BP Wind Energy North America Inc.

Mohave County Wind Farm Project

Plan of Development

Submitted to BLM Kingman Field Office

April 2013 Revision

Signature Page

I certify that to the best of my knowledge, this document is accurate and fulfills the requirements for the Right of Way Grant process. This Plan of Development (POD) for the Mohave County Wind Farm Project site accompanies the Final EIS.

Name Date

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LIST OF ACRONYMS AND ABBREVIATIONS

AAC	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ARS	Arizona Revised Statute
BLM	Bureau of Land Management
BMP	best management practice
CFR	Code of Federal Regulations
E.O.	Executive Order
EIS	Environmental Impact Statement
EMF	Electromagnetic fields
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy Management Act
GPD	gallons per day
GPM	gallons per minute
GPW	gallons per week
KFO	Kingman Field Office
kV	kilovolt
kW	kilowatts
m	meters
m/s	meters per second
met	meteorological
mph	miles per hour
MW	megawatts
NEPA	National Environmental Policy Act
O&M	Operations and Maintenance Facilities
OMS	Operations Management System
OSHA	Occupational Safety and Health Administration
P.L.	Public Law
PEIS	Programmatic Environmental Impact Statement
POD	Plan of Development
POI	Point of Interconnect
Project	Mohave County Wind Farm Project
Reclamation	Bureau Reclamation
ROD	Record of Decision
ROW	Right of Way
rpm	revolutions per minute
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Officer
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan
US 93	U.S. Highway 93
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
Western	Western Area Power Administration
WTG	Wind Turbine Generator

GLOSSARY OF KEY TERMS

Access Road – (per BLM Manual Section 9113) Provides primary access to large blocks of land, and connects with, or is an extension of, the public road system. The Access Roads will bring the large turbine components, construction and operations personnel from the public road system to the initial point of entry and inspection on the Project site.

Ancillary Facilities – Wind Turbine Generator (WTG) support components (i.e. transformers, electrical collection system, substations, O & M) that allow the electricity produced by the WTG to be connected to the existing electrical grid.

Anemometer – One of the components of a meteorological tower, the anemometer is a sensor that measures wind speed and direction.

Clearing & Grubbing – Process of removing top layer of soil and vegetation within the areas indicated on the design drawings; cutting and removal of all brush, shrubs, debris, and vegetation to approximately flush with the ground surface or 3 to 6 inches below surface.

Concrete Batch Plant – A manufacturing plant where cement is mixed before being transported to a construction site, ready to be poured. Equipment and materials including batchers, mixers, sand, aggregate, and cement are required for batching and mixing concrete.

EIS Corridor – Potential area of impact resulting from the proposed construction activities.

Electrical collection system – Consists of underground and overhead cables that carry electricity from and within groups of wind turbines and transmits it to a collection substation and point of interconnection switchyard, which transfers the electricity generated by the project to the regional power grid.

Electromagnetic fields (EMF) – A combination of invisible electric and magnetic fields of force. They can occur both naturally or due to human constructs.

Gearbox – A protective casing for a system of gears that converts the wind into mechanical energy.

Generator – A device for converting mechanical energy to electrical energy that is located in the Nacelle.

Grid (also "Power Grid" and "Utility Grid") – A common term referring to an electricity transmission and distribution system.

Interior Roads (per BLM Manual Section 9113**)** – Provide lower volume secondary road access and serves a smaller area than Access Roads, and connect to Access Roads. Typically consists of low volume spur roads that provide point access and connect to the Access Roads. The Interior Roads will be roads along the Turbine Line Corridors used during construction to construct the turbine foundations with concrete, deliver turbine towers and components and operation personnel to the turbine during operations.

Main Lay-down Area (also "Staging Area") – A designated secure area or space(s), adjacent to the construction site, where construction equipment and materials/supplies in transit are temporarily stored, assembled, or processed, as part of a construction operation. In addition, temporary construction trailers and vehicles may be parked within the boundary limits of this secure space.

Megawatt – A unit used to measure power, equal to one million watts.

Meteorological mast – One of the components of a meteorological tower, the meteorological mast supports the anemometers and data logger.

Meteorological towers – Wind measurement systems that can be of steel tube or lattice construction, and can be free-standing or guyed; they are equipped with sensors to measure wind speed and direction, temperature and pressure.

Nacelle – The cover for the gearbox, drive train, and generator of a wind turbine that converts the energy of the wind into electrical energy. The Nacelle can rotate a full 360 degrees at the top of the tower to capture the prevailing wind and weighs as much as 50 tons.

Operations and Maintenance Facilities (O&M) – For storing equipment and supplies required during operation. Some maintenance facilities include control functions such as the supervisory control and data acquisition (SCADA) to provide two-way communication with each wind turbine.

Overhead Transmission Line – Potential route for overhead electrical lines connecting from the project substation to a determined point of interconnection at the existing system.

Power Grid (also "Utility Grid") – A common term referring to an electricity transmission and distribution system.

Rotor – The blades and other rotating components of a wind energy conversion turbine.

SCADA – Supervisory Control and Data Acquisition; collects data throughout the wind farm to monitor and provide control from a remote location.

Sedimentation – Deposition of sediment into water bodies and wetlands.

Shadow flicker – The effect caused by the sun's casting shadows from moving wind turbine blades.

Soil erosion – A natural process in which soil particles are detached and removed by wind or water.

Staging Area (also "Main Lay-down Area") – A designated secure area or space, adjacent to the construction site, where construction equipment and materials/supplies in transit are temporarily stored, assembled, or processed, as part of a construction operation. In addition, temporary construction trailers and vehicles may be parked within the boundary limits of this secure space.

Switching Station – A particular type of substation where energy, of the same voltage, is routed either from different sources or to different customers. Switching stations often contain circuit breakers, switches and other automated mechanisms that switch or divide their output between different distribution lines when system faults occur or shut down transmission altogether in the event of a serious problem

Transmission/Interconnection facilities – A collection substation terminates collection feeder cables and steps up the voltage to that of the transmission system to which the project ultimately connects.

Turbine (also see "Wind Turbine") – A term used for a wind energy conversion device that produces electricity.

Utility Grid (also see "Power Grid") – A common term referring to an electricity transmission and distribution system.

Wind Energy (also see "Wind Power") – Power generated by converting the mechanical energy of the wind into electrical energy through the use of a wind generator.

Wind Generator – A wind energy conversion system designed to produce electricity.

Wind Load – The lateral pressure on a structure in pounds per square foot, due to wind blowing in any direction.

Wind Power (also see "Wind Energy") – Power generated by converting the mechanical energy of the wind into electrical energy through the use of a wind generator.

Wind Power Plant – A group of wind turbines interconnected to a common utility system.

Wind Project – Wind projects vary in size, from small projects of one to a few turbines (known as "behind the meter" or "distributed wind systems") serving individual customers, to large projects ("utility" or "commercial-scale" or "wind farms") designed to provide wholesale electricity to utilities or an electricity market.

Wind Turbine – A term used for a wind energy conversion device that produces electricity. Typically consists of three major mechanical components: tower, nacelle, and rotor.

Wind Turbine Lay-down Area – An area adjacent to the wind turbine foundation, where wind turbine components are temporarily stored, assembled, or processed, as part of the wind turbine assembly operation.

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

BP Wind Energy is proposing to construct, operate, and eventually decommission a wind-powered electrical generation facility in Mohave County, northwestern Arizona. The proposed Mohave County Wind Farm Project (the Project) is proposed in the White Hills of Mohave County about 40 miles northwest of Kingman, Arizona. The Project includes about 38,099 acres of public land managed by the Bureau of Land Management (BLM) and 8,960 acres of land managed by the Bureau Reclamation (Reclamation); additional land would be needed for access to the Project site (estimated at about 75 acres) and a power distribution line within the access road Right of Way (ROW). In response to the application to use this land for the proposed Project, the BLM segregated these public lands from appropriation under the public land laws including the mining law, but excluding the mineral leasing or materials acts, for a period of two years beginning March 2, 2012 when the segregation notice was published in the Federal Register.

The Project is based on a corridor approach, in which defined areas were identified across the site for the potential placement of turbines, roads, collection system, and transmission lines. The defined corridors allowed a more focused approach on the planning and environmental review while maintaining the flexibility to choose a turbine once permitting and commercial agreements were finalized. Within the areas identified for development, detailed surveys were carried out for land-based resources. The precise placement of each turbine within the corridors will be determined prior to BLM and Reclamation issuing (respectively) Notices to Proceed right of use authorizations. By proposing corridors, BP Wind Energy preserves important flexibility in the selection of turbines and their placement. Given the long permitting times for a development of this scale on federal lands (the development ROW application for the Project was filed in 2006) as well as the recent fast-paced evolution of wind science and turbine design over the permitting period for the Project, by selecting the precise type and placement of turbines at the construction design phase BP Wind Energy would be able to best maximize the Wind Farm Site’s wind resources. The flexibility provided by the corridor approach is, however, limited both by the number and extent of corridors proposed and by the maximum nameplate capacity proposed, which may not exceed 500 MW. In addition, within each corridor the construction siting process will take into account not only environmental constraints but also engineering, construction and safety factors, and will each be approved by BLM and Reclamation. Thus, the turbine placements shown within corridors in the figures and maps throughout this document represent approximate spacing based on turbine model and size, while the actual spacing and number of turbines that would be built within each corridor will reflect a wide range of variables.

The Project’s energy generating capacity would be dependent on the turbine type, placement and number of turbines within approved corridors, and the transmission line selected. The power generation capacity is proposed to be 425 megawatts (MW) if the Project interconnects to the 345-kV Liberty-Mead transmission line, and 500 MW if the Project interconnects to the 500-kV Mead-Phoenix transmission line. Power generated by the Project would enter the regional electrical grid through a proposed interconnection with one of two existing transmission lines crossing the Project Area.

The turbine hubs would be between 262 feet (80 meters) and 345 feet (105 meters) above the ground depending on the turbine selected. The turbine blades would extend between 126 feet (38.5 meters) and 194 feet (59 meters) above the hub. The rotor diameter likely would be between 252 feet (77.2 meters) and 388 feet (118 meters). Therefore, each turbine would have a rotor “swept area” of 50,300 square feet to 117,600 square feet. At the top of their arc, the blades would be between 390 feet (118.5 meters) and 539 feet (164 meters) above the ground.

BP Wind Energy may select turbines in the 1.5 to 3.0 MW range; these turbines may have slightly different hub heights and/or rotor diameters. BP Wind Energy utilized a corridor approach in permitting the Project to maintain the flexibility to choose a turbine in the approximate size range indicated above due to the permitting time an Environmental Impact Statement (EIS) involves, the changing size and commercial availability of turbine models, and possible negotiation outcomes with turbine vendors. Using a larger number of smaller MW turbines or a smaller number of larger MW turbines would not change the corridors in which the turbines are located, but it would affect the amount of space between turbines. Turbine spacing would also be affected by the location of sensitive natural and cultural resources, engineering, construction and safety constraints. The turbine size would not be expected to notably change the long-term or temporary ground disturbance for the Project; a 1.5-MW turbine would be expected to result in about 1.85 acres of temporary ground disturbance per turbine but would require 283 turbines for the proposed Project footprint (approximately 524 acres total disturbance) compared with needing 167 3.0-MW turbines with approximately 2.5 acres of temporary ground disturbance per turbine (approximately 418 acres of total disturbance).

The Project includes the following major components and facilities:

1) a wind farm (the Wind Farm Site) on approximately 38,099 acres of public land managed by the BLM Kingman Field Office (KFO), and approximately 8,960 acres of Federal land managed by Reclamation. Project features within the Wind Farm Site would include, but not be limited to, turbines aligned within corridors, access roads, an operations and maintenance building (potentially with a water well to support the operations and maintenance building), two temporary laydown/staging areas (with temporary batch plant[1] operations), temporary and permanent meteorological (met) towers, two substations, and collector lines. No State of Arizona or private lands are expected to be utilized for the project.

2) up to 37 acres of BLM-administered public lands within the Wind Farm Site would be used for construction of the switchyard[2] (the Switchyard) that would be operated by the Western Area Power Administration (Western);

3) an single access consisting of an approximately 3-mile access road between the Wind Farm Site and U.S. Highway 93 (US 93) (the Access Road) with certain improvements as required by the Arizona Department of Transportation (ADOT);

4) the temporary use of the existing Detrital Wash Materials Pit as a materials source (the Materials Source) for the base material of roads and for concrete needed for foundations. The existing water wells in the immediate vicinity of this Materials Source would provide temporary construction-phase water for batch plant operations and dust suppression;

5) a water pipeline (the Temporary Pipeline) that would extend within the primary Access Road ROW from the Materials Source to the main laydown/staging area where batch plant operations are proposed to occur; and

6) a distribution line (the Distribution Line) that would be expected to tap into an existing power line south of the Project Area, parallel US 93 north to the Access Road, and follow the access road to the main (southernmost) laydown/staging area where batch plant operations are proposed to occur.

[1] A manufacturing plant where concrete is mixed and made ready to be poured before being transported to a construction site.

[2] A facility where electricity from the electrical generator is transferred to the electric grid.

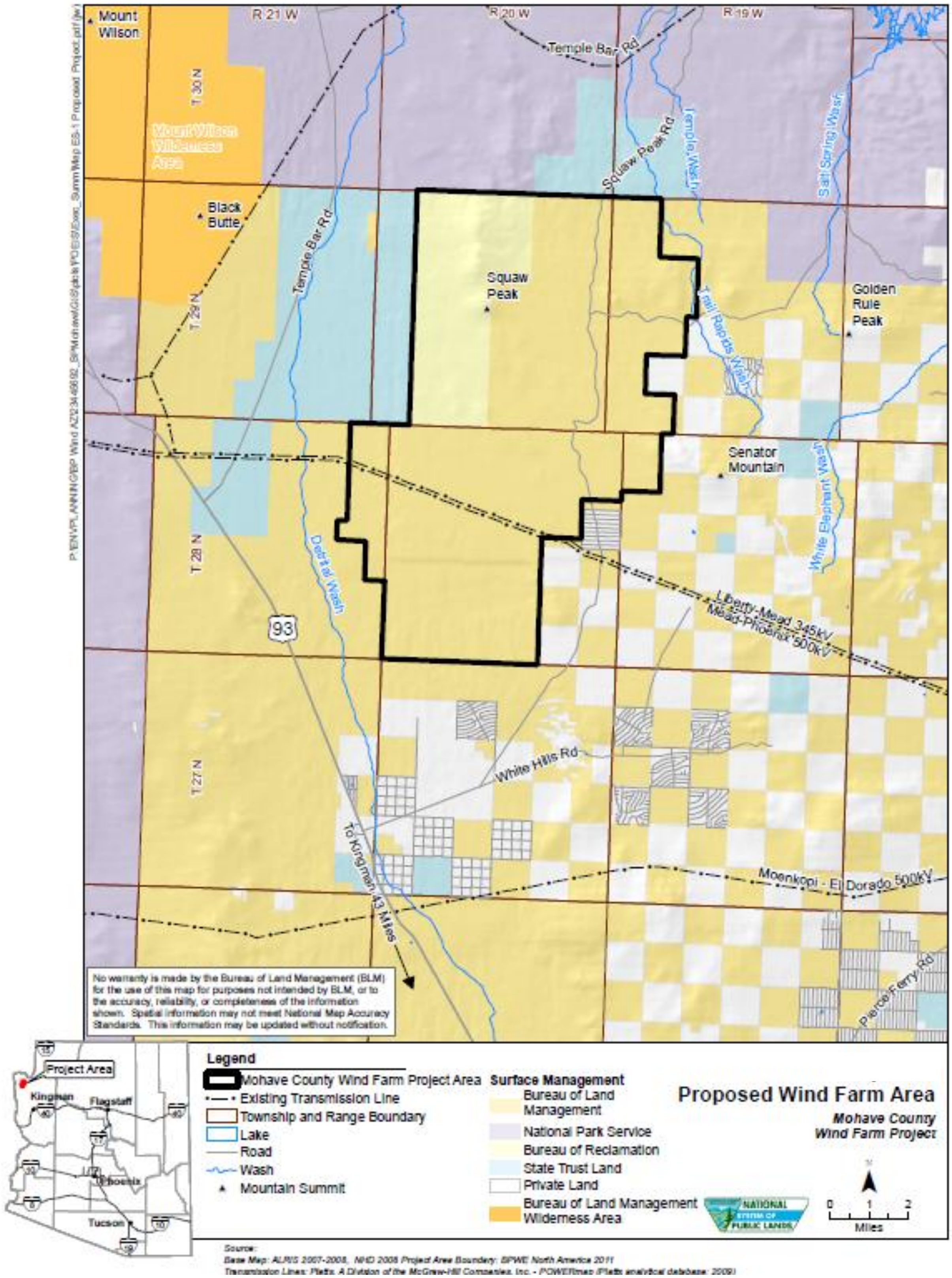


Figure 1-1: Proposed Mohave County Wind Farm Overview

7) if the 345-kilovolt (kV) interconnection option is selected, an existing 345/230-kV transformer and associated breakers and switches within Western's Mead Substation would be replaced with two new 345/230-kV transformers and new breakers and switches. These replacements, which would be required to accommodate the increased electrical loading related to generation from the proposed Project, would be accomplished by Western at BP Wind Energy's expense. The existing transformer is at the terminus of the Liberty-Mead 345-kV line in Mead Substation; the substation is located near Boulder City, Nevada.

1.1.1 Proposed Schedule

Construction is anticipated to begin after permitting is complete and purchasers of the Project's power are identified, and would take approximately 12 to 18 months. Table 1-1 outlines the construction activities and their anticipated duration. The project could be constructed in multiple phases depending upon several factors including power contracting, turbine availability and permitting. Should the Project need to be phased, plans would be coordinated with BLM and/or Reclamation to address treatment of temporary facilities and the reclamation schedule.

Table 1-1: Proposed Construction Schedule (Approximate)

Facility	Start	Duration
Road Construction	Week 3	25 weeks
Substation Construction	Week 4	32 weeks
Transmission Line Installation	Week 6	20 weeks
Foundation Construction	Week 7	28 weeks
O&M Building Construction	Week 8	16 weeks
Collection Line Installation	Week 9	22 weeks
Turbine Generator Installation	Week 11	35 weeks
Turbine Commissioning	Week 15	35 weeks
Site Restoration (Interim Reclamation)	Week 50	8 weeks

The number of construction personnel on site is expected to range from 300 to 500 (during peak construction). The number and types of trucks needed in various stages of construction are included in Appendix C of the Final EIS.

Table 1-2: Mohave County Wind Farm Project Timeline

Anticipated Project Schedule (subject to change)	
Interconnection Studies -System Impact Study -Facilities Study -Large Generator Interconnection Agreement Signed	 Summer 2009 Spring 2011 Summer 2012
Wind Turbine Supply Contract	After ROD and advanced PPA negotiations
BOP Contract executed	After ROD and advanced PPA negotiations
Commencement of construction	After ROD and advanced PPA negotiations
Testing	9 to 10 Months after start of construction
Commercial Operation	12 to 18 months after start of construction

1.2 PROPONENT'S PURPOSE AND NEED FOR THE PROJECT

The Proponent's objective is to construct, operate, maintain and eventually decommission the Project that is environmentally and economically feasible. The Project meets a number of objectives on the local, state and federal level. These include, but are not limited to:

- The need for additional energy supplies to serve the region.
- The priority placed on meeting these needs with clean, renewable energy.
- The BLM's commitment, via their wind energy development program, to promote the use of public lands for renewable energy development.

Additionally, a number of policy directives and agency actions at the federal level promote the development of renewable energy resources:

- President Executive Order (E.O.) 13212 (2001), "Actions to Expedite Energy-Related Projects," established a policy that federal agencies should take appropriate actions, to the extent consistent with applicable law, to expedite projects to increase the production, transmission, or conservation of energy.
- The National Energy Policy Development Group (2001) recommended to the President, as part of the National Energy Policy, that the Departments of the Interior, Energy, Agriculture, and Defense work together to increase renewable energy production.
- The Energy Policy Act of 2005 (P.L. 109-58). Section 211 states, "It is the sense of the Congress that the Secretary of the Interior should, before the end of the 10-year period beginning on the date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity."

In response to the increased interest in wind energy development and to implement the National Energy Policy recommendation to increase renewable energy production, the BLM established a wind energy development program. This program supports the directives of E.O. 13212, the recommendations of the National Energy Policy, and Congressional direction provided in the Energy Policy Act of 2005 regarding renewable energy development on public lands.

The BLM Wind Energy Programmatic Environmental Impact Statement (PEIS) of 2005 presented the agency's approach for managing wind energy development on BLM-administered public lands. The BLM's Wind Energy Development Program is a comprehensive approach for ensuring that potential adverse environmental impacts to public lands are minimized to the extent possible.

1.3 GENERAL FACILITY DESCRIPTION, DESIGN, AND OPERATION

1.3.1 Project Location, Land Ownership, and Jurisdiction

The Project would be located on public land managed by the BLM KFO, and public land managed by the Reclamation. Figure 1-1 provided an overview of the site location. There are no anticipated State of Arizona or private lands that will be utilized for this proposed project.

1.3.2 Legal Land Description of Facility

The Townships, Ranges, Sections, and acreage for the four proposed action alternatives in the Final EIS are included in Attachment 1.

1.3.3 Total Acreage

BP Wind Energy's Project proposed action would be located on approximately 38,099 acres of public land managed by the BLM KFO, and approximately 8,960 acres of Federal land managed by Reclamation.

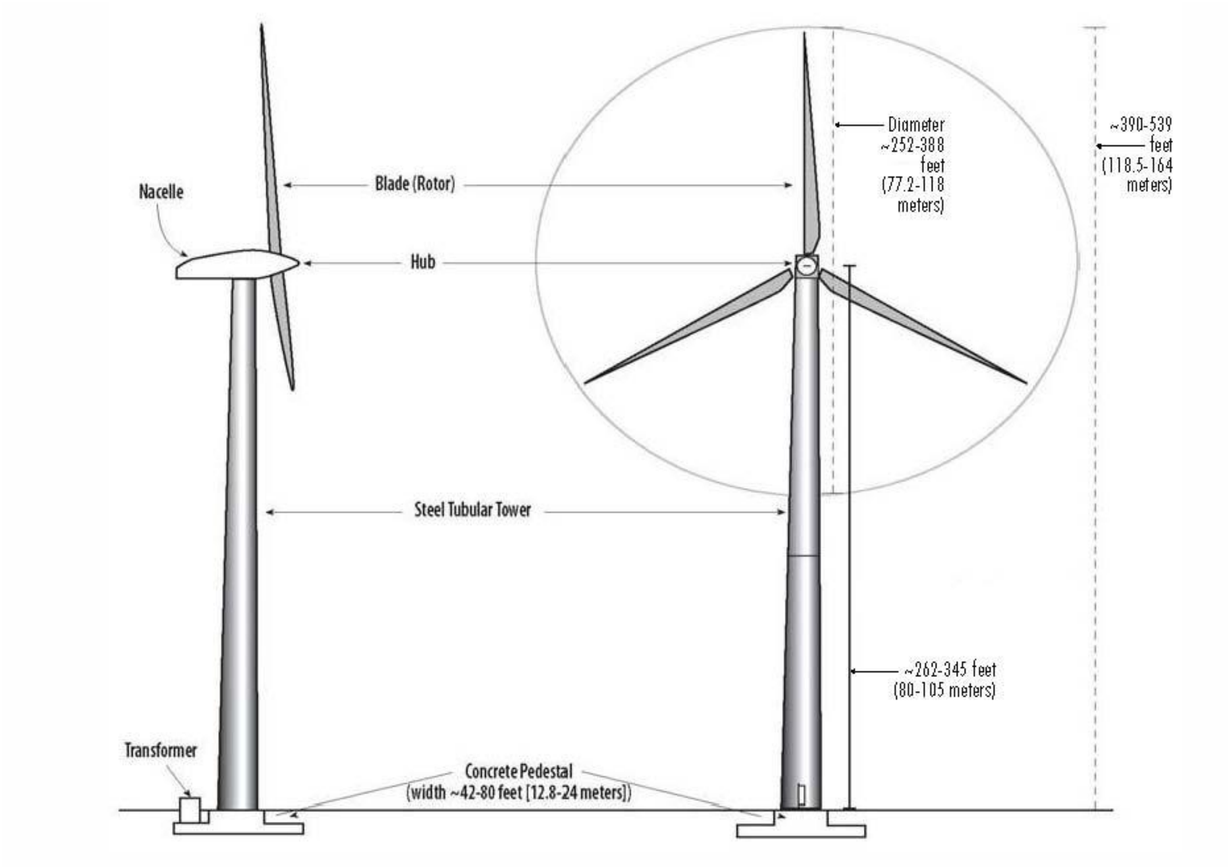


Figure 1-2: Wind Turbine Schematic

1.3.4 Number and Size of Wind Turbines

As shown in Figure 1-2, a wind turbine consists of three main components: (1) nacelle, (2) tower, and (3) rotor blades. The nacelle houses the generator and gearbox and supports the rotor and blades at the hub. The turbine tower supports and provides access to the nacelle. The turbine hubs would be between 262 feet (80 meters) and 345 feet (105 meters) above the ground depending on the turbine selected. The turbine blades would extend between 126 feet (38.5 meters) and 194 feet (59 meters) above the hub. The rotor diameter likely would be between 252 feet (77.2 meters) and 388 feet (118 meters). Therefore, each turbine would have a rotor "swept area" of 50,300 square feet to 117,600 square feet. At the top of their arc, the blades would be between 390 feet (118.5 meters) and 539 feet (164 meters) above the ground.

BP Wind Energy may select turbines in the 1.5 to 3.0 MW range; these turbines may have slightly different hub heights and/or rotor diameters. BP Wind Energy utilized a corridor approach in permitting the Project to maintain the flexibility to choose a turbine in the approximate size range indicated above due to the permitting time an EIS involves, the changing size and commercial availability of turbine models, and possible negotiation outcomes with turbine vendors. Using a larger number of smaller MW turbines or a smaller number of larger MW turbines would not change the corridors in which the turbines are located, but it would affect the amount of space between turbines. Turbine spacing would also be affected by the location of sensitive natural and cultural resources, engineering, construction and safety constraints. The turbine size would not be expected to notably change the long-term or temporary ground disturbance for the Project; a 1.5-MW turbine would be expected to result in about 1.85 acres of temporary ground disturbance per turbine but would require 283 turbines for the proposed Project footprint (approximately 524 acres total disturbance) compared with needing 167 3.0-MW turbines with approximately 2.5 acres of temporary ground disturbance per turbine (approximately 418 acres of total disturbance). Table 1-3 lists the characteristics of representative turbines of each of the respective size classes.

Table 1-3: Characteristics of Representative Turbine Types

Characteristic	Turbine			
	GE 1.5 MW	**Vestas 1.8 MW**	**Vestas 3.0 MW**	**Siemens 2.3 MW**
Nameplate capacity	1,500 kW	1,800 kW	3,000 kW	2,300 kW
Hub height	262 ft (80 m)	262 to 312 ft (80 to 95 m)	262 to 345 ft (80 to 105 m)	295 ft (90 m)
Rotor Diameter	256 ft (78 m)	328 ft (100 m)	295 ft (90 m)	371 ft (113 m)
Total height[1]	390 ft (119 m)	423 to 472 ft (129 to 144 m)	410 to 492 ft (125 to 150 m)	481 ft (146.5 m)
Cut-in wind speed[2]	6.7 mph (3 m/s)	8.9 mph (4 m/s)	8.9 mph (4 m/s)	8.9 mph (4 m/s)
Rated capacity wind speed[3]	26.4 mph (11.8 m/s)	26.8 mph (12 m/s)	33.6 mph (15 m/s)	26.8 mph (12/m/s)
Cut-out wind speed[4]	55 mph (25 m/s)	44.7 mph (20 m/s)	55 mph (25 m/s)	55 mph (25 m/s)
Maximum sustained wind speed[5]	Over 100 mph (45 m/s)	95 mph (42.5 m/s)	Over 95 mph (42.5 m/s)	95 mph (42.5 m/s)
Rotor speed	10.1 to 20.4 rpm	9.3 to 16.6 rpm	9.9 to 18.4 rpm	6 to 13 rpm

[1]Total height = the total turbine height from the ground to the tip of the blade in an upright position
[2]Cut-in wind speed = wind speed at which turbine begins operation
[3]Rated capacity wind speed = wind speed at which turbine reaches its rated capacity
[4]Cut-out wind speed = wind speed above which turbine shuts down operation
[5]Maximum sustained wind speed = wind speed up to which turbine is designed to withstand
kW = kilowatts
m = meters
mph = miles per hour
m/s = meters per second
rpm = revolutions per minute
SOURCES: Bureau of Land Management 2008c, BP Wind Energy 2011

Turbine types are not selected until shortly before construction begins. In part, the additional data collected through met towers provides a better understanding of the wind resource and the type of turbine that may be best suited to the site. However, the primary reason is that the availability of turbine types varies and not all manufacturers have the ability to provide the machines at a specified time. Some turbines being considered include the 1.8 MW Vestas turbine currently being manufactured in the vicinity of Denver, Colorado, and the 2.3 MW Siemens Turbine currently being manufactured in Hutchinson, Kansas, but other turbines may be selected as well. A turbine brochure for a Siemens turbine is included in Attachment 2.

1.3.5 Wind Turbine Configuration and Layout

Up to 283 turbines[3] are proposed to be installed within the corridors on the Wind Farm Site; each would have the capacity to generate between 1.5 to 3.0 MW. Depending on the turbine model used, the turbine hubs would be between 262 feet (80 meters) and 345 feet (105 meters) above the ground, and the turbine blades would extend between 126 feet (38.5 meters) and 194 feet (59 meters) above the hub. At the top of their arc, the blades would be between 390 feet (118.5 meters) and 539 feet (164 meters) above the ground. The energy generating capacity of the Project would depend on the turbine model selected, the transmission line used, and the turbine corridors approved by BLM and Reclamation. The Project would have a nameplate generating capacity[4] of 425 MW in the event the Project interconnects to the Liberty-Mead line, and 500 MW in the event the Project interconnects to the Mead-Phoenix line. The desired generation level could be achieved by different numbers of turbines, depending on the turbine model(s) selected by BP Wind Energy, and the land area approved by BLM and/or Reclamation in accordance with the decisions made by these agencies in their anticipated joint Record of Decision (ROD). Figure 1-3 provides a site layout that indicates the corridors and turbines proposed for Alternative A using a 2.3 MW turbine.

1.3.6 Substations and Transmission Lines

An overhead transmission line would carry the power from substation to substation then to a switchyard where the power is transferred to the electrical power grid. The switchyard facility would be a graveled and fenced area up to 18 acres, with a parking area and electrical devices such as circuit breakers and air switches. Because switchyards do not change system voltage from one level to another, they do not have transformers on site; therefore, there is no risk of a leaking transformer. A relatively short (approximately 30 to 50 feet) microwave tower within the switchyard would provide communications to an existing line-of-site microwave tower located miles away. The telecommunications line to the Operations and Maintenance (O&M) building would be extended to the switchyard to provide a redundant means of communication with the switchyard. System studies would determine the appropriate location for the interconnection with an existing transmission lines. The transmission line would be the same voltage as the power line to which it interconnects (that is, either 345-kV or 500-kV).

[3] Turbine is the term used to describe the complete assembly of pieces that include the rotor blades, hub, nacelle, and support tower.

[4] Nameplate generation capacity is equivalent to the sum of all installed wind turbine generators at their maximum output capacity.

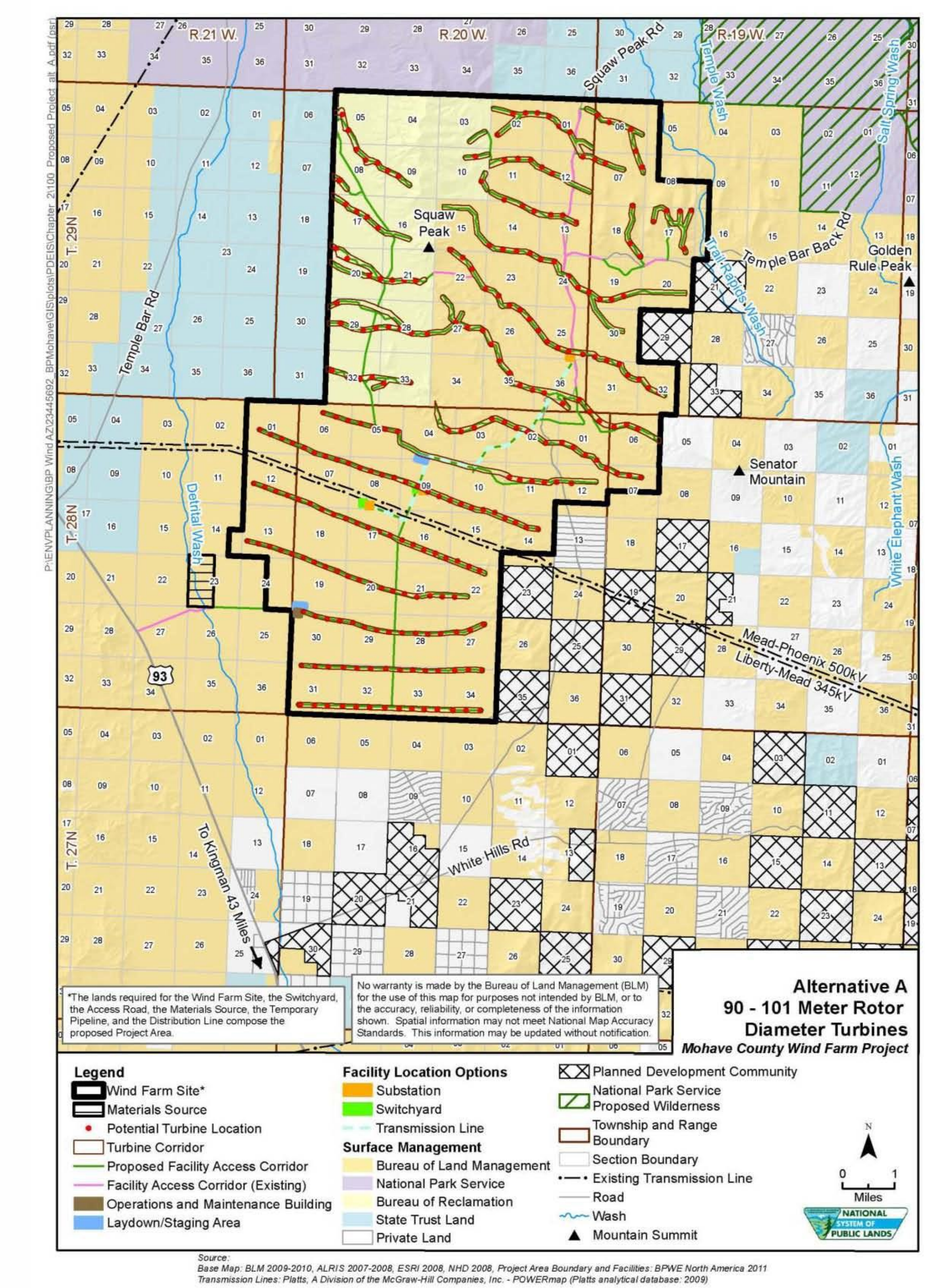


Figure 1-3: Site Layout for Wind Turbines

1.3.7 Ancillary Facilities, Access Roads, Buildings and Parking Areas

Table 1-4 describes the anticipated key project components, quantities, and land requirements for the facilities and ancillary facilities.

Table 1-4: Key Project Components, Quantities and Land Requirements

Components	Quantity	Purpose
Temporary Laydown/Staging Areas	Two areas (up to 21 acres per area)	Secure areas for temporary construction offices, construction vehicle parking, equipment and construction materials storage, and stockpiled soil storage
Temporary Concrete Batch Plants	Two areas (within laydown/staging areas)	Facilities for mixing concrete needed in the construction phase
Wind Turbines	Up to 283	Generate power
Foundations and Pad-Mounted Transformers for the Wind Turbines	Up to 283 (foundations range from 50 to 60 feet wide and 8 to 10 feet deep)	Foundations support the turbines and transformers step up the voltage between the turbine and the electrical collection system
Electrical Collection System and Communications	Approximately 100 to 120 miles of 34.5-kilovolt collector lines (within interior roads disturbance area accounted for with roads)	Connect each turbine to the substation and provide for communications between the turbine and substation
Electrical Distribution Substations	Two (approximately 5 acres each)	Step up the voltage of the electrical collection system for delivery through a high-voltage transmission line
Overhead Transmission Line	Approximately 6 miles in length with 8 support structures per mile for 345-kilovolt or 500-kilovolt line	Connect with existing regional transmission line to deliver Project power to purchasing utility
Interconnection Switchyard	One (up to 10 acres)	Interface at the interconnection point between the proposed transmission line and an existing regional transmission line
Mead Substation Transformer Replacement (applicable with a 345-kV interconnection)	Not applicable (within existing Mead Substation)	To provide adequate equipment, the existing 345/230-kV transformer and associated equipment at Mead Substation would be replaced with two new 345/230 transformers and ancillary equipment if the Project is interconnected to the 345-kV transmission line
Operations and Maintenance Building	One (approximately 4 to 5 acres)	Employee facility for operation and maintenance of Project facilities and storage of supplies and maintenance equipment
Access Road	Approximately 3 miles of access road linking the Wind Farm Site to US 93	Provide primary access to the Wind Farm Site from US 93
Interior Roads	Approximately 85 to 112 miles within the Wind Farm Site	Provide internal access within the Wind Farm Site between facilities (turbines, substation, and operations and maintenance building)
Utility and Communication Lines	Approximately 5 to 10 miles	Provide operational power and communication abilities for on-site facilities
Meteorological Towers	Up to three permanent and up to 10 additional temporary met towers (9 square feet for each tower)	Monitor wind speed

SOURCE: BP Wind Energy 2011

1.3.8 Temporary Construction Workspace, Yards, and Staging Areas

Secure laydown/staging areas (up to 20 acres per area) would be established for temporary construction offices, temporary construction facilities (e.g., portable toilet trailer, portable amenities trailer, and mobile concrete batch plant), and materials/supply storage (e.g., turbine components and fuel for construction equipment). Details of the Laydown areas are included in Section 2.1.1.

The location of the proposed staging areas would be strategically selected in an effort to avoid environmentally and culturally sensitive areas. The temporary construction facilities would be established in areas that are relatively flat, with the primary staging area near the site access point, adjacent to a proposed interior road. This would provide efficient access for materials and equipment being delivered to the staging area for disbursement to the proposed turbine sites. As shown in Figure 1-3, two temporary laydown/staging areas have been identified in Township 28 North, Range 20 West with one location in Section 19 and the other straddling the section line between Sections 4 and 9.

1.3.9 Water Usage, Amounts, Sources

Water for dust control, batching water for concrete production, and other washing needs, would be obtained from three existing production wells at the Materials Source production site or a proposed well at the O&M building location . Table 1-5 provides the capacity of the wells and expected use of the well water.

Table 1-5: Well Capacity and Anticipated Water Use for the Project

Well Capacity		Water Required for Construction of the Project			
		Activity	GPD	Weekly Requirement (5-day Work Week)	Total – 39* Weeks
Well 1 GPM	1,000	Dust control	100,000	500,000	19,500,000
Well 2 GPM	400	Cement Production	25,000	125,000	4,875,000
Well 3 GPM (not expected to be needed)	200	Truck washing, hydrating aggregate	15,000	75,000	2,925,000
Total GPD	2,304,000		140,000		
Total GPW (5 day work week)	115,200,000			700,000	
Total 39* weeks (5 day work week)	449,280,000				27,300,000

GPM – Gallons per minute
GPD – Gallons per day
GPW – Gallons per week
*39 weeks was used as maximum time for both dust control and cement production (rather than anticipated 25-week duration) to present a worst case scenario.

The wells owned by BLM near the Materials Source along Detrital Wash are permitted for industrial withdrawals. One of these wells, registration number 531378, has a permitted pumping rate of 60 gallons per minute. This well alone would be able to meet most of BP Wind Energy's construction water needs. Any water demands in addition to what well 531378 can supply would be met using the other industrial water supply wells permitted to BLM at the Materials Source or the new well located at the O&M building permitted by the Arizona Department of Water Resources. Water for production would be pumped from the wells, and a valve meter would be installed at each well to maintain overall usage during the course of mining activities. Water would be used for concrete production in the mobile batch plant. Water would be piped to the primary batch plant location near the primary access road. Surface-laid poly pipe is typically used for this type of temporary water pipeline. Water would be transported via water trucks to the batch plant established in the northern portion of the Wind Farm Site. If the new well at the O&M building is capable of meeting the needs of the batch plant and dust control, the O&M building well would supply the southern laydown site with water via a similar temporary surface laid poly pipe from the well location to the water storage location within the laydown site.

Two clay-lined ponds, each approximately 5 feet deep and with a surface area of 60 feet by 60 feet with sidewalls at approximately 3:1 ratio, would be located at the Materials Source processing site, with each pond having a 100,000 gallon holding capacity. The ponds would be used for storage and recycling of wash water, and used to contain the fine particles washed from the sand. Also, during peak usage, water may be stored in the ponds. When the Materials Source is no longer in use, the ponds would be reclaimed to prior existing conditions to the extent possible per the Plan of Development (POD) Attachment 3, Integrated Reclamation Plan (referred to as Reclamation Plan in this document).

Aboveground storage tanks would temporarily store the water needed at the northern concrete batch plant. The dimensions and capacity of the water storage tanks would be determined based on the equipment available to the batch plant provider. However, typical tank sizes are 10,000 to 20,000 gallons each, 15 feet tall, and 12 feet in diameter. It is anticipated that storage capacity for approximately 50,000 gallons would be required on site. Post-construction water needs would be minimal and primarily limited to the water used by fewer than 40 operations and maintenance personnel for drinking water, washing, and keeping the office space within the O&M building clean. These water needs are addressed in Section 2.5.2.9 of the Final EIS.

1.3.10 Erosion Control and Stormwater Drainage

Prior to construction, a Storm Water Pollution Prevention Plan (SWPPP) will be developed and then implemented during construction. The SWPPP would include structural and non-structural best management best management practices (BMP's) for erosion and sediment control as well as a monitoring and corrective action plan.

1.3.11 Vegetation Treatment, Weed Management, and Any Proposed Use of Herbicides

A site specific vegetation treatment, weed management and application of any proposed use of herbicides is more fully discussed in the Final EIS and in the POD Attachment 3, Integrated Reclamation Plan.

1.3.12 Waste and Hazardous Materials Management

Clearing and disposing of trash, debris, and shrub/scrub on those portions of the site where construction would occur would be performed at the end of each work day into dumpsters through all stages of construction per POD Attachment 4 – HSSE Plan, Attachment BB Waste Handling Plan unless held for later use in reclamation. Existing vegetation is sparse in most locations, and clearing would be performed only where necessary. Excavations made by clearing activities would be backfilled as soon as practical (e.g., after cable infrastructure is tested or when turbine foundations have cured) with compacted earth/aggregate available on site. Disposal of non-hazardous cuttings and debris would be in an approved facility designed to handle such waste or at the direction of the BLM/Reclamation-authorized officer, which may include using vegetative cuttings as mulch in the Project Area during the reclamation phase. Site cleanup would be performed on a continuous basis.

1.3.13 Fire Protection

The Fire Protection Plan is attached to the POD Attachment 4 – HSSE Plan, Attachment W – Site Specific Plan for Fire Protection and Prevention Mohave Wind Project. The wind turbines will be equipped with built-in fire prevention measures that allow the turbines to shut down automatically before mechanical problems create excess heat or sparks. The use of underground power collector cables substantially reduces the risk of fire from short circuits caused by wildlife or lightning. The Project's new access roads are typically oriented perpendicular to the prevailing winds and thus serve as effective fire breaks. After construction has been completed, welding, cutting, grinding, or other flame- or spark-producing operations near the turbines will only occur on an infrequent basis and will be closely supervised.

All onsite employees for both construction and operations will receive annual fire prevention and response training by a professional fire safety training firm. The appropriate fire departments will be asked to participate in this training. Employees will be prohibited from smoking outside of company vehicles during dry summer months. The details of the plan are provided in POD Attachment 4 – HSSE Plan, Attachment W – Site Specific Plan for Fire Protection and Prevention Mohave Wind Project. Each onsite company vehicle will contain a fire extinguisher, water spray can, shovel, Emergency Response procedures book, and a two-way radio for immediate communications with the O&M facility. The O&M facility staff will coordinate fire response efforts. Water-carrying trailers (water buffaloes) will be present at appropriate locations around the Project to be determined in consultation with the local fire departments. A water buffalo will be brought to any job site where there is a substantial risk of fire. Each water buffalo will have a capacity of 500 gallons and be equipped with a pump and hoses. The water buffaloes can be towed by a number of vehicles, including service trucks and pickup trucks; such vehicles will be at hand in sufficient numbers at all times during construction and operation of the Project. All local fire departments will have maps of the project site.

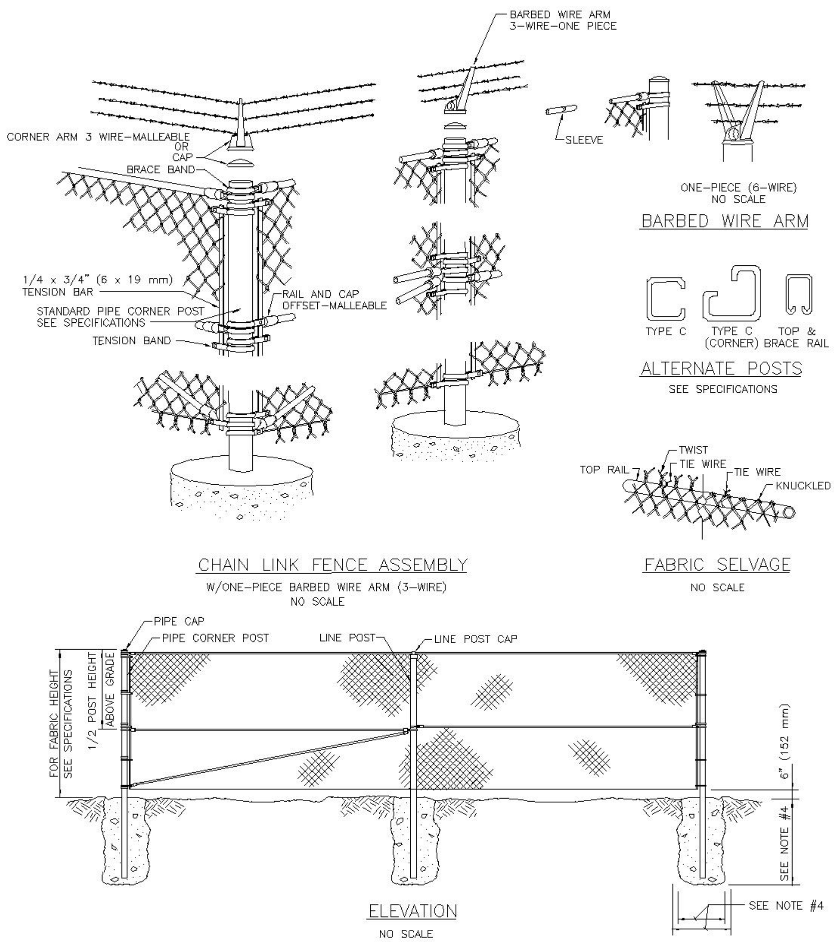
1.3.14 Health and Safety Program, Site Security and Fencing Proposed

The POD Attachment 4 – HSSE Plan addresses the draft plan and would be refined prior to the construction stage of the Project to address health and safety risks and requirements. As the Project moves into the operational stage, the components of the HSSE Plan would be modified to adapt to O&M activities.

BP Wind Energy would post safety and warning signs informing the public of construction activities where the road(s) enters the Project Area from a public road. During construction, access to the site would be monitored and controlled, so as to prevent public access during such times when it would not be safe for public on-road or off-road use within the Project Area. During non-construction hours a security guard would patrol the Project Area to prevent or minimize the threat of unauthorized dumping via use of the new roads, vandalism, theft of property, and incidents that could affect public health and safety. Within the Project Area recreational off-road vehicle use would be restricted during construction. Recreational off-road vehicle use outside of construction areas is likely to remain unchanged from the present situation, except for restrictions at the substation, switchyard, and O&M building, and during maintenance activities if safety considerations require temporary restriction(s).

Gates to chain link fenced areas, including the substations, switchyard, select lay down yards, and O&M area, would remain open during construction hours in working areas and would be locked at night or during non-construction hours. Gates or cattle guards would be installed where openings are needed within fences, and the road may also be physically gated during non-construction hours. During non-construction hours, gates would be closed and a security guard would patrol the site area. Temporary warning fences or barricades (consisting of warning tape, barricades, plastic mesh, and/or warning signs) would be erected in areas where public safety risks could exist and where site personnel would not be available to control public access (such as excavated foundation holes and electrical collection system trenches). Fences would be installed around laydown areas, areas deemed hazardous, or areas where security or theft are of concern, and would be removed at the completion of the construction period. BP Wind Energy would coordinate the fencing activities and locations with the BLM and/or Reclamation, as appropriate. A permanent chain-link fence would be installed around the Project O&M building, substations, and switchyard for safety. Temporary fencing around unfinished turbine bases would be designed to warn people of the potential danger. Excavations would be fenced with high visibility plastic mesh.

As illustrated in Figure 1-4, permanent fences would be chain-link fence, treated to minimize reflections off the metal, 8 feet in height, and topped with barbed wire where appropriate for safety and security. An auger would be used to dig 9- to 12-inch-diameter holes to a depth of about 38 inches for fence posts with the dirt excavated from the hole used to backfill the hole and secure the fence post.



NOTES:

1. POST SPACING: LINE POSTS SHALL BE EVENLY SPACED, CENTER TO CENTER.
2. BARBED WIRE ARM: SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
3. TERMINAL LINE POSTS, & TOP/BRACE RAIL SHALL BE ACCORDING TO THE SPECIFICATIONS.
4. POST SETTING SHALL BE ACCORDING TO THE FOLLOWING TABLE:
5. THE METRIC CONVERSIONS ARE PROVIDED IN PARENTHESIS FOLLOWING THE ENGLISH UNITS.

POST SETTING REQUIREMENT			
TYPE OF POST	HOLE DIA. AT TOP*	HOLE DEPTH	POST EMBEDMENT
LINE	9" (229 mm)	38" (965 mm)	36" (914 mm)
TERMINAL	12" (305 mm)	38" (965 mm)	36" (914 mm)

*MIN. HOLE DIAMETER IN SOFT OR LOOSE SOIL SHALL BE 18" (457 mm).

Figure 1-4: Fencing Diagram

1.3.15 Spill Prevention, Control, and Countermeasure Plan

A Spill Prevention, Control, and Countermeasure (SPCC) Plan is being developed following an example plan consistent with past projects presently included as POD Attachment 5. The SPCC Plan will be completed before issuance of the Notice to Proceed.

1.4 OTHER FEDERAL, STATE, AND LOCAL AGENCY PERMIT REQUIREMENTS

The overall action is to respond to BP Wind Energy's Proposal to use Federal lands. With regard to the affected public lands administered by the BLM, the purpose for the proposed action is to respond to a Federal Land Policy Management Act (FLPMA) ROW application submitted by BP Wind Energy to construct, operate, maintain, and decommission a wind energy facility and associated infrastructure in compliance with FLPMA, BLM ROW regulations, BLM's multiple use mandate, and other applicable Federal laws and policies.

The BLM will consider the use of BLM-administered public lands in the White Hills area of Mohave County, Arizona, to help meet the need for energy, particularly from renewable wind energy sources, consistent with the EPAct and BLM's Wind Energy Development Policy, including BLM's Instruction Memoranda 2011-061 dated February 7, 2011 on processing renewable energy ROW applications. Responding to requests for ROWs on BLM-administered public lands is required of BLM under FLPMA.

Reclamation will consider the use of Reclamation-administered lands in the White Hills area of Mohave County, Arizona, to help meet the need for renewable energy, consistent with the EPAct. It is Reclamation's responsibility under the Act of Congress of June 17, 1902 (32 Stat. 388), the Act of Congress approved August 4, 1939 (53 Stat. 1187), Section 10, and 43 Code of Federal Regulations (CFR) Part 429 to respond to a request for ROWs on Reclamation-administered Federal lands.

BP Wind Energy has applied to interconnect the proposed Project with either the Mead-Phoenix (of which Western is one of several co-owners[5]) or Western's Liberty-Mead transmission line; the proposed Project would interconnect through a new switchyard to be constructed within the Wind Farm Site. Western's purpose and need is to approve, deny, or approve as modified the interconnection request in accordance with its Open Access Transmission Service Tariff (Tariff) and the Federal Power Act, as amended (FPA). If the decision is to execute an interconnection agreement, then Western would also need to construct, own and operate the Switchyard. If the 345-kV interconnection is selected, Western would replace the 345/230-kV transformer and associated equipment at the existing Mead Substation (located south of Boulder City, Nevada) with two new 345/230-kV transformers and ancillary equipment. This would occur entirely within the previously disturbed and developed Mead Substation.

Table 1-6 lists the potential major Federal, state, and county actions and authorities that must be obtained or considered for the proposed action. Approvals required by the State of Arizona and Mohave County also are described, as applicable, for each resource addressed in Chapter 3 (Affected Environment) of this EIS.

[5] The participants (owners) in the Mead-Phoenix line include: Arizona Public Service Company, 18 percent; MSR Public Power Agency, 12 percent; Southern California Public Power Authority, 18 percent; Startrans IO, LLC, 2 percent; Salt River Project Agricultural Improvement and Power District, 18 percent; and Western, 32 percent.

Table 1-6: Summary of Potential Major Agency Authorities and Actions

Agency	Proposal Requiring Action	Permit, License, Approval, Compliance, or Review	Relevant Law and/or Regulation
		FEDERAL	
Bureau of Land Management (BLM), Bureau of Reclamation (Reclamation)	Right-of-way grants for the Wind Farm Site, primary access road, transmission line, and other associated facilities on BLM and Reclamation land. The BLM is the lead agency for National Environmental Policy Act (NEPA) purposes.	EIS and Record of Decision	NEPA (42 United States Code [U.S.C.] 4321); Council Environmental Quality NEPA Regulations (40 CFR 1500-1508) Department of the Interior implementing regulations (43 CFR 46)
BLM (lead) and Reclamation in consultation with U.S. Fish and Wildlife Service (USFWS)	Construction, operation, maintenance, and decommissioning of facilities for the Wind Farm Site, primary access road, and other associated facilities on public land	Right-of-way grant across public land; temporary use permit; contract for sale of mineral materials	Federal Land Policy and Management Act (FLPMA) of 1976 (PL 94-579); 43 U.S.C. 1761-1771; 43 CFR 2800; 43 CFR 3602
BLM (lead) and Reclamation in consultation with USFWS	Right-of-way grant to Western for the switchyard	Right-of-way grant	FLPMA of 1976 (PL 94-579); 43 U.S.C. 1761-1771; 43 CFR 2800
BLM (lead) and Reclamation in consultation with USFWS, Western Area Power Administration (Western), Advisory Council on Historic Preservation	Proposed undertaking that may adversely affect properties eligible for the National Register of Historic Places	Section 106 reviews and provides consultations to identify and resolve any adverse effects to historic properties	National Historic Preservation Act of 1966, (16 U.S.C. 470) (36 CFR 800)
BLM (lead), Reclamation	Investigation of cultural and paleontological resources; excavation of archaeological resources	Permit to collect artifacts and to excavate archaeological sites	Antiquities Act of 1906 (16 U.S.C. 432-433) and Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa to 470ee); Paleontological Resources Preservation Act of 2009 (16 U.S.C. 470aaa)
BLM (lead), Reclamation	Potential conflicts with freedom to practice traditional American Indian religions	Consultation with affected American Indian tribal entities	American Indian Religious Freedom Act (42 U.S.C. 1996); EO 13007, Indian Sacred Sites; and EO 13175, Consultation and Coordination with Indian Tribal Governments
BLM (lead), Reclamation	Potential disturbance of graves, associated funerary objects, sacred objects, and items of cultural patrimony	Consultation with affected groups regarding a Plan of Action for treatment of protected remains and objects	Native American Graves Protection and Repatriation Act of 1990 (25 SUC 3001-3002)

Agency	Proposal Requiring Action	Permit, License, Approval, Compliance, or Review	Relevant Law and/or Regulation
BLM	Prevent the establishment and spread of noxious and invasive weeds	Compliance	Federal Noxious Weed Act of 1974, as amended, Public Law 93-629 (7 U.S.C. § 2801 et seq.; 88 Stat. 2148); and EO 13112, Invasive Species
BLM and Reclamation in consultation with USFWS	Effects on species listed or critical habitat designated under the ESA, and BLM sensitive species	Compliance	Endangered Species Act of 1973, as amended (16 U.S.C. §1531) Section 7(a)(2); and BLM Manual H-6840 (Special Status Species)
BLM and Reclamation in consultation with USFWS	Protection of migratory birds	Compliance	The Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712; Ch. 128); and EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
BLM and Reclamation in consultation with USFWS	Protection of Bald and Golden Eagles	Compliance	The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), 1940 et seq,, and BLM Instruction Memorandum 2010-156.
BLM	Protection of segments, sites, and features related to national trails	Compliance	National Trails System Act (PL 90-543) (16 U.S.C. 1241 to 1249)
Reclamation	Preconstruction surveys, con-struction, operation, maintenance, and decommissioning of facilities on Reclamation withdrawn land	Right-of-way grant across Reclamation withdrawn land; temporary use permit	Act of Congress of June 17, 1902 (32 Stat. 388) Act of Congress approved August 4, 1939 (53 Stat. 1187) Section10, and 43 CFR 429
Western	Transmission line interconnection request	Interconnection approval	Section 211 of the Federal Power Act (18 CFR § 2.20); Western's Open Access Transmission Service Tariff; Department of Energy NEPA implementing regulations (10 CFR 1021)
U.S. Environmental Protection Agency	Potential Pollutant discharge during construction, operation, maintenance, and decommissioning	Spill Prevention Control and Countermeasure (SPCC) Plan	Oil Pollution Act of 1990 (33 U.S.C. 2701 et seq.; 40 CFR Part 112)
U.S. Army Corps of Engineers (USACE)	Potential discharge of dredged or fill material into waters of the United States (including wetlands and washes)	Section 404 Permit (individual or nationwide)	Clean Water Act (33 U.S.C. 1344)
Federal Aviation Administration (FAA)	Structures exceeding 200 feet	Determination of No Hazard To Air Navigation	14 CFR Part 77, Objects Affecting Navigable Air Space (49 U.S.C. 44718)
FAA	Structures exceeding 200 feet	Confirmation of achieved height	14 CFR Part 77, Objects Affecting Navigable Air Space (49 U.S.C. 44718)

Agency	Proposal Requiring Action	Permit, License, Approval, Compliance, or Review	Relevant Law and/or Regulation
FAA	Required lighting on turbines	Review and approval of selective lighting	FAA Advisory Circular 70/7460-1K, change 2
STATE			
Arizona Corporation Commission	Construction of transmission line of 115 kV or more	Certificate of Environmental Compatibility	Arizona Revised Statute (ARS) Section 40-320 et seq.
Arizona Department of Environmental Quality (ADEQ) for submittal to USACE	Reviews activities and provides conditions for protecting water quality for inclusion in the Section 404 Permit	Section 401 Certification	Clean Water Act (33 U.S.C. 1344)
ADEQ	Air pollutant emissions during construction	Class II (minor source) permit	Clean Air Act, Arizona Administrative Code (AAC) Title 18, Chapter 2, Article 3
ADEQ	Fugitive dust as a result of Project construction	Dust and Emissions Control Plan	AAC Title 18, Chapter 2, Article 6
ADEQ	Construction activities impacting 1 acre or more	Arizona Pollutant Discharge Elimination System (AZPDES) stormwater permit for construction	Clean Water Act (33 U.S.C. 1344) Section 402
ADEQ	Required for potential discharge of storm water from an industrial site	AZPDES stormwater permit for operations	Clean Water Act (33 U.S.C. 1344) Section 402
ADEQ	Generation, storage and tracking disposal of hazardous waste during Project construction and operation	Hazardous waste generator registration	Hazardous Waste Control Act of 1972
Arizona Department of Agriculture	Displacement or removal of regulated native plant species as a result of construction activities	Permit for Arizona Protected Native Plants and Wood Removal	Native Plant Law (ARS 3-901 through 916)
Arizona Department of Water Resources	Well drilling activities	Well drilling permit, general industrial use permit, and water development plan, as necessary	Groundwater Management Code ARS Title 45-454
State Historic Preservation Officer (SHPO) (a division of Arizona State Parks)	Project activities (i.e., grading, trenching or other construction) may have potential to have adverse effects to historic properties	Compliance with Section 106 of the National Historic Preservation Act in consultation with agencies, Indian tribes, the applicant, and other parties	National Historic Preservation Act, Section 106, 36 CFR 800
Arizona Game and Fish Department	Project activities (i.e., grading, trenching or other construction) may have potential to impact fish and wildlife	Coordination with Arizona Game and Fish Department regarding impacts to fish and wildlife	ARS 17-102 and 231, which address all fish and wildlife in Arizona as trust resources of the State of Arizona; Memorandum of Understanding between BLM and Arizona Game and Fish Commission Agreement Number AZ-930-0703

Agency	Proposal Requiring Action	Permit, License, Approval, Compliance, or Review	Relevant Law and/or Regulation
Arizona Department of Transportation (ADOT)	Transport of oversized loads on roads under ADOT jurisdiction	Heavy haul permit	ARS 28-7053, AAC R 17-3-501 through 509
ADOT	Encroachment by facilities on highway rights-of-way (e.g., transmission lines, pipes, new roads, etc.)	Encroachment permit	ARS 28-7053, AAC R17-3-501 through 509
COUNTY			
Mohave County, Development Services	Project construction	Grading permit	Mohave County ordinance
Mohave County, Development Services	Project construction	Building permit	Mohave County ordinance
Mohave County	Project construction and operation	Compliance with, and amendment of the Mohave County General Plan	Mohave County General Plan
Mohave County	Septic system for operations and maintenance building	Septic permit	Mohave County ordinance
Mohave County	Temporary use of the Materials Source (Detrital Wash Materials Pit)	Flood use permit	Mohave County ordinance
Mohave County	Project Construction	Zoning Ordinance compliance; Application to establish an energy overlay zone	Mohave County Development Services Department Zoning Ordinance, Sections 27.P and 27.X

1.5 FINANCIAL AND TECHNICAL CAPABILITY OF APPLICANT

BP has been a leader in power generation for many years. BP has developed, constructed, owned, and operated over 13,000 MW of electrical generating capacity at locations around the world. BP created its Alternative Energy business unit in November of 2005 to expand upon its power generation expertise. Through this formation, BP combined the expertise and experience of wind, solar, hydrogen and biofuels under a single business unit. The BP Wind Energy team is supported by BP's power marketing and trading capabilities to ensure that BP's cleaner electricity meets the needs of local wholesale markets. BP's significant experience in developing and constructing generation facilities (all types of generation technology) is supplemented by BP's substantial balance sheet.

Since its formation, BP Wind Energy has grown quickly. This business unit has built up a team of approximately 150 people from throughout the industry. More than two-thirds of these people have come from within the power sector from companies outside of BP.

BP Wind Energy considers safety and operational integrity to be of utmost importance to support our desires to meet our goals of no accidents, no harm to people, and protection of the environment. We have implemented a detailed Operations Management System (OMS) that defines our performance requirements and establishes a very high standard of expectations. These expectations, called "group standards" not only address the typical HSSE parameters, but the entire spectrum of how we design, construct, and operate our wind facilities.

BP Wind Energy has developed, constructed, and operated the following wind assets in the U.S since its formation in 2005.

PROJECT	MW	STATE	COD
Cedar Creek I	301	CO	Dec-2007
Silver Star 1	60	TX	Sep-2008
Edom Hills	20	CA	Sep-2008
Sherbino 1	150	TX	Oct-2008
Fowler Ridge 1	301	IN	Mar-2009
Flat Ridge I	100	KS	Mar-2009
Fowler Ridge 3	99	IN	Mar-2009
Fowler Ridge 2	200	IN	Dec-2009
Titan 1	25	SD	Dec-2009
Goshen North	125	ID	Oct-2010
Cedar Creek II	250	CO	Oct-2011
Sherbino II	150	TX	Dec-2011
Trinity Hills	225	TX	Feb-2012
Flat Ridge II	470	KS	Dec-2012
Mehoopany	140	PA	Dec-2012
Auwahi	24	HI	Dec-2012
Total	**2,630**		

2.0 CONSTRUCTION OF FACILITIES

2.1 WIND TURBINE LAYOUT, INSTALLATION, AND CONSTRUCTION PROCESSES

Secure laydown/staging areas (up to 20 acres per area) would be established for temporary construction offices, temporary construction facilities (e.g., portable toilet trailer, portable amenities trailer, and mobile concrete batch plant), and materials/supply storage (e.g., turbine components and fuel for construction equipment). Temporary construction trailers, construction offices, and vehicles may be parked within the boundary limits of the designated secure area or space, including adjacent to the Project laydown site where construction equipment and materials/supplies in transit are temporarily stored, assembled, or processed, including washing (cleaning) vehicles and equipment brought to the Project per the POD Attachment 3, Integrated Reclamation Plan. The ancillary facilities and Project laydown site would be secured using an 8-foot-tall chain-link fence topped with barbed wire. A typical construction laydown area is shown in Figure 2-1.

Figure 2-1: Typical Construction Laydown Area

The location of the proposed staging areas would be strategically selected in an effort to avoid environmentally and culturally sensitive areas. The temporary construction facilities would be established in areas that are relatively flat, with the primary staging area near the site access point, adjacent to a proposed interior road. This would provide efficient access for materials and equipment being delivered to the staging area for disbursement to the proposed turbine sites. As shown in Figure 2-2, two temporary laydown/staging areas have been identified in Township 28 North, Range 20 West with one location in straddling the section line between Sections 4 and 9 and the other in Section 19.

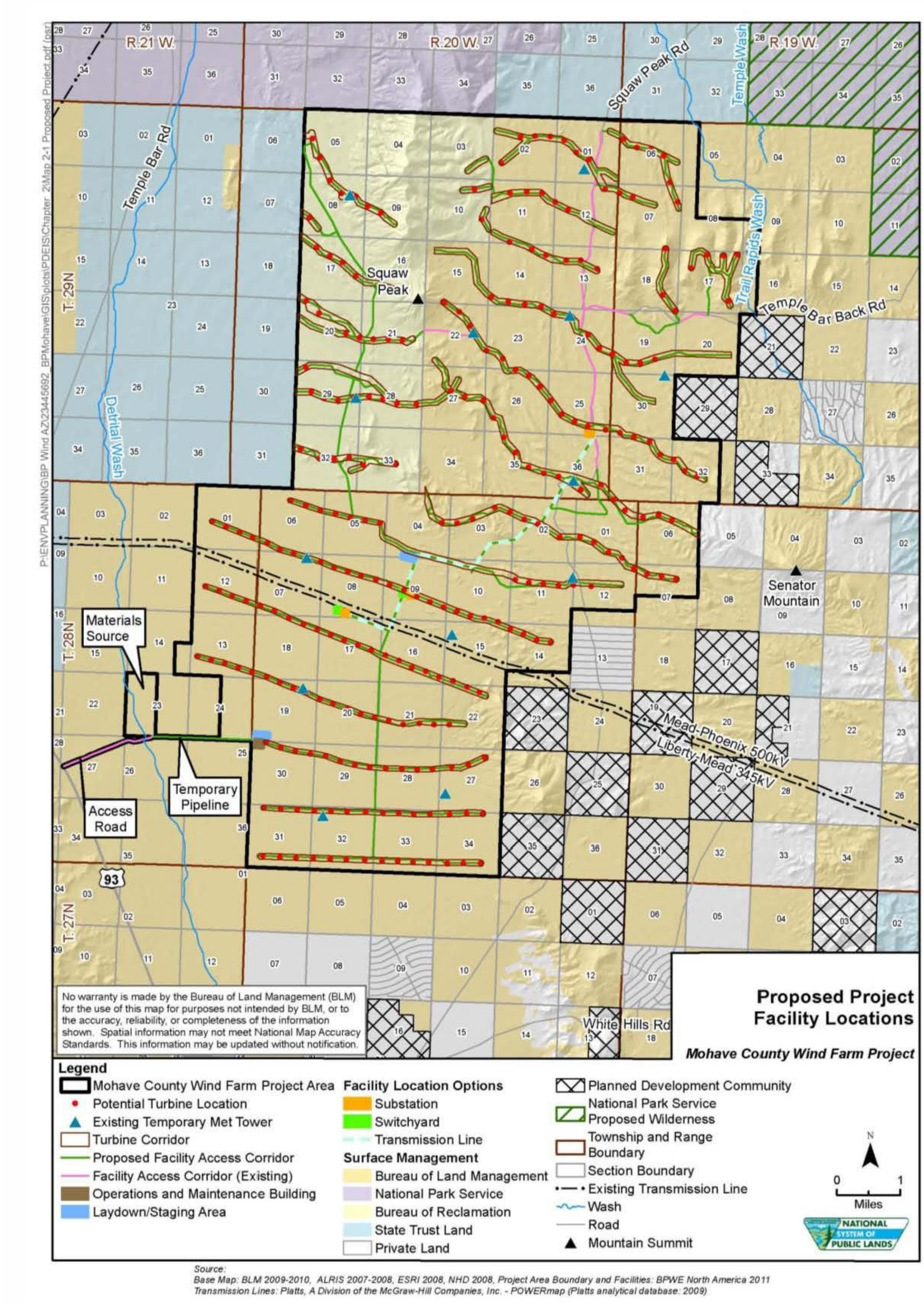


Figure 2-2: Site Plan

Using bulldozers, the laydown/staging areas would be cleared of vegetation and topsoil to a depth of 8 to 12 inches, as guided by the POD Attachment 3, Integrated Reclamation Plan, and replaced with gravel hauled by dual-train gravel hauler from the Materials Source at Detrital Wash Materials Pit (subject to a sales contract with BLM). Topsoil would be salvaged and stockpiled at the edge of the laydown/staging areas. for use in site reclamation

2.2 GEOTECHNICAL STUDIES THAT MAY BE PLANNED

Prior to start of construction a preliminary geotechnical investigation was conducted and included standard penetration test borings at proposed turbine sites to visually characterize the soils and to obtain samples for laboratory testing. Suitable geotechnical investigation equipment was used for the geotechnical investigation, such as a small vehicle or all-terrain vehicle-mounted drill rig. The rig bored to the engineer's required depths, and a backhoe was be used to identify the subsurface soil and rock types and strength properties by sampling and lab testing. The turbine borings were approximately 6 inches in diameter and were extended to a depth of 50 to 65 feet to adequately determine the quality/character of the bedrock. The boring would not be as deep if suitable foundation characteristics are identified at a shallower depth. Soil samples were collected and laboratory tests of the samples would be conducted. The geotechnical investigation for support of the preliminary roadway design would include collection of a series of eight bulk soil samples from depths of approximately 1 to 2 feet at locations across the Project site. In-situ electrical resistivity tests and bulk samples for thermal resistivity testing were performed at the six turbine boring sites and at the proposed substation location. Electrical resistivity testing measures how well the soil conducts electricity. This is primarily used in the design of the grounding grids, which are used to dissipate electricity into the ground. Thermal resistivity testing measures how well heat is dissipated into the soil. This is primarily used in the design of the underground collection circuits to ensure the heat generated by the cables does exceed the cable's specification. All test pits and soil boring locations were back-filled after the soil samples are obtained and rehabilitated if the Project is not constructed.

Additional geotechnical investigations will be performed to further identify subsurface conditions, which would dictate much of the design specifications of the roads, foundations, underground trenching, and electrical grounding systems. Testing also would be completed to measure the soil's electrical properties to ensure proper grounding system design. One boring would be completed per turbine location, plus approximately three borings at the substation, laydown, and O&M building prior to the start of construction. In addition, approximately 20 to 40 soil samples would be taken along the road/collection corridors. The process would be largely the same as described above, but for the samples along the primary access road from US 93 and interior roads, a small backhoe or shovel would be used to dig a sample test pit a few feet deep to obtain soil samples and then the test pits would be refilled.

2.3 ACCESS AND TRANSPORTATION SYSTEM, COMPONENT DELIVERY

The Transportation and Traffic Plan included in the POD Attachment 6 provides a summary of the how wind farm components will arrive to the site off US 93.

2.4 CONSTRUCTION WORK FORCE NUMBERS, VEHICLES EQUIPMENT, TIMEFRAMES

The number of construction personnel on site is expected to range from 300 to 500 (during peak construction). Construction traffic is expected to usually be around 215 trips per day into and out of the site, and peak at approximately 311 trips per day during the construction period (based on 200 construction personnel vehicles leaving and entering the Project site and 50 delivery trucks entering and leaving). Personal vehicles of construction personnel would be parked at the main staging area for the site. BP Wind Energy will request that the construction personnel utilize a ride sharing program to reduce the number of vehicles entering and exiting the site on a daily basis. This encouragement will be made at orientation for new workers and also from time to time at the morning meetings. From this point, interior roads for construction access would be used only by delivery trucks and on-site construction vehicles;

employee personal vehicles would not be driven throughout the Project site. Vehicles would be required to operate within the speed limit of 25 mph.

Construction traffic would be predominantly during weekdays, but some weekend and evening work may be required during peak construction periods. Most work done at night would be to take advantage of lower wind conditions or cooler temperatures.

2.5 SITE PREPARATION, SURVEYING, AND STAKING

About one week prior to the start of construction at any given site, an environmental inspector and agency inspectors/monitors (which may include agency staff and/or contracted environmental monitors), the construction contractor, and any necessary subcontractors would conduct a walk-over of areas to be affected, or potentially affected, by proposed construction activities. These pre-construction walk-overs would occur regularly and are intended to review sensitive resources to avoid, limits of clearing, location of drainage features (e.g., culverts, ditches), and the layout for sedimentation and erosion control measures. Relevant agency representatives would be consulted or included on these walk-overs, as needed. A Compliance and Monitoring Plan that includes a documentation of these activities shall be prepared. Pets (per POD Attachment 4 – HSSE Plan, Attachment QQ – BMPs) firearms, and camping will not be permitted on the Project.

Regardless of when personnel join the construction team and begin work at the construction site, supervisors and work crews would go through orientation and training that would include Project safety rules, environmental and cultural awareness and compliance programs, and minimization of construction waste. An internal pre-construction conference would be held with agency representatives, BP Wind Energy, lead BOP contractor, and consultants to review grants, stipulations, and the Plan of Development to highlight guidelines and mitigation measures. BMPs that would be implemented during site preparation and pre-construction activities are listed in the POD Attachment 4 – HSSE Plan, Attachment QQ – BMPs (a copy of the Final EIS Appendix B – BMPs).

2.6 SITE CLEARING, GRADING, AND EXCAVATION

In reference to the POD Attachment 3, Integrated Reclamation Plan site preparation work may include clearing (removing vegetation from the land), grading (leveling or smoothing and possibly compacting to a desired or horizontal gradient, typically done with a bulldozer), and blasting (using an explosive device to fracture and/or dislodge rock or other materials). Details regarding the equipment to be used during site preparation and pre-construction activities can be found in Appendix C of the Final EIS. Refer to the POD Attachment 7, Dust and Emissions Control Plan, for applicable dust control guidance. Sediment and erosion control measures would be implemented before any clearing and grading activities occur; these control measures would be in accordance with the SWPPP as well as BMPs (refer to POD Attachment 4 – HSSE Plan, Attachment QQ – BMPs). The SWPPP is a plan for stormwater discharge that includes erosion prevention measures and sediment controls that, when implemented, will decrease soil erosion on a parcel of land and thereby decrease off-site nonpoint pollution. Areas to be cleared and graded would include the access road, laydown area, turbine and other facility locations, substation, switchyard, access routes within turbine corridors, and the transmission line corridor. Small areas around transmission line structure sites may also be cleared. Clearing would be performed only within the approved limits of disturbance or for fire prevention and fuel management.

Bulldozers would typically be used to clear and grade land. Removed topsoil[6] bearing organic components would be used in reclamation that takes place during construction or stockpiled for Project reclamation, particularly to promote reseeding success in disturbed areas. Excavated waste rock and/or mineral soil underlying the topsoil would potentially be used for fill material where needed anywhere within the Project Area (such as to achieve desired grades or extend curve radii of roads).

[6] Surface soil usually including the organic layer in which plants have most of their roots.

It may be necessary to blast rock to achieve the necessary slope and gradient for interior roads or for foundation construction. If required, blasting would be conducted in accordance with a Blasting Plan prepared prior to issuance of the Project Notice to Proceed and approved by BLM and Reclamation. The Blasting Plan Draft in Attachment 8 will identify potential blasting locations, safety protocol, and notification procedures when non-construction personnel or developed property may be within range of the noise or vibrations, would not be completed until the final engineering and design phase when geotechnical information is available. When completed, the Blasting Plan will be appended to the Project Plan of Development and made available on the BLM website and/or at the local BLM and Reclamation offices. Blasting would be pre-engineered with each location assessed for apparatus or structures in the vicinity to determine the suitability of that location for blasting. Procedures identified by the construction contractor for conducting such work, as well as applicable Federal and state regulations, would be followed. Explosives would only be used within times and at specified distances from sensitive wildlife or surface waters, as established by the BLM or other Federal and state agencies. Explosive material would be handled only by a licensed, state-approved contractor that would have full responsibility for control and use of the material. The material would be transported to and from the Project site on an as needed basis in accordance with Occupational Safety and Health Administration's (OSHA's) regulations for surface transportation of explosives found in 29 CFR 1926.902.

2.7 GRAVEL, AGGREGATE, CONCRETE NEEDS AND SOURCES

2.7.1 Temporary Concrete Batch Plants

This discussion of the operations associated with the temporary concrete batch plants (located at the two temporary laydown/staging areas) includes the proposed mineral Materials Source to be used for materials used in the concrete mix, the batch plant facilities, the power source for batch plant operations, and the water source and quantities of water used.

2.7.2 Materials Source and Initial Processing

Source materials for batch plant operations are proposed to be obtained from mining the Materials Source, which is located in Section 23, Township 28 North, Range 21 West, near the Project access road leading from US 93 to the Wind Farm Site. BP Wind Energy (or the batch plant contractor) would participate in a competitive sale to extract materials from the quarry and would be issued a sales contract if BLM accepts the bid.

The Materials Source (Detrital Wash Materials Pit) is a previously mined and highly disturbed area encompassing approximately 320 acres. The POD Attachment 9, Mining Plan of Operation, provides additional information on the Material Source. Access to the processing and mining area would be via an existing dirt road connected to the primary access road to the Wind Farm Site. A surface disturbance area of approximately 10 to 15 acres may be required, dependent upon aggregate quality, depth, and consistency of the area. Sand and gravel would be mined in a quarry located in the banks and within the channel of the Detrital Wash. It is anticipated that approximately 180,000 to 210,000 cubic yards of material would be extracted with each of the action alternatives. Excavation would be limited to a depth of approximately 8 feet, with 60-foot long tapers[7] left in place at both the upstream and downstream ends of the excavated area. The remaining side slopes within the quarry would be contoured to a 3:1 or flatter slope. Mined material would be transported via haul truck to the processing area which would be located outside and above the ordinary high-water mark of the wash. In the processing area, material would be stockpiled and screened. A minor amount of crushing may be required, but the in-situ aggregate is generally the size desired for the Project. Oversized material would be stockpiled and crushed for future uses such as roadway or over-excavation backfill materials. The processing area would be located in an

[7] A convex type shape that narrows toward a point and is used to help control erosion.

area of the leased site that has previously been used for processing activities. Refer to the POD Attachment 7, Dust and Emissions Control Plan, for applicable dust control guidance.

2.7.3 Mobile Batch Plant Facilities

Processed material would be transported via “covered” (tarped down) truck and tractor/trailer loads of mineral materials to one of two mobile batch plants, depending on where foundation work is under way. A primary mobile concrete batch plant would be established within the main laydown/staging area during construction to supply high strength concrete for wind turbine foundations and ancillary facility footings/slabs, primarily within the central and southern portions of the Wind Farm Site. A second mobile batch plant would be established in the northern part of the Wind Farm Site to reduce the haul time to foundations constructed in the northern part of the site. Each concrete batch plant would require a flat area of up to 2 acres. Refer to the POD Attachment 7, Dust and Emissions Control Plan, for applicable dust control guidance.

Temporary concrete batch plant facilities typically consist of loading bays, hoppers and mixing equipment, cement and admixture silos, concrete truck loading areas, aboveground water storage tanks, and bins for aggregate and clean sand storage. Figure 2-3 shows a typical batch plant facility. The height and color of the batch plant equipment would vary depending on the equipment ultimately selected. Generally, facilities would have heights ranging from 30 to 50 feet. A washout area would be located within the 20-acre laydown/staging area, with the concrete removed or covered by at least 3 feet of soil when the washout area is no longer needed. More typically, there also would be limited washout at each turbine location within defined limits of disturbance for the turbines (excavated foundation areas) and covered by as much as 8 to 10 feet of soil as part of the turbine foundation backfilling process. Specific locations and use of the washout areas would comply with provisions in the SWPPP provided prior to issuance of the Notice to Proceed.

Figure 2-3: Typical Temporary Concrete Batch Plant

2.7.4 Power Source and Equipment

Electrical power for the batch plants would be supplied by a distribution line to the site or by diesel generator. The proposed power source for the primary batch plant would be via a tap on an existing UniSource Energy line with a distribution line installed to extend from the tap, along the west side of US 93 (BLM right-of-way application separate from the Wind Project), on existing power poles, crossing

US 93 (either underground or above ground), and then along the primary access road to the Wind Farm Site on similar poles and design as currently in the area. Power for the secondary batch plant farther north within the Wind Farm Site would include the temporary use of a 500- to 750-kilowatt diesel generator and use number 2 fuel. The fuel would be stored in a 500-gallon on-site tank. Typical daily fuel usage for the generator would range from 150 to 250 gallons. Containment to prevent/control potential spills would be in accordance with the SPCC Plan. Generator noise production varies by the model used, but should be less than 105 A-weighted decibels (as measured at a distance of about 23 feet from the generator). A backup generator may be necessary, but it would only be put in operation if the primary generator is not functioning.

2.7.5 Production Needs

It is estimated that approximately 180,000 to 210,000 cubic yards of aggregate would be required for the turbine pad foundations, building foundations, and gravel for road surfaces and as required for work areas, i.e., Substations, Interconnection Facility, and Operations and Maintenance area. Aggregate and water are planned to be obtained from within the Wind Farm Site. Assuming eight aggregate and two water trucks are needed per day over a 26-week period, of a 5-day work week, 1,300 round trips would be required for aggregate and water trucks. The concrete would be mixed and hydrated at the batching plant, and concrete mixer trucks would make only one round trip per day. Approximately 10 concrete mixer trucks per day would be required to haul a full load of mixed concrete, and assuming a 26-week construction schedule, 1,300 round trips would be required for concrete delivery (see Appendix C of the Draft EIS for more details on vehicle trips and cumulative volumes of materials). The gravel and sand would be stored in bins located within the unloading/storage area, adjacent to the mixing plant. Cement and admixture materials would be stored in silos adjacent to the mixing plant, which would also provide protection from the weather. The storage facilities would not be moved during the course of construction; cement containers would be replaced or refilled as they are used. It is estimated that aggregate mining operations would continue for approximately 6 months during the 12- to 18-month Project construction period.

Each mobile batch plant would be capable of producing approximately 800 cubic yards of concrete per day, although the two batch plants may not be operated simultaneously. A total of approximately 180 tons of cement, 360 tons of sand, 810 tons of aggregate, and 25,000 gallons of water would be needed per day while mixing concrete at peak production (5 days per week for approximately 25 weeks) (Barr 2011). The batch plant would also require up to 1,500 gallons per hour to support operations such as truck washing and hydrating aggregate prior to mixing. These additional uses could consume between 3,000 and 15,000 gallons of water per day (assuming a maximum 10-hour work day); thus, it is expected that average daily water use at the batch plant would range from 28,000 to 40,000 gallons. Based on the 40,000-gallon daily water use estimate, cumulative water use to support the batch plant may be as much as 5.0 million gallons (15.3 acre-feet) over the life of the plant. It is anticipated that an additional 100,000 gallons of water would be needed per day, 5 days a week, for 39 weeks for dust control, refer to the POD Attachment 7, Dust and Emissions Control Plan. This equates to a total usage of 19.5 million gallons of water, or 59.8 acre-feet. Combined water use for the batch plant and dust suppression would therefore reach approximately 75.2 acre-feet during construction.

2.7.6 Water Source

Water for dust control, batching water for concrete production, and other washing needs, would be obtained from three existing production wells at the Materials Source production site. Table 2-1 provides the capacity of the wells and expected use of the well water.

Table 2-1: Well Capacity and Anticipated Water Use for the Project

Well Capacity		Water Required for Construction of the Project			
		Activity	GPD	Weekly Requirement (5-day Work Week)	Total – 39* Weeks
Well 1 GPM	1,000	Dust control	100,000	500,000	19,500,000
Well 2 GPM	400	Cement Production	25,000	125,000	4,875,000
Well 3 GPM (not expected to be needed)	200	Truck washing, hydrating aggregate	15,000	75,000	2,925,000
Total GPD	2,304,000		140,000		
Total GPW (5 day work week)	115,200,000			700,000	
Total 39* weeks (5 day work week)	449,280,000				27,300,000

GPM – Gallons per minute
GPD – Gallons per day
GPW – Gallons per week
*39 weeks was used as maximum time for both dust control and cement production (rather than anticipated 25-week duration) to present a worst case scenario.

The wells owned by BLM near the Materials Source along Detrital Wash are permitted for industrial withdrawals. One of these wells, registration number 531378, has a permitted pumping rate of 60 gallons per minute. This well alone would be able to meet most of BP Wind Energy's construction water needs. Any water demands in addition to what well 531378 can supply would be met using the other industrial water supply wells permitted to BLM at the Materials Source. Water for production would be pumped from the wells, and a valve meter would be installed at each well to maintain overall usage during the course of mining activities. Water would be used for concrete production in the mobile batch plant. Water would be piped to the primary batch plant location near the primary access road. Surface-laid polypipe is typically used for this type of temporary water pipeline. Water would be transported via water trucks to the batch plant established in the northern portion of the Wind Farm Site.

Two clay-lined ponds, each approximately 5 feet deep and with a surface area of 60 feet by 60 feet, would be located at the Materials Source processing site, with each pond having a 100,000 gallon holding capacity. The ponds would be used for storage and recycling of wash water, and used to contain the fine particles washed from the sand. Also, during peak usage, water may be stored in the ponds. When the Materials Source is no longer in use, the ponds would be reclaimed to prior existing conditions to the extent possible.

Aboveground storage tanks would temporarily store the water needed at the northern concrete batch plant. The dimensions and capacity of the water storage tanks would be determined based on the equipment available to the batch plant provider. However, typical tank sizes are 10,000 to 20,000 gallons each, 15 feet tall, and 12 feet in diameter. It is anticipated that storage capacity for approximately 50,000 gallons would be required on site. Post-construction water needs would be minimal and primarily limited to the water used by fewer than 40 operations and maintenance personnel for drinking water, washing, and keeping the office space within the O&M building clean.

2.8 WIND TURBINE ASSEMBLY AND CONSTRUCTION

The wind turbine base foundation anchors the turbine structure securely to the ground due to its size, weight, and configuration. The most common foundation design used for wind turbine installations within the United States is the mat foundation, which is proposed for this Project. A mat foundation is generally an octagon shape with dimensions ranging from 50 to 60 feet wide and 8 to 10 feet deep. A concrete pier, (approximately 15 feet in diameter, refer to Figure 2-6) , on the top of the mat extends to the ground level.

Typically, the amount of soil material excavated for a mat foundation ranges between 655 to 1,045 cubic yards; the excavated soil is not all waste material because some of the soil is used to backfill over the concrete foundation. The amount of concrete material needed to construct a typical foundation is approximately 375 cubic yards, but could be as much as 600 cubic yards depending on the turbine selection. Rebar is used for structural support with about two to three truckloads of steel (20 to 35 tons) used per turbine site.

Figure 2-4 shows a turbine foundation under construction. After the concrete has cured for about 30 days, the excavated soil is backfilled so that only the concrete pier on top of the mat remains visible. Topsoil would be reserved for rehabilitation and other excess soil from construction activities would be used where needed to achieve an appropriate grade for roads, to supplement the existing sub-base of roads, and/or to blend the road into the surroundings grades by widening curves and improving road prisms[8], as appropriate.

Figure 2-4: Typical Pouring of Turbine Foundation

Power from the turbines would be fed through insulated electric cables (meeting state/Federal standards) and a breaker panel at the turbine base inside the tower would be interconnected to a pad-mounted step-up transformer (see Figure 2-5). This 34.5-kV transformer is approximately 6 feet long by 6 feet wide and 6 feet high, and is placed adjacent to the concrete pier of each new turbine foundation to step up the voltage from the wind turbine (typically around 690 volts) to a capacity of 34.5 kV direct current, which is the voltage carried on the electrical collection system. The transformer foundation would be an approximately 6 foot-by-6-foot concrete pad placed over compacted soil or granular material. Each pad-mounted transformer would contain approximately 500 gallons of mineral oil used to cool the electrical components located within the box. Leak detection and containment systems have been engineered into the design of these transformers. As a result, potential for accidental spills resulting from malfunction or breach of the transformers is low, as addressed in the SPCC Plan.

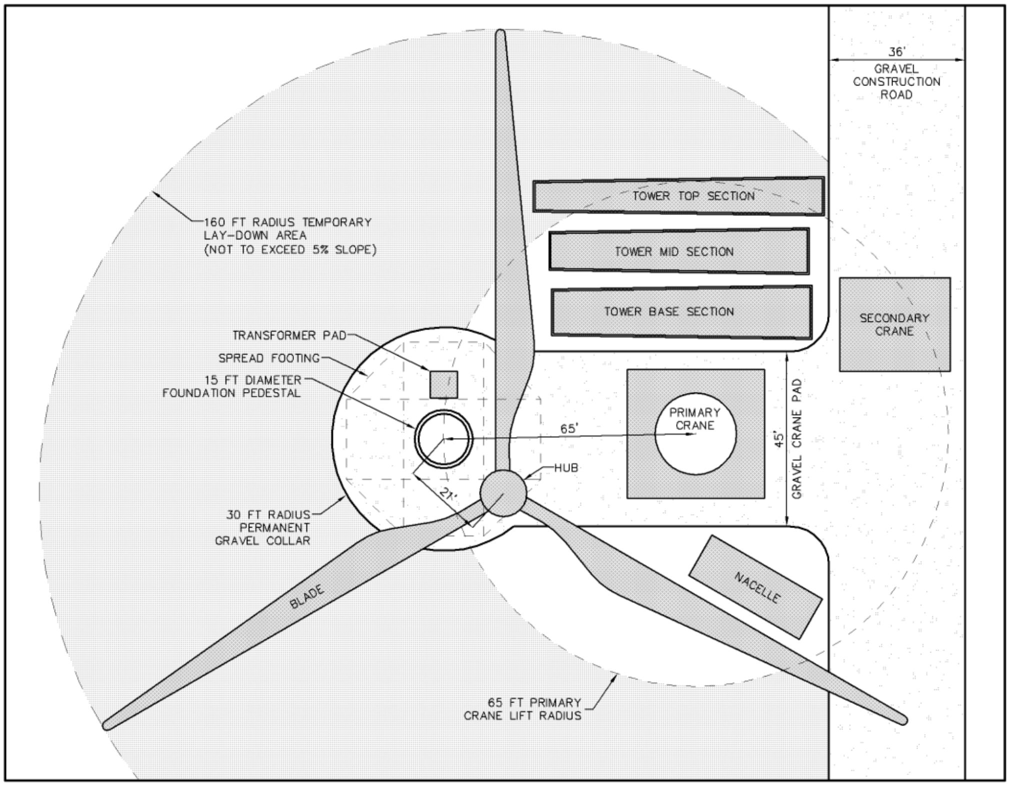
[8] The area of the ground containing the road surface, cut slope, and fill slope.

Figure 2-5: Typical Pad-Mounted Transformer

The tower components for the wind turbines would be delivered by truck to the site in four or five parts, depending on the wind turbine selected. Each turbine would require approximately 7 to 16 truckloads to deliver equipment and construction materials. Refer to the POD Attachment 6, Transportation and Traffic Plan, for transportation details. Whenever possible, the delivery of turbine components would be scheduled so that they can be directly installed at each location, reducing the need for intermediate storage on site. When the trucks arrive at each site, the assist crane would remove the cargo and position it according to the predetermined lay-down configuration. Each turbine site would have a plan for the arrangement of major components before erection. Figure 2-6 provides an example of the construction layout for component staging and assembly. The typical temporary disturbance area for staging and assembly of the wind turbine is about 1.85 to 2.5 acres, with an area of about 0.065 acre per turbine of permanent disturbance for the life of the project.

Wind turbines are positioned about three rotor widths (about 1,000 feet for the smallest turbine) apart from one another and each row of turbines is about 10 rotor diameters from the next row (about 0.5 mile) so that the wind energy can reconstitute to maximum power after passing through each row of turbines. For safety reasons, no turbine on public land would be positioned closer than 1.5 times the total height of the wind turbine to the ROW boundary. Based on the proposed range of total turbine heights, this equates to a safety setback of 585 to 738 feet from the ROW boundary. There are also setbacks that would be applicable if the Project were being built adjacent to an existing wind farm; in general, the BLM Wind Energy Policy (Instruction Memorandum 2011-061dated February 7, 2011) would require that no turbine be positioned closer than five rotor-diameters from the center of the wind turbine to the ROW boundary. However, this setback rule would not apply to this Project because there are no wind farms adjacent to the application area.

Figure 2-6: Wind Turbine Generator Component Staging and Assembly



The wind turbines are equipped with sensors that monitor wind speed and direction. While the turbine blades may spin freely in low wind speeds, the turbine generators produce electricity when the wind reaches a pre-determined wind speed that can sustain the rotational movement. Refer to POD Table 1-3 Characteristics of Representative Turbine Types (footnotes) for relationships between wind speeds and turbine operations. The turbines rotate to face the prevailing wind to maximize energy production. At around 30 mph, the turbines reach their maximum power output, which is between 1.5 to 3.0 MW, depending on the final turbine selection. In stronger winds, the turbines start to pitch out of the wind (which means the turbine blades may shift in rotation to capture less energy or what is known as "feathering") and at a pre-determined cut-out wind speed, the turbines shut down to limit the amount of stresses on the turbine. Refer to POD Table 1-3 Characteristics of Representative Turbine Types (footnotes).

Each wind turbine generator contains approximately 50 gallons of glycol-water mix, 85 gallons of hydraulic oil, and 105 gallons of lubricating oil located in the nacelle. Leak detection and containment systems have been engineered into the design of the wind turbine generators and are addressed in the SPCC Plan. As a result, potential for accidental spills resulting from malfunction or breach of the generators is low.

Each wind turbine also contains a safety system that ensures automatic shutdown of the turbine in the event of any mechanical disorders, excessive vibration, grid electrical faults, or loss of grid power. If grid electrical faults or loss of grid power occurs, the turbines would automatically be brought back to service when the disorder has been remedied. For mechanical disorders, the turbines would remain shut down until the cause of the disorder has been identified and resolved by the Project O&M team. Inoperative turbines shall be repaired, replaced, or removed in a timely manner. Operators will be required to demonstrate due diligence in the repair, replacement, or removal of turbines. Additionally, the construction of each turbine base would include a buried copper cable grounding mat to discharge electric energy into the earth when the wind turbine builds up an electrical charge through turbine operation, by being struck by lightning, or by equipment malfunction.

2.9 ELECTRICAL CONSTRUCTION ACTIVITIES

A power collection system would collect the energy generated by each wind turbine (increased in voltage through the pad-mounted transformer) and transmit the power to an electrical substation via 34.5-kV electric cables. Three cables, one for each electrical phase, plus a communication and ground cable may be buried in a trench within the temporary interior road area that is wide enough to handle the large transport vehicles hauling turbine components and the cranes used to assemble the turbines. Using a back-hoe or trencher, the trench would be dug 3 or more feet deep and approximately 2 feet wide (see Figure 2-7). In some locations, particularly near the substation, multiple sets of cables could be installed in a joint trench to consolidate the cables from multiple corridors of turbines.

Trenching plans would be developed in cooperation with BLM and Reclamation, with input from appropriate regulatory agencies, to minimize the environmental effects that may occur with open trenches. This may include timing trenching to avoid leaving trenches open when heavy precipitation is anticipated, using wooden planks to establish wildlife escape ramps, and inspecting trenches left open overnight for animals that need to be removed prior to backfilling.

Figure 2-7: Typical Trench for Electrical Collection Cables

While collector lines connecting turbines within a row would typically be placed underground, the collector lines leading to the substation may be constructed aboveground on wood poles or tower structures to span terrain and environmentally and culturally sensitive areas (see Figure 2-8). When used, aboveground 34.5-kV wooden monopole or tower structures would generally be approximately 35 to 65 feet tall, direct embedded in the ground without concrete footings, and support three wires (one for each electrical phase) although it is possible that there would be two circuits (six wires) on one set of poles/towers, plus a fiber optical ground wire line at the top of the structure. The poles would span about 250 feet and generally resemble a power distribution line. The aboveground facilities would be built to Avian Power Line Interaction Committee standards to minimize potential impacts to raptors and other birds. If collector lines are placed aboveground, physical ground disturbance would generally be limited to the pole installation site where an auger would be used to dig the hole for the support structure, although vegetation clearing would be required for access to the pole sites. Structures would be grounded by installing grounding rods.

A Supervisory Control and Data Acquisition (SCADA) system would network underground fiber optic cables within the Wind Farm Site to allow for remote control monitoring of the turbines and communication between the wind turbines and the substation. The network of cables would be buried in the same trenches as the electrical collection system cables to minimize the impact to the environment. BP Wind Energy maintains a 24-hour-per-day, 7-days-per-week Remote Operations Center in Houston, Texas where each of the turbines and ancillary equipment can be monitored for faults, in addition to the monitoring available at the O&M building that would be staffed during business hours. All authorized personnel would be able to remotely operate the turbines.

Figure 2-8: Typical Structures for Aboveground Collector Lines

2.9.1 Electrical Distribution Substations

The energy generated by the turbines would be delivered via the electrical collector system to two new substations (either 345-kV or 500-kV), where transformers would further increase the voltage so that generated power can be transmitted via a high-voltage transmission line to the grid (see Figure 2-9). The single transmission line would connect the two substations and then would tie into the interconnection switchyard.

Figure 2-9: Typical Substation

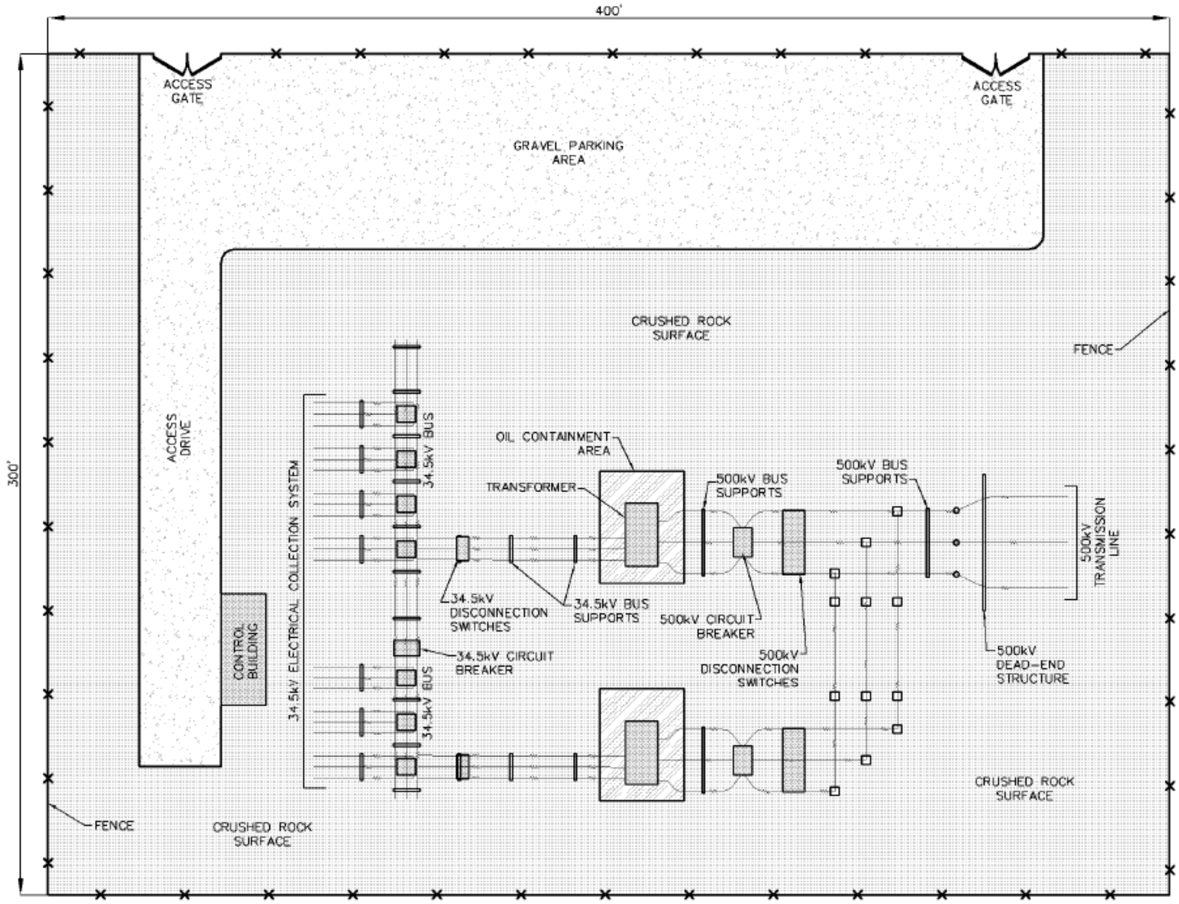
The locations of the proposed substations would be strategically selected in an effort to avoid environmentally and culturally sensitive areas. The facilities would be established in areas that are relatively flat, near the site access point, adjacent to a proposed interior road, and central to the proposed turbine sites. As shown in the Final EIS Map 2-1, one proposed substation location is in Section 25, Township 29 North, Range 20 West. The second substation is proposed to be located near the switchyard. One switchyard location has been identified for each transmission line being considered. If a 345kV switchyard is built, the location would be in Section 8 of Township 28 North, Range 20 West. If a 500kV switchyard is built, the location would be in Section 9 of Township 28 North, Range 20 West. Two locations are proposed for the Switchyard because the two transmission lines are in parallel ROWs and the Switchyard should be located such that BP Wind Energy can avoid crossing one line to get to the other as a point of interconnection. Accordingly, a Switchyard site has been selected on both the north side and south side of the parallel lines.

Substation components (such as the buswork, transformers, breakers, control building, etc.) would typically have a maximum of height of around 35 feet with conductive components having uncovered, nonspecular[9] metal surfaces. The lightning protection masts (and potentially shield wires) would have heights closer to 75 feet. In addition, the slack span of the transmission line entering the substations would gradually rise to the height of the transmission line.

The two oil-filled transformers (see Figure 2-10) in the substations would each contain approximately 12,000 gallons of mineral oil for cooling and have a specifically designed containment system to minimize the risk of accidental fluid leak and discharges to the environment, as addressed in the POD Attachment 5, SPCC Plan, to be provided prior to issuance of the Notice to Proceed. No polychlorinated biphenyls would be used in transformers on this project.

[9] Specular is the mirror-like reflection of light from a surface, in which light from a single incoming direction is reflected into a single outgoing direction. A nonspecular surface would diffuse the reflected light.

Figure 2-10: Typical Substation Facility Layout



Site preparation for the substations is would be limited to approximately 5 acres per substation, include a copper grounding grid laid below grade in trenches around the substation site to protect equipment and personnel in the case of electrical malfunction or lightning strike. The grounding grid is typically at a depth of about 2 feet; it may be located deeper, but would not be at depths of more than 5 feet below ground level. The substation facilities would be graveled with approximately 500 cubic yards of crushed rock, and include a parking area. A control building approximately 10 feet wide by 20 feet long and 10 feet high painted a neutral color with muted tones to blend with the environment would be located within the substation sites for electrical metering equipment. The substations would be surrounded by an 8-foot-high chain-link fence capped with three strands of barbed wire for security, refer to Figure 1-4 Fencing Diagram. The approximate dimensions of the fenced areas are anticipated to be 300 feet by 400 feet, although up to 5 acres for each substation site could be fenced.

Project limits of the substations and switchyard would be staked and flagged in accordance with the POD Attachment 10 – Flagging Plan to limit the area of disturbance. Guidance for the following will come from the POD Attachment 3, Integrated Reclamation Plan. Following vegetation salvaging, staking, clearing, and removing and stockpiling the top 4 inches of available top soil material of the substation site, soil erosion control measures (which may include grading to avoid steep slopes, check dams, diversion dikes, silt fences, straw or hay bales, minimizing disturbance by staking the construction area, etc.) would be implemented in accordance with the required SWPPP. Both the substations and the switchyard at the interconnection point would be graded flat and compacted as needed to allow uniformity in foundation elevations and structure heights. Site work would include using a backhoe to excavate for foundations and dig trenches for below-grade conduit and other features, installing the grounding mat, and pouring foundations and slabs using concrete hauled from the batch plant. Foundation depths for the control building and equipment within the substation would vary based on the requirements of the detailed design, but trenches dug for the foundations of major equipment would typically be in the range of 5 to 8 feet deep. Vertical steel support structures would be erected and electrical equipment would be installed. General components would include power transformers, circuit breakers, switchgear, voltage regulators, capacitors, air switches, arresters, and various monitoring instruments/equipment. Finally, the perimeter fence, per Figure 1-4 Fencing Diagram and the final layer of crushed rock surfacing would be installed, possibly with a geotextile type underlayment to help prevent weeds. If needed, substation and switchyard maintenance to control weeds may include physical, biological, and/or chemical control methods, as approved by the BLM, and in accordance with the POD Attachment 3, Integrated Reclamation Plan.

2.9.2 Overhead Transmission Line and Interconnection Switchyard

An overhead transmission line would carry the power from substation to substation to the interconnection switchyard where the power is transferred to the electrical power grid. The switchyard facility would be a graveled and fenced, per Figure 1-4 Fencing Diagram, the area would be up to 37 acres, with a parking area and electrical devices such as circuit breakers and air switches. Because switchyards do not change system voltage from one level to another, they do not have transformers on site; therefore, there is no risk of a leaking transformer. A relatively short microwave tower (approximately 30 to 50 feet) within the switchyard would provide communications to an existing line-of-site microwave tower located miles away. The telecommunications line to the O&M building would be extended to the switchyard to provide a redundant means of communication with the switchyard. System studies would determine the appropriate location for the interconnection with an existing transmission lines. The transmission line would be the same voltage as the power line to which it interconnects (that is, either 345-kV or 500-kV).

The structures proposed for the majority of the transmission line would be 345-kV or 500-kV steel or concrete monopole structures that are of a color suitable for the environment. The structures would be approximately 115 to 150 feet tall and span approximately 800 to 1,000 feet (see Figure 2-11 for typical overhead transmission line structure examples). The depth and diameter of holes dug for the transmission poles foundations would depend on factors determined during detailed engineering, including geotechnical conditions and soil bearing capacity, but for this voltage would typically be about 20 feet in depth and about 3 feet in diameter. Excess soil material would be scattered in the area around the structures/poles. The poles generally would support three conductor phases and a ground wire.

Figure 2-11: Typical Overhead Transmission Line Structures

A 150- to 250-foot-wide corridor is generally required along the entire length of the transmission line route for structure installation and stringing purposes. However, due to the characteristically low-growing plant species present, vegetation clearance for the proposed transmission line would be less, along approved profiles, and removed in accordance with approved BLM guidelines. It is anticipated vegetation would be removed only for the access to the transmission line corridor and for a small areas around transmission line structure sites. Decisions regarding the quantity and height of the vegetation that needs to be removed would be in accordance with approved POD Attachment 3, Integrated Reclamation Plan. and a surveyor would stake the clearance limits in accordance with the POD Attachment 10 – Flagging Plan to help ensure the vegetation removal is minimized to that required for safe construction.

A 20-foot-wide road would be established along the entire length of the proposed transmission line for access. Construction access would consist of an at-grade road that would be restored to reduce the road to a 20-foot width for permanent operation and maintenance of the line upon completion of transmission line construction per POD Attachment 3, Integrated Reclamation Plan. Existing roads would be utilized when available to reduce potential impacts associated with the construction of a new road.

Materials and other components for the transmission line would be transported to the Project Area via tractor and semi-trailer and would be staged and assembled (if necessary) at the Project's main laydown/staging area. At the commencement of construction, material and components would be transported, as needed, from the staging area to the construction site. Foundations would be excavated by means of excavating equipment, and may require blasting to loosen the earth and rock. Excavated material would be crushed and used as backfill with excess fill spread around the site. The foundations may include a 20- to 30-foot steel rebar cage with mounting plate and anchor bolts that would be placed in the augured hole and backfilled with concrete transported from one of the temporary batch plants to the construction sites via transit-mix trucks. Transmission line poles would be lifted into place using a telescoping boom crane onto the cured foundations and bolted down with pneumatic wrenches. A grounding crew would follow behind the pole assembly and erection crew installing the transmission line pole ground rods. Ground resistance would be measured; if the proper ground resistance is not initially achieved, additional ground rods would be installed until the acceptable ground resistance is obtained. Following placement of the poles, a guide wire would be used to string the conductors between the poles. The conductor line, which is approximately 1.0- to 1.5-inches in diameter and nonspecular to minimize reflections, is generally strung in sections (from point of intersection to point of intersection) and then tensioned at those same locations. For stringing a line of this type, most of the work would likely be done using truck mounted equipment; however, the contractor may elect to use helicopters for portions or all of the work. If helicopters are used to transport materials and equipment, flight paths would not be over buildings or public roads other than to cross at right angles. Public road crossings would be secured by personnel to protect the public when helicopter loads are passing overhead.

Until all system studies are completed and negotiations for a power purchase agreement are further advanced to know which transmission line would best serve the power purchaser, the precise location of the interconnection switchyard cannot be determined. However, the general locations that are being studied for the switchyard are included on the maps in this chapter. One switchyard location has been identified for each transmission line being considered. If a 345kV switchyard is built, the location would be in Section 8 of Township 28 North, Range 20 West. If a 500kV switchyard is built, the location would be in Section 9 of Township 28 North, Range 20 West. Construction of the switchyard would generally be as described above for the substation, although the switchyard would not contain transformers so foundations could be less robust and oil spill protection features would not be required. The size of the switchyard would depend on whether the interconnection is to a 345-kV or 500-kV transmission line. The switchyard for a 345-kV interconnection would require approximately 12 acres for construction with the finished switchyard within an approximately 600-foot by 600-foot fenced area. The switchyard for a 500-kV interconnection would require about 37 acres for construction with the finished switchyard within an approximately 900-foot by 1500-foot fenced area. Fencing will be constructed per Figure 1-4 Fencing Diagram. The length of transmission line to the switchyard would depend on the switchyard location, but would range from about 650 feet to 6 miles.

2.10 AVIATION LIGHTING

Because the turbines would exceed heights of 200 feet above ground level, the turbines would be marked or lighted per Federal Aviation Administration (FAA) Guidelines (FAA 2007) and an approved lighting plan. This would possibly entail placing red strobe lights on the nacelle of selected turbines to adequately warn aircraft pilots of the obstructions at night.

When turbines are painted bright white or light off-white, FAA night-time lighting requirements include the use of red, simultaneously flashing lights positioned on the outer perimeter of the wind turbine farm, each spaced no more than 0.5 statute mile from each other. The FAA determines which turbines would require nighttime lights, but it is anticipated that about half of the turbines would be marked by red strobe lights, particularly the turbines closest to the Project boundary or on high terrain.

When turbines are painted a color other than the industry standard of white or light off-white FAA requires that 100 percent of turbines within a wind farm be equipped with daytime white strobe lights, Daytime illumination would not be required for white or light off-white turbines (Patterson 2005).

The intensity of the nighttime flashing red lights is approximately 2,000 candelas (a measure of the intensity of light—roughly equivalent to a 1,666-watt bulb) and they flash about 22 times per minute with a flash duration between 100 and 2000 milliseconds. The lighting would be similar in appearance to a series of cell phone towers. The lights are designed to flash in unison and to concentrate the beam in the horizontal plane, thus minimizing light diffusion down to the ground.

Although turbines used in commercial, utility-scale wind farms are typically white or light off-white, they may be color treated to blend more effectively with the environmental setting. In rare cases, turbines are painted colors other than white or light off-white in order to contrast with the setting to call attention to potential safety hazards.

The FAA-required night-time lighting requirements would not change based on the turbine color. However, to comply with the FAA's aircraft safety lighting requirements, all turbines that are not white or light off-white (such as shadow gray, which is an option being considered for this Project) also would be marked with lights that flash white at 20,000 candela (roughly equivalent to a 16,666-watt bulb) during the day. Daytime white lights would have a flash rate of 60 flashes per minute with a flash duration of less than 10 milliseconds.

2.11 SITE STABILIZATION, PROTECTION, AND RECLAMATION PRACTICES

The Integrated Reclamation Plan and Noxious Weed Control Plan is attached to the POD and includes general restoration procedures and monitoring and reporting procedures for site restoration, protection and reclamation practices. Restoration procedures would be followed per the Integrated Reclamation Plan and Noxious Weed Control Plan. proposed by BP Wind Energy and approved by BLM and Reclamation. A restoration punch-list would be developed to encompass the various Project restoration requirements from the NEPA process and Project permitting requirements. Construction activities would not be deemed complete until the regulatory agencies with jurisdiction over the Project have acknowledged that the restoration activities have been adequately implemented and desired results have been achieved.

3.0 OPERATIONS AND MAINTENANCE

3.1 OPERATION AND FACILITY MAINTENANCE NEEDS

The functionality of the wind turbines and safety systems would be tested to ensure they operate in accordance with the manufacturer's specification before the turbines are commissioned for operation. Energizing the Project would start at the point of interconnection and eventually be energized all the way to the turbines. In general the order of energizing the system would be:

- The interconnection switchyard
- The transmission line
- The substation
- The collection system
- The pad mounted transformers at each turbine
- The turbines

At each stage, testing would be performed to ensure the equipment has been installed correctly. When all systems have been tested and are operating properly, the Project would be commissioned for commercial operation and sale of energy.

Because wind farm facilities are comprised of many individual wind turbine generators, O&M activities would not affect the entire wind farm's operation. Annual maintenance would be conducted on a turbine-by-turbine basis and would not affect performance of the wind farm.

BP Wind Energy also would schedule annual maintenance for the wind farm during the season with the lowest expected wind resource in order to minimize impacts on the performance of the facility.

The operational staff would maintain the turbines, including routine maintenance, long-term maintenance, and emergency work. In all cases, the facility staff would be responsible for arranging needed repairs either through internal resources or with the aid of additional contractor support.

Routine wind turbine maintenance and service would occur every six months commencing after the first six months that the Project is in service. This includes the following activities:

- Hydraulic pressure checks
- Accumulators' nitrogen recharge
- Oil level checks on all operating parts
- Visual checks for leaks
- Grease all bearings on moving parts
- Check all bolt torques
- General clean-up within the wind turbine
- Perform any additional modifications/replacements needed

The oil in the gearbox is normally changed every 18 months or after lab analysis of the lube oil indicates that the oil must be changed. Routine maintenance is generally completed by climbing the tower using the internal ladder and doing the work with normal hand tools and electrical testing equipment.

Long-term maintenance may include replacement/rebuilding and cleaning larger components such as generators and gearboxes, testing electrical components, and refurbishing blades. Emergency work also may be required as the result of a system or component failure. Certain unplanned work such as blade repairs or repairs to other large components may require the use of a crane to complete the work. If necessary, a crane would be brought in on trucks and assembled at the turbine site such that the permanent 16-foot wide road (20-foot wide with shoulders/ditches) would be sufficient for site access, and the 10-foot wide shoulders would not need to be reinstalled.

BP Wind Energy and its contractors would demonstrate due diligence and timeliness in the repair, replacement, or removal of inoperative turbines.

Long-term dispersed recreational use throughout the Project Area would continue to be allowed. Off-road vehicle use and recreational access to the Project Area is likely to remain unchanged from the present situation, except for restrictions at the substation, switchyard, and O&M building, which will be areas located outside roadways. Public access in the Project Area may be temporarily restricted during maintenance activities on roads or facilities, when warranted for public safety reasons. Access also may be restricted (i.e., closed to public vehicle travel), upon approval by BLM and/or Reclamation, in areas where reclamation efforts have been undertaken and public access into those areas would diminish the reclamation efforts.

The transmission line ROW would be cleared, as needed, to ensure that vegetation does not come within the safe operating distance of the transmission line. Given the vegetation in the area, this clearing work would likely occur rarely during the life of the Project. Substation and switchyard maintenance may include an underlayment, physical or biological methods, or treating crushed rock surfaces with herbicides to control weeds, if approved by the BLM and/or Reclamation. In general, unless there are un-planned events, maintenance would only consist of routine services that would require only normal access to the Project site.

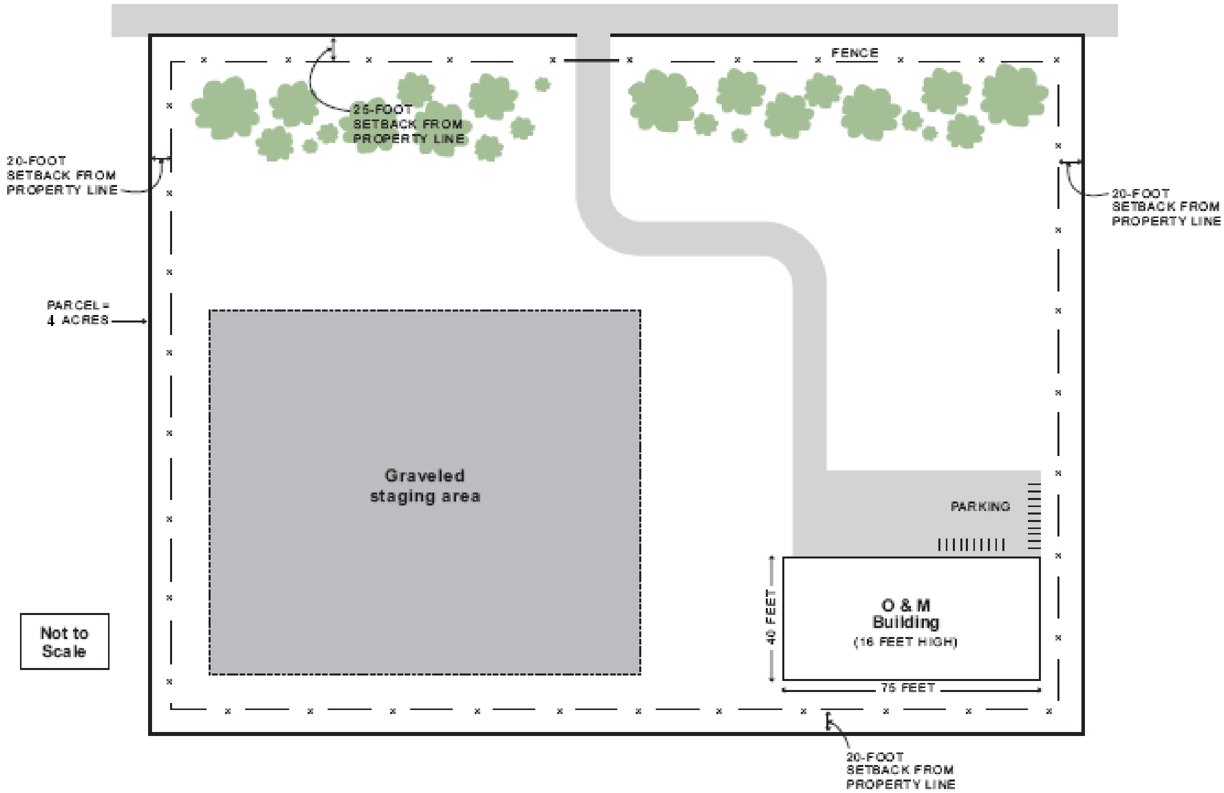
3.2 MAINTENANCE ACTIVITIES, INCLUDING ROAD MAINTENANCE

During the Project operations period, roads would be specifically inspected for erosion, blockage of culverts, and damaged cattle guards twice annually; identified problems would be addressed to correct the concern. In addition, road conditions would be inspected after heavy rain fall. Roads would be inspected monthly and periodic grading or replacement of gravel may be required to maintain road quality. Road maintenance would be scheduled when wind speeds are less than 22 mph to minimize airborne dust. To limit airborne dust and the erosion of roads, speed limits of 25 mph would be posted and required of all O&M personnel. Because roads used in operations and maintenance would be graveled, traffic would be very limited, and speed limits would be low, the need for dust suppression is not anticipated. During the operation phase of the project, public access to the Project site would be monitored at certain access points to provide for the safety of the public in and around the operating equipment.

3.3 OPERATIONS WORKFORCE, EQUIPMENT, AND GROUND TRANSPORTATION

The O&M building would be used to store equipment and supplies required for operations and maintenance of the wind farm, house control functions such as the SCADA used to provide two-way communication with each wind turbine, and provide a facility where O&M personnel can prepare documentation of work done on wind farm facilities. The O&M building would be located within an approximately 4- to 5-acre fenced area that also includes a graveled parking lot (see Figure 3-1).

Figure 3-1: Typical O&M Facility Layout



The O&M building would be a composite panel steel building, approximately 60-feet by 120-feet in size and approximately 16-feet high, with the roof and side panels painted a color to blend with the environment. The telecommunications and electrical services for the O&M building would be from local providers, or electrical power possibly could be supported by a rooftop solar system and battery backup. If the proposed distribution line to support batch plant operations is established, the power would be extended to the O&M building for the operations and maintenance stage. Telecommunication and/or data lines would be installed on the distribution line support structures to the O&M building unless BLM prefers that communication lines be buried. External lighting would be minimal with downward directed lighting. The surrounding chain-link fence would be 8 feet high and topped with barbed wire (refer to Final EIS Section 2.5.2.12 and Figure 1-4 Fencing Diagram); a roll-away gate within the fence would be operated by O&M personnel.

A well, comparable in capacity and design to a residential well (typically 10- to 15-gallons per minute), would be drilled on the O&M site to provide potable water to the O&M building for domestic water supplies. The depth of the well is difficult to forecast; while the well may be as deep as 1,200 feet, this depth is not anticipated. All necessary entitlements and permits would be acquired prior to construction and permit requirements would be followed during construction. The desired capacity of the well would be to deliver up to 5,000 gallons per day, but a lesser capacity would be adequate because actual water use during operations is expected to be about 100 gallons per day (or 36,500 gallons per year, and 912,500 gallons over the life of the project). If water use were as much as 5,000 gallons per day (a typically limit for residential wells), this conservative amount would equate to a maximum of up to 1.825 million gallons of water per year, and 45.625 million gallons over the life of the project. Pending any other guidance from BLM, after decommissioning the Project, the well would be capped below ground level, with the ground above the cap refilled.

Similarly, a septic system comparable in capacity and design to a residential system would be installed for the O&M building in accordance with applicable permits.

Limited quantities of lubricants, cleaners, and detergents would be stored near and within the O&M building, including a minimum of two 55-gallon drums of oil for continuing maintenance of the wind turbines. Waste fluids would be stored in accordance with applicable regulations at the O&M building for short periods of time during Project operations. BMPs incorporated into the design of the O&M facility, including containment areas and warning signs, would minimize the risk of accidental spill or release of hazardous materials at the facility. No risk to health and safety or the environment is anticipated.

During morning briefings and at various times during the day, approximately 30 employees could be using the O&M building. The O&M building would be staffed during typical business hours, although there may be occasions when employees would work on weekends as well. Because turbines can be operated from the Remote Operations Center in Houston, Texas, there is no need to have personnel on site 24 hours per day.

Site preparation for the O&M building would include surveying, staking, clearing, and grading per the POD Attachment 3, Integrated Reclamation Plan. Excess excavated soils would be used as fill for roads or other related project needs. The drainage plan would be designed in accordance with BMPs (from POD Attachment 4 – HSSE Plan, Attachment QQ) and the required SWPPP. An approximately 1- to 3-foot-wide concrete-filled trench would provide a foundation for the 60-foot by 100-foot composite panel building, and beams would be put in place to form the floor. The panel building would be erected on the foundation. Telecommunications and electrical lines would also be connected to the building.

The O&M building would be located near the location where the primary access road enters the Wind Farm Site along the Section 19/20 line in Township 28 North, Range 20 West.

3.4 DECOMMISSIONING

The Project is anticipated to have a lifetime of up to 30 years after which it may no longer be cost effective to continue operations. The Project would be decommissioned, and the existing equipment removed. At that time, a Decommissioning Plan would be provided to BLM and Reclamation for review and approval, and would address the procedures described in this section.

The goal of Project decommissioning is to remove the installed power generation equipment and return the site to a condition as close to a pre-construction state as feasible. The major activities required for the decommissioning are as follows:

- Remove wind turbines and met towers
- Remove electrical system
- Structural foundations would be removed in accordance with a BLM- and/or Reclamation-approved decommissioning plan
- Remove roads not desired for other purposes
- Re-grade and recontour the disturbed area
- Revegetate

The most noticeable decommissioning activity to the public would be the removal of the wind turbines and met towers. The disassembly and removal of this equipment, including the large components that make up a wind turbine, would essentially be the reverse order of the installation activities. The rotor (hub and blades) as well as the met towers would be removed from the top down with the help of a smaller crane. Once the turbine rotors have been removed and disassembled into loose parts, it would be placed directly onto a truck bed and taken off the site. This approach would limit the need for clearing vegetation in an area around the turbine base to just enough area to set down the rotor.

BLM and Reclamation would be consulted at the time of decommissioning to determine if it is desired to remove the cables buried between each turbine, or leave them in place. Removal of the cables would likely cause some environmental impact that would need to be mitigated, but leaving them in place could impact future uses of the site. If it is decided that the cables should be removed, an appropriate technique in use at the time of decommissioning would be used. This potentially may include opening the trench to pull the cables out or using a mechanical device to cut the cables and pull the cables from beneath the soils. Trenches to access the cable would then be filled with native soil, compacted, and revegetated.

Once the Project and transmission line are de-energized, the substations, steel structures, and control building would be disassembled and removed from the site along with all foundations and other concrete features. Unless Western identifies an alternate use for the switchyard, it would be deenergized and decommissioned as well. The fence and fence posts would be removed. The gravel placed at Project facilities would be removed and replaced with native rock, if surface rock is prevalent in the immediate area. BLM and Reclamation would be consulted to determine if the buried substation grounding grid should be removed or left in place. Assuming the transmission line no longer serves a purpose for the site, it would be disassembled and removed with the foundations. The tower structures would then be disassembled and removed. The areas around the poles, including interior roads for access, would be reclaimed per the POD Attachment 3, Integrated Reclamation Plan to the satisfaction of BLM and/or Reclamation.

The O&M building would be removed.

Foundations of the wind turbines, met towers, substation components, and transmission line structures would be removed in accordance with a BLM- and/or Reclamation-approved decommissioning plan. Fully removing the wind turbine foundations would require major excavation/disturbance at each tower site, as well as additional truck haul-away traffic. This could contribute to environmental impacts to native plants and wildlife, as well as a potential temporary reduction in air quality resulting from additional dust and truck emissions. Because the foundations are composed of non-leaching/natural elements that should not present a hazard to the environment and because of the extent of excavation required to remove deep foundations, removal of the sections of the foundations below 36 inches from the ground surface would cause greater environmental impacts than leaving them in place. Therefore, it is proposed that these portions of the foundations would not be removed. Shallow foundations, like that for the O&M building and substation/switchyard components, would be removed in their entirety. All concrete and steel debris would be removed from the site. Voids left by the removed concrete foundations would be filled with native material and restored to original grade.

To facilitate the various uses for the property, BLM and Reclamation may choose to leave the roads in place. If the roads are retained, maintenance of the roads would become the responsibility of BLM and/or Reclamation. Improvements to the access road that extend into the US 93 ROW would be coordinated with ADOT to determine if the improvements should be retained or reclaimed. When the necessary equipment and materials have been removed from an area and the road to that area is no longer needed, it would be reclaimed. For areas where equipment or materials are removed, those areas would be re-graded back to pre-construction contours (if possible). A Draft Decommissioning Plan is included as POD Attachment 11.

4.0 ENVIRONMENTAL CONSIDERATIONS

4.1 GENERAL DESCRIPTION OF SITE CHARACTERISTICS AND POTENTIAL ENVIRONMENTAL ISSUES

The Final EIS that was published in May 2013 contains the comprehensive environmental considerations considered for the Project. The application is available for download at the following URL:

http://www.blm.gov/az/st/en/prog/energy/wind/mohave.html

4.2 DESIGN CRITERIA

BP Wind Energy considered several design criteria when designing the facility and construction procedures to mitigate concerns. These mitigations are currently captured in the Final EIS but samples are included below:

- Alternate Land Locations – BP Wind Energy revised its proposed project area based upon comments received at public scoping meetings and environmental studies to a smaller overall footprint that was solely on Federal Lands.
- Use of Tubular Conical Turbine Towers – Tubular towers do not provide locations for raptors to perch, decreasing risk of collisions with turbine blades.
- Collection System – The collection system will be buried underground within turbine corridors inside the temporarily disturbed crane paths.
- Collection System – The collection system that connects the turbine corridors or ultimately connects to the substations will either be buried underground adjacent to the access roads or if place above ground will be built to Aviation Power Line Interaction Committee standards to minimize potential for avian impacts.

4.3 WILDLIFE MITIGATION

In addition to the mitigation measures identified in the Final EIS, the Eagle Conservation Plan/Bird Conservation Strategy and Bat Conservation Strategy or Attachments 12 and 13, respectively, are included to describe avoidance, minimization, and mitigation for birds and bats specifically.