EXHIBIT B
FACILITY DESCRIPTION

OAR 345-021-0010(1)(b)

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FIGURE

B-1 Facility Vicinity Map

OAR 345-021-0010(1)(b) *Information about the proposed facility, construction schedule and temporary disturbances of the site, including:*

B.1 DESCRIPTION OF PROPOSED FACILITY

B.1.1 Electrical Generating Capacity

OAR 345-021-0010(1)(b)(A)(ii) *A description of the proposed energy facility, including as applicable: (i) The nominal electric generating capacity and the average electrical generating capacity, as defined in ORS 469.300.*

Response: Madras PV1, LLC (Applicant) proposes to construct and operate the Madras Solar Energy Facility (Facility) in Jefferson County, Oregon (see Figure B-1, Facility Vicinity Map). The Facility will consist of approximately 63 megawatts (MW) of alternating current nominal and average electric generating capacity.[1]

The Facility will generate electricity using solar photovoltaic (PV) modules connected to inverters, transformers, and a substation. PV modules (also known as "panels" but referenced herein as modules for consistency) contain solar cells that generate electricity by means of the PV effect, in which the semiconductor materials found inside the solar cells interact with photons from the sun to generate an electrical current that can be collected and supplied to the power grid. The solar modules will be mounted onto a metal racking structure and grouped into arrays (i.e., modules wired in series and in parallel). The electric output of each array feeds into an inverter, which takes the direct current (DC) output of the solar modules and turns it into the alternating current (AC) used by the electric grid. This output of the inverters is then "stepped up" in voltage to 34.5 kilovolts (kV), before being conveyed to the proposed onsite Facility substation via direct buried cables. At the Facility substation, the voltage will again be stepped up to 230 kV for delivery via pole-mounted, overhead cables to the utility-owned, three-breaker ring-bus point of interconnection (POI) switching station. The POI switching station will serve as the location of common coupling with the existing Portland General Electric (PGE) Pelton Dam to Round Butte 230-kV transmission line. PGE will own and operate the switching station.

The Facility may also include a battery storage system for stabilizing the solar resource through dispatch of either short-term (minutes) or long-term (hours) energy stored in the battery system.

While solar modules, racking, inverters, and other components are mostly interchangeable and substantially similar to other products of the same kind, manufacturers are continually updating and refining existing models. This, combined with the fact that prices for specific components tend to decline over time, means that final specifications of selected models and manufacturers typically are not known until shortly before construction. As such, the descriptions provided herein are representative of typical products, but the precise description and number of individual components may change.

B.1.2 Major Components, Structures, and Systems

OAR 345-021-0010(1)(b)(A)(ii) *Major components, structures and systems, including a description of the size, type and configuration of equipment used to generate electricity and useful thermal energy.*

Response:

Solar Modules. The solar PV modules will be installed to form approximately 60 module blocks of approximately 1.05 MW of alternating current each. A full-sized row within a given array is 400 feet long and 1,960 millimeters (6.4 feet) wide, with approximately 8 feet of clear space between each row. The crystalline silicon modules themselves will be approximately 2,000 millimeters (6.6 feet) long by 1,000 millimeters (3.3 feet) wide and approximately 40 millimeters (0.13 foot) thick. The final number of modules will be determined by power ratings (in Watts) of the specific modules chosen prior to construction. Additional components of each module block include the tracking system/racks, posts, cabling, inverters, and transformers. Additional detail on each component is provided in the paragraphs below.

[1] Based on the Oregon Revised Statute 469.300(4) definition of average generating capacity for all energy facilities besides wind and geothermal.

Tables and Trackers. The solar PV modules will sit atop a steel single-axis tracking system, which will consist of metal table frames or “racks” with a rotating drive gear that can rotate up to 60 degrees in an east to west direction such that the modules track the sun throughout the day in order to increase solar production. The modules will be approximately 4 to 5 feet off the ground when fully stowed. When fully rotated, the highest point of the module will be approximately 8 feet off the ground, while the minimum distance to the ground when fully rotated will range from 1 to 2 feet.

Posts. Each tracker table will be bolted to steel posts driven into the ground to serve as the foundation. The post depths will vary depending on soil conditions, which will be confirmed via a detailed geotechnical investigation, but are typically driven to a depth of at least 8 feet below the surface. Approximately 1,000 posts will be installed per module block or approximately 30,000 posts for the up-to-63-MW Facility. Post locations will be determined by the ground-coverage ratio (GCR), which is the ratio of the area of the modules to the total area. The GCR for the Facility is currently planned to be approximately 39 percent, meaning that the area occupied by the modules (when fully rotated) will be approximately 39 percent of the area within the array. A ballasted design may be used in portions of the site featuring significant subsurface rock formations, which involves mounting the tracker tables on foundations embedded in concrete blocks (ballasts) that will rest on the surface of the ground rather than on posts driven into the ground.

Cabling. Electrical cables connecting the modules to each other are typically mounted to the back of the modules using cable trays or wire harnesses. Several rows of modules are then collected in a combiner box located at the end of one of the rows. Other electrical cables within arrays will be buried to a depth of at least 3 feet.

Inverters, Transformers, and Switchgear. The direct current output from the PV modules will be combined in parallel in combiner boxes and, from the combiner boxes, it will be converted into alternating current via the inverters, the output of which will be fed into transformers that step up in voltage to 34.5 kV. The inverters and transformers will be mounted on a concrete pad measuring approximately 20 feet by 40 feet, with a maximum height of approximately 10 feet (including the inverters and transformers). The combination of the inverters and transformers is sometimes referred to as a power conversion station (PCS). A total of 19 PCSs are proposed in each of the two site plans described in Section B.1.3. Each PCS is located within the interior of the arrays. Each tracker column will be equipped with on-board batteries that will act as a backup power source to rotate the tracker units into the stowed position during high wind events and a loss of the primary 230-kV connection to the electrical grid. The transformers will then convey the power via 34.5-kV underground collector lines to the switchgear, which consists of an industry-standard electrical protection device that controls, protects, and isolates electrical equipment. The metal-clad switchgear enclosures typically measure approximately 33 feet long by 12 feet wide and 11 feet high.

B.1.3 Site Plan

OAR 345-021-0010(1)(b)(A)(iii) *A site plan and general arrangement of buildings, equipment and structures.*

Response: The Facility is proposed with two distinct conceptual site plans showing the proposed general arrangement of buildings, equipment, and structures (see Figures C-2A and C-2B in Exhibit C). The difference between the two site plans is the inclusion of a battery storage system. The Facility may be constructed and operated without any battery storage, which is shown in the site plan on Figure C-2A. Alternatively, the Facility may be developed with a battery storage system housed within a maximum of 120 battery storage containers. The maximum battery storage scenario with up to 120 battery storage containers is shown in the site plan on Figure C-2B. The constructed Facility may have an amount of battery storage in between the two scenarios presented on Figures C-2A and C-2B, but not more than the 120 battery storage containers shown on Figure C-2B. Section B.2 provides more detail on the potential battery storage system. The Facility disturbance areas presented in Table C-1 of Exhibit C are inclusive of any amount of battery storage that may be developed.

B.1.4 Spill Containment

OAR 345-021-0010(1)(b)(A)(iv) *Fuel and chemical storage facilities, including structures and systems for spill containment*

Response: The transformers are the only structures that contain oil and an appropriate secondary spill containment system will be integrated into the design, construction, and operation protocols of the main transformer within the Facility substation. The step-up transformers sitting on the concrete pads as part of the PCS will not have secondary containment as they will use environmentally acceptable ester oil (EPA, 2011).

B.1.5 Fire Prevention

OAR 345-021-0010(1)(b)(A)(v) *Equipment and systems for fire prevention and control*

The Facility components will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards and will not pose a significant fire risk. The O&M enclosure will have basic firefighting equipment for use onsite during maintenance activities, consisting of shovels, beaters, portable water for hand sprayers, fire extinguishers, and other equipment. The Facility substation will have sufficient spacing between equipment to prevent the spread of fire.

The fenced perimeter will provide a noncombustible, defensible space clearance. The limited vegetation during operations within the solar area will also help to minimize spread of fire. Any potential fires inside the solar array will be controlled by trained Facility staff who will be able to access the Facility around the clock. These measures will help keep external fires out or internal fires in.

As described in Section B.2, the Facility may include a battery storage system with either lithium-ion or flow battery technology. The battery storage system, if included in the Facility, will be housed within container structures similar to shipping containers, and will be outfitted with chemical fire suppression capabilities (see Section B.2.2.4, Battery Storage Fire Suppression).

The chemicals used in lithium-ion batteries generally are nontoxic, but do present a flammability hazard. Lithium-ion batteries are susceptible to overheating and require cooling systems, especially at the utility scale (LAZARD, 2016). The gas released by an overheating lithium-ion cell is mainly carbon dioxide. The electrolyte solution, usually consisting of ethylene or propylene, may also vaporize and vent if the cell overheats (Battery University, 2017). The Applicant will implement the following fire prevention and control methods to minimize fire and safety risks if lithium-ion batteries are used:

- Transportation of lithium-ion batteries is subject to 49 *Code of Federal Regulations* (CFR) 173.185 (“Lithium cells and batteries”) under the Pipeline and Hazardous Materials Safety Administration, Department of Transportation. This regulation contains requirements for preventing a dangerous evolution of heat; short-circuits; damage to the terminals; and batteries coming into contact with other batteries or conductive materials.
- The batteries will be stored in completely contained, leak-proof modules. Inadvertent spills within the modules are unlikely.
- O&M staff will conduct inspections of the battery storage systems according to the manufacturer’s recommendations, which are assumed to be monthly inspections.
- An emergency contingency plan may be developed with response procedures in the event of an emergency such as a fire. The Applicant will work with the relevant authorities, including the Jefferson County Fire District, to develop the plan once the final system design has been completed and before construction begins. The plan will cover response procedures that take into account the dry nature of the region and address risks on a seasonal basis. The plan will also specify communication channels the Applicant intends to pursue with local fire protection agency personnel, for example, annual meetings to discuss emergency planning, and invitations to observe any emergency drill conducted at the Facility.
- Adherence to the requirements and regulations, personnel training, safe interim storage, and segregation from other potential waste streams will minimize any public hazard related to transport, use, or disposal of batteries.

Flow batteries do not present a flammability hazard and therefore do not require the cooling systems included with lithium-ion batteries (LAZARD, 2016).

During construction, the construction contractor will be required to provide firefighting equipment similar to the firefighting equipment for the O&M enclosure (see Section B.2.2.3).

B.1.6 Thermal Power and Liquefied Natural Gas Plants

OAR 345-021-0010(1)(b)(A)(vi) *For thermal power plants:*

(I) *A discussion of the source, quantity and availability of all fuels proposed to be used in the facility to generate electricity or useful thermal energy.*

(II) *Process flow, including power cycle and steam cycle diagrams to describe the energy flows within the system.*

(III) *Equipment and systems for disposal of waste heat.*

(IV) *The fuel chargeable to power heat rate.*

OAR 345-021-0010(1)(b)(A)(vii) *For surface facilities related to underground gas storage, estimated daily injection and withdrawal rates, horsepower compression required to operate at design injection or withdrawal rates, operating pressure range and fuel type of compressors*

OAR 345-021-0010(1)(b)(A)(viii) *For facilities to store liquefied natural gas, the volume, maximum pressure, liquefaction and gasification capacity in thousand cubic feet per hour.*

Response: The Facility is not a thermal power plant nor does it store liquefied natural gas. Therefore, these rules are not applicable.

B.2 RELATED OR SUPPORTING FACILITIES

OAR 345-021-0010(1)(b)(B) *A description of major components, structures and systems of each related or supporting facility.*

The related or supporting facilities described in this response include the 34.5-kV collector lines, battery storage system, onsite Facility substation, POI switching station, O&M enclosure, service roads, security fencing and gates, and construction areas. Figure C-1 in Exhibit C shows the layout of these facilities within the site boundary.

B.2.1 34.5-kV Collector Lines

High-capacity 34.5-kV collector lines will carry power from the switchgear to the proposed onsite Facility substation. The 34.5-kV medium-voltage conductors will run underground for improved reliability. The collector lines will be directly buried at a depth of approximately 3 feet; however, some portion of the conductors may also be above ground. Exact collector line routing within the Facility site boundary is still being decided, but the Applicant anticipates using approximately 21,000 feet (approximately 4 miles) of collector line.

B.2.2 Battery Storage System

An integrated battery storage system is being evaluated for inclusion in the Facility. Battery storage technology can be used to: (1) smooth the intermittent generation of solar PV arrays; (2) store energy for later delivery during periods of peak demand; or (3) enhance grid integration services via voltage support, frequency regulations, and ramp control. The Applicant will choose a battery storage technology based on the intended use specified in the power purchase agreement. The battery storage system could be capable of storing up to 240 megawatt-hours (MWH) of solar energy generated by the Facility and will not increase the power output of the Facility above 63 MW.

The Facility will feature a DC-coupled battery storage system. A DC-coupled system is only applicable to energy plants that already have DC-AC inverters utilized by the battery system. DC-coupled energy storage includes DC-DC converters that sit between the batteries, the PV array, and the inverters. The DC-DC converters capture solar PV energy that would otherwise be “clipped” or lost by the inverters, and regulate the voltage in order to control the amount of energy going into or coming from the batteries. The battery banks are charged from the DC-DC converter with energy from the PV array. Energy that is discharged from the batteries is delivered back into the DC-DC converter and then fed into the inverters. DC-coupled storage can only be used to deliver energy to the grid, and cannot accept energy from the grid for storage.

The Facility is considering one of two battery options: lithium-ion batteries or flow batteries. Both options could hold up to 240 MWH of power in a series of independent containers located adjacent to the solar PV inverter stations. The batteries would be housed inside a container similar to a shipping container measuring approximately 8 feet wide by 40 feet long by 9.5 feet high and located within the interior of the arrays alongside the associated PCS. The actual footprint of the battery storage system could vary based on the final design and battery technology.

B.2.2.1 Battery Storage Options

Lithium-ion Batteries. Lithium-ion batteries are the most common type of utility-scale battery storage system technology. As of 2016, lithium-ion batteries provided more MWs of storage for grid-scale applications than all other battery storage technologies combined (Hart and Sarkissian, 2016). Lithium-ion batteries are a type of solid-state rechargeable battery where lithium-ions, suspended in an electrolyte, move from negative to positive electrodes and back when recharging. A variety of chemistries fall under the lithium-ion term, each with varying performance, cost, and safety characteristics (Energy Storage Association, 2017a). Lithium-ion batteries have a typical lifespan of 5 to 10 years and will experience a consistent degradation of performance over their timeframe. Typically, lithium-ion batteries are used in utility-scale applications when rapid, short-term (minute) deployments of power are needed. For example, lithium-ion batteries can smooth the intermittent generation from solar modules to deliver consistent and predictable power to the grid.

Flow Batteries. Flow batteries are an emerging technology for utility-scale battery storage systems. The term "flow battery" refers to any battery where two electrolyte solutions, one with positive ions and the other with negative ions, are contained in separate tanks and the migration of electrons from one solution to the other, typically through a membrane, creates electricity. The different classes of flow batteries are reduction-oxidation (redox) flow, hybrid, and membrane-less (Energy Storage Association, 2017b). Like lithium-ion batteries, each class of flow battery includes a variety of chemistries with different characteristics. Flow batteries typically have a maximum lifespan of 10 to 20 years, but do not degrade over time like conventional batteries. During normal operations, the electrolyte solutions are recovered and reused during the recharging process. The chemicals used generally are not highly reactive or toxic substances. Examples of electrolyte solutions could range from food-grade substances used in ViZn Energy battery systems to zinc bromine in a system under development by Primus Power.

B.2.2.2 Battery Storage Components

The battery storage system will be designed to include the following components:

- Battery storage equipment, including batteries and racks or containers, DC-DC converters, DC switchboards.
- Balance of plant equipment (more advanced systems required for lithium-ion), which may include low-voltage electrical systems, fire suppression, heating, ventilation, and air-conditioning systems, building auxiliary electrical systems, and network/SCADA systems.
- Cooling system (more advanced systems required for lithium-ion), which may include a separate chiller or condenser unit located outside the battery racks with chillers, pumps, and heat exchangers.
- Standard-sized shipping containers for placement of both the lithium-ion and flow batteries. The containers are approximately 8 feet wide by 40 feet long by 9.5 feet high on a concrete slab located within the interior of the arrays alongside the associated PCS. Each container holds the batteries, a SCADA system, a cooling system (if needed), and a fire prevention system.

The battery storage system can be scaled to the desired capacity by increasing the number of containers. Figure C-2B in Exhibit C shows the maximum number (120) of containers that would be used in the Facility.

B.2.2.3 Battery Storage Operations and Maintenance

The batteries and other materials for the battery storage system will be manufactured offsite and transported to the Facility by truck. Defective or decommissioned parts will be disposed of or recycled in compliance with applicable regulations such as 49 CFR 173.185, which regulates the transportation of lithium-ion batteries.

The O&M activities will mainly consist of minimal procedures that do not require tampering with the battery cell components. Flow batteries will require replacement of the electrolyte solutions approximately every 10 to 20 years, whereas lithium-ion systems require more frequent replacement of the batteries every 5 to 10 years.

Both battery storage systems will be stored in completely contained, leak-proof modules and inadvertent spills within the battery storage modules are unlikely. O&M staff will conduct inspections of the battery storage systems according to the manufacturer's recommendations, most likely on a monthly basis.

A spill prevention, control, and countermeasure plan (SPCC Plan) and hazardous materials business plan will be developed to manage, prevent, contain, and control potential releases, and provide provisions for quick and safe cleanup of hazardous materials. The Applicant will retain a contractor to prepare the SPCC Plan before construction begins. The contractor's SPCC Plan will comply with the Council standards set forth in 40 CFR 112 (Oil Pollution Prevention), including the safe cleanup of hazardous materials. Attachment B-1 contains a proposed outline of the SPCC Plan to support the Department's review of compliance with applicable Council Standards

As stated in Section B.1.5 (Fire Prevention), an emergency contingency plan may also be developed with response procedures in the event of a fire or other emergency.

B.2.2.4 Battery Storage Fire Suppression

If the Applicant decides to use lithium-ion batteries, the most likely type will contain lithium iron phosphate (LFP). Compared to other common lithium-ion battery types for grid-scale energy storage, including lithium nickel manganese cobalt oxide and lithium nickel cobalt aluminum oxide, LFP is the most stable (Lindsay 2018).

The Applicant's preferred LFP battery manufacturer deploys five internal Stat-X 1500E aerosol fire suppression units inside each battery storage container. Each of the five fire suppression units will be connected to a photo/heat detector. The fire suppression units will be part of a redundant system designed to prevent fire and facilitate safe operation of the battery storage system. Other facets of the redundant system include selection of a stable chemistry, proper module design and spacing, design of an advanced battery management system that provides real-time information on each cell's operating condition, and automatic adjustments to ensure that battery management system operating limits are not exceeded.

The final design of the battery storage system will comply with the most current adopted version of the National Fire Protection Association's *NFPA 855: Standard for the Installation of Stationary Energy Storage Systems* (NFPA, 2020).

B.2.3 Onsite Facility Substation and Associated Equipment

The proposed onsite Facility substation will be situated on approximately 2 acres of land and will include the following typical equipment:

- Incoming 34.5-kV feeder breakers
- Main step-up transformer (from 34.5 kV to 230 kV)
- Control enclosure
- Dead-end and shield pole
- Support steel
- Auxiliary station service transformer
- Circuit breaker

- Motor-operated disconnect switch

This Exhibit provides estimated heights for the various Facility components except for the substation and POI switching station. Height information is not provided for these two components because they have not been designed and each includes various pieces of equipment. Additionally, design of the POI will incorporate input from PGE because PGE will likely own and operate the POI. Components within the substation typically range up to 10 feet in height.

The H-frame poles that will hold the overhead cables connecting the substation to the POI will be the tallest components within the substation and POI. The POI will likely be located within the existing right-of-way for the PGE transmission line. The Facility substation will be adjacent to the edge of the right-of-way and the two will connect via the pole-mounted, overhead cables. The overhead cables will extend no more than approximately 200 feet (likely less than this distance) between the substation and POI. The overhead cables will be on approximately four H-frame poles that may be up to 80 feet in height. These four poles will be located within the substation and POI footprints.

B.2.4 Point of Interconnection Switching Station

The Facility will be connected via a new three-breaker, ring-bus switching station at the selected POI on PGE’s system. The POI switching station will include the following equipment to enable the interconnection:

- Control house
- Circuit breaker
- Metering, communications, protection, and control
- Circuit switcher
- Protection and control panel
- SCADA and metering equipment

B.2.5 Operations and Maintenance Enclosure

The O&M enclosure will consist of a single, 8.5-foot-tall, 320-square-foot dry-storage shed located within the Facility site boundary. Restroom facilities will be provided in the form of temporary portalets, while any required water will be trucked in from offsite sources. Electric power and telephone will be provided via local service providers.

B.2.6 Service Roads, Security Fencing, and Gates

The Facility will be fenced with a security fence, typically consisting of chain-link or notch-style fencing. The security fence will either be 6 feet tall with two strands of barbed wire, or 8 feet tall with no barbed wire. The security fence will feature gated access at several points. Service roads are not anticipated to be required, given that site conditions should allow the site to be accessible by maintenance vehicles year-round; however, the final configuration of any potential service roads will be determined in conjunction with Jefferson County Fire District #1.

The Facility will have three main points of access from SW Elk Drive for construction and operation as shown on the conceptual site plan (see Figures C-2A and C-2B in Exhibit C). Two points of access will be 20-foot-wide gravel access road segments into the southern end of the Facility. One of these access points extends into the portion of the Facility west of SW Elk Drive and the other extends into the southern end of the Facility east of SW Elk Drive. The graveled entrance/exit point west of SW Elk Drive ends within the Facility after approximately 120 feet and the graveled entrance/exit point east of SW Elk Drive ends within the Facility after approximately 140 feet. At the end of the access road segments, internal circulation will be via the 16- to 20-foot-wide clear spaces between the rows of solar modules (see Figures C-2A and C-2B).

The main access road to the construction laydown (also known as staging) area, O&M enclosure, Facility substation, POI, and northern end of the Facility will be a 24-foot-wide graveled road extending east from SW Elk Drive (see Figures C-2A and C-2B) for approximately 960 feet before ending at the Facility's substation. Again, access to various areas around the Facility will be via the 16- to 20-foot-wide clear spaces between the rows of solar modules.

B.2.7 Construction Areas

During construction, temporary laydown areas within the Facility site boundary will be used to stage construction activities and organize equipment and supplies. A temporary construction trailer will be installed onsite, consisting of an office space, storage, and breakroom facilities. A gravel parking and storage area will be located adjacent to the construction trailer.

B.2.8 Temporary Concrete Batch Plant

If a temporary concrete batch plant is needed for construction, it will be located within the Facility site boundary. The batch plant may be used for aggregate storage and concrete preparation for foundations. Any rock for construction purposes will be obtained from existing permitted quarries. Associated rock-crushing activities may occur at the quarry as needed, before transporting material to the temporary batch plant. Operation of the batch plant will meet applicable local and state ordinances and codes.

B.3 DIMENSIONS OF MAJOR STRUCTURES AND FEATURES

OAR 345-021-0010(1)(b)(C) T*he approximate dimensions of major facility structures and visible features.*

Response: Each standard block of solar modules will be approximately 375 feet wide by 400 feet long; however, micrositing considerations along the perimeter of the Facility will necessitate reductions in standard block size. As stated under Major Components, Structures, and Systems above, when mounted on the tables and tracking system, the PV solar module will be approximately 4 to 5 feet off the ground when level and, when fully rotated, the highest point will be approximately 8 feet off the ground. The maximum height of the modules and inverters will be approximately 10 feet tall. Internal service roads will be located throughout the module blocks for construction and maintenance. Battery containers, if deployed, measure 8 feet wide by 40 feet long by 9.5 feet high, and will be located within the interior of the arrays.

B.4 TRANSMISSION LINE

OAR 345-021-0010(1)(b)(D) *If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a transmission line or pipeline that, by itself, is an energy facility under the definition in ORS 469.300, a corridor selection assessment explaining how the applicant selected the corridor(s) for analysis in the application. In the assessment, the applicant shall evaluate the corridor adjustments the Department has described in the project order, if any. The applicant may select any corridor for analysis in the application and may select more than one corridor. However, if the applicant selects a new corridor, then the applicant must explain why the applicant did not present the new corridor for comment at an informational meeting under OAR 345-015-0130. In the assessment, the applicant shall discuss the reasons for selecting the corridor(s), based upon evaluation of the following factors:*

i) Least disturbance to streams, rivers and wetlands during construction.

(ii) Least percentage of the total length of the pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife.

(iii) Greatest percentage of the total length of the pipeline or transmission line that would be located within or adjacent to public roads and existing pipeline or transmission line rights-of-way.

(iv) Least percentage of the total length of the pipeline or transmission line that would be located within lands that require zone changes, variances or exceptions.

(v) Least percentage of the total length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040.

(vi) Least disturbance to areas where historical, cultural or archaeological resources are likely to exist.

(vii) Greatest percentage of the total length of the pipeline or transmission line that would be located to avoid seismic, geological and soils hazards.

(viii) Least percentage of the total length of the pipeline or transmission line that would be located within lands zoned for exclusive farm use.

Response: The proposed Facility does not involve construction of a new transmission line, as it will interconnect with an existing transmission line that runs through the site. Therefore, this rule is not applicable.

B.4.1 Length

OAR 345-021-0010(1)(b)(E)(i) *If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a transmission line or pipeline of any size:*

(i) The length of the pipeline or transmission line.

Response: The proposed Facility does not involve construction of a new transmission line, as it will interconnect with an existing transmission line that runs through the site. Therefore, this rule is not applicable.

B.4.2 Right-of-Way

OAR 345-021-0010(1)(b)(E)(ii) *The proposed right-of-way width of the pipeline or transmission line, including to what extent new right-of-way will be required or existing right-of-way will be widened.*

Response: The proposed Facility does not involve construction of a new transmission line, as it will interconnect with an existing transmission line that runs through the site. Therefore, this rule is not applicable.

OAR 345-021-0010(1)(b)(E)(iii) *If the proposed transmission line or pipeline corridor follows or includes public right-of-way, a description of where the transmission line or pipeline would be located within the public right-of-way, to the extent known. If the applicant proposes to locate all or part of a transmission line or pipeline adjacent to but not within the public right-of-way, describe the reasons for locating the transmission line or pipeline outside the public right-of-way. The applicant must include a set of clear and objective criteria and a description of the type of evidence that would support locating the transmission line or pipeline outside the public right-of-way, based on those criteria.*

Response: The proposed Facility does not involve construction of a new transmission line, as it will interconnect with an existing transmission line that runs through the site. Therefore, this rule is not applicable.

B.4.3 Rating and Dimensions

OAR 345-021-0010(1)(b)(E)(iv) *For pipelines, the operating pressure and delivery capacity in thousand cubic feet per day and the diameter and location, above or below ground, of each pipeline.*

Response: The Facility does not have a pipeline. Therefore, this rule is not applicable.

OAR 345-021-0010(1)(b)(E)(v) *For transmission lines, the rated voltage, load carrying capacity, and type of current and a description of transmission line structures and their dimensions.*

Response: The proposed Facility does not involve construction of a new transmission line, as it will interconnect with an existing transmission line that runs through the site. Therefore, this rule is not applicable.

B.5 CONSTRUCTION SCHEDULE

OAR 345-021-0010(1)(b)(F) *A construction schedule including the date by which the applicant proposes to begin construction and the date by which the applicant proposes to complete construction. Construction is defined in OAR 345-001-0010. The applicant shall describe in this exhibit all work on the site that the applicant intends to begin before the Council issues a site certificate. The applicant shall include an estimate of the cost of that work. For the purpose of this exhibit, "work on the site" means any work within a site or corridor, that the applicant anticipates or has performed as of the time of submitting the application.*

The Applicant tentatively proposes to begin construction by June 1, 2021, and complete construction by March 1, 2022.

The following activities have been completed, or will be completed, before the Energy Facility Siting Council issues a site certificate:

- American Land Title Association survey
- Cultural resources survey
- Geotechnical survey
- Habitat characterization
- Interconnection studies
- Option to Lease Agreement
- Preliminary design
- Raptor nest survey
- Rare plant survey
- Solar monitoring station installation
- Wetland delineation

The estimated cost of this work is under $250,000, in accordance with ORS 469.300(4) and OAR 345-001-0010(11).

B.6 REFERENCES

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Figure

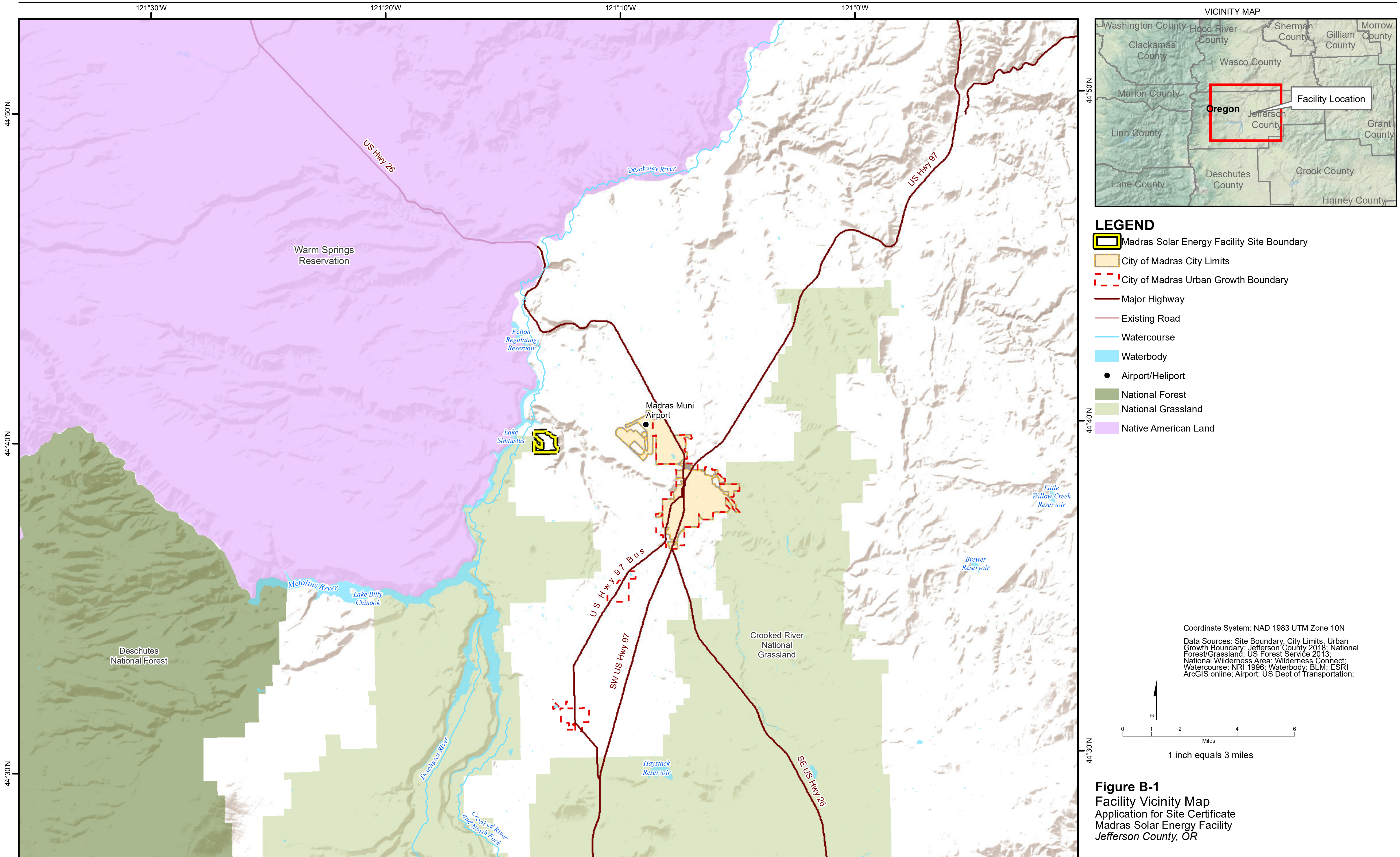

Figure B-1
Facility Vicinity Map
Application for Site Certificate
Madras Solar Energy Facility
Jefferson County, OR

JACOBS

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Attachment B-1
Proposed Outline of Spill Prevention, Control, and Countermeasure Plan

Proposed Outline of Spill Prevention, Control, and Countermeasure Plan

Plant Information Page

SPCC Plan Certification Page

Engineer Certification

Plan Review and Revision

1. Introduction

1.1 Objectives and Scope of Plan

1.2 Plan Format and Content

2. Plant Description

2.1 Plant Area

2.2 Solar Array

2.3 O&M Building and Substation

2.4 Summary of Oil Containers and Equipment

3. Plan Requirements and Activities

3.1 Fault Analysis and Containment Measures

3.2 Inspections

3.3 Spill Response

3.4 Recordkeeping

3.5 Training

3.6 Security

Appendix A Site Map

Appendix B Container/Equipment Data Sheets

Appendix C Substantial Harm Certification Determination