
- The Applicant would obtain all necessary WSDOT permits to access, modify ingress and egress to, or transport regulated loads on state-managed roadways.
- The Applicant would obtain WSDOT trip permits for oversize and overweight loads.
- The Applicant would coordinate with EFSEC and Benton County to identify a qualified third-party engineer who would document road conditions prior to construction and again within 30 days after construction is complete or as weather permits.
- A service agreement between the Applicant and Benton County would ensure post-construction road restoration to conditions as good or better than pre-construction.
- The Applicant or its contractor and EFSEC staff would meet prior to final site plan approval to outline steps for minimizing construction traffic impacts, including conflicts if state-imposed roadway restrictions could affect transporter routes.

- The Applicant or its contractor would provide advance notification to adjacent landowners and farmers through mailing, informal meeting, open house, or other similar methods when construction takes place in the vicinity of their homes and farms to help minimize access disruptions.
- All construction vehicles would yield to school-related vehicles (e.g., school busses) and would lower their speed when approaching a school bus or bus stop along the transporter route.
- Advanced warning and proper roadway signage would be placed on major state and county roads to warn motorists of potential Project-related vehicles entering and exiting the roadway.
- When slow or oversized wide loads are being hauled, appropriate vehicle and roadside signing and warning devices would be deployed. Pilot cars would be used as WSDOT dictates, depending on load size and weight.
- Carpooling among the construction workers would be encouraged to reduce traffic volume to and from the Project site.
- Detour plans and warning signage would be provided in advance of any planned traffic disturbances.
- Flaggers would be employed as necessary to direct traffic when large equipment is exiting or entering public roads to minimize risk of accidents. Should the Applicant or its construction contractor receive notice during Project construction of transportation events (e.g., WSDOT or Benton County transportation projects, roadway incident, other traffic events) that give rise to a safety concern, the Project construction manager would review the Traffic Management Plan in coordination with the applicable agency and address additional safety measures, including flagging, as may be appropriate for the situation.
- If lane closure must occur, adequate signage for potential detours or possible delays would be posted.
- Advance notification would be provided to emergency providers and hospitals when public roads may be partially or completely closed.
- Emergency vehicles would be given the right-of-way per local, state, and federal requirements.
- Site access roads and an entrance driveway to the O&M facilities on site would be constructed to service truck movements of legal weight and provide adequate sight distance.
- Traffic control requests would be coordinated through the WSDOT traffic engineer and the Benton County public works department, abiding by seasonal county road restrictions.
- A haul and approach route would be developed in coordination with the appropriate jurisdictional authorities.
- Permanent private Project access roads would be maintained by the Applicant for the life of the Project.
- Tracked vehicles and heavy trucks would be restricted to approved transporter roads to prevent damage to surface and base of county roads.
- Turbines and permanent met towers would be lit according to regulations established by the FAA.
- The Applicant would obtain Determinations of No Hazard to Air Navigation from the FAA.
- Advance warning and proper roadway signage would be placed on highways and county roads to warn motorists of potential vehicles entering and exiting the roadway.

- After construction, all-weather access roads (including graveled roads), suitable to handle emergency equipment, would be provided within 150 feet of any built structure or surface activity area.

2.1.3.12 Socioeconomic Environment

The following commitments are proposed by the Applicant and described in detail in Section 4.4 of the ASC.

- Active dust suppression would be implemented during construction.
- Engine idling time would be limited, and equipment would be shut down when not in use, to limit air emissions.
- Noise mitigation measures would include maintaining all tools and equipment in good operating order, using properly muffled construction equipment, and scheduling construction activity during normal working hours on weekdays to the extent possible.
- Prior to commencement of construction, the Applicant would consult with WSDOT and Benton County on the development of a construction-stage Traffic Management Plan that would be designed to reduce and manage construction-related transportation impacts.
- The Applicant would coordinate with the Benton County Fire Marshal and other appropriate agencies to finalize an Emergency Response Plan, as well as coordinate with local emergency services personnel and provide training where necessary.

2.2 Alternatives to the Proposed Action

2.2.1 Alternatives Considered

The following alternatives were considered for analysis:

- **Solar Only:** Under this alternative, only the solar facilities and supporting infrastructure would be constructed within the 10,755 acres of Solar Siting Areas, resulting in a permanent disturbance footprint of approximately 6,570 acres. The Applicant would consider all solar technology available at that time to design the most efficient and effective solar array layouts.
- **Wind Only:** Under this alternative, only the wind turbines and supporting infrastructure would be constructed within the 11,850 acres of Wind Energy Micrositing Corridors, resulting in approximately 476.6 acres of permanent disturbance.
- **No Action:** Under the No Action Alternative, the Project would not be constructed or operated, power would not be supplied from the Project, and the potential environmental impacts associated with the Project would not occur. Existing agricultural use in the Lease Boundary would continue without interruption. The Benton County Comprehensive Land Use Plan and the zoning ordinance would continue to govern the development of the land within the Lease Boundary.

2.2.2 Alternative Carried Forward for Detailed Analysis

The Solar Only and Wind Only alternatives were eliminated from detailed analysis because they would not generate the designed nameplate generating capacity required by the Applicant.

The No Action Alternative was carried forward for analysis in the Draft EIS.