BEATTY ENERGY CENTER PROJECT DESCRIPTION

MAY 2021

PREPARED FOR

Boulevard Associates, LLC
A Subsidiary of NextEra Energy Resources, LLC

PREPARED BY

SWCA Environmental Consultants

BEATTY ENERGY CENTER PROJECT DESCRIPTION

Prepared for

Boulevard Associates, LLC
A Subsidiary of NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, Florida 33408
Attn: Kathleen Campanella

Prepared by

SWCA Environmental Consultants
7210 Placid Street
Las Vegas, NV 89119
(702) 248-3880
www.swca.com

For Submittal to:

Bureau of Land Management
Tonopah Field Office
1553 South Main Street
P.O. Box 911
Tonopah, NV 89049

May 2021

CONTENTS

Name and Address of Applicant **1**
Proposed Project Description **1**
Plan of Development (POD) Schedule **1**
Technical and Financial Capability **1**
Proposed Project Location **3**
Proposed Project Setting **3**
Alternatives **4**
Authorizations and Pending Applications **4**
Project Need **4**
Proposed Project Characteristics **4**
Solar Energy Generation System 4
On-Site Substation, Switching Station, and Generation Tie-In Line 5
Energy Storage System 5
Ancillary Facilities 6
Access Road 6
Signage 6
Perimeter and Substation Fence 6
Lighting 7
Construction **7**
Schedule 7
Traffic 7
Construction Activities 8
Water Use 8
On-Site Eletrical Distribution **8**
Operation **8**
Decommissioning **8**
Environmental and Human Effects **9**
References Cited/Literature Cited **10**

Figures

Figure 1. Beatty Energy Center application area. 2

This page intentionally left blank.

NAME AND ADDRESS OF APPLICANT

Boulevard Associates, LLC

700 Universe Boulevard

Juno Beach, Florida 33408

Authorized Agent: Kathleen Campanella

Phone: (561) 694-3854

Email: Kathleen.Campanella@nexteraenergy.com

PROPOSED PROJECT DESCRIPTION

Boulevard Associates, LLC ("Applicant") is proposing to construct, operate, maintain, and decommission an approximately 800-megawatt ("MW") alternating current ("AC") solar photovoltaic ("Solar PV") facility and energy storage project (the Beatty Energy Center Project ["Proposed Project"]) on approximately 6,515 acres of public lands in Nye County, Nevada which are administered by the Bureau of Land Management ("BLM") Tonopah Field Office (Figure 1). An approximately 2-mile-long 138 or 230 kilovolt (kV) generation tie-in (gen-tie) line would extend from an on-site project substation through BLM and private land to the Valley Electric Association (VEA) Beatty substation. Gen-tie line alignment options are currently under development. The Applicant will pursue issuance of a Title V Federal Lands Policy and Management Act of 1976 right-of-way ("ROW") from the BLM for a 30-year term. In addition to the solar facility, the Proposed Project would include inverters, perimeter fencing, roads, and a supervisory control and data acquisition ("SCADA") system.

PLAN OF DEVELOPMENT (POD) SCHEDULE

The Applicant is currently preparing a POD per the BLM POD template and will submit the POD to the BLM Tonopah Field Office following the pre-application meeting.

TECHNICAL AND FINANCIAL CAPABILITY

Boulevard Associates, LLC is a subsidiary of NextEra Energy Resources LLC (NEER), a wholly-owned subsidiary of NextEra Energy Capital Holdings Inc., who owns, develops, constructs, manages, and operates primarily domestic electric-generating facilities that sell power into the wholesale energy markets. NEER is an operator and owner of over 20,000 megawatts (MW) of energy facilities in North America. As of 2019 NEER has 2,300 MW of solar facilities currently in operation including Mountain View Solar (20 MW) and Silver State South Solar (250 MW) located in Clark County, Nevada. NEER is currently building the 200 MW Dodge Flat Solar and 100 MW Fish Springs Solar projects in Washoe County, Nevada with end of 2021 operation dates.

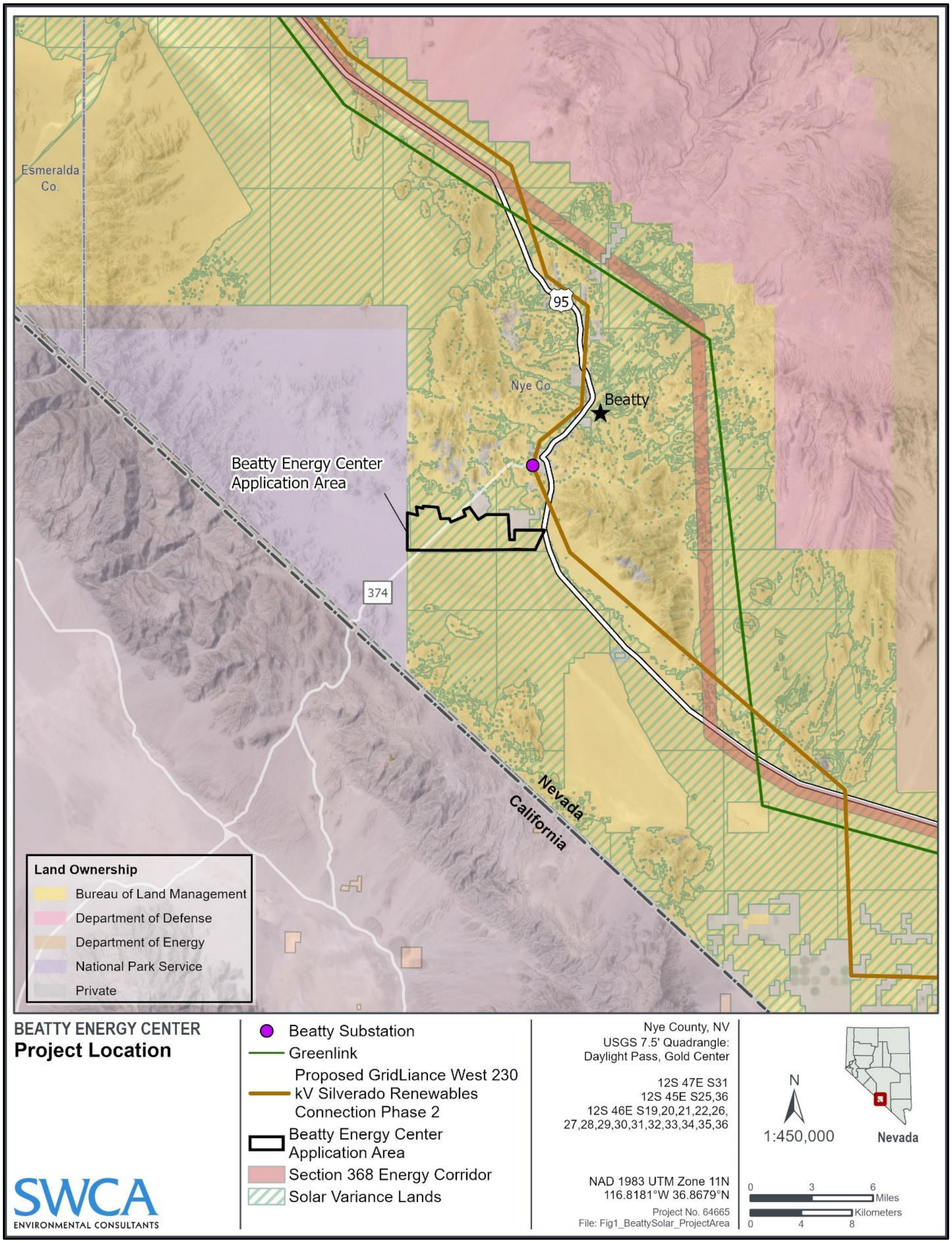

Figure 1. Beatty Energy Center application area.

PROPOSED PROJECT LOCATION

The Proposed Project would be on BLM land that is identified as variance lands in the Final Solar Energy Development Programmatic Environmental Impact Statement (BLM 2012), as shown on Figure 1. Lands identified as BLM exclusion lands would not be utilized.

The Proposed Project is found on Daylight Pass, and Gold Center, Nevada, U.S. Geological Survey 7.5- topographic quadrangles. The Project site is located on the north and south side of Highway 374, approximately 2.6 miles southwest of the Town of Beatty, Nevada, and west of U.S. Route 95. The legal land description for the solar facility that is on BLM-administered public lands is as follows.

Solar Facility:

Nye County, Beatty, Nevada, Mount Diablo, Meridian Nevada

T. 12 S., R. 45 E.,
- sec 25, E ½ SE ¼, and E ½ NE ½;
- sec 36, E ½ SE ¼, and E ½ NE ½.

T. 12 S., R. 46 E.,
- sec 19, S ½ SE ¼, and SE ¼ SW ¼;
- sec 20, SW ¼ SE ¼, and S ½ SW ¼;
- sec 21, SE ¼ SE ¼;
- sec 22, Lot 10;
- sec 26,
- sec 27, Lot 1 thru 6, SW ¼ NW ¼, and S ½;
- sec 28, S ½, SW ¼ NW ¼, and NE ¼;
- sec 29, S ½, NW ¼, NW ¼ NE ¼, and S ½ NE ¼;
- sec 30,
- sec 31,
- sec 32,
- sec 33,
- sec 34,
- sec 35,
- sec 36.

T. 12 S., R. 47 E.,
- sec 31, Lot 1 thru 4, E ½ NW ¼, E ½ SW ¼, and W ½ NE ¼.

PROPOSED PROJECT SETTING

The location of the Proposed Project has been selected because it provides a large, flat portion of land suitable for solar development near the proposed VEA Beatty Substation. Using the BLM Solar Energy Environmental Mapper (https://bogi.evs.anl.gov/solmap/portal/), the land is identified as available solar variance land with strong solar potential (BLM 2012). There is also a BLM Section 368 corridor approximately 7.5 miles to the east of the site.

ALTERNATIVES

Boulevard evaluated other private and BLM land with similar potential for interconnection; however, other nearby BLM land is identified as exclusion and other potential sites would have required substantially longer gen-tie lines which add environmental impact and cost. Further, there are not large enough private parcels available near the interconnection point to facilitate a project of this size.

AUTHORIZATIONS AND PENDING APPLICATIONS

- Silver State South Solar: Case File N-85801
- Mountain View Solar: Case File N-90989
- Dodge Flat Solar: Case File N-96241. See DOI-BLM-NV-C020-2019-0017-EA
- Fish Springs Solar: Case File NVN-98157. See DOI-BLM-NV-C020-2020-0012
- Yellow Pine Solar: Case File N 90788. See DOI- BLM-NV-S010-2017-0110-EIS
- Mason Valley Solar: NVN-100105
- Pine Nut Solar: NVN-100106
- Dodge Flat II Solar: NVN-100104

PROJECT NEED

The project would deliver renewable energy into the Nevada energy grid and support the state's RPS goal (50% by 2030).

PROPOSED PROJECT CHARACTERISTICS

The Proposed Project consists of the following components:

- PV solar energy generation system
- On-site substation, switching station, and 138 or 230 kV gen-tie line
- Energy storage system
- Ancillary facilities

Solar Energy Generation System

The Proposed Project includes an approximately 800-MW nameplate capacity solar power–generating installation built over an approximate 36 to 48-month period. The existing site would house all structures, including solar panels, tracking/support structures, inverters, SCADA system, energy storage facilities, and interconnection facilities (i.e., possible on-site substation and/or switching station), all of which would be enclosed by a perimeter security fence. Solar energy would be captured by an array of panels mounted to a single-axis tracking system (the final number of panels will be determined based on the selected panel manufacturer and size of the panel selected).

The high-efficiency commercially available PV panels convert incoming sunlight to direct current (“DC”) electrical energy (see photo at right). The panels are arranged in series to effectively increase output voltage to approximately 1,500 volts. These series chains of panels are called “strings” in industry terms and provide the basic building block of power conversion in the solar array. The strings are combined in the solar field via an aboveground or belowground DC collection system, and then further ganged together at the inverter stations, where the energy is converted to AC and then stepped to an intermediate voltage, typically 34.5 kV. The chosen PV panels would either be crystalline silicon or thin film and would be well suited for the desert environment due to their durability and reliability. PV panels may be single-sided or bi-facial.

The tracking system would be supported, when practical, by driven piers (piles) directly embedded into the ground and would be parallel to the ground. The system would rotate slowly throughout the day at a range of +/− 60 degrees facing east to west to stay perpendicular to the incoming solar rays so that production would be optimized.

Each tracker would have a maximum height of approximately 12 feet above grade, depending on the dimensions of the chosen panel. The minimum clearance from the lower edge of the panel to ground level would be approximately 18 to 24 inches, pending final design.

The inverter stations would be up to approximately 13 feet in height and perform three critical functions for the solar plant: (1) collect DC power in a central location, (2) convert the DC power into AC power, and (3) convert low-voltage AC power to medium-voltage AC power. The inverter stations are typically open air and well suited for desert environments. The stations consist of DC collection equipment, utility-scale inverters, and a low- to medium-voltage transformer. The output power from the inverter stations is then fed to the AC collection system via an aboveground or belowground collection system. This AC collection system would deliver the electricity to the on-site substation, where the voltage would be stepped up to the interconnection voltage.

On-Site Substation, Switching Station, and Generation Tie-In Line

The project proposes to interconnect to VEA’s Beatty substation. Depending on the final alignment and voltage available at Beatty substation, a 138 or 230 kV gen-tie approximately 2-miles-long would be constructed. The gen-tie line would originate at a new, approximately 10-acre on-site project substation that would step up power from the 34.5 kV solar collection lines and deliver it to the point of interconnection. At this time, the location of the on-site substation is unknown. A corridor of 500 feet either side of center line is proposed for evaluation, with a temporary use are of 200 feet and permanent ROW of 150 feet.

Energy Storage System

The project would use an energy storage system (batteries) that would have a capacity no larger than the solar facility (approximately 800 MW) and would be connected using either an AC- or DC-coupled system. Selection of an AC- or DC-coupled system is ultimately determined through off-taker preference and contract terms.

The AC-coupled system would be connected to a bi-directional inverter to convert DC energy to AC energy, allowing for energy to flow in or out of the batteries in order to provide charge and discharge. This AC energy would be coupled to the PV array at the 34.5-kV busbars. Power switches and relays would protect the system. The system would consist of several housing units, similar to shipping containers. The containers would be placed on concrete pads and would occupy up to 50 acres, depending on the size of the system contracted and technology selected. The equipment enclosures and buildings would be located next to the Project Substation and operations and maintenance building.

If a DC-coupled system is used, battery units would be stored in numerous smaller containers. Those containers would make use of the solar inverters, feeding them in DC power. Therefore, the battery containers would be distributed throughout the solar arrays, adjacent to their respective inverters. The containers would be similar in size (20–40 feet long) to the solar inverter skids. The battery and solar inputs would be metered separately prior to signal inversion. The charge and discharge of the DC-coupled batteries would be controlled by signal from the inverters. As is typical for the industry, inverters would be controlled by a central control system. The protections to the batteries would be internal to the battery management systems and control boxes located within the containers and inverters.

A battery supplier has not been selected at this time due to changing markets; however, past suppliers have included LG Chem, Samsung, BMW, Tesla, and Lishen. Inverter suppliers would likely include ABB, Parker Hannifin, S&C Electric, Eaton, Princeton Power, DynaPower, Power Electronics, and Ideal Power. The final battery supplier(s) would be selected prior to project construction and would be subject to an industry-standard pre-qualification process.

Ancillary Facilities

Access Road

Primary access to the Project would be from U.S. Route 95 and Highway 374 which is accessed from U.S. Route 95 in the Town of Beatty. Primary Proposed Project access road(s) would typically be 24 feet wide and composed of either 6 inches of type II class B aggregate base compacted to 95% maximum dry density or asphalt concrete.

Internal access roads to the on-site substation, switching station, and energy storage system would consist of 20-foot-wide roads with compacted gravel or dirt. Internal maintenance pathways between solar modules would be approximately 16 feet wide.

Signage

A small sign would be installed at the site's main entry to the Proposed Project. The sign would be no larger than 8 feet by 4 feet and would read "Beatty Energy Center." In addition, required safety signs would be installed identifying high voltage within the facility on the fence near the entrance, as well as information for emergency services.

Perimeter and Substation Fence

The perimeter of the Project Site would be enclosed by a 6-foot-tall chain-link fence topped with a foot of three-strand barbed wire. Access into the Project Site would be provided through drive-through gates. The main purpose of the fence would be to prevent unauthorized access to the site. The total height, above grade, of the fence would be approximately 7 feet. The perimeter around the proposed substation would be enclosed by a 7-foot-tall chain-link fence, topped with a foot of three-strand barbed wire. Cattle guards would be installed with gates as necessary.

Lighting

Low-elevation (< 14-foot) controlled security lighting would be installed at primary access gates, the on-site substation, and the entrance to the energy storage structure(s). The lighting is only switched on when personnel enter the area (either motion-sensor or manual activation [switch]). All safety and emergency service signs would be lit when the lights are on. The lighting would be shielded so that the light is directed downwards. Electrical power to supply the access gate and lighting would be obtained from the local electricity provider. Lighting would only be in areas where it is required for safety, security, or operations. All lighting would be directed on site and would include shielding as necessary to minimize illumination of the night sky or potential impacts to surrounding viewers.

CONSTRUCTION

Schedule

The Proposed Project is intended to be constructed in a single phase; however, it may be developed in multiple phases depending on final power purchase agreements. The total construction duration assuming a single phase is planned to take approximately 36 to 48 months from notice to proceed to final connection and commissioning. If multiple phases are constructed, total construction length would be extended. It is anticipated that the work would be completed in 8- to 10-hour shifts, with a total of five shifts per week (Monday–Friday). Overtime and weekend work would be used only as necessary to meet scheduled milestones or accelerate schedule and would comply with all applicable Nevada labor laws.

Traffic

For an 800-MW project, the peak daily construction employees would be approximately 600 daily. In addition to the approximately 600 maximum daily workers traveling to the site, there would be up to approximately 35 truck trips per day at peak construction activity (when trenching and system installation phases overlap). A total of up to 625 trips per day are anticipated during peak construction activities, assuming a worst-case scenario whereby no carpooling occurs, though it is likely that carpooling would occur.

Delivery of materials and supplies would reach the site via on-road truck delivery via U.S. Route 95, Highway 374, and the Project access road. The majority of the truck deliveries would be for the PV system installation and any aggregate material that may be required for road base.

The heaviest delivery loads to the site would consist of the tracker structures, rock truck deliveries, and the generator step up. These loads would typically be limited to a total weight of 80,000 pounds, with a cargo load of approximately 25 tons or 50,000 pounds of rock or tracker structures. The generator step up could be up to 160,000 pounds. Typically, the rock is delivered in “bottom dump trucks” or “transfer trucks” with six axles and the tracker structures would be delivered on traditional flatbed trucks with a minimum of five axles. Low-bed transport trucks would transport the construction equipment to the site as needed. The size of the low-bed truck (number of axles for weight distribution) would depend on the equipment transported.

Construction Activities

Prior to initiation of grading operations, the construction areas will be cleared and grubbed of vegetation and miscellaneous debris. The primary grading activities will be associated with the development of access roads, with lesser quantities associated with the Project substation, and the associated foundations. For these areas, grading will consist of the excavation and compaction of earth to meet the design requirements. Grading within the solar field will match existing grades as close as possible. The existing contours will need to be smoothed out to remove existing washes for access purposes.

Water Use

Water consumption during construction would be utilized for dust suppression and earthwork over an approximately 36 to 48-month period. Panel rinsing is expected to be conducted up to four times annually as performance testing and weather and site conditions dictate. Construction water and operational water would either come from drilling a well on site or trucking in water from a nearby source.

ON-SITE ELETRICAL DISTRIBUTION

A distribution line to the project substation would be needed to provide construction power and backup power to the solar and energy storage facilities for lighting and communications purposes, as well as to the groundwater well pumps if needed. It is anticipated that would come from the existing line that traverses the area. Alternatively, generators could be used to provide construction and backup power.

OPERATION

The Proposed Project would be unmanned, and no operations and maintenance building would be constructed. Operations would be monitored remotely via the SCADA system, and periodic inspections and maintenance activities would occur. During operations, solar panel washing is not expected to be needed, but would not occur more than one to four times per year. Conditions that may necessitate increased wash requirements include unusual weather occurrences, forest fires, local air pollutants, and other similar conditions. A general labor force (up to 30 individuals) may assist in the panel cleaning. Panel washing for a project of this size would require approximately 40 days to complete per wash cycle. If groundwater proves unsuitable for washing, water trucks would be used to deliver water from a local purveyor.

DECOMMISSIONING

The PV system and energy storage system (including structure) would be recycled when the Proposed Project’s life is over. Most parts of the proposed system are recyclable. Panels typically consist of silicon, glass, and a metal frame. Batteries include lithium-ion, which degrades but can be recycled and/or repurposed. Site structures would include steel or wood and concrete. All of these materials can be recycled. Concrete from deconstruction is to be recycled. Local recyclers are available. Metal and scrap equipment and parts that do not have free-flowing oil may be sent for salvage.

Fuel, hydraulic fluids, and oils would be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks/vessels would be rinsed and transferred to tanker trucks. Other items that are not feasible to remove at the point of generation, such as smaller containers, lubricants, paints, thinners, solvents, cleaners, batteries, and sealants, would be kept in a locked utility building with integral secondary containment that meets Certified Unified Program Agencies and Resource Conservation and Recovery Act requirements for hazardous waste storage until removal for proper disposal and recycling. It is anticipated that all oils and batteries would be recycled at an appropriate facility. Site personnel involved in handling these materials would be trained to properly handle them. Containers used to store hazardous materials would be inspected regularly for any signs of failure or leakage. Additional procedures would be specified in the hazardous materials business plan. Transportation of the removed hazardous materials would comply with regulations for transporting hazardous materials, including those set by the U.S. Department of Transportation, Nevada Department of Transportation, U.S. Environmental Protection Agency, Nevada Highway Patrol, and Nevada State Fire Marshal.

Upon removal of the Proposed Project components, the site would be left as disturbed dirt generally consistent with the existing (pre-development) conditions.

ENVIRONMENTAL AND HUMAN EFFECTS

The project is located in a rural area approximately 2.6 miles away from the Town of Beatty. The project is not anticipated to have any substantial effects on air quality, visual resources, water resources, noise, vegetation, soils, wildlife, or historic/archaeological resources/properties. No hazardous materials are expected to be used, produced, transported, or stored on or within the ROW; however, further analysis will be completed in the POD and NEPA process. Grazing allotments are within the project vicinity and early coordination with active permittees will occur in accordance with BLM regulation 43 CFR 4110.4-2(b).

REFERENCES CITED/LITERATURE CITED

BLM (U.S. Bureau of Land Management). 2012. Final Solar Energy Development Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States. July 2012. https://www.energy.gov/nepa/downloads/eis-0403-final-programmatic-environmental-impact-statement.