For Office Use Only

RECORD No. 217- 21 - 000438 - **PLNG**

Commercial (no exception): $9500

RECEIVED
MAY 25 2021
BY: _____

Crook County Community Development
300 NE 3rd Street, Room 12, Prineville Oregon 97754
Phone: 541-447-3211 Ext. 1 / Fax: 541-416-2139
Email: plan@co.crook.or.us / Website: www.co.crook.or.us

CONDITIONAL USE – COMMERCIAL ENERGY FACILITY

NOTICE TO ALL APPLICANTS: The Crook County Community Development, Planning Division is required to review all applications for accuracy and to determine whether the staff and/or Planning Commission have the information needed to make a decision. Crook County Code (C.C.C.) allows 30 days to determine whether the application is complete. If the Planning Division determines that your application is incomplete, you will be requested in writing to provide the necessary missing information, and a decision on your application will be postponed until the information is received. State Law requires that information to support an application be available for public inspection at our office 20-days before a public hearing. Any information submitted after this date may require a postponement of the hearing date if necessary. ***Make sure your application is complete. The burden of proof lies with the applicant.***

IMPORTANT: **In addition to this form, a detailed explanation of the use and how the applicable standards and criteria are satisfied is required. Please refer to the Crook County Code, Title 18 for the applicable standards and criteria.**

PROPERTY OWNER:

Last Name: Spencer First Name: Kevin
Mailing Address: 66375 Tweed Road
City: Bend State: Oregon Zip: 97703
Day-time phone: (541) 389 - 0070 Cell Phone: (541) 815 - 7858
Email: _____

AGENT / REPRESENTATIVE: (Will need to fill out Authorization Notice form

Last Name: Stephens First Name: Jacob
Mailing Address: 2033 E Speedway Blvd, Suite 200
City: Tucson State: AZ Zip: 85716
Day-time phone: (520) 261 - 8094 Cell Phone: (_____) _____-_____
Email: _____

PROPERTY LOCATION:

Township 16 South, Range 15 East WM, Section 5,7,8,9,15,16,17,20,21 Tax Lot 800
Township 16 South, Range 15 East WM, Section 16, Tax Lot 1900
Size of property: 2,446 + 80 acres Zoning: EFU-3
Physical address: 12417 SW George Millican Road, Prineville, Oregon
Subdivision name, if applicable: _____

EXPLAIN YOUR REQUEST

Please see accopanying attachment, Exhibit A: Main Proposal

ACCESS / ROADS

Explain how you will access your property for the proposed structure:

Will you **ACCESS** this property from an existing access? Yes ____ No ____
If yes, submit a copy of an "**APPROVED**" Road Approach Access.
If no, will the proposed access be from:
County_____ Public_____ *Private__X__ **State _____(check one only)

* If private easement, provide legal recorded documentation.
** If accessing from State Highway, an "approved" ODOT permit must be attached with this application: No Exceptions!

Oregon Department of Transportation
(Contact Robert Morrow at ODOT - Bend Office)
Phone: 541.388.6169
Email: Robert.j.morrow@odot.state.or.us

*** If accessing from a county maintained or public road, a road approach application is required.

FLOOD ZONE

Is the property located within a Flood Zone? Yes ___ No _X_
If yes, a "Special Flood Hazard Area Development Permit" is required to be submitted at the same time.

DOMESTIC WATER

Water will be supplied by: (check only one)

_____ An existing individual well
_____ A proposed individual well
_____ 4 to 14 dwellings on one well State regulated system.
_____ Shared well (Number of dwellings_____)
If shared well, indicate the location of well and other property locations (Tax Map #), as well as a copy of a recorded "**Shared Well Agreement.**" A "Shared Well" is 3 or less dwellings on one well un-regulated system.
__x__ Other: Please explain Please See Exhibit A—Main Proposal
_____ Community Water System: Name _____
PWS# _____

Community Water System Authorization
Print Name: _____ **Daytime phone:**_____
Authorization Signature:_____ **Date:** _____
(or) a signed authorized letter must be attached to this application. No exceptions.

****

Before you DIG ~ Call 811 ~ it's the LAW

Website: www.digsafelyoregon.com

Phone: (503) 232-1987 / 800-332-2344

The applicant and/or agent shall be responsible for contacting 811 to locate underground utilities, as well as Ochoco Irrigation District and/or the Central Oregon Irrigation District for any underground utilities

****

IRRIGATION WATER RIGHT

Please indicate the location of all existing water rights, number of acres, and proposed division of water rights. *If you don't have irrigation water rights, please answer questions A, D and E.*

If the property has irrigation water rights, who is the supplier:

_____**Central Oregon Irrigation District:**
Phone (541) 548-6047 / Fax (541) 548-0243
Address: 1055 SW Lake Ct, Redmond, OR 97756

_____**Ochoco Irrigation District:**
Phone (541) 447-6449 / Fax (541) 447-3978
Address: 1001 N Deer Street, Prineville, OR 97754

_____**Water Resources Department:**
Phone (541) 306-6885 / Fax (541) 388-5101
Address: 231 SW Scalehouse Loop, Bend, OR 97702

_____**People's Irrigation District:** Phone (541) 447-7797)

_____**Other:** _____

A. Does the property have irrigation water right? Yes ____ No __x_
B. If yes, what is the amount of acres of irrigation water right? _____ acres
C. Amount of water right acres to be transferred? _____ acres
D. Is there an irrigation ditch and/or an underground pipeline that runs through the property? Yes ___ No _x_
E. Is there a distribution point for irrigation located on the property? Yes ___ No_x_

Watermaster Signature: _____ Date: _____
Print Name Clearly: _____ **Phone:** _____

Irrigation District Signature: _____ Date: _____
Print Name Clearly: _____ **Phone:** _____

COMMENTS:

_____
_____
_____
_____
_____

WILDLIFE

ODF&W, Prineville Field Office, 2042 SE Paulina Hwy, Prineville, OR 97754
Phone: (541) 447-5111 Fax: (541) 447-8065

Is the subject property located within a "Winter Wildlife" overlay zone? Yes _x_ No ___

If yes, please check the appropriate box(s):

_____Critical Deer Winter Range
__x__General Deer Winter Range
__x__Elk Winter Range
__x__Antelope Winter Range (partial)

See Exhibit L — Wildlife & Sensitive Plant Review

Is the subject property located within a "Sensitive Bird Habitat" zone? Yes ___ No _x_

ODF&W COMMENTS:

_____
_____
_____
_____
_____
_____
_____

ODF&W Signature: _____ Date: _____
Print Name: _____

SUPPLEMENTAL INFORMATION

The information requested in this application is the minimum information necessary. This application requests information that will assist Crook County planners in evaluating whether your proposal meets these criteria. Failure to complete applicable portions of this application form may result in the County **not** accepting your application or denying your application for failure to demonstrate that the criteria have been met. The County can assist you by providing such information from the Crook County Assessor, Crook County Clerk's, and the Crook County GIS Department. However, the burden of proof lies on you, the applicant, to demonstrate that the criteria have been met. In many cases, you may wish to provide information in addition to that requested to support your application.

SIGNATURES

I agree to meet the standards governing the laws for "Site Plan Reviews" as outlined in the State of Oregon's OAR, ORS, Crook County Code, and Crook County – Prineville Comprehensive Plan. I agree that all the information contained in this application is true to the best of my knowledge.

Property Owner Signature: See Agent Authorization Form Date _____
Print name clearly: _____

Property Owner Signature: See Agent Authorization Form Date _____
Print name clearly: _____

Agent/Representative Signature: _____ Date 3/10/21
Print name clearly: _____

(Note: If an agent/representative is submitting your application on behalf of the property owner, the "Authorization Form" must be completed and attached to this application)

CHECK LIST OF REQUIREMENTS

- A completed application form with the appropriate signatures.
- A copy of the **Tax Lot Card**. *(Available from the Crook County Community Development Department)*
- A copy of the current owners **Warranty Deed.**
- A signed copy of a "**Statement of Understanding**"
- A signed **Authorization Form;** if applicable.
- A detailed "**Plot Plan/Site Plan**" of the subject property. (See below for detailed information)
- An **approved** **Road Access Permit**, if applicable, from the Community Development Department for County Maintained Roads and Public Roads, or the Oregon Department of Transportation for access from State Highways.
- A copy of the irrigation map for the area and historical water rights information on the subject property. (Available from the Irrigation District); if applicable.
- Special Flood Hazard Area Development Permit; if applicable
- Comments & signature from ODF&W
- Supplemental Information
- Submit the correct application fee.

DETAILED PLOT PLAN REQUIREMENTS

The detailed "**Plot Plan**" must be drawn on at least 8 ½ x 11 paper, **but no larger than 8 ½ x 14.**

A parcel that is 2 acres or less in size must be drawn to scale, and all dimensions and boundaries must be shown.

A parcel that is more than two acres in size does not have to be drawn to scale, however, all dimensions and boundaries must be shown and all information must be accurate.

The detailed "**Plot Plan/Site Plan**" must include the following:

- Scale of map – not greater than one inch per 400 feet.
- North arrow
- Dimensions and boundaries of the property
- Location of all easements and names, and the right-of-way widths of existing roads and easements or right-of-way for any proposed roads, utilities, bikeways, and access corridors.
- If the parcel or lot has irrigation water right, indicate the area of the water right with the number of irrigated acres. In addition, submit a copy of a water right map from the district.
- Names and locations of all roads adjacent to the property
- Location of driveways or other roads on the property, existing and proposed
- Location of all public utility easements. In addition, attach copies of the recorded utility easement that indicates easement widths.
- Distance (setbacks) from **all** structures to all property lines
- Location of all major features (canals, irrigation ditches, rock ledges, etc)
- Location of rimrock, if applicable
- Location of all drainage, creeks, springs, etc., with distance to the proposed development site.
- Indicate location of all "**EXISTING**" and "**PROPOSED**" structures: Dwellings, Garage, shops, lean-to, barns, etc. Indicate on the plot plan if existing or proposed with dimension size.
- Location of the proposed Energy Facility on the subject property.

FORM B

STATEMENT OF UNDERSTANDING

I wish to develop the property described as Map Tax Lot No. 800 (partial) and 1900 in a way that requires permits from Crook County, including land use approval, a septic site evaluation and/or septic permits, and building and supplemental construction permits.

I understand that State law does not allow Crook County to issue a septic or building permit before the County has determined that the proposed development complies with all County land use regulations.

In addition, in making this request, I understand and agree that:

No other permits will be issued until the land use permit has been granted.

The land use permit may not be granted if the required approval criteria are not met.

If the land use permit is not granted, the other permits applied for will not be issued.

If the land use permit is not granted, no refund will be given for any land use, site evaluation, plan review or permit fees already paid.

Property Owner Name: See Agent Authorization Form

Mailing Address: 2033 E Speedway Blvd, Suite 200

City: Tuscon State: AZ Zip: 8716

Authorized Agent
~~Property Owner~~ Signature: _____ Date: 3/16/21

Property Owner Signature: _____ Date: _____

Community Development Department
300 NE 3rd Street, Prineville, OR 97754
Phone: (541) 447.8156 / Fax: 541-416-2139
Email: plan@co.crook.or.us / Website: www.co.crook.or.us

AUTHORIZATION FORM

Let it be known that JACOB H STEPHENS
(Print name clearly)

has been retained to act as my authorized agent to perform all acts for development on my property noted below: These acts include: Pre- application conference, filing applications and/or other required documents relative to all Permit applications.

Physical address of property: 12417 SW George Millican Road, Prineville, Oregon, and described in the records of CROOK COUNTY as:

Township 16 South, Range 15 East, Section 5, 7, 8, 9, 15, 16, 17, 20, 21, Tax lot 800
Township 16 South, Range 15 East, Section 16, Tax lot 1900

The costs of the above actions, which are not satisfied by the agent, are the responsibility of the undersigned property owner.

PROPERTY OWNER **(Please Print Clearly)**

Signature: _____ Date: 8-8-18

Print Name: KEVIN SPENCER

Mailing address: 6835 TWEED RD

City: Ben. D State: Ore Zip: 97703

Home Phone: 541 389 0071 Cell Phone: 541 815-7858

Email: KSpencer@KSStone.com

Individual(s)

Corporation;

Limited Liability Corporation;

Trust

IMPORTANT NOTE: Indicate whether property is owned in individual name(s), or by a business or other entity (e.g. Corporation, Limited Liability Company; or Trust). If property is owned by an entity, include names of all authorized signers. For Example:

If the owner is a Corporation, Limited Liability Corporation or Trust, the following information is required as part of this form.

- If a Corporation ~ please provide the name of President or other authorized signor(s).
- If a Limited Liability Corporation ~ provide names of **ALL** members & managers.
- If a Trust ~ provide the name of current Trustee(s)

In addition, you will need to include a copy of Bylaws (Corporations); an Operating Agreement (Limited Liability Company); or Certificate of Trust (Trusts) that verifies authority to sign on behalf of the entity.

AGENT

Signature: _____ Date: _____

Print Name: JACOB H STEPHENS

Mailing address: 2033 E SPEEDWAY BLVD, SUITE 200

City: TUCSON State: AZ Zip: 85716

Home Phone: (520) 261-8094 Cell Phone: (____) _____-_____

Email: _____

SITE PLAN

See Exhibit B — Site Plans

Exhibit A Main Proposal

(Explain Your Request Attachment)

In support of Powell East Solar Farm LLC Conditional Use Permit Application

Contents

Overview

This Application requests Conditional Use Permits of "Solar PV Facilities" as defined in OAR 660-033-0130(38)f and associated transmission lines (ATL) for its Site (as further described below) for uses including conventional technology for the commercial sale of electricity. Permit application is for the development, design, construction, maintenance, operation, repair, removal, and updates of all proposed and permitted facilities. Solar PV Facilities and Associated Transmission Lines are permitted uses on farmland zoned EFU-3 under applicable Crook County and state ordinance. The Powell East Solar Farm (hereinafter, the Facility) is proposed to operate for up to 40 years.

Location:

The subject facility property is located on Tax Lots 0800 and 1900 in Crook County, OR, at about 7 miles south of the junction of Hwy 126 and George Millican Highway, Prineville, OR. Tax Lots 300 and TL 1208 may be used for ATLs to connect to Utility Transmission Lines and/or Substation as needed. Applicant has an ATL easement agreement with the landowner of TLs 0300 and 1208.

NOTE: More detailed/zoomed images of several maps below are also provided in Exhibit B – Site Plans.

See Appendix C for tax lots and maps.

Zoning:

All of the property included as part of this application is zoned EFU-3 (Exclusive Farm Use) (Crook County Code 18.24)

Summary Description:

The proposed facility will consist of photovoltaic panels, inverters, mounting infrastructure using fixed tilt and/or single axis tracker systems, an electrical collection system, a substation, an energy storage system, operation and maintenance facility, private access roads, fencing, and associated transmission lines to connect to the utility facility. Electricity generated by the facility will be transmitted to a facility substation, where it will be increased to appropriate transmission line voltage levels per BPA or Pacificorps (PAC) requirements. Applicant has successfully filed interconnect requests with BPA and PAC and provided evidence to Crook County Planning as such, which has been accepted by the respective utilities. A possible BPA interconnect is presently in the study phase for interconnect with Ponderosa substation. Ponderosa substation is immediately adjacent to TL 1208. An alternative interconnection with PAC is also under study for connection to either the Corral Substation or the immediately adjacent 115kV transmission line. Please see Exhibit B Site Plan and the more detailed facility description of Solar PV Facilities below.

The overall design and construction of the project will be carried out in accordance with all applicable engineering codes and standards, including considerations for the results of any floodplain, wildlife impact mitigation findings and recommendations, wetland and riparian area analyses, or cultural surveys as required by Crook County and other regulatory agencies such as Oregon Department of Fish and Wildlife (ODFW) and Oregon State Historic Preservation Office (SHPO).

Construction will be performed by licensed and qualified contractors and their subcontractors, following an extensive vetting and bid process. Following construction, all on-site disturbances will be restored with native vegetation pursuant to county storm water discharge requirements, and Crook County Weedmaster consultation as applicable.

Facility Size:

The Solar Facility will use up to 320 acres. Again, see Exhibit B site plan, which identifies the proposed PV Facility Siting Area relative to the overall size of the tax lot acreage. Please note that the final Solar Facility will conform to Crook County setback standards for parcels zoned EFU-3.

Present Property Description:

TLs 0800 and 1900 are bounded by three 500kV transmission lines and the Gala Solar Facility to the east, and surrounded by properties to the north, west and south that are zoned EFU3 with no residences. The property proposed does not have irrigation rights and has not been irrigated in the past. An inactive corral with associated water tank and two wells is located on the northeast portion of the site. The property is uncultivated, and non-irrigated; dominant vegetation on the site consists of low shrub / sagebrush and juniper trees.

Image A-1 – General Property Image.

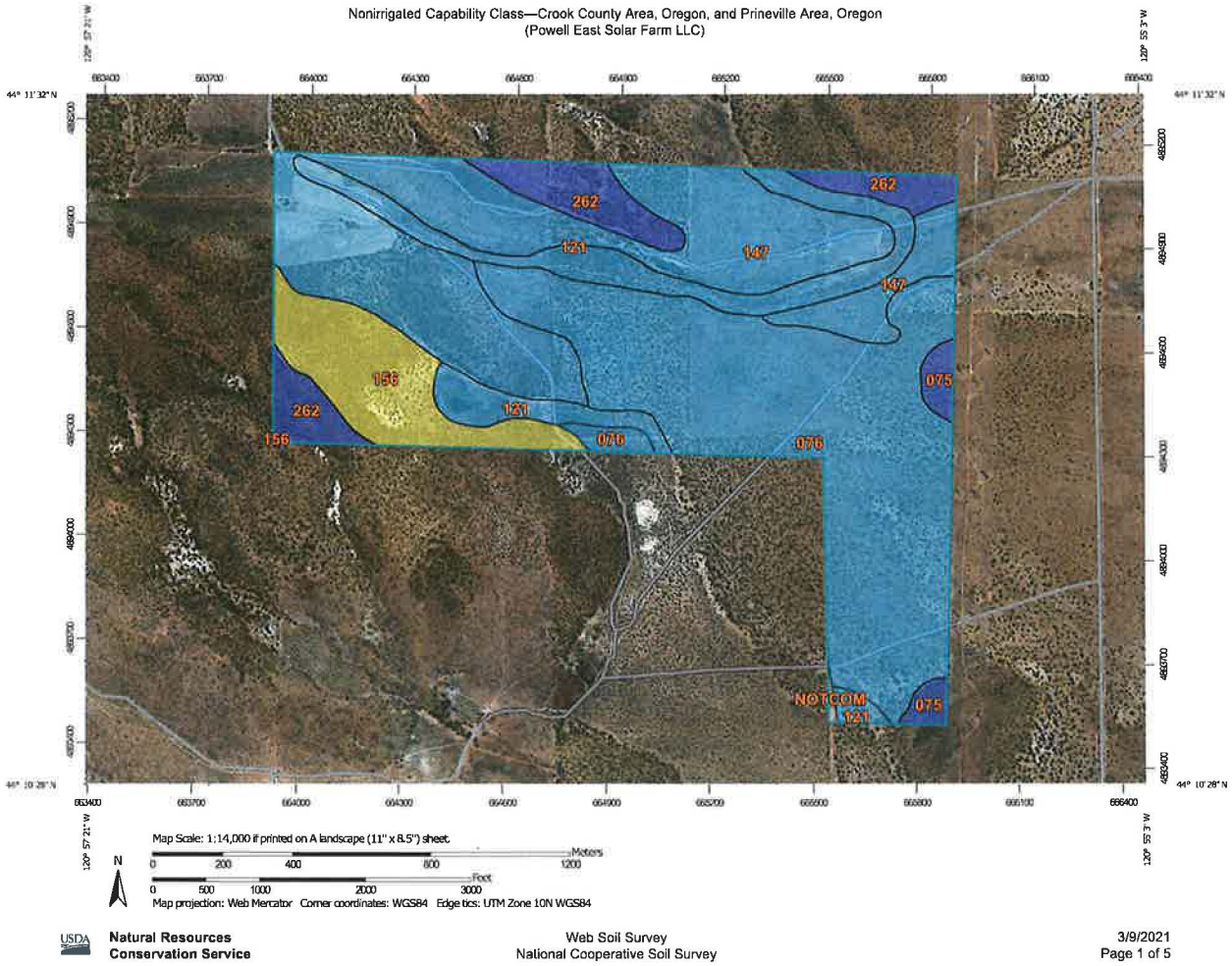
Surrounding Land Uses:

None of the immediately adjacent properties have existing residences. Lands to the south, west and north are used for cattle grazing and other EFU3 zoned purposes. The land to the east operates a solar conditional use facility called Gala Solar under a separate, distinct ownership, not associated with the Applicant.

Soils:

A Custom Soil Resource Report for the Applicant property was prepared using data from the USDA National Cooperative Soil Survey.

Figure 1 below shows the site (Area of Interest/AOI), which is approximate to the actual site boundary.



Corresponding to this mapping, non-irrigated class soils are broken down into the following categories as shown in Table 1.

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
075	Ayres very cobbly loam, dry, 0 to 8 percent slopes	7	7.7	1.6%
076	Ayresbutte-Ayres complex, dry, 0 to 8 percent slopes	6	180.4	37.9%
121	Era ashy sandy loam, 0 to 3 percent slopes	6	52.5	11.0%
147	Ayresbutte-Ayres complex, 3 to 8 percent slopes	6	155.2	32.6%
156	Ginserly-Hatrock complex, 12 to 30 percent north slopes	4	43.3	9.1%
262	Tristan extremely cobbly loam, 12 to 35 percent south slopes	7	36.1	7.6%
Subtotals for Soil Survey Area			**475.3**	**99.9%**
Totals for Area of Interest			**475.9**	**100.0%**

Table 1: Soil Classifications

The mapping indicates that the majority of soils on the site (greater than 90 percent) are Class 6 and 7 while there is an area along the eastern property boundary of Class 4 soils (approximately 9 percent).

Please see Exhibit F-Soils for additional information and a map of soil locations. The proposed facility will not occur on any high-value farmland, will not exceed 20 acres of Class 4 or below soils, and will be less than 320 acres in total.

Ownership:
The site land is wholly owned by Powell Butte Vistas, LLC. The Authorized Agent for the property owners of TL 0800 and 1900 is Jacob Stephens. See Exhibit C Deeds and Legal for details regarding land ownership.

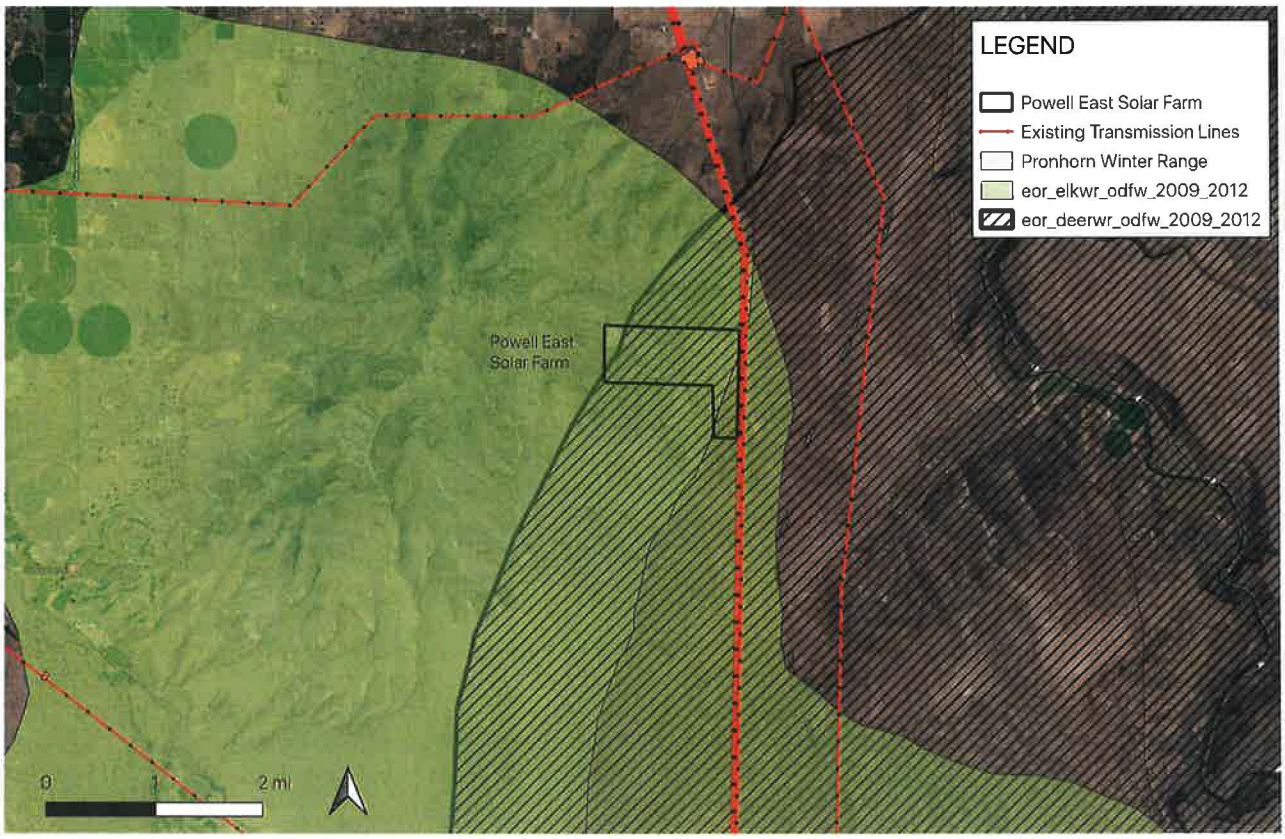
Water Rights:
The subject property has no water rights and the site has not been irrigated in the past.

Flood Hazard Area:
There are no FEMA Special Flood Hazard Area (SFHA) Zones on this property.

Wildlife:
Applicant has engaged a wildlife biologist, PBS Engineering and Environmental, to perform a Wildlife and Sensitive Plant Review, included as Exhibit L of the application.

The site is not identified as Sagebrush Grouse habitat (Sensitive Bird Habitat zone). The subject property is in an area that is mapped by ODFW as winter range for elk, and a portion of the property is within ODFW mapped winter range for deer and pronghorn. See map below showing the ODFW big game overlays.

POWELL EAST SOLAR FARM
ODFW WINTER RANGE OVERLAY



PLS Environmental 2021-03-10

The Applicant has and will continue to consult with ODFW to ensure best practices for wildlife and resource management, and a Wildlife Mitigation Plan (WMP) is being developed with consultation from ODFW and will be submitted under separate cover.

Cultural Resources: The Applicant has initiated consultation with the State Historical Preservation Office (SHPO) to review issues and perform a database review and will coordinate appropriate confirmation that there are no sites of cultural or historical significance in accordance with SHPO policies and procedures. If, upon SHPO's standard recommendation, pedestrian surveys are recommended, Applicant will work with a qualified provider to perform pedestrian on-site surveys if required.

To the extent that during investigation or the construction process any issue or cultural resource of material significance is identified, such issues/resources will either be 1) avoided through project design or 2) mitigation will be implemented which conforms to applicable current regulation and subject to SHPO's reasonable concurrence on such plans.

Airports:
The Facility is not located in an airport control zone. The Applicant did file for a notice of proposed construction with FAA for both the tallest structure (the lighting arrestor that would be on top of the main power transformer) as well as for the entire PV facility siting area. The applicant received a DETERMINATION OF NO HAZARD TO AIR NAVIGATION for all 5 notices (4 corners of the solar facility and one for the highest point (lighting arrestor).

Access:
The Solar PV Facility will be accessed by a modified access road off of the existing private road from SW George Millican road, as designated in Exhibit B Site Plan (P2 of 3) showing the entryway off the highway. As part of on-going development, any alternative entrances and/or additional road access permits will be obtained as necessary from the County or ODOT as applicable.

Water Supply:
Water for construction and operation may be purchased from the City of Prineville or procured from a water well on the property (in accordance with ORS 537.545(1)(f)), or a combination of both. The Applicant and its subcontractors will ensure that if water is procured from a new or existing well in the area that the well provider has the appropriate license from the Oregon Water Resources Department to utilize groundwater from a well for construction purposes.

Fire Protection:
The subject property is located inside the Crook County Fire and Rescue District. Provisions for wildfire prevention and control shall be included in an Emergency Management Plan to be presented to Crook County Fire and Rescue for review and approval. See Exhibit J of this application for an example EMP which may be adapted with site specifics and submitted for review and approval to Crook County Fire and Rescue as part of the on-going development.

Construction Facilities:
Applicant proposes to establish temporary construction facilities on the site in accordance with state and county regulations. These temporary buildings will house construction management and site personnel offices adjacent to a parking area and laydown yards, typical of a construction site. The area proposed, is towards the northern portion of the site. See Exhibit B – Site Plan (P2 and 3) for proposed details. The final location of these temporary construction facilities is subject to applicant's final site design.

Facilities and Structures Overview:
This section provides a narrative overview of the proposed use and structures for the Site under the Application. Additional supporting layout and (larger) supporting diagram images are provided in Exhibit B – Site Plans.

Solar PV Facilities:
The primary structures of the proposed Facilities will be the Solar PV Facilities. Solar PV Facilities will be predominantly comprised of commercially-available solar photovoltaic "PV" panels (or "modules") mounted to racking systems (described below) generally arranged in long rows with the modules wired together (in "strings") to collect DC power they generate at a desired voltage to either store or deliver to inverters which then in turn convert DC power to AC power, with related hardware and equipment. AC power is collected from inverters and stepped up to a collection voltage (nominally 34.5 KV) via transformers (generally pad-mounted) for delivery through switching and/or substation facilities. Facilities will include communications and control equipment, including to provide for remote and on-site monitoring and operations of facilities, including as required by the interconnecting utility, whether through radio communications, fiber optics, and/or conventional telephony. PV modules are typically anti-reflective, in order to maximize absorption of solar energy for generation of power and maximize efficiency for direct use or commercial scale of resultant electricity.

Image A-2 - PV Facility in central OR

Racking Structures:

Racking structures for PV module may be either "fixed tilt" (stationary) or "single axis tracking". They are generally steel, ground-mounted structures less than 15' tall, located up to 25' apart. Final racking, modules, inverters, and other equipment selection will be subject to final design considerations before construction (and may be updated from time to time over the life of the facility) based on commercially available products and other related commercial considerations. Spacing of rows and blocks of rows on the property will be interdependent with and subject to the acreage limitations and proposed shared use with continued agricultural use proposed herein. Sometimes modules are landscape or portrait mounted on racks; sometimes there are multiple rows of panels on the racking structures. Sometimes different racking structures may be use for different parts of a site due to design limitations, civil and geotechnical concerns, configurational issues, or other concerns.

Figure A-3 – PV Module Array strings on single axis tracking racking (central OR)

No reflection or glare issues:

Solar radiation, glare, and glint concerns will not be an issue of material concern (if any) with either a fixed tilt or single axis tracking system, and as demonstrated by other similar solar PV projects in the Oregon area and elsewhere nationally. Solar PV modules do not concentrate solar radiation, so that inadvertent reflection or misdirection from such a concentrated focal point is not feasible. The facility will use commercially available modules treated with absorbent and anti-reflective coatings. These coatings help to absorb sunlight and minimize glare. Key finding from several Glint and Glare studies for private entities as well as performed at National Laboratories such as NREL and Sandia National Labs can be summarized: "Flat-plate photovoltaic solar panels are engineered to absorb, not reflect, sunlight. A panel with a single layer of anti-reflective coating reflects less than 10% of the sunlight striking it. By way of comparison agriculture vegetation reflects between 18 and 25% of solar radiation."

AC Collection, Associated Transmission Lines (ATL), and Interconnection:

Energy will be delivered to/from Solar PV Facilities as applicable to and through the associated transmission lines for connection to the interconnection facilities interfacing with applicable utilities' infrastructure in the area. Utility infrastructure nearby the Property includes facilities owned by Bonneville Power Administration ("BPA"), Pacificorps, and Central Electric Cooperative. Interconnection with these electric utilities will provide for any auxiliary power and/or charging needs of the facilities and for the delivery of energy for commercial sale.

AC Collection at (nominally) 34.5kV of several feeder circuits from power collection stations within the PV facility is accomplished with underground direct burial cables. AC feeders are tied in to the main low side feeder system inside the additionally fenced in substation yard. The

separately fenced substation yard contains all equipment relating to breakers, switching, and transforming power to associated transmission line level voltage, to meet BPA requirements at the Point of Interconnection ("POI"). A typical substation elevation drawing is included in Exhibit B - Site Plans. Fencing for the facility substation used will be a minimum of 8 ft tall chain link fence.

Figure A-4 Power Collection Station example in central Oregon.

Factory pre-built power collection stations may be installed throughout the site and are typically mounted on steel foundation supports similar to site module racking and tracker systems. Power collection stations are usually comprised of an inverter made by a qualified solar inverter OEM such as SMA or Power Electronics, a step up transformer, typically 1000 or 1500V:34.5kV. Inverters typically include their own DC combiner cable inputs. Stations also include AC breaker cabinets, local house power transformer and distribution, and specialized equipment for tracker controls, network communications, and meteorological equipment. See Figure A-5 showing a typical station.

Power Collection stations may be installed onto their foundations with the use of cranes.

Substation equipment consists of a multi-element protection and relay system for 34.5 kV feeders, main power transformer, and breaker relays, metering, and plant control and monitoring systems. It may also house the energy storage feeder and system equipment, examples of which are shown in Figure A-5 below (which might also be located elsewhere in the Site).

Figure A-5. Example inside substation, showing modular energy storage equipment, 34.5 kV transformers, breaker cabinets, and ancillary equipment on concrete mounted pads.

Fencing:

Various approaches for fencing may be implemented and will take into account final design and operational considerations. It is anticipated that the solar field enclosure will be completely fenced at a minimum height of 8 feet using a chain-link fence. Secured gates will be in place at the Project entrance(s).

The substation(s) for the Facilities, however, will be separately fenced within the larger fenced area(s) for security and public safety reasons and security gated. There will be no public access to the Solar PV Facilities and substation equipment. Solar O&M personal will be given access to the site.

Supporting Documents and Plans:

Supporting documents are included as part of this application in later exhibits. These documents may be updated with site specifics as continuing facility development progresses. Applicant has drafts available as part of this permit application and on-going facility development: Exhibit J Emergency Management Plan, Exhibit G Erosion Control Plan, Exhibit H Weed Control Plan, Exhibit I-1 to I-3 Decommissioning Plan, Exhibit L, Informal Traffic Assessment. As part of continuing development, these plans are subject to change; they will be adapted with site specifics and submitted for review to Crook County Planning and Development, Crook County Weedmaster, Crook County County Fire and Rescue, ODFW and other regulatory agencies as appropriate. Additionally, other supporting exhibits have been submitted that contain support materials for Soil, Wildlife and Biological evaluation studies, and socioeconomic impacts.

A mutually acceptable Covenant Not to Sue, similar to Exhibit K Covenant is under evaluation by Applicant and applicant will work to provide a mutually acceptable covenant as part of the on-going development process. As part of a condition of approval, Applicant will provide for a cost estimate and method for meeting decommissioning requirements acceptable to Crook County as part of continued development.

Timeline & Process – Development, Construction, Operations:

Development: Initial facility development activities have commenced and will be on-going over the next several months and/or years. Development work includes and/or may include various studies, investigations, power and power purchase agreement (PPA) contracting, system and

site design and engineering, establishing interconnection energy delivery and rights-of-way, and further entitlement and permitting. These initial and ongoing development activities require substantial investment and will continue through construction.

Construction: Once a qualified EPC (Engineering, Procurement and Construction) firm is contracted and mobilized, construction may take approximately 4-8 months. Additional retrofit, modification and possible capacity expansion may occur subsequent within the scope of the permit, subject to applicable building permit requirements, for repairs, upgrades and/or expansions, if applicable. Subject to final design and EPC construction plan.

Construction of the solar field is usually comprised of applicable site prep (civil work if needed and fencing), driving piles (or otherwise installing foundations structures, like ground screws) to which racking systems are mounted by manual labor, with surrounding electrical connections and conduit for collection. Installation of substation, interconnection facilities, and associated transmission lines is comparable to other power plants for the voltage involved. Dust control as needed will occur.

Traffic during the construction period is addressed in Exhibit L, Traffic Assessment, which has been performed by Transight Consulting. Applicant staff has experience with on-site construction of solar facilities ranging in size from rooftop solar on existing buildings to large scale buildout of facilities comprising over 1000 acres. The traffic assessment addresses the amount and types of traffic that can be expected during peak construction periods for a facility comprising up to 320 acres, both for equipment deliveries and construction workers. Worker commuter travel is expected to peak for a period of 8-12 weeks in duration the overall construction period of 4-8 months. This informal assessment is based on prior assessments performed for similarly sized permitted and constructed solar facilities projects in Crook County.

Operations: During normal operations that will take place over the following 20-40 years after commercial operations of Solar PV Facilities has been achieved, the site will be locally and remotely monitored as needed and routinely inspected and maintained. Solar energy facilities typically require weekly on-site activity or disturbances during normal operations. Service will be provided by a qualified Operations and Maintenance organization and supporting OEM contractors that may reside local to the area and service other nearby solar sites. During normal operations, solar specific site traffic will be typically one or two site visits by solar O&M personnel per week. Basic maintenance activities include weed maintenance, occasional cleaning of modules (if rains aren't adequate), repair or replace of equipment as needed from time to time. PV facilities are based on solid state devices (the PV modules) which degrade very slowly over time and degrade at less than 1% per year of production (and are generally warrantied as such for 20+ years). Solar modules may be washed and cleaned on an as needed basis only (1-2x annually, if required), using generally only water and no solvents. Water use is fractional in this regard, relative to other types of energy generating facilities. No other water use is generally required for solar PV sites. Facility life may extend further including through repairs and retrofit of equipment.

Review of Applicable Criteria:
Applicant has and will continue to use Criteria within the Crook County Code (CCC) to meet Conditional Use Permit requirements. A criteria assessment is included as Exhibit D Local Crook County and State Criteria Review, submitted as part of this application.

EXHIBIT B

SITE PLANS

Site Plan: Present Overview

Legend

- Tax Lot Boundaries
- Existing Access/Driveways (easement granted)
- Existing/Proposed Transmission Line(not associated with project)
- Proposed Gen-Tie Routing Line (Alt. Routes Possible)
- Existing residential power line
- Existing Buildings

GENERAL NOTES

1. DISTANCES, LOCATIONS, AND ROUTING OF ASSOCIATED TRANSMISSION LINES AND ACCESS ARE APPROXIMATE AND SUBJECT TO APPLICANT'S FINAL DESIGN.

2. SOLAR PV FACILITIES SUBJECT TO APPLICABLE ACREAGE RESTRICTIONS.

3. PV FACILITIES FOOTPRINT WILL NOT EXCEED 320 ACRES TOTAL.

4. SETBACK REQUIREMENTS SHALL CONFORM TO CROOK COUNTY STANDARDS FOR PARCELS ZONED EFU-3 INCLUDING TAX LOT BOUNDARIES.

5. CALCULATION FOR ACREAGE OF AGGREGATE GEN-TIE TO BE BASED ON GROUND FOOTPRINT OF POLE AND OTHER GROUND MOUNTED STRUCTURES.

6. ASSOCIATED TRANSMISSION LINES/GEN-TIE(S) ROUTING SUBJECT TO FINAL DESIGN FOR FACILITIES, WITH ROUTING OPTIONS TO INCLUDE BOTH AS SHOWN, AND OTHER ROUTES, INCLUDING AND ALONG OTHER TRANSMISSION AND ROAD FACILITIES IN THE PROJECT SITING AREA AND VICINITY.

7. NOT ALL POWER LINES AND RELATED FACILITIES IN AREA SHOWN.

Notes: Preliminary, Not for Construction	Prepared for: Powell East Solar Farm LLC	TITLE: SITE PLAN OVERALL DRAWN BY: Mark Boissevain REV: NA PAGE: P1 of 3

Site Plan: PV Facility Siting Area

Legend

- Modified Access Roads
- Existing Access Road
- PV Facility Siting Area
- Temporary Laydown Yard(s)
- Temporary Construction Trailer Options
- Existing/ Transmission Line(not associated with project)
- Associated Transmission Line(s) (example routing)
- Substation Facilities Siting Area*

* generally to be adjacent to solar facilities and/or transmission system in vicinity of site.

GENERAL NOTES

1. DISTANCES, LOCATIONS, AND ROUTING OF ASSOCIATED TRANSMISSION LINES AND ACCESS ARE APPROXIMATE AND SUBJECT TO APPLICANT'S FINAL DESIGN.

2. SOLAR PV FACILITIES SUBJECT TO APPLICABLE ACREAGE RESTRICTIONS.

3. CONSTRUCTION LAYDOWN AREAS TO BE FINALIZED BASED ON FINAL DESIGN.

4. SETBACK REQUIREMENTS SHALL CONFORM TO CROOK COUNTY STANDARDS FOR PARCELS ZONED EFU-3.

5. PV FACILTIES FOOTPRINT WILL NOT EXCEED 320 ACRES TOTAL.

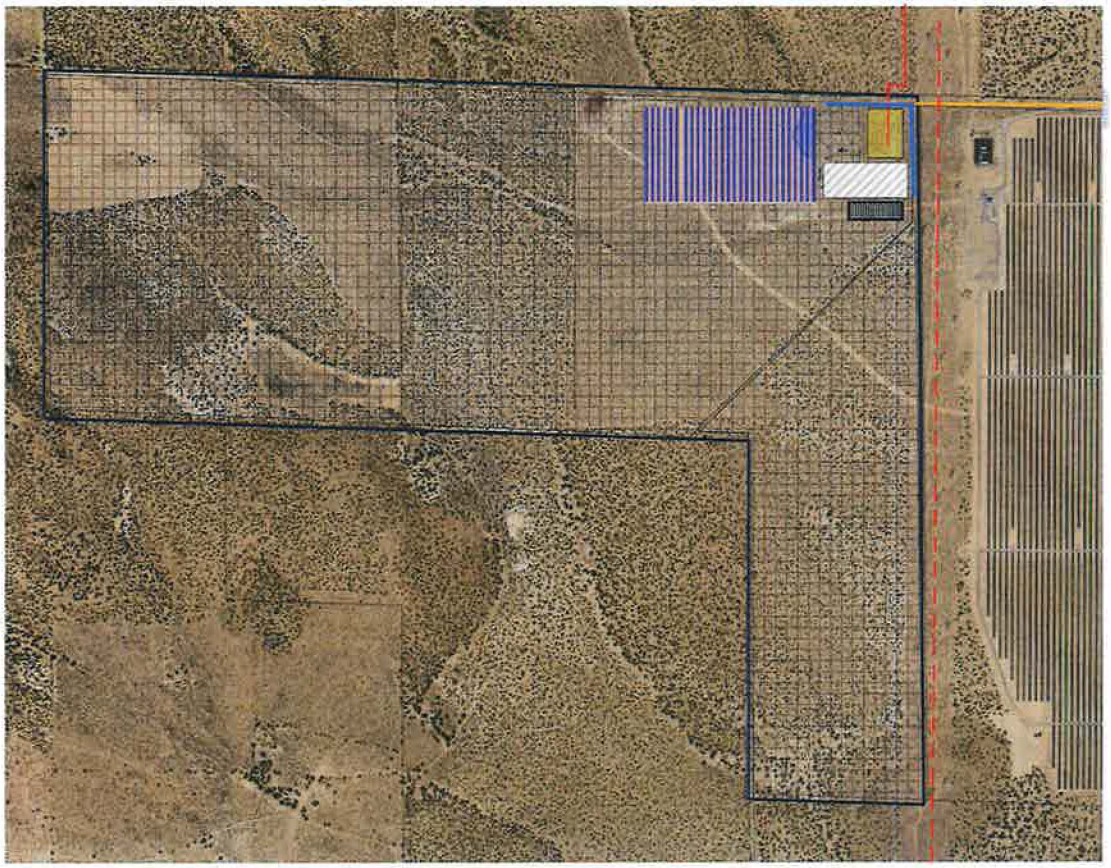
Notes:
Preliminary, Not for Construction

Prepared for: Powell East Solar Farm LLC

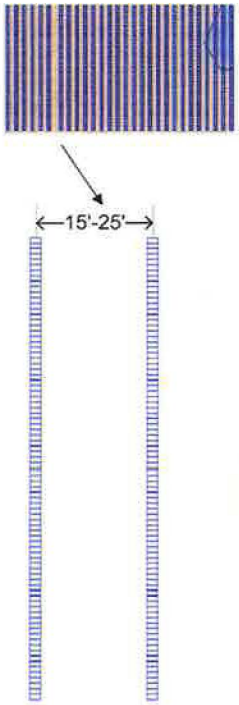
TITLE: SITE PLAN OVERALL
DRAWN BY: Mark Boisseavain
REV: NA
PAGE: P2 of 3

Site Plan: Example Solar PV Facility

(for illustrative purposes only)



ZOOMED IN VIEW OF MODULE/ TRACKER ROWS



Row-to-Row distance may vary and be increased or decreased in final design.

GENERAL NOTES

1. DISTANCES, LOCATIONS, AND ROUTING OF ASSOCIATED TRANSMISSION LINES AND ACCESS ARE APPROXIMATE AND SUBJECT TO APPLICANT'S FINAL DESIGN.

2. SOLAR PV FACILITIES SUBJECT TO APPLICABLE ACREAGE RESTRICTIONS. TOTAL PV FACILITIES SITING AREA CONSIDERED IS LESS THAN 320 ACRES.TOTAL.

3. INTERCONNECTION MAY BE TO ONE OR MORE VARIOUS TRANSMISSION AND DISTRIBUTION FACILITIES IN VICINITY.

4. SETBACK REQUIREMENTS SHALL CONFORM TO CROOK COUNTY STANDARDS FOR PARCELS ZONED EFU-3.

5. PV STRUCTURES LAYOUTS ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. TRACKER ROWS RUN NORTH SOUTH, FIXED RACKS RUN EAST-WEST. ACTUAL LOCATION SUBJECT TO FINAL DESIGN.

6. DRAWING NOT TO SCALE.

Legend

- Modified Access Roads
- Existing Access Road
- PV Facility Siting Area
- Temporary Laydown Yard(s)
- Temporary Construction Trailer Options
- Existing Transmission Line (not connected with project)
- Substation Facilities Siting Area

Notes: Preliminary, Not for Construction	Prepared for: Powell East Solar Farm LLC	TITLE: SITE PLAN: PV LAYOUT EXAMPLE DRAWN BY: Mark Boissevain REV: NA PAGE: P3 of 3

EXHIBIT C

DEEDS AND LEGAL DOCUMENTS

TWP.	RGE.	SEC.	1/4	1/16	PARCEL NUMBER	Type REAL PROP.	Spec. Int. In	CODE AREA NUMBER
16	15				800			1

MAP NUMBER / TAX LOT NUMBER

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY

Crook COUNTY ASSESSOR'S OFFICE

FORMERLY PART OF

Indent each new course to this point	DESCRIPTION AND RECORD OF CHANGE	Date of entry on this card	Deed Record Vol.	Deed Record PG.	Acres Remaining
	2163 EFU3				
	! Also-See A1 accts on separate card				
	Sec 5: S½SW¼				
	Sec 7: S½NE¼; SE¼				
	Sec 8: W½; SE¼ PAGE 1				
	Sec 9: S½SE¼				
	Sec 15: N½N½; S½NE¼; W½SE¼; E½SW¼				
	Sec 16: E½NE¼; NW¼; NW¼SW¼; S½SW¼				
	Sec 17: All				
	Sec 20: E½NE¼				
	Sec 21: NW¼; N½S½; SW¼SW¼				
	BROWN, Warren R. JV50180	7-14-86	MF	79184	2720.
	Exc: Parcel 800A1				
	Exc: Parcel 800A2 JV56939	1-18-89	Request		2719.00
	WELL	11-20-96	MF	130570	
	LLA to Parcel 2500 -40.00 WD	2/8/01		134316	
	Exc: Sec. 21: NE1/4SE1/4 -40.00 LLA	8/23/01	MF	159299	2,679.00
	NOTE	1-9-02	MF	166188	
	r/w ez	11-24-03	MF	184512	
	Powell Butte Investments, LLC SW	11-05-04	MF	194743	
	Freund/Spencer Investment Group, LLC an und 22.6663% interest BS	04-06-05	MF	198211	
	Powell Butte Investments, LLC an und 77.3337%				
	Freund, Jerry R. & Jeannie L. as to an und 38.6685% BS	5-20-05	MF	199550	
	Spencer, Kevin L. & Linda C. as to an und 38.6685%				
	Freund/Spencer Investment Group LLC an und 22.6663%				
	Powell Butte Vistas, LLC SW	9/23/05	MF	202909	
	Powell Butte Vistas, LLC & Freund/Spencer Investment Group LLC und 5% int WD	3-1-07	MF	219154	
	Powell Butte Vistas, LLC & Powell Butte Investments LLC und 5% int BS	3-1-07	MF	219155	

CONT'D

TWP.	RGE.	SEC.	1/4	1/16	PARCEL NUMBER	Type	Spec. Int. In REAL PROP.	CODE AREA NUMBER
16	15				800			

MAP NUMBER

TAX LOT NUMBER

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY

COUNTY ASSESSOR'S OFFICE

FORMERLY PART OF

Indent each new course to this point

2163

DESCRIPTION AND RECORD OF CHANGE

			Date of entry on this card	Deed Record Vol.	Deed Record PG.	Acres Remaining
Powell Butte Vistas, LLC & Powell Butte Investments LLC und4.8240057% int & VSN Properties, LLC und .1759943% int		BS	1-22-08	MF	225197	
Powell Butte Vistas, LLC		BS	2-10-10	MF	238775	
		LS	2-10-10	MF	238776	
USA DOT		LS	1-27-14		261679	
		Vacate	6-2-16		274189	
		EASE	6-8-16		274281	
REVISED LEGAL: IN TOWNSHIP 16 SOUTH, RANGE 15 EAST OF THE WILLAMETTE MERIDIAN, CROOK COUNTY, OREGON: SECTION 5: S1/2SW1/4. SECTION 7: S1/2NE1/4, SE1/4. SECTION 8: W1/2 AND SE1/4. SECTION 9: S1/2SE1/4. SECTION 15: W1/2SW1/4, W1/2NW1/4, NORTH 80 FEET OF E1/2NW1/4 AND NORTH 80 FEET OF NE1/4. SECTION 16: E1/2NE1/4, NW1/4, W1/2SW1/4, SE1/4SW1/4. SECTION 17: ALL. SECTION 20: E1/2NE1/4. SECTION 21: NW1/4, N1/2SW1/4, NW1/4SE1/4,A ND SW1/4SW1/4. SUBJECT TO: ALL EASEMENTS, RESTRICTIONS,A ND RIGHT-OF-WAYS OF RECORD AND THOSE COMMON AND APPARENT ON THE LAND.	-232.96	BLA	8/23/16	273	887	2446.04
		QD	9-9-19	295	211	

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTIES

OFFICE OF COUNTY ASSESSOR CROOK COUNTY, OREGON CODE NO. 1

1900

ACCOUNT NUMBER	TAX LOT NO.	SECTION	TOWNSHIP	RANGE	AERIAL PHO
P 16 15	~~19~~	16	16 S.	15 E.W.M.	

T	BLOCK NO.	ADDITION	CITY

INDENT EACH NEW COURSE TO THIS POINT

2178 LEGAL DESCRIPTION EFU3

			DATE OF ENTRY	DEED RECORD VOLUME	DEED RECORD PAGE	ACRES REMAINING
W½ NE¼						
Hudspeth Land & Livestock			1-1-58	74	239	80.00
Boston Ranch Co V#12516 WD			5-10-67	96	165	
Brooks Resources Corporation	V#45905	SWD	7/13/82	MF	63411	
Brooks Resources Investment Corporation	V#49081	BSD	7-13-84	MF	71119	
Brooks Resources Corp	V#51512	WD	11-21-85	MF	77463	
% Raasch, Ronald A	V51868	Mem of Cont	3-5-86	MF	76672	
Raasch, Ronald A.	V#63634	B&SD	5-1-92	MF#103644		
BROWN, Warren R		WD	7-17-97	MF134315		
NOTE:		WD	7-24-02	MF172444		
		r/w ez	11-24-03	MF184512		
Powell Butte Investments LLC		SW	03-01-05	MF194743		
Freund/Spencer Investment Group, LLC an und 22.6663% Powell Butte Investments, LLC, an und 77.3337 % int		BS	04-06-05	MF198211		
Freund, Jerry R. & Jeannie L. as to an und 38.6685% Spencer, Kevin L. & Linda C. as to an und 38.6685% Freund/Spencer Investment Group LLC an und 22.6663%		BS	05-27-05	MF199550		
Powell Butte Vistas, LLC		SW	9/23/05	MF202909		
		EASE	10-16-06	MF201747		
Powell Butte Vistas, LLC & Freund/Spencer Investment Group LLC und 5% int		WD	3-1-07	MF219154		
Powell Butte Vistas, LLC & Powell Butte Investments LLC und 5% int		BS	3-1-07	MF219155		
Powell Butte Vistas, LLC & Powell Butte Investments LLC und4.8240057% int & VSN Properties, LLC und .1759943% int		BS	1-22-08	MF225197		

STATE PRINTING

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTIES

OFFICE OF COUNTY ASSESSOR CROOK COUNTY, OREGON

CODE NO. _____

MAP NO. 16 15	TAX LOT NO. 1900	SECTION	TOWNSHIP S.	RANGE E.W.M.	AERIAL PHO
ACCOUNT NUMBER					
LOT NO.	BLOCK NO.	ADDITION		CITY	

INDENT EACH NEW COURSE TO THIS POINT	LEGAL DESCRIPTION		DATE OF ENTRY	DEED RECORD VOLUME	DEED RECORD PAGE	ACRES REMAINING
	Powell Butte Vistas, LLC	BS	2-10-10	MF	238775	
		LS	2-10-10	MF	238776	
		EASE	2-7-13	MF	256192	
		QC	9-9-19			

STATE PRINTING 93169

Crook County Ownership Report

REAL PROPERTY ACCOUNT NAMES

Account Number: 2178

Map Tax Lot: 16150000-01900-2178

Owner: 63026 NE LOWER MEADOW DR STE 200
BEND OR 97701

Party Name	Party Type	Ownership Percentage
POWELL BUTTE VISTAS LLC	OWNER	100.00
POWELL BUTTE VISTAS LLC	Taxpayer	100.00

3/10/2021 9:15:03 AM

Crook County Ownership Report

REAL PROPERTY ACCOUNT NAMES

Account Number: 2163

Map Tax Lot: 16150000-00800-2163

Owner: 63026 NE LOWER MEADOW DR STE 200
BEND OR 97701

Party Name	Party Type	Ownership Percentage
POWELL BUTTE VISTAS LLC	OWNER	100.00
POWELL BUTTE VISTAS LLC	Taxpayer	100.00

3/10/2021 9:21:11 AM

Crook County Planning Department
300 NE 3rd Street, Prineville, OR 97754
(541)447-3211
ccplan@co.crook.or.us

AMENDED FINDINGS AND DECISION

(Legal Parcel Verifications)
August 31, 2018

File Number: **217-18-000138-PLNG**

Applicant: **Powell Butte Vistas, LLC**
63026 Lower Meadow Drive
Bend, Oregon 97701

Agent: **Erik Huffman**
549 SW Mill View Way #105
Bend, Oregon 97702

REQUEST: The Applicant requests verification of the following tax lots as individual, discrete legal parcels:

Township 16 S, Range 15 EWM, Sections 5,7,8,9,15,16,17, 20 and 21, tax lot 800 (2,446 acres).
Township 16 S, Range 15 EWM, Section 15, Tax lot 1800 (392.96 acres).
Township 16 S, Range 15 EWM, Section 16, Tax lot 1900 (80 acres).

The Applicant also requests confirmation that the thirteen parcels that comprise tax lot 800 are all individual, discrete, legal parcels.

BASIC FINDINGS:

LOCATION: The properties are located at 12417 SW George Millican Road, Prineville, Oregon.

ZONING: The property is zoned Exclusive Farm Use, EFU- 3 (Powell Butte Areas)

DESCRIPTION: The subject property consists of dryland sage/juniper. It has had limited grazing. The property is undeveloped except for cell towers on the top of Powell Butte and a solar facility on tax lot 1800.

There are no dwellings on any of the tax lots.

FINDINGS of FACT:

History of Ownership: The three tax lots were originally created by patent deeds from 1889 – 1930. (See attachment A for a map showing the patent deeds).

Verification Parcel A: T16S, R15E WM, sections 5,7,8,9,15, 16,17,20 and 21, tax lot 800.
Legal description: Township 16S, Range 15E WM: 2,446.04 acres
Section 5: S1/2SW1/4
Section 7: S1/2NE1/4, SE1/4
Section 8: W1/2 and SE1/4
Section 9: S1/2SE1/4
Section 15: W1/2SW1/4, W1/2NW1/4, North 80 feet of E1/2NW1/4 and North 80 feet of NE1/4.
Section 16: E1/2NE1/4, NW1/4, W1/2NW1/4, SE1/4SW1/4.
Section 17. All
Section 20: E1/2NE1/4.
Section 21: NW1/4, N1/2SW1/4, NW1/4SE1/4 and SW1/4SW1/4

Tax lot 800 (Parcel A) consists of thirteen (13) legal parcels all legally created by separate patent deeds. (see Attachment B – Tax card). The following is a summary of the deeds.

1. Document No: 1-789; recorded 6/17/1889.
2. Document No: 2-224; recorded 4/27/1908.
3. Document 4-581; recorded 8/13/1891.
5. Document 6-145; recorded 5/27/1912
6. Document 7-300; recorded 6/2/1914
7. Document 8-50; recorded 3/5/1917
8. Document 8-58; recorded 4/23/1917
9. Document 8-90; recorded 6/13/1917
10. Document 8-166; recorded 12/13/1918
11. Document 8-167; recorded 12/13/1918
12. Document 8-250; recorded 6/4/1918
13. Document 8-393; recorded 6/7/1919
16. Document 289816; 05/27/1912

The subject properties were created by patent deeds from 1889 – 1919. Tax Lot 800 consists of 13 individual legal parcels. None of the parcels has ever been divided by land use action. Parcels 15 and 16 were shared between tax lot 800 and tax lot 1800. A lot line adjustment moved the line between parcel 15 and 16 to align with the western boundary of tax lot 1800. (217-15-000265-PLNG). (See Attachment C). The adjustment was 160 acres and resulted in parcel 15 being fully within tax lot 1800 and parcel 16 being fully within tax lot 800.

Verification Parcel B: T16S, R 15E WM, Section 15, tax lot 1800.
Legal description: Township 16S, Range 15E WM, Section 15, E1/2SW1/4, W1/2SE1/4, E1/2NW1/4 and NE1/4, excepting therefrom the north 80 feet of E1/2NW1/4 and North 80 feet of the 1/4. (Attachment D).

4. Document 5-352; recorded 1/6/1908
14. Document 8-520; recorded 5/19/1930
15. Document 24-205; recorded 3/10/1911

The subject property was created by patent deed. The tax assessor's records date back to 1958, prior to Crook County's zoning code and land division ordinances. Tax Lot Card entries reflect this property in 1958 when it was a 160 acre parcel owned by Donald W. Thompson. (Attachment E). The property was transferred multiple times as the same 160 acre parcel. A boundary line adjustment with Tax lot 800 added 232.96 acres resulting in a 392.96 acre parcel (see 217-15-000265-PLNG).

Verification Parcel C: T16S, R15E, Section 16, tax lot 1900.
Legal description: Township 16S, Range 15E WM, Section 16, W1/2, NE ¼ (Attachment F). Section 16 was originally conveyed from the U.S. Government to the State of Oregon, presumably at statehood. Tax lot 1900 is an existing 80 acre parcel created prior to 1958 from this parent parcel. It has never been divided or altered by land use action. Tax lot 1900 is a separate, legal parcel. Attachment G is the tax card for Tax lot 1900, which shows the chain of title from 1958 to the present. No findings regarding the status of other lots in Section 16 are addressed in this decision.

ANALYSIS:

Tax lot 800 consists of thirteen (13) individual, separate legal parcels, created by patent deed. Tax lots 1800 and 1900 are existing parcels that were created by patent deed prior to the adoption of Crook County's land development and partition ordinances in 1973. There was no minimum allowable lot size at the time of the properties were created. They are eligible for recognition as legal parcels.

ORS 215.010 defines a lawful parcel of land to include a unit of land created by "deed of land sale contract, if there were no applicable planning, zoning or partitioning ordinances or regulations." In this case, the United States created distinct legal parcels through its issuance of various patents between the years of 1889 and 1930. At the time the patents were issued, neither the State of Oregon nor Crook County had rules, regulations or ordinances governing the creation or conveyance of legal parcels. Prior to 1973 when Crook County adopted its partitioning ordinance, a landowner could create a legal parcel by separately describing land in a recorded deed. *See Palaske v. Clackamas County,* 43 OR LUBA 202 (2002). ("Statutory provisions regarding land partitions adopted in October 1973 but were not self-executing; statutory requirements for land partitions did not apply to individual applications to partition land until after local governments adopted implementing regulations").

Under ORS 215.010, tax lots 1800, 1900 and 800 (consisting of 13 separately deeded parcels) are separate and lawful parcels of land, created by patent deed. Tax lot 1900 has not been altered since 1958 (the earliest deed reflected in the Assessor's tax card). Tax lot 1800 was altered in 2016 through a boundary line adjustment with Tax lot 800. Tax lot 800 was altered through lot line adjustments in 2016 (with tax lot 1800). No other alterations of these properties have occurred.

By statute, Oregon law protects the legal status of such lawfully created parcels. ORS 92.017 specifically states that, "[a] lot or parcel lawfully created shall remain a discrete lot or parcel, unless the lot or parcel lines are vacated or the lot or parcel is further divided, as provided by law". In *Kishpaugh v. Clackamas County,* 24 OR LUBA 164, 172 (1992). While it has been determined that a partition plat eliminates historic lot lines within the boundaries of platter parcels (*Weyerhaeuser Real Estate Development co. v. Polk Count,* 246 OR App 548, 267 P3d 855 (2011), a property line adjustment does not have the same effect because it does not create new parcels.

LUBA has made it clear that a property line adjustment does not create new parcels of the properties that are being adjusted. As LUBA said in *Crook County v. Espinola,* ___Or LUBA ___(LUBA No. 2008-053, September 18, 2008):

*"In general, a parcel can be created only through a "partition," the relevant statutory definitions of which expressly exclude property line adjustments. ORS 92.010(6), (7), (8). With an exception discussed below [*reconfiguring parcels to qualify it to site a dwelling], *a decision that qualifies as a "property line adjustment" as defined at ORS 92.010(12), i.e.., that only relocated or eliminates a common property line between abutting properties, typically does not "create" new parcels or result in parcels with a new date of creation. McKay Creek Valley Assoc. v. Washington County,* 24 Or LUBA 187, 1196 (1992), *aff'd* 118 Or App 543, 848 P2d 624 (1993)"

As noted above, a boundary line adjustment was approved between the former tax lot 1800 and tax lot 800. When the adjustment was approved, none of the thirteen individual parcels comprising tax lot 800 were eliminated because ORS 92.017 states that the parcel lines remain unless vacated or divided "as provided by law." No partition occurred and neither State law nor Crook County code provides a lawful process allowing more than one property line to be moved or eliminated by a single property line adjustment.

Crook County Code defines property line adjustments and authorizes a property owner to move one boundary line between two properties. Specifically, CCC 17.08.010(31) provides:

"Partition land" means to divide land into two or three parcels of land within a calendar year ***but does not include***: (emphasis added)

(b) An adjustment of a property line by the relocation of a common boundary where an additional use of land is not created, and where the existing unit of land reduced in size by the adjustment complies with the applicable zoning requirements including minimum lot size."

ORS 92.010(12) was adopted in 2007 to define a property line adjustment to include the elimination of one common boundary line between abutting properties. This law was adopted in response to a LUBA decision that held that property lines may not be eliminated by approval of a property line adjustment. *South v. City of Portland, 48 OR LUBA 555 (2005).* Crook County has not amended its definition of "partition land" to define a property line adjustment as including the elimination of a common boundary line.

The boundary line adjustment between tax lots 800 and 1800 in 2016 eliminated only one property line, as authorized by State law. Although multiple adjustments may be approved together, a deed must be recorded for each adjustment (ORS 92.192). In the case of the 2016 adjustment, numerous deeds would have been required to be recorded to remove each of the lot lines that exist among the legal parcels that make up tax lot 800. This did not occur as part of the 2016 property line adjustment. The 2016 boundary line adjustment between tax lot 800 and 1800 did not eliminate any property lines. It moved a common property line without eliminating historic existing property lines.

Established case law provides that common ownership of adjacent parcels is not enough to show that the parcels have been aggregated into a single parcel. *Tarjoto v. Lane County,* 34 OR LUBA 124, 129 (1998). In *Tarjoto*, LUBA ruled that legal parcels created by federal patents remained separate and distinct even though later conveyed under common ownership in a single deed.

The subject parcels were created prior to Crook County's adoption of a partitioning ordinance and are valid legal parcels under ORS 215.010. Parcel lines of the subject parcels have never been vacated and have retained their discrete legal status.

CONCLUSION:

Therefore, based upon the "*FINDINGS of FACT*" and "*ANALYSIS*" legal lot verification 217-18-000138-PLNG that tax lots 1800 and 1900 discussed above have been separately described in the original deeds and conveyed. In addition, the 13 parcels that comprise tax lot 800 have also been separately described and conveyed. The parcels have retained their status as discrete parcels and determined to be valid parcels based upon their creation by deed. **Any development of the parcels is subject to the current requirements of the Crook County Code and the Crook County Comprehensive Plan.**

Respectfully submitted,

Ann Beier, Director

cc: Owner
Agent

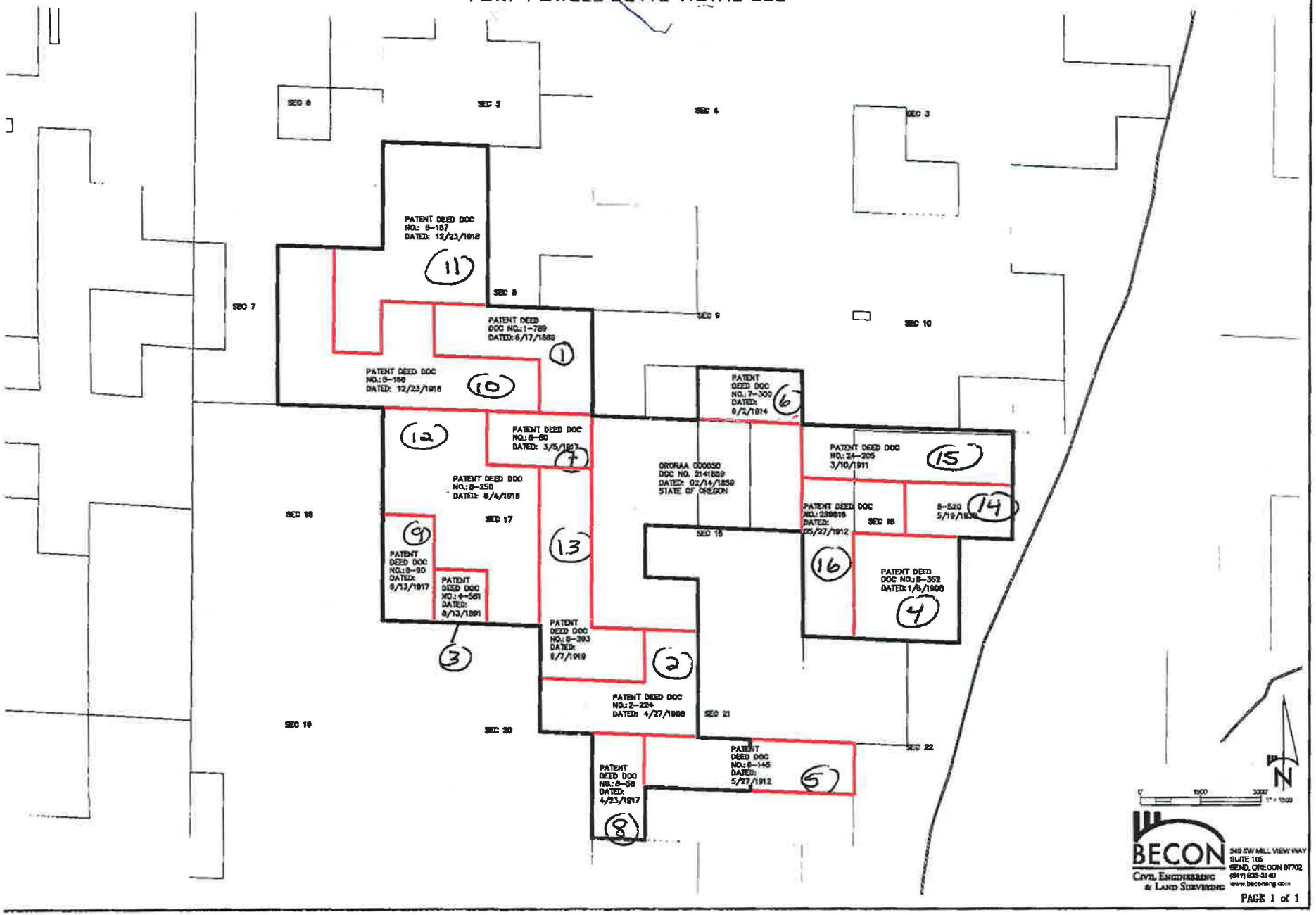
Attachments

247-18-000138-PL NG
Attachment A

PATENT DEEDS WITHIN MAP 16-15-00 TAX LOTS 800, 1800, & 1900

FOR: POWELL BUTTE VISTAS LLC

PROJECT #: 18043
DATE: 06/28/2018
DRAWN BY: JLB/CWA



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(541) 633-3140
www.beconeng.com

TWP.	RGE.	SEC.	1/4	1/16	PARCEL NUMBER	Type	Spec. Int. In	CODE AREA NUMBER
16	15				800			1
MAP NUMBER						REAL PROP.		
TAX LOT NUMBER								

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY
Crook COUNTY ASSESSOR'S OFFICE
FORMERLY PART OF

Indent each new course to this point	DESCRIPTION AND RECORD OF CHANGE	Date of entry on this card	Deed Record Vol.	Deed Record PG.	Acres Remaining
	2163 EFU3				
	! Also-See A1 accts on separate card				
	Sec 5: S½SW¼ Sec 7: S½NE¼; SE¼ Sec 8: W½; SE¼ Sec 9: S½SE¼ Sec 15: N½N½; S½NE¼; W½SE¼; E½SW¼ Sec 16: E½NE¼; NW¼; NW¼SW¼; S½SW¼ Sec 17: All Sec 20: E½NE¼ Sec 21: NW¼; N½S½; SW¼SW¼				
	PAGE 1				
	BROWN, Warren R. JV50180	7-14-86	MF	79184	272C
	Exc: Parcel 800A1				
	Exc: Parcel 800A2 JV56939	1-18-89	Request		271970
	WELL	11-20-96	MF130570		
	LLA to:Parcel 2500 -40.00 WD	2/8/01	13[illegible]316		[illegible]
	Exc: Sec. 21: NE1/4SE1/4 -40.00 LLA	8/23/01	MF 159299		2,679.0
	NOTE	1-9-02	MF166188		
	r/w ez	11-24-03	MF184512		
	Powell Butte Investments, LLC SW	11-05-04	MF194743		
	Freund/Spencer Investment Group, LLC an und 22.6663% interest Powell Butte Investments, LLC an und 77.3337% BS	04-06-05	MF193211		
	Freund, Jerry R. & Jeannie L. as to an und 38.6685% BS Spencer, Kevin L. & Linda C. as to an und 38.6685% Freund/Spencer Investment Group LLC an und 22.6663%	5-20-05	MF199550		
	Powell Butte Vistas, LLC SW	9/23/05	MF202909		
	Powell Butte Vistas, LLC & Freund/Spencer Investment Group LLC und 5% int WD	3-1-07	MF219154		
	Powell Butte Vistas, LLC & Powell Butte Investments LLC und 5% int BS	3-1-07	MF219155		
	CONT'D				

Attachment B
page 2 of 2

TWP.	RGE.	SEC.	1/4	1/16	PARCEL NUMBER	Type	Spec. Int. In REAL PROP.	CODE AREA NUMBER
16	15				800			

MAP NUMBER / TAX LOT NUMBER

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY
COUNTY ASSESSOR'S OFFICE

FORMERLY PART OF

Indent each new course to this point: 2163

DESCRIPTION AND RECORD OF CHANGE — PAGE 2

		Date of entry on this card	Deed Record Vol.	Deed Record PG.	Acres Remainin
Powell Butte Vistas, LLC & Powell Butte Investments LLC und4.8240057% int & VSN Properties, LLC und .1759943% int	BS	1-22-08	MF225197		
Powell Butte Vistas, LLC	BS	2-10-10	MF238775		
	LS	2-10-10	MF238776		
USA DOT	LS	1-27-14	261679		
	Vacate	6-2-16	274189		
	EASE	6-8-16	274281		

REVISED LEGAL:
IN TOWNSHIP 16 SOUTH, RANGE 15 EAST OF THE WILLAMETTE MERIDIAN, CROOK COUNTY, OREGON:
SECTION 5: S1/2SW1/4.
SECTION 7: S1/2NE1/4, SE1/4.
SECTION 8: W1/2 AND SE1/4.
SECTION 9: S1/2SE1/4.
SECTION 15: W1/2SW1/4, W1/2NW1/4, NORTH 80 FEET OF E1/2NW1/4 AND NORTH 80 FEET OF NE1/4.
SECTION 16: E1/2NE1/4, NW1/4, W1/2SW1/4, SE1/4SW1/4.
SECTION 17: ALL.
SECTION 20: E1/2NE1/4.
SECTION 21: NW1/4, N1/2SW1/4, NW1/4SE1/4,A ND SW1/4SW1/4.
SUBJECT TO: ALL EASEMENTS, RESTRICTIONS,A ND RIGHT-OF-WAYS OF RECORD AND THOSE COMMON AND APPARENT ON THE LAND.

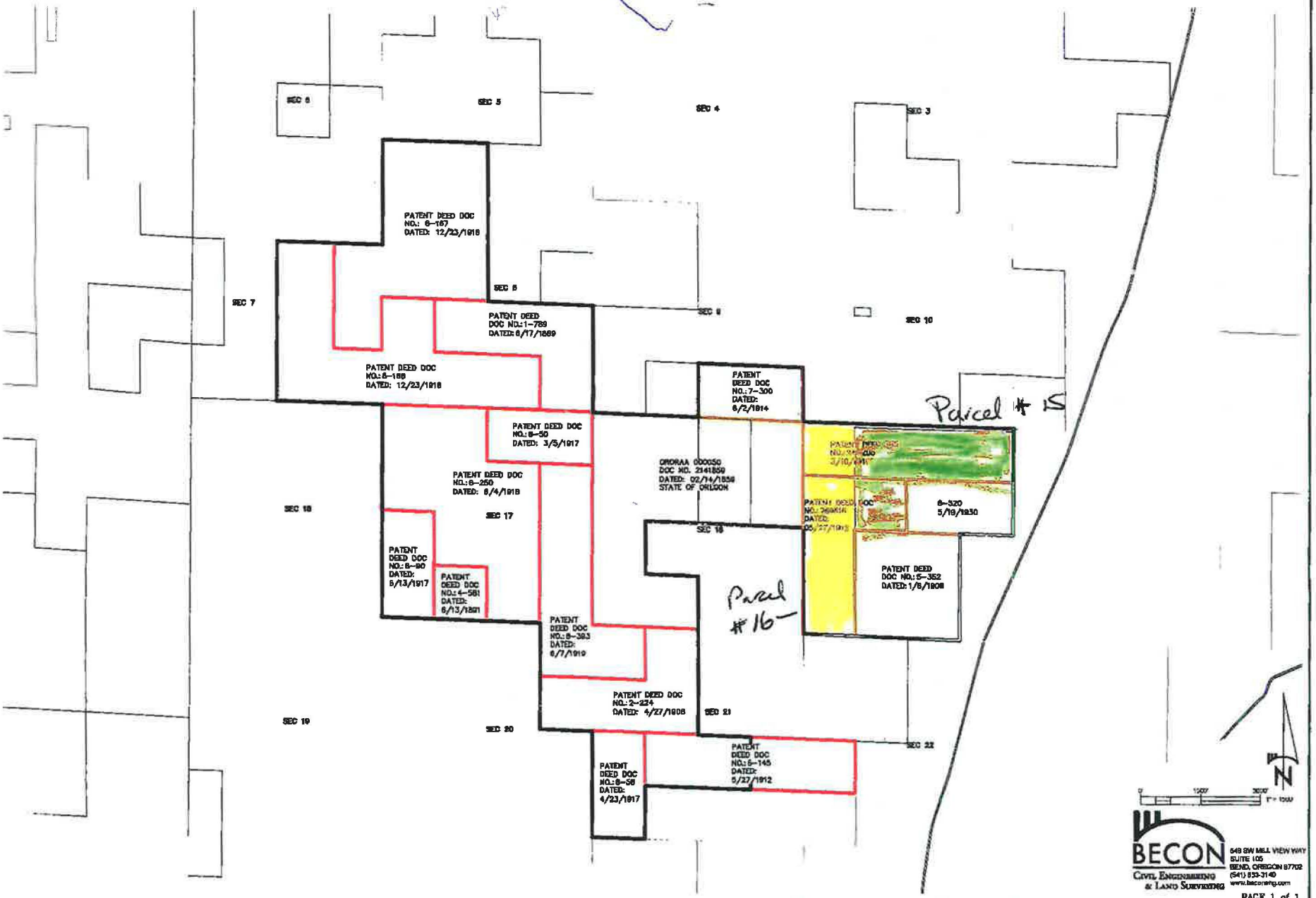
-232.96	BLA	8/23/16	273887		2446.04

After Boundary Line Adjustment

PATENT DEEDS WITHIN MAP 16-15-00 TAX LOTS 800, 1800, & 1900

FOR: POWELL BUTTE VISTAS LLC

PROJECT #: 18043
DATE: 06/28/2018
DRAWN BY: JLB/CWA



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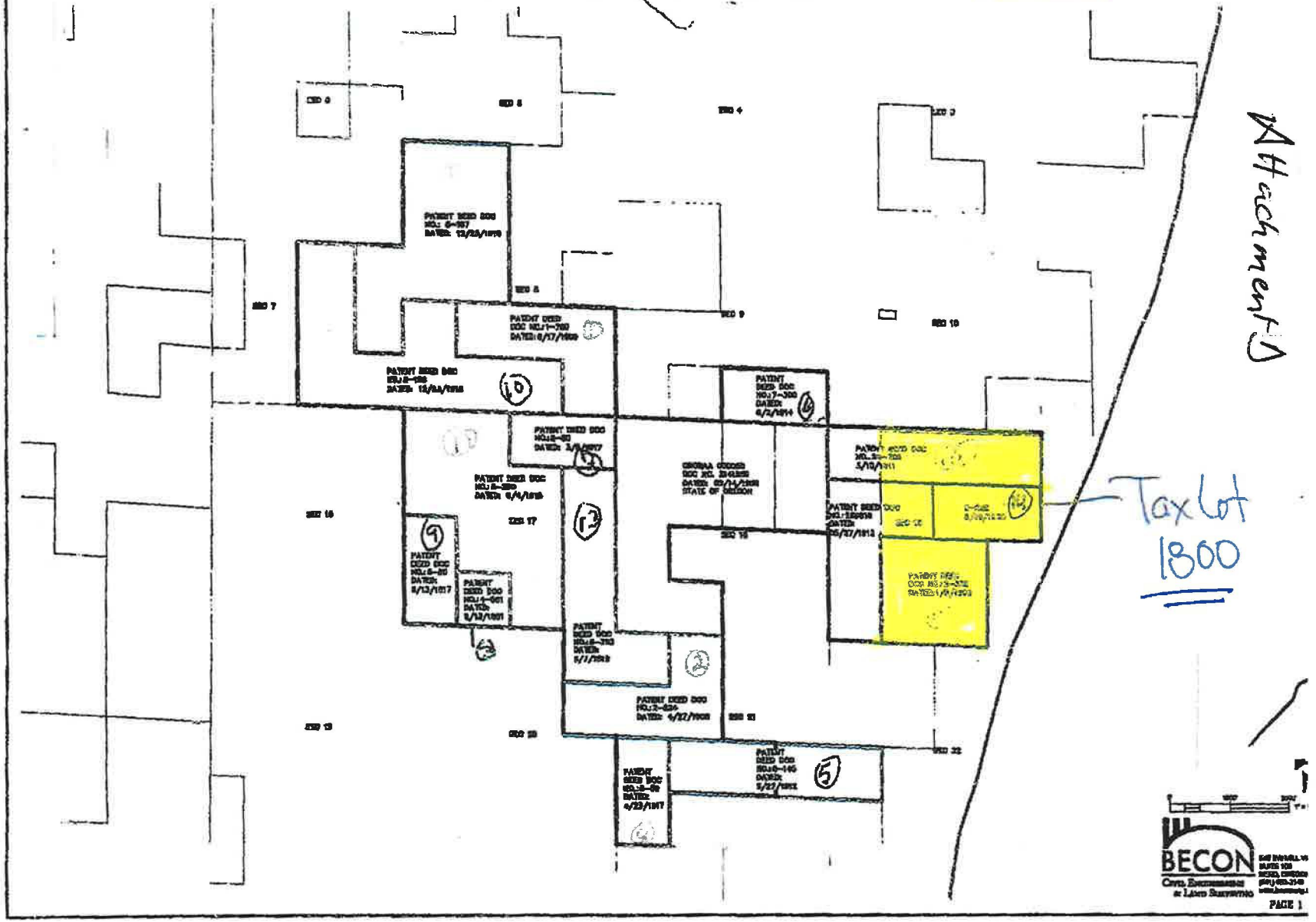
SUITE 105
BEND, OREGON 97702
(541) 633-3140
www.beconeng.com

Attachment C

PATENT DEEDS WITHIN MAP 16-15-00 TAX LOTS 800, 1800, & 1900

FOR: POWELL BUTTE VISTAS LLC

PROJECT #: 1
DATE: 06/23
DRAWN BY: J



Attachment E p 1 of 2

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTIES

OFFICE OF COUNTY ASSESSOR CROOK COUNTY, OREGON CODE NO. 1

1800

MAP NO. 16 15	TAX LOT NO. ~~18~~	SECTION 15	TOWNSHIP 16 S.	RANGE 15 E.W.M.	AERIAL PHOTO
ACCOUNT NUMBER					
LOT NO.	BLOCK NO.	ADDITION PAGE 1	CITY		

INDENT EACH NEW COURSE TO THIS POINT

2177 LEGAL DESCRIPTION EFU3

DATE OF ENTRY	DEED RECORD VOLUME	DEED RECORD PAGE	ACRES REMAINING

S½ NW¼; W½ SW¼

Thompson, Donald W.			1-1-58	54	227	160.00
Thompson, Donald W & Frieda W	V#36311	QCD	7-3-78	MF	45823	
		Easement	7-27-81	MF	59709	
Ward, Frieda W. V#56826		Death Certi.	9-28-88	MF	88772	
Brown, Warren R. V#56826		BSD	9-29-88	MF	88773	
Powell Butte Investments, LLC		SW	11-05-04	MF	194743	
Freund/Spencer Investment Group, LLC an und 22.6663% Powell Butte Investments, LLC an und 77.3337% int		BS	04-06-05	MF	198211	
Freund, Jerry R. & Jeannie L. as to an und 38.6685% Spencer, Kevin L. & Linda C. as to an und 38.6685% Freund/Spencer Investment Group LLC an und 22.6663%		BS	05-27-05	MF	199550	
Powell Butte Vistas, LLC		SW	9/23/05	MF	202909	
Powell Butte Vistas, LLC & Freund/Spencer Investment Group LLC und 5% int		WD	3-1-07	MF	219154	
Powell Butte Vistas, LLC & Powell Butte Investments LLC und 5% int		BS	3-1-07	MF	219155	
Powell Butte Vistas, LLC & Powell Butte Investments LLC und4.8240057% int & VSN Properties, LLC und .1759943% int		BS	1-22-08	MF	225197	
Powell Butte Vistas, LLC		BS	2-10-10	MF	238775	
		LS	2-10-10	MF	238776	
		EASE	6-8-16		274281	

CONT'D

STATE PRINTING 98169

Attachment E
p 2 of 2

TWP.	RGE.	SEC.	1/4	1/16	PARCEL NUMBER	Type	Spec. Int. In REAL PROP.	CODE AREA NUMBER
16S	15E				1800			21

MAP NUMBER

TAX LOT NUMBER

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY

COUNTY ASSESSOR'S OFFICE

FORMERLY PART OF

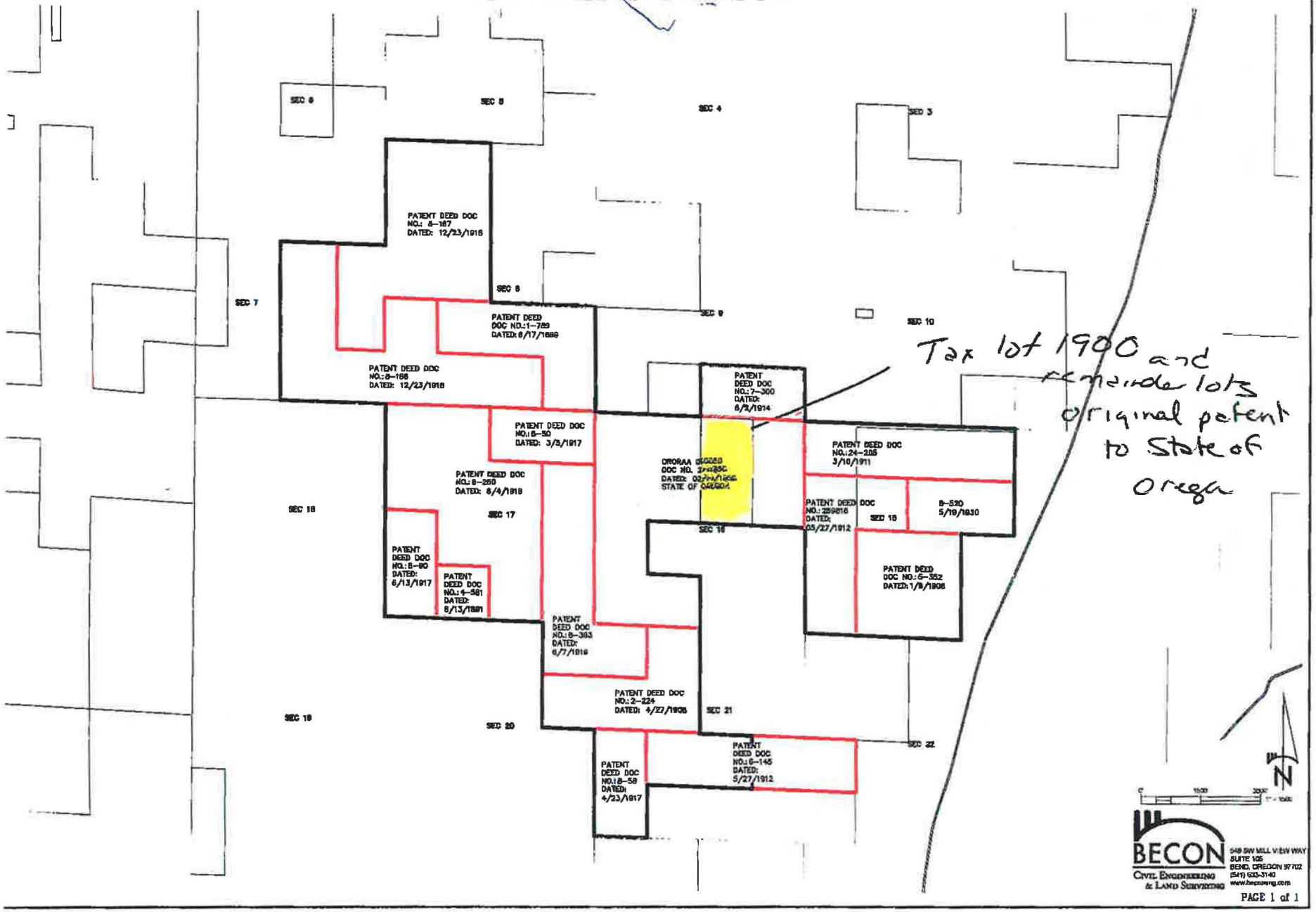
Indent each new course to this point	2177 DESCRIPTION AND RECORD OF CHANGE	Date of entry on this card	Deed Record Vol.	Deed Record PG.	Acres Remaining
	PAGE 2				
	REVISED LEGAL DESC: IN TOWNSHIP 16 SOUTH, RANGE 15 EAST OF THE WILLAMETTE MERIDIAN, CROOK COUNTY, OREGON: SECTION 15: E1/2SW1/4, W1/2SE1/4, E1/2NW1/4 AND NE1/4, EXCEPTING THEREFROM THE NORTH 80 FEET OF E1/2NW1/4 AND NORTH 80 FEET OF THE NE1/4. SUBJECT TO: ALL EASEMENTS, RESTRICTIONS AND RIGHT-OF-WAYS OF RECORD AND THOSE COMMON AND APPARENT ON THE LAND. +232.96 AC BLA	8/23/16	273	887	392.96

COUNTY FORM 303-048 (Rev. 12-72)
OREGON DEPARTMENT OF REVENUE

PATENT DEEDS WITHIN MAP 16-15-00 TAX LOTS 800, 1800, & 1900

FOR: POWELL BUTTE VISTAS LLC

PROJECT #: 18043
DATE: 08/28/2018
DRAWN BY: JLB/CWA



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BEND, OREGON 97702
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Attachment F

Attachment G

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTIES

OFFICE OF COUNTY ASSESSOR CROOK COUNTY, OREGON CODE NO. 1

1900

MAP NO. 16 15	TAX LOT NO. ~~19~~	SECTION 16	TOWNSHIP 16 S.	RANGE 15 E.W.M.	AERIAL PHOTO
ACCOUNT NUMBER					
LOT NO.	BLOCK NO.	ADDITION	CITY		

INDENT EACH NEW COURSE TO THIS POINT

2178 LEGAL DESCRIPTION EFU3

			DATE OF ENTRY	DEED RECORD VOLUME	DEED RECORD PAGE	ACRES REMAINING
W½ NE¼						
Hudspeth Land & Livestock			1-1-58	74	239	80.00
Boston Ranch Co V#12516 WD			5-10-67	96	165	
Brooks Resources Corporation	V#45905	SWD	7/13/82	MF	63411	
Brooks Resources Investment Corporation	V#49081	BSD	7-13-84	MF	71119	
Brooks Resources Corp	V#51512	WD	11-21-85	MF	77463	
% Raasch, Ronald A	V51868	Mem of Cont	3-5-86	MF	76672	
Raasch, Ronald A.	V#63634	B&SD	5-1-92	MF#1	03644	
BROWN, Warren R		WD	7-17-97	MF134315		
NOTE:		WD	7-24-02	MF172444		
		r/w ez	11-24-03	MF184512		
Powell Butte Investments LLC		SW	03-01-05	MF194743		
Freund/Spencer Investment Group, LLC an und 22.6663% Powell Butte Investments, LLC, an und 77.3337 % int		BS	04-06-05	MF198211		
Freund, Jerry R. & Jeannie L. as to an und 38.6685% Spencer, Kevin L. & Linda C. as to an und 38.6685% Freund/Spencer Investment Group LLC an und 22.6663%		BS	05-27-05	MF199550		
Powell Butte Vistas, LLC		SW	9/23/05	MF202909		
		EASE	10-16-06	MF201747		
Powell Butte Vistas, LLC & Freund/Spencer Investment Group LLC und 5% int		WD	3-1-07	MF219154		
Powell Butte Vistas, LLC & Powell Butte Investments LLC und 5% int		BS	3-1-07	MF219155		
Powell Butte Vistas, LLC & Powell Butte Investments LLC und4.8240057% int & VSN Properties, LLC und .1759943% int		BS	1-22-08	MF225197		

STATE PRINTING 68169

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTIES

OFFICE OF COUNTY ASSESSOR CROOK COUNTY, OREGON

CODE NO. _____

MAP NO. 16 15	TAX LOT NO. 1900	SECTION	TOWNSHIP S.	RANGE E.W.M.	AERIAL PHOTO
ACCOUNT NUMBER					
LOT NO.	BLOCK NO.	ADDITION		CITY	

INDENT EACH NEW COURSE TO THIS POINT	LEGAL DESCRIPTION	DATE OF ENTRY	DEED RECORD VOLUME	DEED RECORD PAGE	ACRES REMAINING
	Powell Butte Vistas, LLC				
	BS	2-10-10	MF238775		
	LS	2-10-10	MF238776		
	EASE	2-7-13	MF 256192		

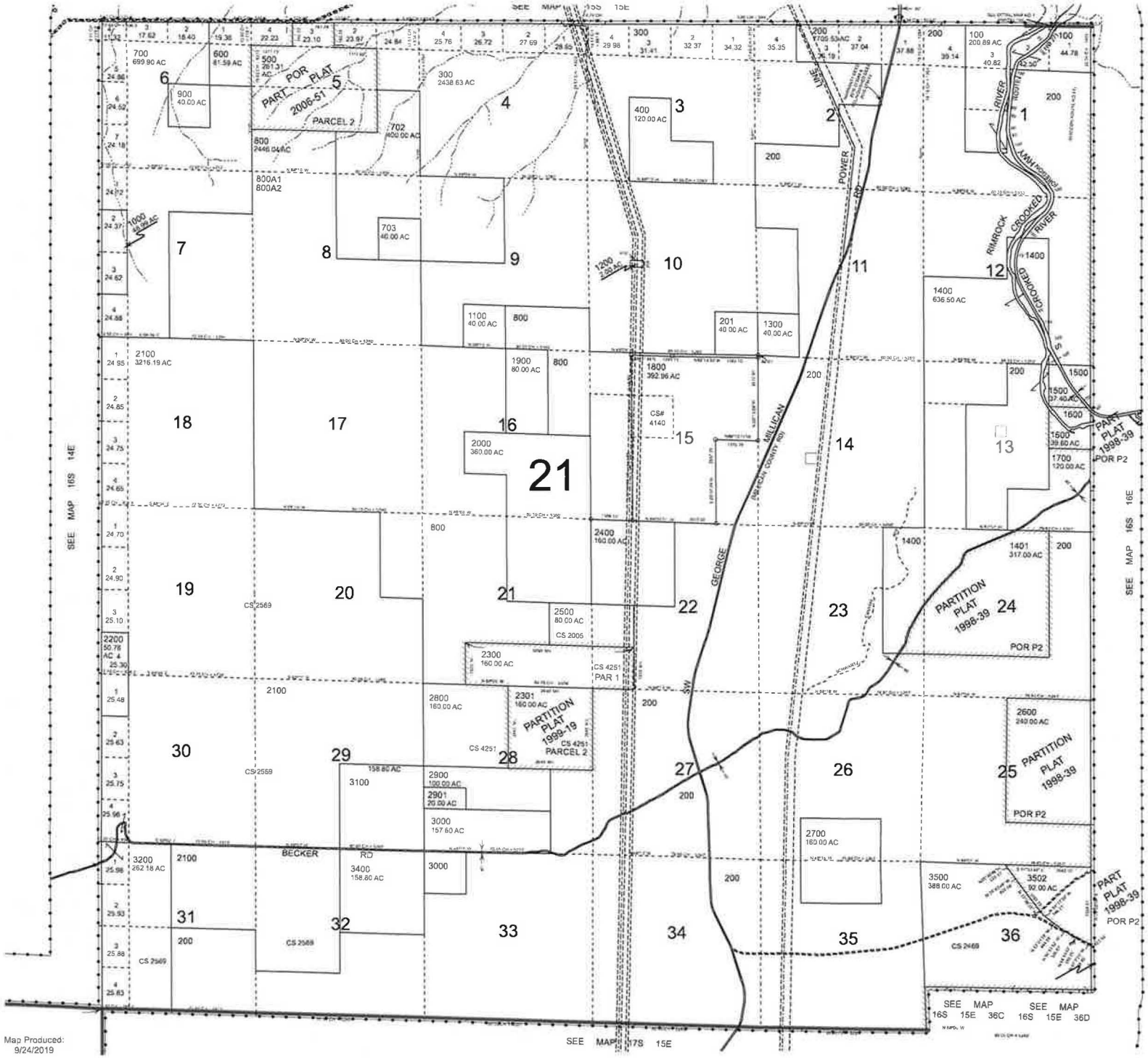
STATE PRINTING 69169

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

0 1,000 2,000 3,000 4,000 Feet

T.16S. R.15E. W.M.
CROOK COUNTY
1" = 2000'

16S15E
CANCELED:
1000U1
1000U2
1000A1
101
102
1402
1403
2500U1
2500U2
3300
3501
701
800U1
800U2



Map Produced:
9/24/2019

Revised:
16S15E

EXHIBIT D

CROOK COUNTY LUDO AND STATE CRITERIA REVIEW

Crook County and State Criteria Review

This Exhibit reviews the applicable land use and development ordinance for the Application and proposed use, as indicated by Crook County Planning Department staff from prior consultations, as per below. Pertinent select sections of these chapters and ordinances have been copied below, with responses provided to each as relates to this Application.

APPLICABLE CRITERIA

Crook County Code (CCC)

Chapter 18.16 Exclusive Farm Use Zones, EFU-1 (Post-Paulina Area), EFU-2 (Prineville Valley-Lone Pine Areas), and EFU-3 (Powell Butte Area)

Chapter 18.160 Conditional Uses

Chapter 18.161 Commercial Power Generating Facilities

Crook County Comprehensive Plan

CCC Chapter 18.180 Transportation Impact Analysis

Oregon Revised Statutes

ORS 215.274 (Associated transmission lines)

ORS 215.283 (Uses authorized on agricultural lands)

Oregon Administrative Rules

OAR 660-033-0120

OAR 660-033-0130(5), (38) (Minimum standards for allowed uses)

APPLICABLE CRITERIA REVIEW AND APPLICANT RESPONSES

CCC Title 18, Chapter 18.160 Conditional Uses

18.16.020 Conditional use review criteria.

An applicant for a use permitted as a conditional use "C" in Table 1 must demonstrate compliance with the following criteria and specific requirements for conditional uses in Chapter 18.160 CCC:

(1) The use will not force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use;

(2) The use will not significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use; and

***Response**: The proposed use will force no significant changes (if any changes) to neighboring farm practices (there are no surrounding lands devoted to forest use). Property to the east is a*

solar photovoltaic facility. Other surrounding lands have limited seasonal grazing that will have limited, if any impacts associated with the solar facility. The proposed facility will not force a significant change in nor increase the cost of accepted farm practices.

(3) The proposed use will be compatible with vicinity uses, and satisfies all relevant requirements of this title and the following general criteria:

(a) The use is consistent with those goals and policies of the comprehensive plan which apply to the proposed use;

(b) The parcel is suitable for the proposed use considering its size, shape, location, topography, existence of improvements and natural features;

(c) The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zoning district;

(d) The proposed use is appropriate, considering the adequacy of public facilities and services existing or planned for the area affected by the use; and

(e) The use is or can be made compatible with existing uses and other allowable uses in the area. (Ord. 309 § 2 (Exh. C), 2019)

***Response**: No significant changes (if any) in use or practices will be forced upon surrounding lands. The lands surrounding the proposed facility are all currently either in agricultural use, primarily for grazing, or are already a solar photovoltaic facility; none of surrounding lands are in forestry. The facility, once built, will be environmentally low impact and a relatively static facility comprised of racking structures of solar panels harvesting sun, much like other crops, with minimally detectable noise levels at or below agricultural practices, mostly due to occasional as-needed maintenance activity. The site has no irrigation rights and uses minimal to no water; operation will not affect neighboring water intensive properties with present water rights.*

Thus, overall, the proposed solar facility use is not expected to have a significant impact (if any) on surrounding land uses. The most significant impacts will occur during primary construction, which may range from 4 – 8 months, with peak activity likely 2-4 months, during which times car and truck traffic delivering materials, equipment, and workers to the site will increase and there will be visual and acoustic impacts consistent with typical construction activities.

Once operational, the solar facilities will have only minor view shed effects and are often considered to look similar to crops or bodies of water from an aerial perspective. The facility will not include any tall structures other than the overhead transmission lines required for the facility substation to connect to the PAC or BPA substation facilities, as applicable. There are transmission lines immediately adjacent to the east of the parcel. The technologies and equipment selected are expected to avoid any glare impacts (for example, photovoltaic solar projects have been FAA approved on airport sites and are generally anti-reflective due to desire to absorb maximal amount of sunlight) and facilitate subsequent site restoration revegetation with native species. The facility is expected to be remotely monitored with maintenance personnel visiting the site periodically. Vegetation and weed control (discussed further below) will be included in the operations and maintenance plans for the project.

Based on the lack of significant changes to surrounding uses as described above, applicant believes that the proposed solar facility will not have a significant impact (if any) on the cost of surrounding land uses. Solar PV plants have not demonstrated an appreciable impact to the uses of neighboring land. The facility will be self-contained and should not impede any currently utilized routes for accessing surrounding properties, except for the landowner providing the land for the facility who is comfortable with minor expected effects and planned accordingly for his own adaptations. The facility will not utilize any water rights and will not compete for equipment and services that support surrounding agricultural uses.

CCC 18.16.060(3) Photovoltaic Solar Power Generation Facility

CCC 18.16.060(3) establishes standards for siting a photovoltaic solar power generation facility on EFU ground. The code language mirrors the definitions and provisions in OAR 660-033-130(38).

(3) Photovoltaic Solar Power Generation Facility. A proposal to site a photovoltaic solar power generation facility shall be subject to the following definitions and provisions:

(a) "Arable land" means land in a tract that is predominantly cultivated or, if not currently cultivated, predominantly comprised of arable soils.

(b) "Arable soils" means soils that are suitable for cultivation as determined by the governing body or its designate based on substantial evidence in the record of a local land use application, but "arable soils" do not include high-value farmland soils described at ORS 195.300(10) unless otherwise stated.

(c) "Nonarable land" means land in a tract that is predominantly not cultivated and predominantly comprised of nonarable soils.

(d) "Nonarable soils" means soils that are not suitable for cultivation. Soils with an NRCS agricultural capability Class V – VIII and no history of irrigation shall be considered nonarable in all cases. The governing body or its designate may determine other soils, including soils with a past history of irrigation, to be nonarable based on substantial evidence in the record of a local land use application.

(e) "Photovoltaic solar power generation facility" includes, but is not limited to, an assembly of equipment that converts sunlight into electricity and then stores, transfers, or both, that electricity. This includes photovoltaic modules, mounting and solar tracking equipment, foundations, inverters, wiring, storage devices and other components. Photovoltaic solar power generation facilities also include electrical cable collection systems connecting the photovoltaic solar generation facility to a transmission line, all necessary grid integration equipment, new or expanded private roads constructed to serve the photovoltaic solar power generation facility, office, operation and maintenance buildings, staging areas and all other necessary appurtenances. For purposes of applying the acreage standards of this section, a photovoltaic solar power generation facility includes all existing and proposed facilities on a single tract, as well as any existing and proposed facilities determined to be under common ownership on lands with fewer than 1320 feet of separation from the tract on which the new facility is proposed to be sited. Projects connected to the same parent company or individuals shall be considered to be in common ownership, regardless of the operating business structure. A photovoltaic solar

power generation facility does not include a net metering project established consistent with ORS 757.300 and OAR chapter 860, division 39 or a Feed-in-Tariff project established consistent with ORS 757.365 and OAR chapter 860, division 84.

(f) For high-value farmland described at ORS 195.300(10), a photovoltaic solar power generation facility shall not use, occupy, or cover more than 12 acres unless an exception is taken pursuant to ORS 197.732 and OAR chapter 660, division 4 or the requirements of paragraph (G) are met. The governing body or its designate must find that: [OMITTED EXCEPTION CRITERIA PER BELOW; N/A]

Response: *The proposed project meets the definition of a "photovoltaic solar power generation facility" and includes the following equipment, components and facilities:*

• PV solar panels using a fixed-tilt or single-axis racking system that would be supported by driven piles.

• Electrical equipment, including a direct current (DC) collection system from the solar panels to centralized inverters, and an altering current (AC) transformer system.

• A project substation and associated transmission line to interconnect to an existing utility substation.

• Perimeter fencing around the facility.

•Laydown and staging areas, including parking, storage for tools and parts, temporary office space, communications and facility monitoring hardware/software equipment.

•Storm water management facilities if necessary. The design of these facilities will be based on the final selection of the PV technology and layout.

•An existing access road will be utilized for project construction and operation.

The proposed use meets the definition of a "photovoltaic solar power generation facility." The Applicant does not own or control any existing or proposed facility within 1,320 feet of the subject tract. This is a stand-alone solar generating facility and will be operating independently from other approved or existing projects in this area of the County.

The proposed use is within the jurisdiction of Crook County. The project area and transmission line facility will not permanently occupy more than 320-acres of nonarable land.

((f) applies to high value farmland

Response N/A: *Application does not propose for a photovoltaic solar power generation facility to use, occupy, or cover more than 12 acres of high-value farmland. [This is defined into the fundamental definitions and terms of Applicant's permit application].*

Thus, no exception is required. [And, for brevity, the portions of this OAR-033-0130(38) pertaining to criteria for exceptions for solar on over 12 acres of high-value farmland are omitted, as they do not pertain.]

(g) For arable lands, a photovoltaic solar power generation facility shall not use, occupy, or cover more than 20 acres unless an exception is taken pursuant to ORS 197.732 and OAR chapter 660, division 4.

Response: ***N/A:*** *While there are approximately 43 acres of Class 4 soils on the site (arable lands), the Application does not propose for a photovoltaic solar power generation facility to use, occupy, or cover more than 20 acres of arable lands. This is defined into the fundamental definitions and terms of Applicant's permit application. Thus, no exception is required. [And, for brevity, the portions of this OAR-033-0130(38) pertaining to criteria for exceptions for arable lands over 20 acres are omitted, as they do not pertain.]*

(h) For nonarable lands, a photovoltaic solar power generation facility shall not use, occupy, or cover more than 320 acres unless an exception is taken pursuant to ORS 197.732 and OAR chapter 660, division 4.

Response: ***N/A:*** *Application does not propose for a photovoltaic solar power generation facility to use, occupy, or cover more than 320 acres of any lands. This is defined into the fundamental definitions and terms of Applicant's permit application.*

Thus, no exception is required. [And, for brevity, the portions of this OAR-033-0130(38) pertaining to criteria for exceptions for nonarable lands over 320 acres are omitted, as they do not pertain.]

(i), (ii), and (iii) apply to high-value farmland or properties that are arable. The up to 320-acre project site consists of > 90 percent non-arable soils and will not use more than 20 acres of the remaining arable soils.

(v) If a photovoltaic solar power generation facility is proposed to be developed on lands that contain a Goal 5 resource protected under the county's comprehensive plan, and the plan does not address conflicts between energy facility development and the resource, the applicant and the county, together with any state or federal agency responsible for protecting the resource or habitat supporting the resource, will cooperatively develop a specific resource management plan to mitigate potential development conflicts. If there is no program present to protect the listed Goal 5 resource(s) present in the local comprehensive plan or implementing ordinances and the applicant and the appropriate resource management agency(ies) cannot successfully agree on a cooperative resource management plan, the county is responsible for determining appropriate mitigation measures; and

(vi) If a proposed photovoltaic solar power generation facility is located on lands where the potential exists for adverse effects to state or federal special status species (threatened, endangered, candidate, or sensitive), or to wildlife species of concern identified and mapped by the Oregon Department of Fish and Wildlife (including big game winter range and migration corridors, golden eagle and prairie falcon nest sites, and pigeon springs), the applicant shall conduct a site-specific assessment of the subject property in consultation with all appropriate state, federal, and tribal wildlife management agencies. A professional biologist shall conduct the site-specific assessment by using methodologies accepted by the appropriate wildlife management agency and shall determine whether adverse effects to special status species or wildlife species of concern are anticipated. Based on the results of the biologist's report, the site shall be designed to avoid adverse effects to state or federal special status species or to wildlife species of concern as described above. If the applicant's site-specific assessment shows that adverse effects cannot be avoided, the applicant and the appropriate wildlife management agency will cooperatively develop an agreement for project-specific mitigation to offset the

potential adverse effects of the facility. Where the applicant and the resource management agency cannot agree on what mitigation will be carried out, the county is responsible for determining appropriate mitigation, if any, required for the facility.

Response: *A site-specific assessment has been conducted by the Applicant's consulting biologist and is included as Exhibit L of the application. The site is not identified as Sagebrush Grouse habitat (Sensitive Bird Habitat zone). The entirety of the property is in an area that is mapped by ODFW as winter range for elk, and the majority of the property with the exception of the northwest portion is within ODFW mapped winter range for deer. A portion of the southeast area of the site is within ODFW mapped pronghorn winter range. The Applicant has and will continue to consult with ODFW to minimize impact to wildlife and where unavoidable, mitigate for those impacts. A Wildlife Mitigation Plan (WMP) is being developed with consultation from ODFW and the County and will be submitted under separate cover. Note that under this provision, where the Applicant and resource management agency cannot agree on what mitigation will be carried out, the county is responsible for determining appropriate mitigation. While no ground nests or raptor nests were observed onsite during the site visits, the site does provide some suitable nesting habitat for non-ground nesting birds. The Wildlife Mitigation Plan will include migratory bird conservation measures and include language agreeing to conduct vegetation removal and construction activities to avoid impacts to active nest sites if present (March 1 – August 1) or to monitor for nest sites if construction occurs during normal nesting periods. Post construction, applicant will follow guidelines in a County Weedmaster approved noxious weed plan. Note that the solar PV technology proposed is not a concentrating solar technology.*

(i) The county governing body or its designate shall require as a condition of approval for a photovoltaic solar power generation facility, that the project owner sign and record in the deed records for the county a document binding the project owner and the project owner's successors in interest, prohibiting them from pursuing a claim for relief or cause of action alleging injury from farming or forest practices as defined in ORS 30.930(2) and (4).

Response: *Applicant will sign and record an agreement from pursuing relief or actions related to farm use surrounding the Property substantially similar to current farm use (See Exhibit K: Crook County Farm Covenant Not to Sue)*

(j) Nothing in this section shall prevent a county from requiring a bond or other security from a developer or otherwise imposing on a developer the responsibility for retiring the photovoltaic solar power generation facility.

Response: *Compared to other industrial facilities, decommissioning of a solar PV project is relatively simple, does not require highly skilled or specialized labor, could be undertaken by many regional contractors, and does not result in the generation of hazardous waste. In addition, many of the components of the system can be readily sold for scrap value (e.g., aluminum module frames, steel racking, copper conductors, etc.), whereby such residual value is typically estimated to exceed the cost of decommissioning a solar PV plant. A representative decommissioning plan typical for a facility such as proposed is attached as Exhibit I-1 and a representative cost estimate showing that salvage value typically exceeds deconstruction costs is attached as Exhibit I-2. Exhibit I-3 provides additional decommissioning and salvage support*

documents showing costs for another similar site. Regarding a decommissioning bond, Applicant will comply with county requirements such that financial instruments will be posted, such as a bond or letter of credit, for the estimated cost. Applicant will provide an update of projected cost based on final design prior to construction and an instrument will be posted at that time suitable to the county which meets those estimated cost requirements.

(k) If ORS 469.300(11)(a)(D) is amended, the commission may re-evaluate the acreage thresholds identified in subsections (f), (g) and (h) of this section.

Response: *N/A at this time.*

18.160.020 General Criteria

In judging whether or not a conditional use proposal shall be approved or denied, the planning director or planning commission shall weigh the proposal's appropriateness and desirability or the public convenience or necessity to be served against any adverse conditions that would result from authorizing the particular development at the location proposed and, to approve such use, shall find that the following criteria are either met, can be met by observance of conditions, or are not applicable:

(1) The proposal will be consistent with the comprehensive plan and the objectives of the zoning ordinance and other applicable policies and regulations of the county.

Response: *The proposed Project is consistent with the comprehensive plan and objectives of the zoning ordinance. Specifically, Crook County's Comprehensive plan includes the following policies:*

> *Air, Water and Land Resource Policies: Encourage non-pollutant industries to locate in Crook County.*
>
> *Economic Policies: To diversify, stabilize and improve the economy of the County.*
>
> *Energy – "To encourage renewable and/ or efficient energy systems design, siting and construction materials in all new development and improvements in the County."*

The comprehensive plan also includes the following statement regarding solar energy production: "Prineville and Crook County receive about 300 days of sunshine per year. Solar energy will be a very feasible source of energy."

The Project is allowed as a conditional use in the County's exclusive farm use (EFU) zones. In addition, the Crook County Court adopted specific standards in the zoning code (Chapter 18.161) for commercial wind and photovoltaic energy systems on June 16, 2010 to help promote development of renewable energy systems in the County and to address potential impacts associated with such developments. CCC 18.161 requires that an applicant evaluate potential adverse impacts to accepted farming practices, natural environments, and residential development, and that the development avoid, minimize, and mitigate impacts to the extent

necessary. The Applicant states that the proposed Project will comply with all applicable criteria and standards, and in doing so, will further promote the development of renewable energy in the County. As such, the County the Project is consistent with the applicable comprehensive plan goals and policies. The proposed location of the solar PV facility adjacent to existing transmission and less than 2 ½ miles from interconnect facilities, support the County's goals to maximize use of existing infrastructure.

2) Taking into account location, size, design and operation characteristics, the proposal will have minimal adverse impact on the (a) livability, (b) value and (c) appropriate development of abutting properties and the surrounding area compared to the impact of development that is permitted outright.

Response:

(a) livability: Solar farms, once constructed are quiet, as described above. The only sound sources come from Inverter cooling system fans which can activate during warm days at peak generation, and these are typically undetectable from more than 100 ft away. Applicant will maintain setback requirements and work to reasonably address any nearby resident and county concerns, such as maintaining existing natural vegetation (juniper and sagebrush) where possible in the setback area, consistent with present vegetation on most adjacent properties. The addition of a solar facility will minimally impact views due to its low elevation profile. As most houses are located within Juniper steppe areas, and for the reasons sited above, it is hard to tell the difference between agricultural crops, a lake and the solar facility beside them.

(b) Value: The impact of the proposed use on surrounding values would be minimal relative to the impact from other currently permitted uses, including a similar solar facility adjacent to the Property.

(c) It is clear that EFU outright permitted land uses for the surrounding properties will not be affected by the solar facility as discussed above and in the application; neighboring farms can continue to pursue practices permitted outright without impact from the applicant facility, once construction is completed. Outright permitted uses such as industrial farms, hog farms, aggregate pits (such as that located on neighboring property), and compost facilities impose much greater impacts with respect to noise levels, emissions, dust control, odor, and water usage. By contrast the solar facility imposes none of these impacts on surrounding land use. The proposed use has less impact than other outright permitted uses on subject property and surrounding area.

(3) The location and design of the site and structures for the proposal will be as attractive as the nature of the use and its setting warrant.

The site may be visible from the George Millican Road, which is a transportation artery to Prineville, however it will be located behand an existing solar facility (Avangrid Renewables Gala Project) and therefore if visible at all it will look similar to that existing project. The most visible equipment will be the safety and security fencing required, and the PV module equipment, which are about 8-12 ft tall in the morning and the evening with single axis tracking equipment. While fencing is necessary and desired from a public safety and security standpoint, there may be other concerns, such as roadside view and even wildlife ingress and egress.

Applicant will work to balance these concerns in its choice of fencing and any landscaping that is proximal to the road. Concerns such as glare, misdirection of solar will not be impacted any more so than if an agricultural operation were in place. Photographs of reference solar PV systems are provided below for reference to the visual attributes.

An added advantage to this site is that all transmission connection facilities, generally those most displeasing to the eye and highest elevation profile, will be located west the current Gala solar facility which should shield it from view from the Millican Road. Existing utility substation and powerlines are presently a permitted use on subject and adjoining properties.

Figure [D-1] Views of a single PV tracker row, and PV facility from above in distance.

Figure [D-2] Example image of tracking solar PV installation, aerial angle view.

(4) The proposal will preserve assets of particular interest to the county.

Response: *The Project will further the County's interest in renewable energy development, is not sited on commercial agricultural land, and will not have adverse impacts on other County interests*

(5) The applicant has a bona fide intent and capability to develop and use the land as proposed and has some appropriate purpose for submitting the proposal, and is not motivated solely by such purposes as the alteration of property values for speculative purposes.

Response: *Applicant affiliates have extensive experience based on prior business history of land use for solar development in central Oregon in Harney and Lake County, Arizona, and California. Applicant affiliates have successfully permitted and constructed Solar PV projects in central Oregon in Harney and Lake County and continue to pursue further development and investment.*

18.160.030 General Conditions

In addition to the standards and conditions set forth in a specific zone, this chapter, and other applicable regulations, in permitting a new conditional use or the alteration of an existing conditional use, the planning director or planning commission may impose conditions which it finds necessary to avoid a detrimental impact and to otherwise protect the best interests of the surrounding area or the county as a whole. These conditions may include the following:

(1) Limiting the manner in which the use is conducted including restricting the time an activity may take place and restraints to minimize such environmental effects as noise, vibration, air pollution, glare and odor.

(2) Establishing a special yard or other open space or lot area or dimension.

(3) Limiting the height, size or location of a building or other structure.

(4) Designating the size, number, location and nature of vehicle access points.

Response: *The Project will be designed to minimize impacts as much as possible. There will be a "laydown" yard for construction materials, parking areas for construction materials and an office/maintenance building.*

The Project will be accessed by an existing access road off SW George Millican Road.

(5) Increasing the amount of street dedication, roadway width or improvements within the street right-of-way.

(6) Designating the size, location, screening, drainage, surfacing or other improvement of a parking area or loading area.

(7) Limiting or otherwise designating the number, size, location, height and lighting of signs.

(8) Limiting the location and intensity of outdoor lighting and requiring its shielding.

(9) Requiring diking, screening, landscaping or another facility to protect adjacent or nearby property and designating standards for its installation and maintenance.

(10) Designating the size, height, location and materials for a fence.

(11) Protecting and preserving existing trees, vegetation, water resources, wildlife habitat or other significant natural resources.

(12) Other conditions necessary to permit the development of the county in conformity with the intent and purpose of this title and the policies of the comprehensive plan.

Response: *The Main Proposal (Exhibit A) addresses many of the factors listed above. The Applicant will designate parking areas. The Applicant agrees that any on-site lighting during construction and operation will be illuminated only when people are present on the site and will be directed downward and shielded. Motion-detection lighting will be used where appropriate. Lighting on the substation will meet required safety standards. An 8-foot-tall chain link fence shall be located on the Project perimeter.*

18.160.050 Standards governing Conditional Uses

18.160.0500(19) Commercial Power Generating Facilities

A commercial power generating facility that is a conditional use in the applicable zone is governed by the general criteria and conditions in CCC 18.160.020 and 18.160.030 and the provisions of Chapter 18.161 CCC.

CCC Title 18, Chapter 18.161 Commercial Power Generating Facilities

18.161.010(2) Commercial Photovoltaic Energy Systems.

(a) In addition to the requirements of this chapter, commercial photovoltaic energy systems in EFU zones are subject to OAR 660-033-0120 and 660-033-0130.

Response: *As shown in above responses the subject property and proposed energy facility meet or exceed the requirements of OAR 660-033-0120 and 0130.*

(b) Application Requirements. An application for a commercial photovoltaic energy system shall include the following unless waived by the director in writing.

(i) A description of the proposed photovoltaic energy system, a tentative construction schedule, the legal description of the property on which the facility will be located, and identification of the general area for all components of the photovoltaic energy system, including a map showing the location of components and including:

(A) Evidence of an active utility transmission interconnect request and/or process and description of same; and

(B) A route and permitting plan for transmission lines connecting the project to the grid.

(ii) Identification of potential conflicts, if any, with:

(A) Accepted farming practices as defined in ORS 215.203(2)(c) on adjacent lands devoted to farm uses;

(B) Other resource operations and practices on adjacent lands including photovoltaic energy system facilities on such adjacent lands.

***Response**: Exhibit A, Main Proposal contains a complete description of the facility and its components. This description contains additional details about the main components and nature of the proposed solar site. This description is consistent in detail with other recently permitted energy facility applications.*

Exhibit B, Site Plans provides information pertaining to the location of the proposed site within the larger tax lots. The remainder of the Exhibits support the conditional use application.

Applicant has provided to the planning director interconnection request information and evidence of same.

Applicant sees no conflict with surrounding uses or accepted farm practices, as per above responses. Furthermore, Applicant has agreed to review and file a covenant not to sue as part of this application. Final wording of this document shall be reviewed by both applicant and county legal representation (See Exhibit K: Crook County Farm Covenant Not to Sue).

The project site is adjacent to an existing commercial photovoltaic energy system (Avangrid Renewables Gala Sola Project). Construction activities and normal operation of a separately interconnected facility will not impact energy production or operation of the adjacent facility. Therefore, Applicant has determined there will not be any conflict with the operation of that facility.

(iii) A transportation impact analysis (TIA) or traffic assessment letter (TAL) with proposed recommendations, if any, reflecting the requirements in Section 7.1.7 of the Crook County transportation system plan (TSP) and the transportation impacts of the photovoltaic energy system upon the local and regional road system during and after construction, after consultation with the Crook County road master. The TIA or TAL will designate the size, number, location and nature of vehicle access points and shall include a construction and vehicle access plan and appropriate road access permits if needed.

Response: *Applicant has completed a traffic assessment letter. (See Exhibit N Traffic Assessment Letter) which speaks to the proposed site access roads and the amount of traffic during normal operation as well as during construction. The letter describes the proposed site access roads and estimates traffic during construction and normal operation. Access to the facility will be provided from Millican Road via the existing approach to the Gala Solar Plant, located directly east of the site. The traffic assessment concludes that the proposed solar facility generates less than the County trip thresholds, will conform with County access requirements and is not located near a high crash location. None of the County thresholds are met to require a Transportation Impact Analysis.*

(iv) A wildlife impact and monitoring plan. A wildlife impact and monitoring plan shall be required for photovoltaic energy systems impacting inventoried wildlife resources identified within the County comprehensive plan. The wildlife impact and monitoring plan shall be designed and administered by the applicant's wildlife professionals. Contents and duration of the study shall be recommended by a technical advisory committee. At the request of applicant, this committee requirement may be waived or discontinued by the county planning commission. If applicant has completed a wildlife impact study, it can be submitted for review to the planning commission. Projects that do not impact inventoried wildlife resources identified within the county comprehensive plan shall provide sufficient information to address the application requirement and criteria relating to wildlife in subsections (2)(b)(viii) and (2)(c)(iv) of this section; however, a comprehensive wildlife impact and monitoring plan is not required.

Response: *A site-specific assessment has been conducted by the Applicant's consulting biologist and is included as Exhibit L of the application. The site is not identified as Sagebrush Grouse habitat (Sensitive Bird Habitat zone). The entirety of the property is in an area that is mapped by ODFW as winter range for elk, and the majority of the property with the exception of the northwest portion is within ODFW mapped winter range for deer. A portion of the southeast area of the site is within ODFW mapped pronghorn winter range. The Applicant has and will continue to consult with ODFW to minimize impact to wildlife and where unavoidable, mitigate for those impacts. A Wildlife Mitigation Plan (WMP) is being developed with consultation from ODFW and the County and will be submitted under separate cover. Note that under this provision, where the Applicant and resource management agency cannot agree on what mitigation will be carried out, the county is responsible for determining appropriate mitigation.*

While no ground nests or raptor nests were observed onsite during the site visits, the site does provide some suitable nesting habitat for non-ground nesting birds. The Wildlife Mitigation Plan will include migratory bird conservation measures and include language agreeing to conduct vegetation removal and construction activities to avoid impacts to active nest sites if present (March 1 – August 1) or to monitor for nest sites if construction occurs during normal nesting periods. Post construction, applicant will follow guidelines in a County Weedmaster approved noxious weed plan. The solar PV technology proposed is not a concentrating solar technology.

(v) An emergency management plan for all phases of the life of the facility. The plan shall address the major concerns associated with the terrain, dry conditions, limited access, and water quality. The plan shall identify the fire district and verify that the district has the appropriate equipment, training and personnel to respond to fires. If the local fire department or district does not have adequate rescue capability, the applicant shall provide a plan for providing such in case of an emergency.

Response: *Applicant has created a draft emergency management plan (see Exhibit J) which Crook County Fire & Rescue has reviewed and approved pending final design updates. The plan discusses the procedures that may be implemented in the event of an emergency during the construction and long-term operation of the facility. It includes a fire prevention plan as well as other emergency response measures and addresses concerns the Crook County Fire District management may have such design for fire prevention, access, internal roads, specific possible hazards relating to solar facility specific and high voltage equipment concerns. As part of ongoing development, applicant will work with the Fire District to review and further adapt the plan as necessary and update it as site specifics become finalized.*

(vi) An erosion control plan, developed in consultation with the Crook County soil and water conservation district, the Crook County watershed council, and the Oregon Agricultural Water Quality Management Program (administered by the Oregon Department of Agriculture and Department of Environmental Quality). At a minimum, the plan should include the seeding of all road cuts or related bare road areas as a result of all construction, demolition and rehabilitation with an appropriate mix of native vegetation or vegetation suited to the area. The plan should also address monitoring during post-construction.

Response: *Erosion control shall be addressed during on-going facility development activities, such as civil engineering design of the facility. Erosion control mitigation during construction will also be addressed. An Erosion Control Plan has been developed and is included as Exhibit G. The plan discusses erosion control and other mitigation measures to be undertaken by any qualified EPC contractor chosen for design and construction of the site. Applicant agrees to have appropriate agencies from the county review aspects of the plan, or the facility engineering design as a part of ongoing site development.*

(vii) A weed control plan addressing prevention and control of all Crook County identified noxious weeds.

Response: *A weed management plan has been developed and is included as Exhibit H. Similar to the EMP, this plan has also been reviewed by county personnel and will be updated based on final design.*

(viii) Information pertaining to the impacts of the photovoltaic energy system on:

(A) Wetlands and streams;

(B) Wildlife (all wildlife listed as identified Goal 5 resources in the comprehensive plan, state and federal listed endangered, threatened, sensitive and special status species, bats and raptors and species of local sport and economic importance);

(C) Wildlife habitat; and

Response: *Wetlands and Wildlife concerns are discussed in the main proposal (Exhibit A) of this application, as well as being discussed above.*

(D) Criminal activity (vandalism, theft, trespass, etc.). Include a plan and proposed actions to avoid, minimize or mitigate impacts.

Response: *The solar facility shall be fenced appropriately with public safety and security in mind. Eight foot chain link fencing is commonly used. Any such fencing shall be appropriately secured gated entry points for all access roads. During construction, prior to fencing being installed, lay down yards will be appropriately secured with temporary fencing as a criminal deterrent, and it is possible that 24/7 on-site security may be considered during construction prior to fencing installation as a further deterrent. Public Safety, including Criminal activity management will also be addressed as part of an Emergency Management Plan mentioned above.*

(ix) A dismantling and decommissioning plan of all components of the photovoltaic energy system, as provided in subsection (2)(e) of this section.

Response: *Applicant addresses decommissioning requirements in the section below for 19.030 (c) sections xiv-xvi.*

(x) A socioeconomic impact assessment of the photovoltaic energy system, evaluating such factors as, but not limited to, the project's effects upon the social, economic, public service, cultural, visual, and recreational aspects of affected communities and/or individuals. These effects can be viewed as either positive or negative. The purpose of this information is to provide decision makers with

information in order to maximize potential benefits and to mitigate outcomes that are viewed as problematic. The applicant may submit information provided by the Economic Development of Central Oregon or similar entity to meet this requirement.

Response: *Facilities shall be designed to minimize adverse socioeconomic impacts to the County, including, but not limited to, increased demands for governmental services or capital expenditures.*

The facilities are expected to generally result in net positive socioeconomic impacts to the County, particularly as relates positive local economic benefits:

- *During the development period: Frequent visits to Crook County by the developers and related consultants include frequenting local hotels, eateries, retail, and other businesses, as well as occasional support from local service providers.*

- *During the construction period: Construction will likely take place primarily over a 4-8 month period, with peak activity during 2-4 months. Dozens of workers will be required, through various general and sub-contractors, including utilization of various skilled and unskilled labor types such as manual labor, equipment operators, electricians & apprentices, management, and supervisors. It is expected that these will be a mix of local and non-local, depending on types, availability, and contractors. Local food and lodging support will be necessary, expected to result in positive economic impacts to the local area.*

- *During operations: Routine maintenance will occur from time-to-time for the facilities. The facilities are generally low maintenance by their nature but will require routine visits and (depending on ongoing needs) minor repairs and property maintenance. Some ongoing local positive economic impact is likely, in addition to property tax revenues accrued on an ongoing basis by the county.*

The facility is not expected to require any service or capital support from local governmental agencies with the exception of the rural fire protection agency. Applicant understands that there may be an EMR assessment to be borne by the project, in support of the county EMS. The cost of any required improvements will be borne by the project.

As a result, no material (if any) adverse socioeconomic impacts are expected from the proposed use. Applicant is willing to provide a more detailed socioeconomic impact statement as part of on-going development as part of on-going development activity. Once site plans and designs become finalized, additional information such as impact to state and local tax revenue may be considered.

(c) Criteria. The following requirements and restrictions apply to the siting of a photovoltaic energy system facility:

(i) Setbacks. No portion of the facility shall be within 100 feet of properties zoned residential use or designated on a comprehensive plan as residential. If the facility is located in a residential zone then this restriction does not apply to the lot or parcel

that the facility is located on, or any adjacent property in common ownership. Structures shall not be constructed closer than 100 feet of an existing residence unless a written waiver is obtained from the landowner, which shall become a part of the deed to that property. New electrical transmission lines shall not be constructed closer than 500 feet to an existing residence without prior written approval of the owner, said written approval to be made a part of the deed to that property.

Summary Response: *Constructed facilities will meet all setback requirements identified above. As all the proposed Tax Lots lie adjacent to other lands zoned EFU-3, the setbacks will be according to CCC 18.16.075 Development Standards. Applicant assumes internal fencing and roadways do not have to meet the setback requirements designated above.*

(ii) A plan shall identify how the development and operation of the facility will, to the extent practicable, protect and preserve existing trees, vegetation, water resources, wildlife habitat and other significant natural resources.

Response: *Based on the April 7, 2021 letter from the US Army Corps of Engineers, there are no "waters of the U.S." on the Project site. However, the Wetland Determination Report (Exhibit M) did identify three intermittent streams which are within Oregon Department of State Lands (ODSL) jurisdiction. These intermittent streams will be avoided if required by ODSL.*

As part of on-going development, the Applicant will continue to work with the County to protect and preserve trees and native vegetation where practical. Applicant will develop a Wildlife Mitigation Plan to address habitat impacts resulting from the Project.

(iii) Ground Leveling. The proposed photovoltaic energy system shall be designed and constructed so that ground leveling is limited to those areas needed for effective solar energy collection and so that the natural ground contour is preserved to the greatest extent practical.

Response: *Areas which comprise the up to 320 acre solar facility are for the most part level, and minimal ground leveling shall be required.*

(iv) Wildlife Resources. The proposed photovoltaic energy system shall be designed to reduce the likelihood of significant adverse effects on wildlife and wildlife habitat. Measures to reduce significant impact may include, but are not limited to, the following:

(A) Designing foundations and support structures for solar equipment to avoid creation of artificial habitat or shelter for raptor prey.

(B) Controlling weeds to avoid the creation of artificial habitat suitable for raptor prey.

(C) Using anti-perching protection devices on transmission line support structures and appropriate spacing of conductors.

(D) Avoiding construction activities near raptor nesting locations during sensitive breeding periods and using appropriate no construction buffers around known nest sites.

(E) Using suitable methods such as coloration or sound producing devices to discourage birds from entering areas of concentrated solar energy.

(F) Fencing as appropriate to limit access by people or wildlife.

Response: *A site-specific assessment has been conducted by the Applicant's consulting biologist and is included as Exhibit L of the application. The site is not identified as Sagebrush Grouse habitat (Sensitive Bird Habitat zone). The entirety of the property is in an area that is mapped by ODFW as winter range for elk, and the majority of the property with the exception of the northwest portion is within ODFW mapped winter range for deer. A portion of the southeast area of the site is within ODFW mapped pronghorn winter range. The Applicant has and will continue to consult with ODFW to minimize impact to wildlife and where unavoidable, mitigate for those impacts. A Wildlife Mitigation Plan (WMP) is being developed with consultation from ODFW and the County and will be submitted under separate cover. Note that under this provision, where the Applicant and resource management agency cannot agree on what mitigation will be carried out, the county is responsible for determining appropriate mitigation. While no ground nests or raptor nests were observed onsite during the site visits, the site does provide some suitable nesting habitat for non-ground nesting birds. The Wildlife Mitigation Plan will include migratory bird conservation measures and include language agreeing to conduct vegetation removal and construction activities to avoid impacts to active nest sites if present (March 1 – August 1) or to monitor for nest sites if construction occurs during normal nesting periods. Post construction, applicant will follow guidelines in a County Weedmaster approved noxious weed plan for appropriate seed mixes. The solar PV technology proposed is not a concentrating solar technology.*

(v) A finding by the Energy Facility Siting Council that a proposed energy facility meets the Council's fish and wildlife habitat standard, OAR 345-022-0060, satisfies the requirements of subsection (2)(c)(iv) of this section.

Response: n/a

(vi) Misdirection of Solar Radiation. The proposed solar energy shall be designed and be operated to prevent the misdirection of solar radiation onto nearby property, public roads or other areas accessible to the public.

Response: *The proposed facility shall be designed, constructed, and operated to prevent the misdirection of concentrated solar radiation onto nearby properties, public roadways or other areas accessible to the public. Fixed tilt and single axis tracking systems with reflection absorbent PV modules neither concentrate nor mis-direct solar radiation when properly installed.*

(vii) Public Safety. The proposed photovoltaic energy system shall be designed and will be operated to protect public safety, including development and implementation of a plan of operating procedures to prevent public access to hazardous areas.

Response: *The facility will be fenced with security gates. All possible hazards (such as high voltage, for instance) within the facility shall be appropriately signed according to acceptable safety standards per NEC and other appropriate guidelines for high voltage guidelines. EMP discusses public safety issues.*

(viii) Airport Proximity. The proposed photovoltaic energy system is not located adjacent to, or within, the control zone of any airport.

Response: *Response: The subject property is not near or located within the portion of the Redmond Airport Control Zone located in Crook County. The Prineville Airport, located 6.25 miles north of the Project, does not have a Control Zone. Applicant submitted a notice of proposed construction to the FAA and received a" Determination of No Hazard to Air Navigation" from the Federal Aviation Administration regarding the tallest proposed structures (gen-tie and lighting arrester on main power transformer) and the solar panel arrays.*

(ix) Cleaning Chemicals and Solvents. During operation of the proposed solar energy project, all chemicals or solvents used to clean photovoltaic panels or heliostats should be low in volatile organic compounds and the operator should use recyclable or biodegradable products to the extent possible.

Response: *During operation of the proposed facility, all chemicals or solvents used to clean solar panels shall be low in volatile organic compounds and to the extent reasonably practicable, the applicant shall use recyclable or biodegradable products. Often times, water alone suffices and is preferred. During construction an operation, site personnel, and their sub-contractors will be required to conform to site safety plans which include plans for spill containment of commonly used chemicals.*

(x) Private access roads established and controlled by the photovoltaic energy system shall be gated to protect the facility and property owners from illegal or unwarranted trespass, illegal dumping, and hunting.

(xi) Where practicable the electrical cable collector system shall be installed underground, at a minimum depth of three feet; elsewhere the cable collector system shall be installed to prevent adverse impacts on agriculture operations.

(xii) In EFU zones any required permanent maintenance/operations buildings shall be located off site in one of Crook County's appropriately zoned areas, except that such a building may be constructed on site if:

(A) The building is designed and constructed generally consistent with the character of similar buildings used by commercial farmers or ranchers; and

(B) The building will be removed or converted to farm use upon decommissioning of the photovoltaic energy system consistent with the provisions of subsection (2)(e) of this section.

Response: *(sections x-xii) The solar facility shall be fenced and gated with appropriate security measures. Solar collection cabling internal to the site shall be installed underground, with several stations above ground used for AC breakers, transformers and other required energy collection that will be appropriately signed and secured per safety standards.*

(xiii) If the photovoltaic energy system is located in or adjacent to an EFU zone, a covenant not to sue with regard to generally accepted farming practices shall be recorded with the county. "Generally accepted farming practices" shall be consistent with the definition of farming practices under ORS 30.930. The applicant shall covenant not to sue owners, operators, contractors, employees, or invitees of property zoned for farm use for generally accepted farming practices.

Response: *Applicant has agreed to review and file a covenant not to sue as part of this application. Final wording of this document shall be reviewed by both applicant and county legal representation. See [Exhibit K], Covenant Not to Sue (draft).*

(xiv) A road use agreement with Crook County regarding the impacts and mitigation on county roads during and after construction shall be required as a condition of approval.

Response: *(sections xiv-xvi) Applicant will work with county roadmaster regarding possible road impacts during and post construction as part of on-going development and use.*

(xv) A plan for dismantling of uncompleted construction and/or decommissioning of the photovoltaic energy system shall be required. Contents of the plan are as set forth in subsection (2)(e) of this section.

(xvi) An agreement and security in accordance with CCC 17.40.080 and 17.40.090 acceptable to the county shall be established to cover the cost of dismantling of uncompleted construction and/or decommissioning of the facility, and site rehabilitation; see subsection (2)(e) of this section. Upon approval of the planning commission, the agreement may allow that the security may be phased throughout the proposed project. If phasing is proposed the applicant shall submit a phasing schedule. For projects being sited by the state of Oregon's Energy Facility Siting Council (EFSC), the bond, letter of credit, or other form of security required by EFSC will be deemed to meet this requirement. For non-EFSC projects the EFSC requirements on bonds shall serve as a guideline for the amount of the bond or other financial mechanism required.

Response: *(sections xv-xvi) A decommissioning plan per CCC and OAR standards and reviewed by Crook County officials shall be implemented as part of on-going development.*

In general, compared to other industrial facilities, decommissioning of a solar PV project is relatively simple, does not require highly skilled or specialized labor, could be undertaken by many regional contractors, and does not result in the generation of hazardous waste. In addition, many of the components of the system can be readily sold for scrap value (e.g., aluminum module frames, steel racking, copper conductors, etc.), whereby such residual value is typically estimated to exceed the cost of decommissioning a solar PV plant.

In addition, the Ground Lease that will be entered into prior to construction of the Project includes requirements for the removal of the system at the end of the lease term and its useful life, and restoration and reseeding of the site.

Applicant will comply with county requirements such that financial instruments will be posted, such as a bond or letter of credit, for the estimated cost of decommissioning. Applicant will provide an update of projected cost based on final design prior to construction and an instrument will be posted at that time suitable to the county which meets those estimated cost requirements.

(xvii) A summary of as built changes in the facility from the original plan, if any, shall be provided by the owner/operator.

Response: *Applicant will provide additional site facility plans, showing as designed and as built changes to Crook county.*

(xviii) Upon request of the county after the end of each calendar year the facility owner/operator shall provide Crook County an annual report including the following information:

(A) A summary of changes to the facility that do not require facility requirement amendments.

(B) A summary of the wildlife monitoring program – bird injuries, casualties, positive impacts on area wildlife and recommendations for changes in the monitoring program.

(C) Employment impacts to the community and Crook County during and after construction.

(D) Success or failure of weed control practices.

(E) Status of the decommissioning bond or other financial mechanism.

(F) Summary comments of any problems with the projects, any adjustments needed, or any suggestions.

(G) The annual report requirement may be discontinued or required at a less frequent schedule by the county. The reporting requirement and/or reporting schedule shall be reviewed, and possibly altered, at the request of the facility owner/operator. For facilities under EFSC jurisdiction and for which an annual report is required, the annual report to EFSC satisfies this requirement.

Response: *Applicant will reasonably comply with all county reporting requirements. Reporting requirements identified above will be incorporated into an Operation and Maintenance contract plan.*

(d) Amendments. The photovoltaic energy system requirements shall be facility specific, but can be amended as long as the facility does not exceed the boundaries of the Crook County land use permit where the original facility was constructed. An amendment to the specific requirements of the land use permit shall be subject to the standards and procedures found in Chapter 18.170 CCC. Additionally, an amendment shall be required if the facility changes would:

(i) Require an expansion of the established facility boundaries;

(ii) Increase the footprint of the photovoltaic energy system by more than 20 percent;

(iii) Increase generator output by more than 25 percent relative to the generation capacity authorized by the initial permit due to the repowering or upgrading of power generation capacity;

(iv) Changes to any roads or access points to be established at or inside the project boundaries;

(v) Notification by the facility owner/operator to the Crook County planning department of changes not requiring an amendment is encouraged, but not required. An amendment to a site certificate issued by EFSC will be governed by the rules for amendments established by EFSC.

Response: *Applicant shall adhere to all amendment conditions and requirements.*

(e) Decommissioning. Plan elements shall include:

(i) A plan for dismantling and/or decommissioning that provides for completion of dismantling or decommissioning of the facility without significant delay and protects public health, safety and the environment in compliance with the restoration requirements of this section.

(ii) A description of actions the facility owner proposes to take to restore the site to a useful, nonhazardous condition, including options for post-dismantle or decommission land use, information on how impacts on wildlife populations and the environment would be minimized during the dismantling or decommissioning process, and measures to protect the public against risk or danger resulting from post-decommissioning site conditions in compliance with the requirements of this section.

(iii) A current detailed cost estimate, a comparison of that estimate with present funds of the bond or other financial mechanism for dismantling or decommissioning, and a plan for assuring the availability of adequate funds for completion of dismantling or decommissioning. The cost estimate will be reviewed and be updated by the facility owner/operator on a five-year basis, unless material changes have been made in the overall facility that would materially increase these costs. If so, the report must be revised within 120 days of completion of such changes.

(iv) Restoration of the site shall consist of the following:

(A) Dismantling and removal of all photovoltaic energy system structures. Concrete pads shall be removed to a depth of at least four feet below the surface grade.

(B) The underground collection and communication cables need not be removed if at a depth of three feet or greater. Cables at a depth of three feet or greater can be abandoned in place if they are deemed not a hazard or interfering with agricultural use or other consistent resource uses of the land.

(C) Access roads in EFU zones shall be removed by removing gravel and restoring the surface grade and soil.

(D) In EFU zones after removal of the structures and roads, the area shall be graded as close as is reasonably possible to a condition compatible with farm uses or consistent with other resource uses. Revegetation shall include planting by applicant of native plant seed mixes, planting by applicant of plant species suited to the area, or planting by landowner of agricultural crops, as appropriate, and shall be consistent with the weed control plan approved by Crook County.

(E) Roads, fences, gates, and improvements may be left in place if a letter from the landowner is submitted to Crook County indicating said landowner will be responsible for and will maintain said roads and/or facilities for farm or other purposes as permitted under applicable zoning.

(v) The facility owner/operator shall submit to Crook County an agreement and security in accordance with CCC 17.40.080 and 17.40.090, acceptable to the county in form and amount and naming Crook County as beneficiary, obligee, or payee.

(A) The calculation of present year dollars shall be made using the U.S. Gross Domestic Product Implicit Price Deflator as published by the U.S. Department of Commerce's Bureau of Economic Analysis (hereinafter "the Index"), or any decommissioning standards established by a successor agency. The amount of the bond or other financial mechanism shall be increased at such time when the cumulative requirements in the Index exceed 10 percent from the last change. If at any time the Index is no longer published, Crook County and the applicant shall select a comparable calculation of present year dollars. The amount of the security shall be pro-rated within the year to the date of decommissioning.

(B) The decommissioning security shall not be subject to revocation or reduction before both the decommissioning of the photovoltaic energy system and the rehabilitation of the site.

(C) The facility owner/operator shall describe the status of the decommissioning security in the annual report submitted to Crook County, or upon request.

(D) If any disputes arise between Crook County and the landowner on the expenditure of any proceeds from the required security, either party may request nonbinding arbitration. Each party shall appoint an arbitrator, with the two arbitrators choosing a third. The arbitration shall proceed according to the Oregon statutes governing arbitration. The cost of the arbitration (excluding attorney fees) shall be shared equally by the parties, or as the parties may otherwise agree among themselves.

(E) For projects sited by EFSC, compliance with EFSC's financial assurance and decommissioning standards shall be deemed to be in compliance with the dismantling and decommissioning requirements of this section.

(F) Crook County may impose additional clear and objective conditions in accordance with the Crook County comprehensive plan, county zoning code and state law, which Crook County considers necessary to protect the best interests of the surrounding area, or Crook County as a whole.

(G) Prior to commencement of any decommissioning work, all necessary permits shall be obtained, e.g., Crook County land use permits, road access and other permits from the Crook County road master and the Oregon Department of Transportation; or other entities. (Ord. 296 § 12 (Exh. J), 2016; Ord. 245 § 1, 2011; Ord. 229 § 1 (Exh. A), 2010)

Response: *In general, compared to other industrial facilities, decommissioning of a solar PV project is relatively simple, does not require highly skilled or specialized labor, could be undertaken by many regional contractors, and does not result in the generation of hazardous waste. In addition, many of the components of the system can be readily sold for scrap value (e.g., aluminum module frames, steel racking, copper conductors, etc.), whereby such residual value is typically estimated to exceed the cost of decommissioning a solar PV plant.*

In addition, the Ground Lease that will be entered into prior to construction of the Project includes requirements for the removal of the system at the end of the lease term and its useful life, and restoration and reseeding of the site.

Applicant will comply with county requirements such that financial instruments will be posted, such as a bond or letter of credit, for the estimated cost of decommissioning. Applicant will provide an update of projected cost based on final design prior to construction and an instrument will be posted at that time suitable to the county which meets those estimated cost requirements.

18.180.010 Transportation impact analysis.

(1) Purpose. The purpose of this section is to coordinate the review of land use applications with roadway authorities and to implement Section 660-012-0045(2)(e) of the state Transportation Planning Rule, which requires the county to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. The following provisions also establish when a proposal must be reviewed for potential traffic impacts, when a transportation impact analysis or transportation assessment letter must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities, the required contents of a transportation impact analysis and transportation assessment letter, and who is qualified to prepare the analysis.

(2) When a Transportation Impact Analysis Is Required. The county or other road authority with jurisdiction may require a transportation impact analysis (TIA) as part of an application for development, a change in use, or a change in access. A TIA shall be required where a change of use or a development would involve one or more of the following:

(a) The development generates 25 or more peak-hour trips or 250 or more daily trips.

(b) An access spacing exception is required for the site access driveway(s) and the development generates 10 or more peak-hour trips or 100 or more daily trips.

(c) The development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.

(d) The development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists such as school zones.

(e) A change in zoning or a plan amendment designation.

(f) A TIA is required by ODOT.

(3) When a Transportation Assessment Letter (TAL) Is Required. If the provisions of subsections (2)(a) through (f) of this section do not apply, the applicant's traffic engineer shall

submit a transportation assessment letter to Crook County planning department demonstrating that the proposed land use action is exempt from TIA requirements. This letter shall outline the trip-generating characteristics of the proposed land use and verify that the site-access driveways or roadways meet Crook County's sight-distance requirements and roadway design standards.

(4) Preparation of a TIA or TAL. A professional engineer registered by the state of Oregon, in accordance with the requirements of the road authority, shall prepare the TIA or TAL. If preparing a TIA, the content and methodologies of the analysis shall conform to the requirements of subsections (5) to (13) of this section.

(5) Contents of a Transportation Impact Analysis. As a guide in the preparation of a transportation impact analysis, Crook County recommends the following format be used to document the analysis:

(a) Table of Contents. Listing of all sections, figures, and tables included in the report.

(b) Executive Summary. Summary of the findings and recommendations contained within the report.

(c) Introduction. Proposed land use action, including site location, building square footage, and project scope. Map showing the proposed site, building footprint, access driveways, and parking facilities. Map of the study area, which shows site location and surrounding roadway facilities.

(d) Existing Conditions. Existing site conditions and adjacent land uses. Roadway characteristics (all transportation facilities and modal opportunities located within the study area, including roadway functional classifications, street cross section descriptions, posted speeds, bicycle and pedestrian facilities, on-street parking, and transit facilities). Existing lane configurations and traffic control devices at the study area intersections. Existing traffic volumes and operational analysis of the study area roadways and intersections. Roadway and intersection crash history analysis.

(e) Background Conditions (without the proposed land use action). Approved developments and funded transportation improvements in the study area. Traffic growth assumptions. Addition of traffic from other planned developments. Background traffic volumes and operational analysis.

(f) Full Build-Out Traffic Conditions (with the proposed land use action). Description of the proposed development plans. Trip-generation characteristics of the proposed development (including trip reduction documentation). Trip distribution assumptions. Full build-out traffic volumes and intersection operational analysis. Intersection and site-access driveway queuing analysis. Expected safety impacts. Recommended roadway and intersection mitigations (if necessary).

(g) Site Circulation Review. Evaluate internal site access and circulation. Review pedestrian paths between parking lots and buildings. Ensure adequate throat depth is available at the driveways and that vehicles entering the site do not block the public facilities. Review truck paths for the design vehicle.

(h) Turn Lane Warrant Evaluation. Evaluate the need to provide turn lanes at the site driveways.

(i) Conclusions and Recommendations. Bullet summary of key conclusions and recommendations from the transportation impact analysis.

(j) Appendix. Traffic counts summary sheets, crash analysis summary sheets, and existing/background/full build-out traffic operational analysis worksheets. Other analysis summary sheets such as queuing and signal warrant analyses.

(k) Figures. The following list of figures should be included in the transportation impact analysis: site vicinity map; existing lane configurations and traffic control devices; existing traffic volumes and levels of service (all peak hours evaluated); future year background traffic volumes and levels of service (all peak hours evaluated); proposed site plan; future year assumed lane configurations and traffic control devices; estimated trip distribution pattern; site-generated traffic volumes (all peak hours evaluated); full build-out traffic volumes and levels of service (all peak hours evaluated).

(6) Study Area. The study area shall include, at a minimum, all site-access points and intersections (signalized and unsignalized) adjacent to the proposed site. If the proposed site fronts an arterial or collector street, the study shall include all intersections along the site frontage and within the access spacing distances extending out from the boundary of the site frontage. Beyond the minimum study area, the transportation impact analysis shall evaluate all intersections that receive site-generated trips that comprise at least 10 percent or more of the total intersection volume. In addition to these requirements, the county roadmaster (or designee) shall determine any additional intersections or roadway links that might be adversely

affected as a result of the proposed development. The applicant and the county roadmaster (or designee) will agree on these intersections prior to the start of the transportation impact analysis.

(7) Study Years to Be Analyzed in the Transportation Impact Analysis. A level-of-service analysis shall be performed for all study roadways and intersections for the following horizon years:

(a) Existing Year. Evaluate all existing study roadways and intersections under existing conditions.

(b) Background Year. Evaluate the study roadways and intersections in the year the proposed land use is expected to be fully built out, without traffic from the proposed land use. This analysis should include traffic from all approved developments that impact the study intersections, or planned developments that are expected to be fully built out in the horizon year.

(c) Full Build-Out Year. Evaluate the expected roadway, intersection, and land use conditions resulting from the background growth and the proposed land use action assuming full build-out and occupancy. For phased developments, an analysis shall be performed during each year a phase is expected to be completed.

(d) Twenty-Year Analysis. For all land use actions requesting a comprehensive plan amendment and/or a zone change, a long-term level-of-service analysis shall be performed for all study intersections assuming build-out of the proposed site with and without the comprehensive plan designation and/or zoning designation in place. The analysis should be performed using the future year traffic volumes identified in the transportation system plan (TSP). If the applicant's traffic engineer proposes to use different future year traffic volumes, justification for not using the TSP volumes must be provided along with documentation of the forecasting methodology.

(8) Study Time Periods to Be Analyzed in the Transportation Impact Analysis. Within each horizon year, a level-of-service analysis shall be performed for the time period(s) that experience the highest degree of network travel. These periods typically occur during the midweek (Tuesday through Thursday) morning (7:00 a.m. to 9:00 a.m.), midweek evening (4:00 p.m. to 6:00 p.m.), and Saturday afternoon (12:00 p.m. to 3:00 p.m.) periods. The transportation impact analysis should always address the weekday a.m. and p.m. peak hours when the proposed lane use action is expected to generate 25 trips or more during the peak time periods.

If the applicant can demonstrate that the peak-hour trip generation of the proposed land use action is negligible during one of the two peak study periods and the peak trip generation of the land use action corresponds to the roadway system peak, then only the worst-case study period need be analyzed. Depending on the proposed land use action and the expected trip-generating characteristics of that development, consideration of non-peak travel periods may be appropriate. Examples of land uses that have nontypical trip-generating characteristics include schools, movie theaters, and churches. The roadmaster (or his/her designee) and applicant should discuss the potential for additional study periods prior to the start of the transportation impact analysis.

(9) Traffic Count Requirements. Once the study periods have been determined, turning movement counts should be collected at all study area intersections to determine the base traffic conditions. These turning movement counts should typically be conducted during the weekday (Tuesday through Thursday) between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m., depending on the proposed land use. Historical turning movement counts may be used if the data are less than 12 months old, but must be factored to meet the existing traffic conditions.

(10) Trip Generation for the Proposed Development. To determine the impacts of a proposed development on the surrounding transportation network, the trip-generating characteristics of that development must be estimated. Trip-generating characteristics should be obtained from one of the following acceptable sources:

(a) Institute of Transportation Engineers (ITE) Trip Generation Manual (latest edition).

(b) Specific trip generation studies that have been conducted for the particular land use action for the purposes of estimating peak-hour trip-generating characteristics. The roadmaster (or his/her designee) should approve the use of these studies prior to their inclusion in the transportation impact analysis.

(c) In addition to new site-generated trips, several land uses typically generate additional trips that are not added to the adjacent traffic network. These trips include pass-by trips and internal trips and are considered to be separate from the total number of new trips generated by the proposed development. The procedures listed in the most recent version of the Trip Generation Handbook (ITE) should be used to account for pass-by and internal trips.

(11) Trip Distribution. Estimated site-generated traffic from the proposed development should be distributed and assigned on the existing or proposed arterial/collector street network. Trip distribution methods should be based on a reasonable assumption of local travel patterns and the locations of off-site origin/destination points within the site vicinity. Acceptable trip distribution methods should be based on one of the following procedures:

(a) An analysis of local traffic patterns and intersection turning movement counts gathered within the previous 12 months.

(b) A detailed market study specific to the proposed development and surrounding land uses.

(12) Intersection Operation Standards. Crook County evaluates intersection operational performance based on levels of service and "volume-to-capacity" (v/c) ratio. When evaluating the volume-to-capacity ratio, the total traffic demand shall be considered.

(a) Intersection Volume-to-Capacity Analysis. A capacity analysis should be performed at all intersections within the identified study area. The methods identified in the latest edition of the Highway Capacity Manual, published by the Transportation Research Board, are to be used for all intersection capacity calculations. Crook County requires that all intersections within the study area must maintain a v/c ratio of 0.95 or less. It should be noted that the mobility standards in the Oregon Highway Plan apply to Oregon Department of Transportation facilities.

(b) Intersection Levels of Service. Crook County requires all intersections within the study area to maintain an acceptable level of service (LOS) upon full build-out of the proposed land use action. LOS calculations for signalized intersections are based on the average control delay per vehicle, while LOS calculations for unsignalized intersections are based on the average control delay and volume-to-capacity ratio for the worst or critical movement. All LOS calculations should be made using the methods identified in the most recent version of the Highway Capacity Manual (or by field studies), published by the Transportation Research Board. The minimum acceptable level of service for signalized intersections is LOS "D." The minimum acceptable level of service for all-way stop controlled intersections and roundabouts is LOS "D." The minimum acceptable level of service for unsignalized two-way stop-controlled intersections is LOS "E" or LOS "F" with a v/c ratio of 0.95 or less for the critical movement. Any intersections not operating at these standards will be considered to be unacceptable.

(13) Review Policy and Procedure. The following criteria should be used in reviewing a transportation impact analysis as part of a subdivision or site plan review:

(a) The road system is designed to meet the projected traffic demand at full build-out.

(b) Adequate intersection and stopping sight distance is available at all driveways.

(c) Proposed driveways meet the county's access spacing standards in Chapter 18.176 CCC, Access Management Standards, or sufficient justification is provided to allow a deviation from the spacing standard.

(d) Opportunities for providing joint or crossover access have been pursued.

(e) The site does not rely upon the surrounding roadway network for internal circulation.

(f) The road system provides adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.

(g) A pedestrian path system is provided that links buildings with parking areas, entrances to the development, open space, recreational facilities, and other community facilities consistent with the requirements of CCC 18.184.010, Pedestrian access and circulation.

(14) Conditions of Approval. In approving an action that requires a traffic impact study, the county may condition approval to ensure that the proposed application will meet operations and safety standards and provide the necessary right-of-way and improvements to develop the future planned transportation system. Conditions of approval may include, but are not limited to:

(a) Crossover easement agreements for all adjoining parcels to facilitate future access between parcels.

(b) Conditional access permits for new developments which have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.

(c) Right-of-way dedications for future planned roadway improvements.

(d) Half-street improvements along site frontages that do not have full build-out improvements in place at the time of development. (Ord. 303 § 1 (Exh. C), 2017)

Response: *Applicant has completed a traffic assessment letter. (See Exhibit N Traffic Assessment Letter) which speaks to the proposed site access roads and the amount of traffic during normal operation as well as during construction. The letter describes the proposed site access roads and estimates traffic during construction and normal operation. Access to the facility will be provided from Millican Road via the existing approach to the Gala Solar Plant, located directly east of the site. The traffic assessment concludes that the proposed solar facility generates less than the County trip thresholds, will conform with County access requirements and is not located near a high crash location. None of the County thresholds are met to require a Transportation Impact Analysis.*

EXHIBIT F—SOILS DATA

United States Department of Agriculture

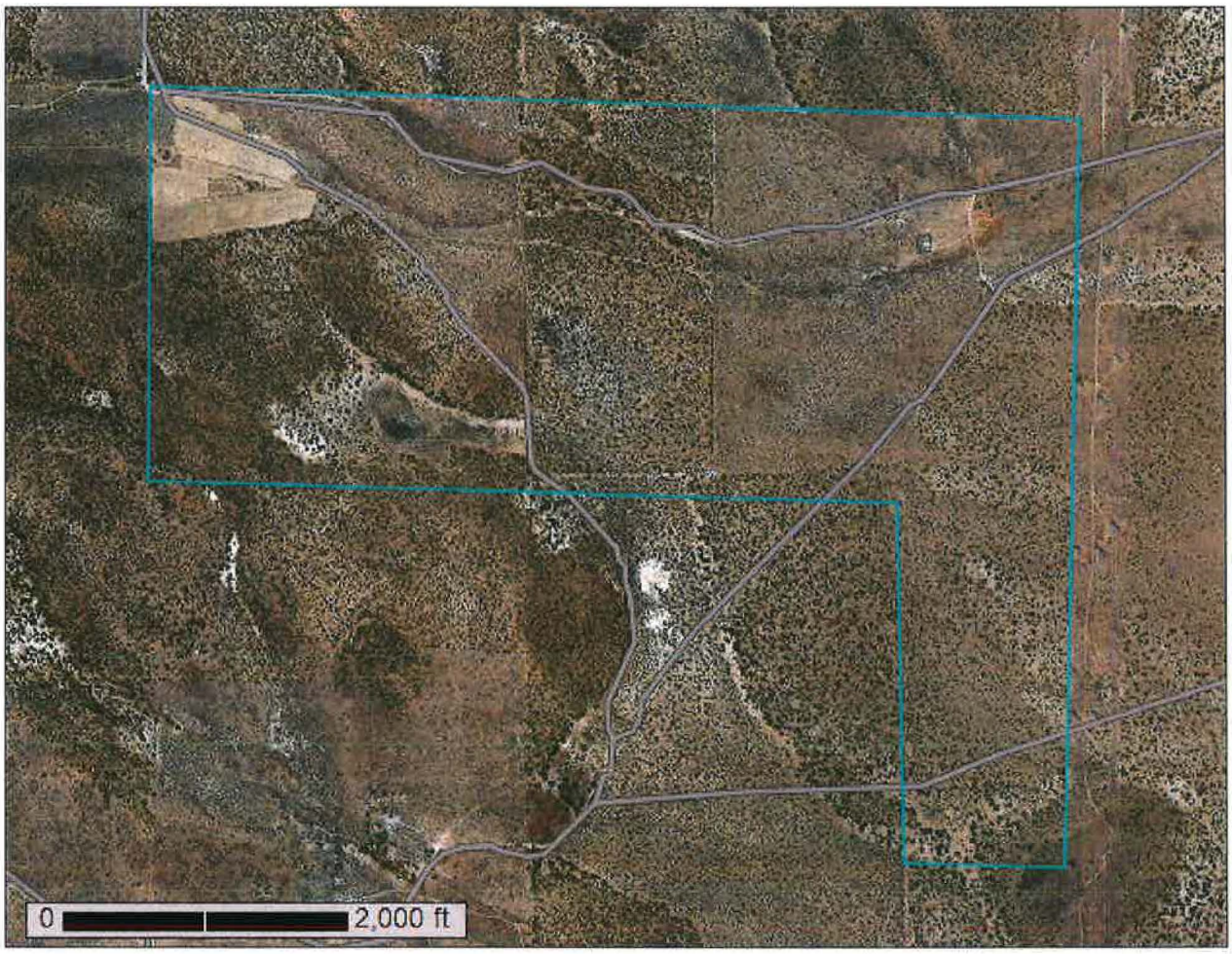
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Crook County Area, Oregon, and Prineville Area, Oregon

Powell East Solar Farm LLC



March 9, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

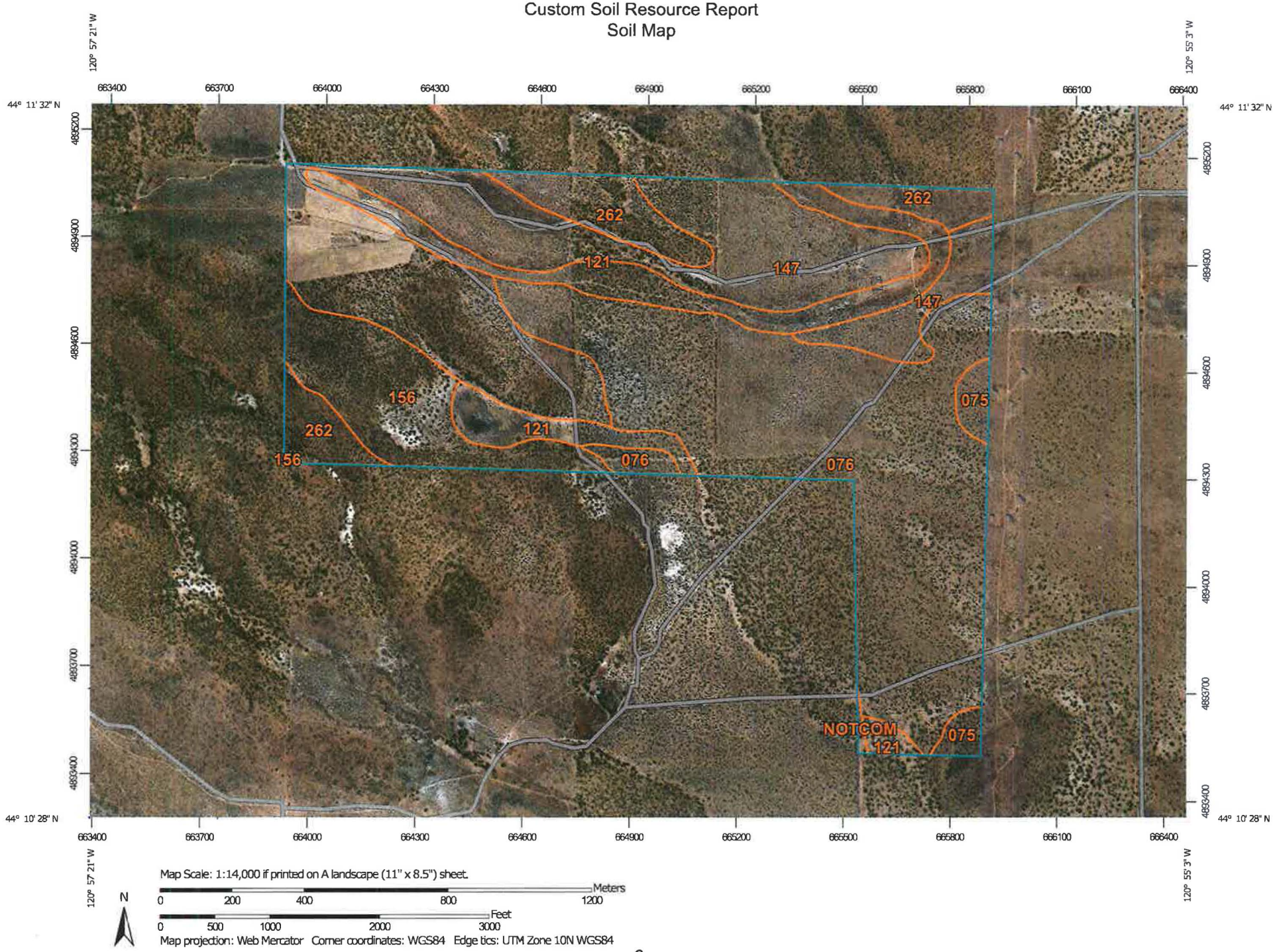
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Crook County Area, Oregon
Survey Area Data: Version 3, Sep 11, 2019

Soil Survey Area: Prineville Area, Oregon
Survey Area Data: Version 19, Sep 14, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 21, 2013—Sep 7, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	0.6	0.1%
Subtotals for Soil Survey Area		**0.6**	**0.1%**
Totals for Area of Interest		**475.9**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
075	Ayres very cobbly loam, dry, 0 to 8 percent slopes	7.7	1.6%
076	Ayresbutte-Ayres complex, dry, 0 to 8 percent slopes	180.4	37.9%
121	Era ashy sandy loam, 0 to 3 percent slopes	52.5	11.0%
147	Ayresbutte-Ayres complex, 3 to 8 percent slopes	155.2	32.6%
156	Ginserly-Hatrock complex, 12 to 30 percent north slopes	43.3	9.1%
262	Tristan extremely cobbly loam, 12 to 35 percent south slopes	36.1	7.6%
Subtotals for Soil Survey Area		**475.3**	**99.9%**
Totals for Area of Interest		**475.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases.* Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Crook County Area, Oregon

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

Prineville Area, Oregon

075—Ayres very cobbly loam, dry, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 20c0n
Elevation: 3,100 to 3,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Ayres, dry, and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ayres, Dry

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Volcanic ash over alluvium from volcanic rock with a duripan.

Typical profile

A - 0 to 3 inches: very cobbly loam
AB - 3 to 8 inches: very cobbly loam
Bt1 - 8 to 12 inches: very cobbly loam
Bt2 - 12 to 15 inches: extremely cobbly clay loam
Bqm - 15 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to duripan
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R010XB029OR - JD CLAYPAN 9-12 PZ
Hydric soil rating: No

076—Ayresbutte-Ayres complex, dry, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 20c0p
Elevation: 3,100 to 3,800 feet
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ayresbutte, dry, and similar soils: 50 percent
Ayres, dry, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ayresbutte, Dry

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: > 7" of ash over alluvium from volcanic rock with a duripan.

Typical profile

A - 0 to 3 inches: gravelly ashy sandy loam
AB - 3 to 10 inches: ashy very gravelly sandy loam
2Bt1 - 10 to 16 inches: very cobbly loam
2Bt2 - 16 to 23 inches: extremely cobbly clay loam
2Bk - 23 to 26 inches: extremely cobbly loam
2Bkqm - 26 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C

Ecological site: R010XA003OR - DROUGHTY 8-10 PZ
Hydric soil rating: No

Description of Ayres, Dry

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Volcanic ash over alluvium from volcanic rock with a duripan.

Typical profile
A - 0 to 3 inches: very cobbly loam
AB - 3 to 8 inches: very cobbly loam
Bt1 - 8 to 12 inches: very cobbly loam
Bt2 - 12 to 15 inches: extremely cobbly clay loam
Bqm - 15 to 60 inches: cemented material

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to duripan
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R010XB029OR - JD CLAYPAN 9-12 PZ
Hydric soil rating: No

121—Era ashy sandy loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 20c1n
Elevation: 2,800 to 4,000 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Era and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Era

Setting

Landform: Hillslopes, alluvial fans, stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Volcanic ash mixed with a small amount of colluvium from volcanic rock on north slopes

Typical profile

Ap - 0 to 8 inches: ashy sandy loam
AB - 8 to 16 inches: ashy sandy loam
Bw1 - 16 to 21 inches: ashy sandy loam
Bw2 - 21 to 30 inches: ashy sandy loam
2Bk - 30 to 37 inches: gravelly fine sandy loam
2Ck1 - 37 to 50 inches: gravelly fine sandy loam
2Ck2 - 50 to 60 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R010XA019OR - SHRUBBY LOAM 8-12 PZ
Hydric soil rating: No

147—Ayresbutte-Ayres complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2r4v2
Elevation: 3,100 to 3,800 feet
Mean annual precipitation: 8 to 10 inches

Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ayresbutte and similar soils: 50 percent
Ayres and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ayresbutte

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: > 7" of ash over alluvium from volcanic rock with a duripan.

Typical profile

A - 0 to 3 inches: ashy gravelly sandy loam
AB - 3 to 10 inches: ashy very gravelly sandy loam
2Bt1 - 10 to 16 inches: very cobbly loam
2Bt2 - 16 to 23 inches: extremely cobbly clay loam
2Bk - 23 to 26 inches: extremely cobbly loam
2Bkqm - 26 to 60 inches: cemented material

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: R010XA027OR - JUNIPER PUMICE FLAT 8-10 PZ
Hydric soil rating: No

Description of Ayres

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Volcanic ash over alluvium from volcanic rock with a duripan.

Typical profile

A - 0 to 3 inches: very cobbly loam
AB - 3 to 8 inches: very cobbly loam
Bt1 - 8 to 12 inches: very cobbly loam
Bt2 - 12 to 15 inches: extremely cobbly clay loam
Bqm - 15 to 60 inches: cemented material

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to duripan
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R010XA003OR - DROUGHTY 8-10 PZ
Hydric soil rating: No

156—Ginserly-Hatrock complex, 12 to 30 percent north slopes

Map Unit Setting

National map unit symbol: 20c24
Elevation: 3,500 to 5,100 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 50 to 80 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ginserly, north, and similar soils: 55 percent
Hatrock, north, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ginserly, North

Setting

Landform: Hillslopes, mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: > 7" volcanic ash over colluvium/residuum from volcanic rock

Typical profile

A - 0 to 5 inches: cobbly ashy loam
AB - 5 to 17 inches: very cobbly ashy loam
2Bt1 - 17 to 31 inches: very cobbly loam
2Bt2 - 31 to 38 inches: extremely cobbly clay loam
2Bt3 - 38 to 45 inches: extremely cobbly clay loam
2R - 45 to 49 inches: unweathered bedrock

Properties and qualities

Slope: 12 to 30 percent
Surface area covered with cobbles, stones or boulders: 5.0 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R010XB085OR - JD MOUNTAIN NORTH 12-16 PZ
Hydric soil rating: No

Description of Hatrock, North

Setting

Landform: Hillslopes, mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium from volcanic rock with volcanic ash throughout (vitrandic).

Typical profile

A - 0 to 2 inches: cobbly ashy fine sandy loam
AB - 2 to 12 inches: cobbly ashy fine sandy loam
Bw - 12 to 23 inches: gravelly ashy fine sandy loam
Bk - 23 to 60 inches: very stony ashy fine sandy loam

Properties and qualities

Slope: 12 to 30 percent
Surface area covered with cobbles, stones or boulders: 10.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R010XB085OR - JD MOUNTAIN NORTH 12-16 PZ
Hydric soil rating: No

262—Tristan extremely cobbly loam, 12 to 35 percent south slopes

Map Unit Setting

National map unit symbol: 20c37
Elevation: 3,500 to 4,000 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 70 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Searles, south, and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Searles, South

Setting

Landform: Hillslopes, mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium over residuum from volcanic rock

Typical profile

A - 0 to 3 inches: extremely cobbly loam
Bw - 3 to 10 inches: very cobbly loam
Bt1 - 10 to 16 inches: very cobbly clay loam
Bt2 - 16 to 28 inches: extremely cobbly clay loam
C - 28 to 55 inches: extremely cobbly clay loam
R - 55 to 59 inches: unweathered bedrock

Properties and qualities

Slope: 12 to 35 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: R010XA007OR - JUNIPER PUMICE SOUTH 9-12 PZ
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Nonirrigated Capability Class (Powell East Solar Farm LLC)

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations that show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels-capability class, subclass, and unit. Only class and subclass are included in this data set.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

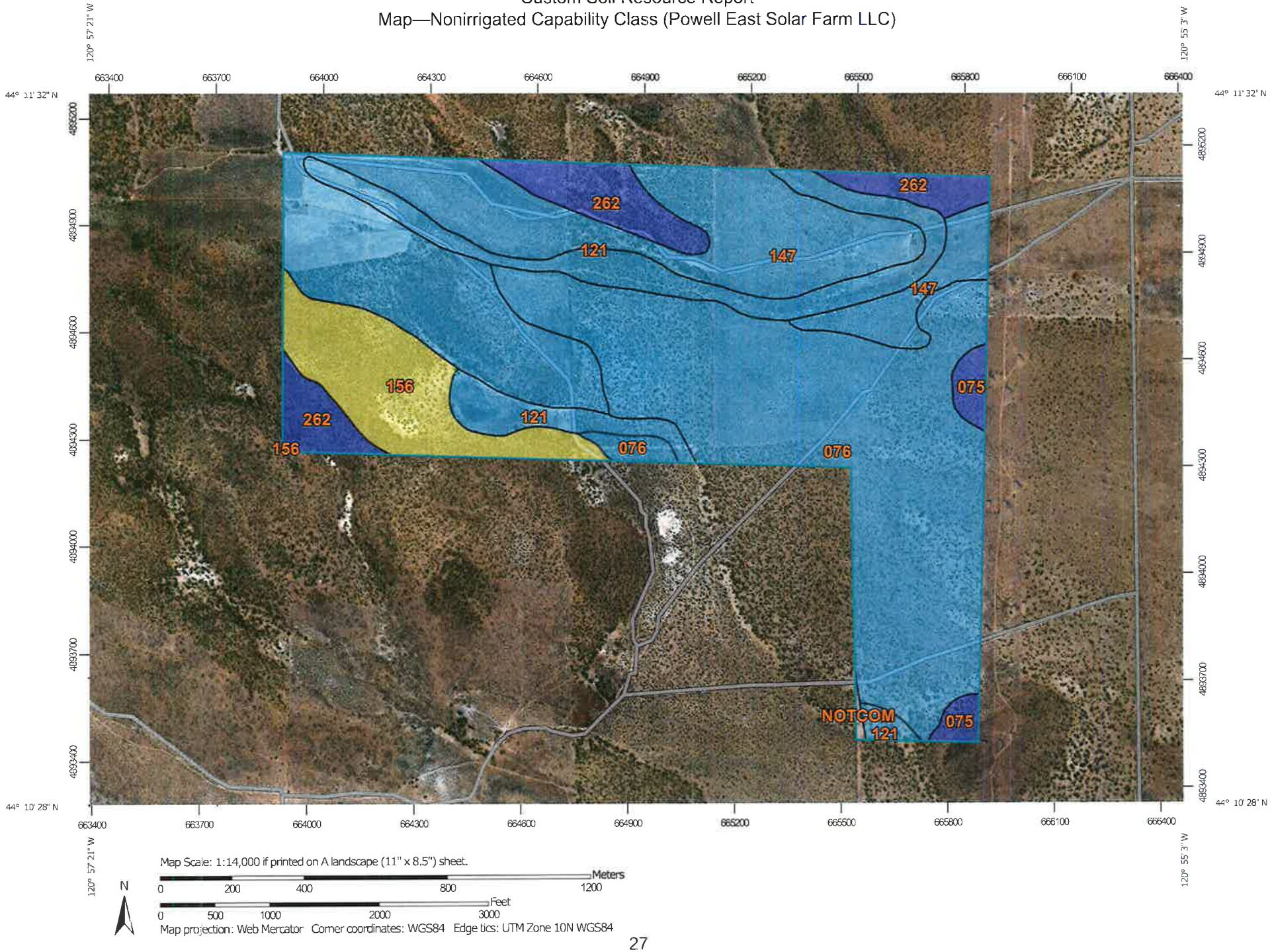
Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Map—Nonirrigated Capability Class (Powell East Solar Farm LLC)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Soil Rating Lines
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Soil Rating Points
- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Crook County Area, Oregon
Survey Area Data: Version 3, Sep 11, 2019

Soil Survey Area: Prineville Area, Oregon
Survey Area Data: Version 19, Sep 14, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 21, 2013—Sep 7, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Nonirrigated Capability Class (Powell East Solar Farm LLC)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available		0.6	0.1%
Subtotals for Soil Survey Area			**0.6**	**0.1%**
Totals for Area of Interest			**475.9**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
075	Ayres very cobbly loam, dry, 0 to 8 percent slopes	7	7.7	1.6%
076	Ayresbutte-Ayres complex, dry, 0 to 8 percent slopes	6	180.4	37.9%
121	Era ashy sandy loam, 0 to 3 percent slopes	6	52.5	11.0%
147	Ayresbutte-Ayres complex, 3 to 8 percent slopes	6	155.2	32.6%
156	Ginserly-Hatrock complex, 12 to 30 percent north slopes	4	43.3	9.1%
262	Tristan extremely cobbly loam, 12 to 35 percent south slopes	7	36.1	7.6%
Subtotals for Soil Survey Area			**475.3**	**99.9%**
Totals for Area of Interest			**475.9**	**100.0%**

Rating Options—Nonirrigated Capability Class (Powell East Solar Farm LLC)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

EXHIBIT G — EROSION CONTROL PLAN

Erosion Control Plan

Prepared for:

Powell East Solar Farm LLC

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Prepared by:

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March 9, 2020

ENERGY AUTOMATION SOLUTIONS ENGINEERING, LLC.

Contents

1.0 INTRODUCTION

The Clearing, Grading and Erosion requirements described in this Plan apply to work associated with construction, operation, and maintenance of the proposed Applicant Facility. Applicant may implement the construction, mitigation, and reclamation actions contained in this plan to the extent that they do not conflict with the requirements of any applicable federal, state, or local rules and regulations, or other permits or approvals that are applicable to the facility. Construction contractors will be working to a completed and approved set of civil engineering drawings dictating the clearing, grading, and erosion control requirements.

Applicant will work with the county to amend the plan as needed as part of a condition of permit approval. Additionally, applicant may deviate from specific requirements of this plan on specific private lands as agreed to by landowners, county officials or as required to suit actual site conditions as determined and directed by Powel East Solar Farm LLC. All work must be in compliance with federal, state, and local Crook County permits. The facility will be designed, constructed, operated, and maintained in a manner that meets or exceeds applicable industry standards and regulatory requirements.

Following approval of the Plan, Applicant will be engaging in EPC Contractor (Contractor) bids and likely awarding contracts for various stages of construction of the facility. In addition to satisfying Crook County Conditional Use Permit requirements, this plan is meant to also be a specification and set of guidelines that the EPC Contractor firms(s) may adhere to.

Some parts of this plan may contain information duplicate to other specifically directed plans, such as a Facility Weed Control Plan, submitted as separate Exhibits to this conditional use permit application for the site. In those cases, the specific plans shall supersede this plan.

Questions or comments regarding this plan or required revisions to meet conditional use stipulations shall be directed to the Engineering and Construction Permit Manager.

2.0 Clearing, Grading and Erosion Control

2.1 Clearing

The Applicant site is composed of predominantly Class 6 and Class 7 soils with one small area of Class 4 soils. The objective of clearing is to provide a clear and unobstructed ROW for safe and efficient construction of the facility. The following mitigation measures shall be implemented:

- Construction traffic shall be restricted to the construction ROW, existing roads, and approved private roads.
- Construction ROW boundaries, including pre-approved temporary workspace, shall be clearly staked to prevent disturbance to unauthorized areas.

- Burning shall be prohibited on cultivated land or where prohibited by state and local regulations.

2.2 Topsoil Removal and Storage

The objective of topsoil handling is to maintain topsoil capability by conserving topsoil for future replacement and reclamation and to minimize the degradation of topsoil from compaction, rutting, loss of organic matter, or soil mixing so that successful reclamation of the ROW can occur. The following mitigation measures shall be implemented during topsoil removal and storage unless otherwise approved or directed by Applicant based on site-specific conditions or circumstances. All work shall be conducted in accordance with applicable permits.

- Segregate topsoil in the areas over the facility area on all lands to a minimum depth of 6 inches and a maximum depth of 12 inches.
- Stripped topsoil shall be stockpiled within designated areas shown on the construction plan in a windrow along the edge of the ROW. The Contractor shall perform work in a manner to minimize the potential for subsoil and topsoil to be mixed.
- Under no circumstances shall the Contractor use topsoil to fill a low area.
- If required due to excessively windy conditions, topsoil piles shall be tackified using either water or a suitable tackifier (liquid mulch binder).
- Gaps in the rows of topsoil will be left in order to allow drainage and prevent ponding of water adjacent to or on the ROW.
- Topsoil shall not be utilized to construct ramps at road or waterbody crossings.

2.3 Grading

The objective of grading is to develop a ROW that allows the safe passage of equipment and meets the requirements to construct the facility. The following mitigative measures shall be implemented during grading unless otherwise approved or directed by Applicant based on site-specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- All grading for roadways and equipment shall be undertaken with the understanding that original contours and drainage patterns shall be re-established to the extent practicable.
- Some grading will be required to reduce the slopes in the areas that exceed the racking manufacturer's tolerances. The original drainage patterns and flows will be maintained.
- Agricultural areas that have terraces shall be surveyed to establish pre-construction contours to be utilized for restoration of the terraces after construction.
- On steep slopes, or wherever erosion potential is high, temporary erosion control measures shall be implemented.

- Bar ditches adjacent to existing roadways to be crossed during construction shall be adequately ramped with grade or ditch spoil to prevent damage to the road shoulder and ditch.
- Where the construction surface remains inadequate to support equipment travel, timber mats, timber riprap, or other method shall be used to stabilize surface conditions.

The Contractor shall limit the interruption of the surface drain network in the vicinity of the ROW using the appropriate methods:

- Providing gaps in the rows of subsoil and topsoil in order to prevent any accumulation of water on the land;
- Preventing obstructions in furrows, furrow drains, and ditches;
- Installing flumes and ramps in furrows, furrow drains, and ditches to facilitate water flow across the construction ROW and allow for construction equipment traffic; and
- Installing flumes over the trench for any watercourse where flow is continuous during construction.

2.4 Temporary Erosion and Sediment Control

2.4.1 General

Temporary erosion and sediment control measures shall be installed immediately prior to initial disturbance of the soil, maintained throughout construction, and reinstalled as necessary until replaced by permanent erosion control structures or restoration of the construction site is complete.

Specifications and configurations for erosion and sediment control measures may be modified by Applicant as necessary to suit actual site conditions. However, all work shall be conducted in accordance with applicable permits.

The Contractor shall inspect all temporary erosion control measures at least once every 14 days in areas of active construction or equipment operation, and once every 30 days in areas with no construction or equipment operation, and within 24 hours of each significant rainfall event of 0.5 inches or greater. The Contractor shall repair all ineffective temporary erosion control measures as expediently as practicable.

2.4.2 Sediment Barriers

Sediment barriers shall be constructed of silt fence, compacted earth (e.g., drivable berms across travel lanes), sand bags, or other appropriate materials.

The Contractor shall install sediment barriers in accordance with Company specifications or as otherwise approved or directed by Applicant. The Contractor is responsible for properly installing, maintaining, and replacing temporary and permanent erosion controls throughout construction and cleanup. Near wetland or riparian zones, the Contractor will install sediment control structures along the construction site edges prior to vegetation removal where practicable. The aforementioned sediment barriers may be used interchangeably or together depending on site-

specific conditions. In most cases, silt fence shall be utilized where longer sediment barriers are required.

Sediment barriers shall be installed below disturbed areas where there is hazard of off-site sedimentation. These areas include:

- The base of slopes adjacent to road crossings;
- The edge of the construction site adjacent to and up-gradient of a roadway, flowing stream, spring, wetland, or impoundment;
- Trench or test water discharge locations where required;
- Where waterbodies or wetlands are adjacent to the construction site; (the Contractor shall install sediment barriers along the edge of the construction site as necessary to contain spoil and sediment within the construction site);
- Across the entire construction site at flowing waterbody crossings;
- Along the edge of the construction site within 50 feet of wetland boundaries as necessary to contain spoil and sediment within the construction site.

Sediment barriers placed at the toe of a slope shall be set a sufficient distance from the toe of the slope, if possible, in order to increase ponding volume.

Sediment control barriers shall be placed so as not to hinder construction operations. If silt fence or other sediment controls are placed across the entire construction site at waterbodies, wetlands, or upslope of roads, a provision shall be made for temporary traffic flow through a gap for vehicles and equipment to pass within the structure. Immediately following each day's shutdown of construction activities, a section of silt fence or other sediment control shall be placed across the up-gradient side of the gap with sufficient overlap at each end of the barrier gap to eliminate sediment bypass flow. Following completion of the equipment crossing, the gap shall be closed using silt fence or other perimeter sediment control management practices.

The Contractor shall maintain sediment barriers by removing collected sediment and replacing damaged material. Sediment shall be removed and placed where it shall not reenter the barrier when sediment loading is greater than half the height of the device or if directed by Applicant.

The Contractor shall remove sediment barriers, except those needed for permanent erosion and sediment control, during restoration of the construction site.

2.4.3 Drainage Channels or Ditches

Drainage channels or ditches shall be used on a limited basis to provide drainage along the construction site and toe of cut slopes as well as to direct surface runoff across the construction site or away from disturbances and onto natural undisturbed ground. Channels or ditches shall be constructed by the Contractor during grading operations. Where there is inadequate vegetation at the channel or ditch outlet, sediment barriers, check berms, or other appropriate measures shall be used to control erosion.

2.4.4 Temporary Mulching

Unless otherwise directed by applicant, the Contractor shall apply temporary seed and/or mulch on disturbed construction work areas that have been inactive for 21 days or are expected to be inactive for 21 days or more. The Contractor shall not apply temporary mulch in cultivated areas

unless specifically requested by the landowner. The Contractor shall not apply mulch within wetland boundaries.

Temporary mulch of straw or equivalent applied on slopes shall be spread uniformly to cover at least 90 percent of the ground surface at an approximate rate of 2 tons per acre of straw or its equivalent. Mulch application on slopes within 100 feet of waterbodies and wetlands shall be increased to an approximate rate of 2 tons per acre.

2.4.5 Tackifier

When wetting topsoil piles with water does not prevent wind erosion, the Contractor shall temporarily suspend topsoil handling operations and apply a tackifier to topsoil stockpiles at the rate recommended by the manufacturer.

Should construction traffic, cattle grazing, heavy rains, or other related construction activity disturb the tackified topsoil piles and create a potential for wind erosion, additional tackifier shall be applied by the Contractor.

2.5 Trenching

The objective of trenching is to provide a ditch of sufficient depth and width with a bottom to continuously support the conduit and/or direct burial electrical collection cables and meet applicable civil, electrical engineering and safety requirements for depth, dependent on the types installed. During trenching operations, the following mitigation measures shall be implemented unless otherwise approved or directed by Applicant based on site-specific conditions or circumstances. All work shall be conducted in accordance with applicable permits.

- Subsoil shall be segregated from topsoil in separate, distinct rows with a separation that shall limit any admixing of topsoil and subsoil during handling.
- Gaps must be left in the spoil piles that coincide with breaks in the strung conduit to facilitate natural drainage patterns and to allow the passage of livestock or wildlife.
- Trenching operations shall be followed as closely as practicable by lower-in and backfill operations to minimize the length of time the ditch is open.
- Construction debris (e.g., welding debris) and other garbage shall not be deposited in the ditch.

2.5.1 Trench Dewatering/Well Points

The Contractor shall make all reasonable efforts to discharge trench water in a manner that avoids damage to adjacent agricultural land, crops, and pasture. Damage includes, but is not limited to, the inundation of crops for more than 24 hours, deposition of sediment in ditches, and the deposition of gravel in fields or pastures.

When pumping water from the trench for any reason, the Contractor shall ensure that adequate pumping capacity and sufficient hose is available to permit dewatering as follows:

- No heavily silt-laden trench water shall be allowed to enter a waterbody or wetland directly but shall instead be diverted through a well-vegetated area, a geotextile filter bag, or a permeable berm (or Applicant-approved equivalent).

- Trench water shall not be disposed of in a manner that could damage crops or interfere with the functioning of underground drainage systems.

The Contractor shall screen the intake hose and keep the hose either one foot off the bottom of the trench or in a container to minimize entrainment of sediment.

2.6 Cleanup

The objective of cleanup activities shall be to prepare the site and other disturbed areas to approximate preconstruction ground contours to the extent possible and to replace spoil and stockpiled material in a manner that preserves soil viability and quality to a degree reasonably equivalent to the original or that of representative undisturbed land. The following mitigation measures shall be utilized during cleanup, unless otherwise approved or directed by Applicant based on specific conditions or circumstances. All work shall be conducted in accordance with applicable permits.

- All garbage and construction debris shall be collected and disposed of at approved disposal sites.
- Subsoil shall not be placed on top of topsoil.
- During cleanup, temporary sediment barriers such as silt fence shall be removed; accumulated sediment shall be re-contoured with the rest of the site; and permanent erosion controls shall be installed as necessary.
- After construction, all temporary access shall be returned to pre-construction conditions unless specifically agreed with the landowner or otherwise specified by Applicant.
- All temporary gates installed during construction shall be replaced with permanent fence unless otherwise requested by the landowner.

2.7 Reclamation and Revegetation

The objectives of reclamation and revegetation are to return the disturbed areas to approximately pre-construction use and capability. This involves the treatment of soil as necessary to preserve approximate pre-construction capability and the stabilization of the work surface in a manner consistent with the initial land use.

The following mitigative measures will be utilized unless otherwise approved or directed by Applicant based on site-specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits and meet the guidelines and requirements of the site Noxious Weed Plan approved by the Crook County.

2.7.1 Rock Removal

- On agricultural land, rocks that are exposed on the surface due to construction activity shall be removed from the site prior to and after topsoil replacement. This effort will result in an equivalent quantity, size and distribution of rocks to that found on adjacent lands.
- Clearing of rocks may be carried out with a mechanical rock picker or by manual means, provided that preservation of topsoil is assured. Rock removed from the site shall be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner and to Applicant.

2.7.2 Seeding

- Seed Mixes shall meet the requirements of the Noxious Weed Plan for the site.
- Certificates of seed analysis by the State of Oregon, Crook County, or the state in which the seed originated, are required for all seed mixes to limit the introduction of noxious weeds.
- Seeding shall follow cleanup and topsoil replacement as closely as possible. Seed shall be applied to all disturbed surfaces (except cultivated fields unless requested by the landowner).
- If mulch was applied prior to seeding for temporary erosion control, the Third Party Contractor shall remove and dispose of the excess mulch prior to seedbed preparation to ensure that seedbed preparation equipment and seed drills do not become plugged with excess mulch; and to support an adequate seedbed; and to ensure that seed incorporation or soil packing equipment can operate without becoming plugged with mulch.
- The Third Party Contractor may evenly re-apply and anchor (straw crimp) the removed temporary mulch on the construction site following seeding.
- Seed shall be applied at the rate recommended by the managing agency. Seeding rates shall be based on pure live seed.
- Weather conditions, construction site constraints, site access, and soil type shall influence the seeding method to be used (i.e., drill seeding versus broadcast seeding).
- The Third Party Contractor shall delay seeding as necessary until the soil is in the appropriate condition for drill seeding.
- The Third Party Contractor shall operate drill seeders at an appropriate speed so the specified seeding rate and depth is maintained.
- The Third Party Contractor shall calibrate drill seeders so that the specified seeding rate is planted. The site spacing on drill seeders shall not exceed 8 inches.
- The Third Party Contractor shall plant seed at depths consistent with the local or regional agricultural practices.
- Broadcast or hydro seeding, used in lieu of drilling, shall utilize double the recommended seeding rates. Where seed is broadcast, the Third Party Contractor shall use a harrow, cultipacker, or other equipment immediately following broadcasting to incorporate the seed to the specified depth and to firm the seedbed.
- The Third Party Contractor shall delay broadcast seeding during high wind conditions if even distribution of seed is impeded.
- The Third Party Contractor shall hand rake all areas that are too steep or otherwise cannot be safely harrowed or culti-packed in order to incorporate the broadcast seed to the specified depth.
- Hydro seeding may be used, on a limited basis, where the slope is too steep or soil conditions do not warrant conventional seeding methods. Fertilizer, where specified, may be included in the seed, virgin wood fiber, tackifier, and water mixture. When hydro-seeding, virgin wood fiber shall be applied at the rate of approximately 3,000 pounds per acre on an air-dry weight basis as necessary to provide at least 75 percent ground cover. Tackifier shall consist of biodegradable, vegetable-based material and shall be applied at the rate recommended by the manufacturer. The seed, mulch, and tackifier slurry shall be applied so that it forms a uniform, mat-like covering of the ground.

2.7.3 Permanent Erosion and Sediment Control

The Contractor shall restore all existing landowner soil conservation improvements and structures disturbed by facility construction to the approximate pre-construction line and grade. Soil conservation improvements and structures include, but are not limited to, grassed waterways, toe walls, drop inlets, grade control works, terraces, levees, and farm ponds.

2.7.3.1 Mulching

The Contractor shall apply mulch on all areas with high erosion potential and on slopes greater than 8 percent unless otherwise approved based on site-specific conditions or circumstances. The Contractor shall spread mulch uniformly over the area to cover at least 90 percent of the ground surface at an approximate rate of 2 tons per acre of straw or its equivalent. The Environmental Inspector may reduce the application rate or forego mulching an area altogether if there is an adequate cover of rock or organic debris to protect the slope from erosion.

Mulch application includes straw or grass hay mulch or hydro mulch and tackifier. The Contractor shall not apply mulch in cultivated areas unless deemed necessary by the County and Applicant.

The Contractor shall use mulch that is State of Oregon and/or Crook County certified, or by the state of origin, weed seed free.

The Contractor shall apply mulch immediately following seeding. The Contractor shall not apply mulch in wetlands.

If a mulch blower is used, the majority of strands of the mulching material shall not be shredded to less than 12 inches in length to allow anchoring. The Contractor shall anchor mulch immediately after application to minimize loss by wind and water.

When anchoring (straw crimping) by mechanical means, the Contractor shall use a tool specifically designed for mulch anchoring with flat, notched disks to properly crimp the mulch to a depth of 2 to 3 inches. A regular farm disk shall not be used to crimp mulch. The crimping of mulch shall be performed across the slope of the ground, not parallel to it. In addition, in areas of steep terrain, tracked vehicles may be used as a means of crimping mulch (equipment running up and down the hill to leave crimps perpendicular to the slope), provided they leave adequate coverage of mulch.

In soils possessing high erosion potential, the Contractor may be required to make two passes with the mulch crimping tool; passes must be as perpendicular to the others as possible.

When anchoring with liquid mulch binders (tackifiers), the Contractor shall use a biodegradable tackifier derived from a vegetable-based source. The Contractor shall apply mulch binders at rates recommended by the manufacturer.

The Contractor shall limit the use of tackifiers for anchoring straw and the use of hydromulch and tackifier to areas that are too steep or rocky to safely or effectively operate mechanical mulch-anchoring tools. No asphalt-based tackifiers shall be used on the Facility.

2.7.3.2 *Erosion Control Matting*

Erosion control matting shall be applied in areas of high erosion potential. The Contractor shall anchor the erosion control matting with staples or other approved devices.

The Contractor shall use erosion control matting made of biodegradable, natural fiber such as straw or coir (coconut fiber).

The Contractor shall prepare the soil surface and install the erosion control matting to ensure it is stable and the matting makes uniform contact with the soil of the slope face or waterbody bank with no bridging of rills, gullies, or other low areas.

3.0 WATERBODIES AND RIPARIAN AREAS

3.1 General

The Contractor shall comply with requirements of all permits issued for the waterbody crossings by federal, state, or local agencies.

Waterbody includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:

- Minor Waterbody includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of construction.
- Intermediate Waterbody includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of construction.
- Major Waterbody includes all waterbodies greater than 100 feet wide at the water's edge at the time of construction.

The Contractor shall supply and install advisory signs in a readily visible location along the construction ROW at a distance of approximately 50 feet on each side of the crossing and on all roads that provide direct construction access to waterbody crossing sites. Signs shall be supplied, installed, maintained, and then removed upon completion of the Facility.

The Contractor shall not store hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating within 100 feet of any waterbody. The Contractor shall not refuel construction equipment within 100 feet of any waterbody. All equipment maintenance and repairs shall be performed in upland locations at least 100 feet from waterbodies and wetlands. All equipment parked overnight shall be at least 100 feet from a watercourse or wetland, if possible. Equipment shall not be washed in waterbodies or wetlands.

Throughout construction, the Contractor shall maintain adequate flow rates to protect aquatic life and to prevent the interruption of existing downstream uses.

Applicant may allow modification of the following specification, as necessary, to accommodate specific situations or procedures. Any modifications must comply with all applicable regulations and permits. Applicant will complete site-specific crossing plans for certain waterbody crossings if required by the applicable regulatory agencies during federal or state permitting processes.

3.2 Easement and Work Space

The permanent easement, temporary workspace, additional temporary workspace, and any special restrictions will be depicted on the construction drawings. The work shall be contained

within these areas and be limited in size to the minimum required to construct the waterbody crossing.

The Contractor shall locate all extra work areas (such as staging areas and additional spoil storage areas) at least 10 feet from the water's edge if practicable.

At all waterbody crossings, the Contractor shall install flagging across the construction ROW at least 10 feet from the water's edge prior to clearing and ensure that riparian cover is maintained where practicable during construction.

3.3 Vehicle Access and Equipment Crossings

The Contractor shall inspect equipment for fluid leaks prior to entering or crossing over waterbodies.

Equipment crossings shall be perpendicular to drainage bottoms wherever possible.

Erosion and sediment control barriers shall be installed and maintained around vehicle access points, as necessary, to prevent sediment from reaching the waterway.

The Contractor shall be responsible for the installation, maintenance, and removal of all temporary access crossings including portable bridges, bridges made from timber or mats, flumes, culverts, sand bags, subsoil, coarse granular material, and riprap.

The Contractor shall ensure that culverts and flumes are sized and installed of sufficient diameter to accommodate the existing flow of water and those that potentially may be created by sudden runoffs. Flumes shall be installed with the inlet and outlet at natural grade, if possible.

Where bridges, culverts, or flumes are installed across the work area, the Contractor shall be responsible for maintaining them (e.g., preventing collapse, clogging, or tilting). All flumes and culverts shall be removed as soon as possible upon completion of construction.

The width of the temporary access road across culverts and flumes and the design of the approaches and ramps shall be adequate for the size of vehicle and equipment access required. The ramps shall be of sufficient depth and constructed to prevent collapse of the flumes, and the approaches on both sides of the flume shall be feathered.

Where culverts are installed for access, the culvert shall be of sufficient length to convey the stream flow through the construction zone.

The Contractor shall maintain equipment bridges to prevent soil from entering the waterbody.

3.4 Waterbody Crossing Methods

It is not anticipated that major waterbodies are located in the Facility area; however, construction methods pertinent to waterbody crossings are presented below. In conjunction with the appropriate jurisdictional agency, Applicant will develop specific crossing plans for major waterbodies that contain recreationally or commercially important fisheries, or are classified as special use. Applicant will consult with state fisheries agencies with respect to applicable construction windows for each crossing and develop specific construction and crossing methods for open cuts in conjunction with USACE permitting and USFWS consultation.

3.5 Clearing

All staging areas for materials and equipment shall be located at least 50 feet from the waterbody edge. The Contractor shall preserve as much vegetation as possible along the waterbody banks while allowing for safe equipment operation.

Clearing and grubbing for temporary vehicle access and equipment crossings shall be carefully controlled to minimize sediment entering the waterbody from the construction ROW.

Plant debris or soil inadvertently deposited within the highwater mark of waterbodies shall be promptly removed in a manner that minimizes disturbance of the waterbody bed and bank. Excess floatable debris shall be removed above the highwater mark from areas immediately above crossings.

3.6 Grading

The construction ROW adjacent to the waterbody shall be graded so that soil is pushed away from the waterbody rather than towards it whenever possible.

In order to minimize disturbance to woody riparian vegetation within extra workspaces adjacent to the construction ROW at waterbody crossings, the Contractor shall limit grading and grubbing to upland areas adjacent to waterbody banks.

3.7 Temporary Erosion and Sediment Control

The Contractor shall install and maintain sediment and erosion control barriers and cover across the entire construction ROW at all flowing waterbody crossings.

The Contractor shall install sediment barriers immediately prior to initial disturbance adjacent uplands. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.

Where waterbodies are adjacent to the construction ROW, the Contractor shall install and maintain sediment barriers along the edge of the construction ROW as necessary to contain spoil and sediment within the construction ROW.

EXHIBIT H

WEED CONTROL PLAN

Weed Control Plan

Prepared for:

Powell East Solar Farm LLC

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March 09, 2021

Contents

1.0 Introduction

Applicant is proposing to construct, operate, maintain, and decommission a utility scale solar photovoltaic energy generating facility in central Oregon.

The Powell East Solar Farm (the Facility) will be located in Crook County, OR, on a portion of TL 800 and 1900, at the corner of SW Millican and the Gala Solar Access road in Prineville, OR, approximately 9 miles from the center of Prineville, OR. Powell East Solar Farm is west of the Gala Solar project, at the end of the Gala Access Road. The solar facility will use up to 320 acres of these lots lot which runs parallel to SW Millican Road.

The main electrical generation area within the Facility area will include solar modules, switchgear and transmission line substation, solar inverter stations, an energy storage subsystem, monitoring and maintenance facilities, collector lines, and temporary use areas on up to 320 acres of land.

The spread of noxious weeds can be a significant issue in construction facilities involving land disturbance. Measures must be taken to prevent the spread of noxious weeds during construction, operation, and maintenance (O&M). Earth moving activities and the use of contaminated fill, seed, or erosion control products contribute to the spread of weeds.

Disturbance from construction could introduce new noxious weed species or facilitate the spread of existing populations. It is important to note that much of the area where construction would occur is largely undeveloped land and consists of relatively flat terrain.

Applicant recognizes that prevention is the most cost-effective approach to noxious weed management. Applicant will assist county, state, and local agency weed control efforts, comply with preventative requirements, and implement control measures on areas of the facility identified to be of special concern.

1.1 PLAN PURPOSE/OBJECTIVES

This Weed Control Plan (Plan) is intended to address methods to prevent, mitigate, and control the spread of noxious and invasive weeds during construction, operation, decommissioning, and reclamation of the facility. Weed management goals are to prevent the spread and establishment of noxious and invasive weeds in the facility area. Additional goals are to minimize potential effects from control treatments such as herbicide spraying. Effective control of noxious and invasive weeds can be a combination of chemical, mechanical, biological, or cultural controls.

Applicant and its contractors will be responsible for implementing the methods described in this Plan. Applicant will comply with State of Oregon, county and federal agency requirements implemented to prevent the spread of noxious and invasive weeds. Noxious and invasive weed control measures will be implemented in accordance with existing regulations and jurisdictional land management agencies or landowner agreements.

1.2 NOXIOUS WEEDS AND INVASIVE SPECIES

The terms "noxious weed" and "invasive weed" are often used interchangeably to describe any plant that is unwanted and grows or spreads aggressively. The term "noxious weed" is legally defined under both federal and state laws. Noxious weeds and invasive species are opportunistic and often exotic (non-indigenous) plant species that readily invade disturbed areas, often producing monocultures and preventing native plant species from establishing communities. Noxious weeds and invasive species also degrade agricultural productivity, soil and water, wildlife habitat, and recreational and wilderness values. Noxious weeds have become a growing concern in the western U.S. based on their ability to increase in cover relative to surrounding vegetation and exclude native plants from an area.

The State of Oregon defines noxious weeds as "a terrestrial, aquatic or marine plant designated by the State Weed Board under ORS 569.615 as among those representing the greatest public menace and as a top priority for action by weed control programs" (from Oregon Department of Agriculture Noxious Weed Policy and Classification System 2019, Noxious Weed Control Program http://www.oregon.gov/ODA/programs/Weeds/Pages/AboutWeeds.aspx).

Oregon's noxious weed list are identified in the above referenced document, included as an attachment to this plan. Please see the Tables in the attached 2019 Plan for a comprehensive listing species.

In addition, the Oregon State designated weed list may be supplemented by Crook County details as specified by the County Weedmaster.

2.0 Inventory of Weed Species

Biological surveys for noxious and invasive weeds will be conducted prior as part of preconstruction activities to determine their occurrence within the facility area. A report of finding will become of the facility record.

3.0 Prevention

Prevention is the most effective method of preventing the spread and establishment of noxious and invasive weeds. The following generally accepted practices will be implemented as reasonable to minimize the spread and establishment of noxious and invasive weeds before and after construction, operation, decommissioning, and reclamation. During construction, decommissioning, and reclamation, Applicant will seek to minimize ground disturbance and vegetation removal as much as possible or practical.

3.1 Construction Methods

The following generally accepted practices will be implemented during construction:

- Prior to construction, contractor will mark all areas of the Facility area, which contain infestations of noxious, invasive species, or soil-borne pests. Such markings will clearly indicate the limits of the infestation in the Facility area.
- Contractor will implement pre-construction treatments such as mowing prior to seed development or herbicide application to areas of noxious and invasive weed infestation prior to other clearing, grading, trenching, or other soil disturbing work at locations identified in the construction drawings.
- During construction, contractor will clean the tracks, tires, and blades of equipment by hand (track shovel) or compressed air to remove excess soil prior to movement of equipment out of weed or soil-borne pest infested areas or utilize cleaning stations to remove vegetative materials using water under high pressure.
- Clean all equipment of dirt and vegetation. The contractor will pressure wash all construction equipment prior to mobilizing/demobilizing from the Facility. This includes timber mats, cars, transporting trailers and trucks, and recreational equipment brought on-site.
- Use only certified weed-free straw/hay or use fiber roll logs for sediment control.
- Use only certified weed-free straw/hay for mulch.
- Areas located outside of the Facility area related to the Facility (construction/storage yards) will be kept weed free. Inspection will be conducted on a regular basis to confirm weeds are not present. Weeds located outside the Facility areas will be treated in the same manner as Facility area locations.

3.2 Operation

- Noxious and invasive weed monitoring and control would continue for any area over which Applicant would retain control over the land surface use during operation. Inspections will occur on an annual basis while the SSF is in operation.

- Throughout the life of the facility, Applicant will work cooperatively with the local weed and pest district in order to properly manage noxious and invasive weeds in the SSF.

- Any weed control spraying performed by Applicant will be done by a state licensed pesticide applicator.

3.3 Temporary and Permanent Restoration Methods

Reclamation specific management practices include:

- Once construction is complete, temporary revegetation will be completed as soon as possible.
- As part of decommissioning, revegetation of the Facility area will be completed. Use seed and other plant materials that have been certified as weed free. Seed mixes will conform to the managing land agency specification(s).
- Use native materials where appropriate and feasible.

- Treat weeds adjacent to newly seeded areas prior to planting and treat planted areas for weeds in the first growing season.
- Monitoring will be conducted to assess Facility area stability, revegetation progress, and percentage of vegetative cover. Monitoring will assess whether applied treatment methods are effective in controlling weeds and make recommendations for further treatment.

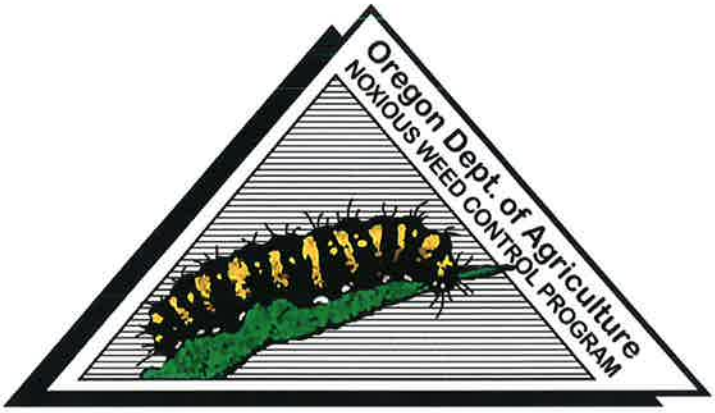
3.4 Post-Reclamation Methods

Post-reclamation specific practices include:

- Re-vegetate or otherwise prevent the establishment of weeds in the Facility area and documenting all ground-disturbing operations in noxious weed infested areas. Herbicide applications to noxious weed infestation areas after grass species are established.
- Treatment methods other than herbicide application, such as mowing and biological methods, will be considered during the post-reclamation process.
- Noxious and invasive weed monitoring and control will continue for any area over which Applicant will retain control over land surface use after decommissioning. Any weed control spraying required will be done by a state licensed pesticide applicator.

Oregon Department of Agriculture

Noxious Weed Policy and Classification System 2019



Noxious Weed Control Program

Address: 635 Capitol Street NE, Salem, Oregon 97301
Phone: (503) 986-4621 **Fax:** (503) 986-4786
www.oregon.gov/ODA/programs/Weeds/Pages/AboutWeeds.aspx

Mission Statement

To protect Oregon's natural resources and agricultural economy from the invasion and proliferation of invasive noxious weeds.

Program Overview

The Oregon Department of Agriculture (ODA) Noxious Weed Control Program provides statewide leadership for coordination and management of state listed noxious weeds. The state program focuses on noxious weed control efforts by implementing early detection and rapid response projects for new invasive noxious weeds, implementing biological control, implementing statewide inventory and survey, assisting the public and cooperators through technology transfer and noxious weed education, maintaining noxious weed data and maps for priority listed noxious weeds, and assisting land managers and cooperators with integrated weed management projects. The Noxious Weed Control Program also supports the Oregon State Weed Board (OSWB) with administration of the OSWB Grant Program, developing statewide management objectives, developing weed risk assessments, and maintaining the state noxious weed list.

Tim Butler
Program Manager
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(503) 986-4621

Table of Contents

Noxious Weed Control Policy and Classification System

Definition

"Noxious weed" means a terrestrial, aquatic or marine plant designated by the Oregon State Weed Board under ORS 569.615 as among those representing the greatest public menace and as a top priority for action by weed control programs.

Noxious weeds have become so thoroughly established and are spreading so rapidly on private, state, county, and federally owned lands, that they have been declared by ORS 569.350 to be a menace to public welfare. Steps leading to eradication, where possible, and intensive control are necessary. It is further recognized that the responsibility for eradication and intensive control rests not only on the private landowner and operator, but also on the county, state, and federal governments.

Weed Control Policy

Therefore, it shall be the policy of ODA to:

1. Assess non-native plants through risk assessment processes and make recommendations to the Oregon State Weed Board for potential listing.
2. Rate and classify weeds at the state level.
3. Prevent the establishment and spread of listed noxious weeds.
4. Encourage and implement the control or containment of infestations of listed noxious weed species and, if possible, eradicate them.
5. Develop and manage a biological weed control program.
6. Increase awareness of potential economic losses and other undesirable effects of existing and newly invading noxious weeds, and to act as a resource center for the dissemination of information.
7. Encourage and assist in the organization and operation of noxious weed control programs with government agencies and other weed management entities.
8. Develop partnerships with county weed control districts, universities, and other cooperators in the development of control methods.
9. Conduct statewide noxious weed surveys and weed control efficacy studies.

Weed Classification System

The purpose of this Classification System is to:

1. Act as the ODA's official guideline for prioritizing and implementing noxious weed control projects.
2. Assist the ODA in the distribution of available funds through the Oregon State Weed Board to assist county weed programs, cooperative weed management groups, private landowners, and other weed management entities.
3. Serve as a model for private and public sectors in developing noxious weed classification systems that aid in setting effective noxious weed control strategies.

Criteria for Determining Economic and Environmental Significance

Detrimental Effects

1. A plant species that causes or has the potential to cause severe negative impacts to Oregon's agricultural economy and natural resources.
2. A plant species that has the potential to or does endanger native flora and fauna by its encroachment into forest, range, aquatic and conservation areas.
3. A plant species that has the potential or does hamper the full utilization and enjoyment of recreational areas.
4. A plant species that is poisonous, injurious, or otherwise harmful to humans and/or animals.

Plant Reproduction

1. A plant that reproduces by seed capable of being dispersed over wide areas or that is long-lived, or produced in large numbers.
2. A plant species that reproduces and spreads by tubers, creeping roots, stolons, rhizomes, or other natural vegetative means.

Distribution

1. A weed of known economic importance which occurs in Oregon in small enough infestations to make eradication/containment possible; or not known to occur, but its presence in neighboring states makes future occurrence seem imminent.
2. A weed of economic or ecological importance and of limited distribution in Oregon.
3. A weed that has not infested the full extent of its potential habitat in Oregon.

Difficulty of Control

A plant species that is not easily controlled with current management practices such as chemical, cultural, biological, and physical methods.

Noxious Weed Control Classification Definitions

Noxious weeds, for the purpose of this system, shall be listed as either A or B, and may also be designated as T, which are priority targets for control, as directed by the Oregon State Weed Board.

- **A Listed Weed**:

  A weed of known economic importance which occurs in the state in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent (Table I).

  Recommended action: Infestations are subject to eradication or intensive control when and where found.

- **B Listed Weed**:

  A weed of economic importance which is regionally abundant, but which may have limited distribution in some counties (Table II).

  Recommended action: Limited to intensive control at the state, county or regional level as determined on a site specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

- **T-Designated Weed (T)**:

  A designated group of weed species that are selected and will be the focus for prevention and control by the Noxious Weed Control Program. Action against these weeds will receive priority. T-designated noxious weeds are determined by the Oregon State Weed Board and directs ODA to develop and implement a statewide management plan. T-designated noxious weeds are species selected from either the A or B list.

Weed Biological Control

Oregon implements biological control, or "biocontrol" as part of its integrated pest management approach to managing noxious weeds. This is the practice of using host-specific natural enemies such as insects or pathogens to control noxious weeds. The Oregon Department of Agriculture Noxious Weed Program has adopted the International Code of Best Practices for biological control of weeds. Only safe, effective, and federally- approved natural enemies will be used for biocontrol.

Table I: A Listed Weeds

Common Name	Scientific Name
African rue (T)	*Peganum harmala*
Camelthorn	*Alhagi pseudalhagi*
Cape-ivy (T)	*Delairea odorata*
Coltsfoot	*Tussilago farfara*
Common frogbit	*Hydrocharis morsus-ranae*
Cordgrass	
Common	*Spartina anglica*
Dense-flowered (T)	*Spartina densiflora*
Saltmeadow (T)	*Spartina patens*
Smooth (T)	*Spartina alterniflora*
Delta arrowhead (T)	*Sagittaria platyphyla*
European water chestnut	*Trapa natans*
Flowering rush (T)	*Butomus umbellatus*
Garden yellow loosestrife (T)	*Lysimachia vulgaris*
Giant hogweed (T)	*Heracleum mantegazzianum*
Goatgrass	
Barbed (T)	*Aegilops triuncialis*
Ovate	*Aegilops ovata*
Goatsrue (T)	*Galega officinalis*
Hawkweed	
King-devil	*Hieracium piloselloides*
Mouse-ear (T)	*Hieracium pilosella*
Orange (T)	*Hieracium aurantiacum*
Yellow (T)	*Hieracium floribundum*
Hoary alyssum (T)	*Berteroa incana*
Hydrilla	*Hydrilla verticillata*
Japanese dodder	*Cuscuta japonica*
Kudzu (T)	*Pueraria lobata*
Matgrass (T)	*Nardus stricta*
Oblong spurge (T)	*Euphorbia oblongata*
Paterson's curse (T)	*Echium plantagineum*
Purple nutsedge	*Cyperus rotundus*
Ravennagrass (T)	*Saccharum ravennae*
Silverleaf nightshade	*Solanum elaeagnifolium*
Squarrose knapweed (T)	*Centaurea virgata*

(T) T-Designated Weed (See page 4)

(Continued) Table I: A Listed Weeds

Common Name	Scientific Name
Starthistle	
Iberian (T)	*Centaurea iberica*
Purple (T)	*Centaurea calcitrapa*
Syrian bean-caper	*Zygophyllum fabago*
Thistle	
Plumeless (T)	*Carduus acanthoides*
Smooth distaff	*Carthamus baeticus*
Taurian (T)	*Onopordum tauricum*
Welted (curly plumeless) (T)	*Carduus crispus*
Woolly distaff (T)	*Carthamus lanatus*
Water soldiers	*Stratiotes aloides*
West Indian spongeplant	*Limnobium laevigatum*
White bryonia	*Bryonia alba*
Yellow floating heart (T)	*Nymphoides peltata*
Yellowtuft (T)	*Alyssum murale, A. corsicum*

(T) T-Designated Weed (See page 4)

Table II: B Listed Weeds

Common Name	Scientific Name
Armenian (Himalayan) blackberry	*Rubus armeniacus (R. procerus, R. discolor)*
Biddy-biddy	*Acaena novae-zelandiae*
Broom	
French*	*Genista monspessulana*
Portuguese (T)	*Cytisus striatus*
Scotch*	*Cytisus scoparius*
Spanish	*Spartium junceum*
Buffalobur	*Solanum rostratum*
Butterfly bush	*Buddleja davidii (B. variabilis)*
Common bugloss (T)	*Anchusa officinalis*
Common crupina	*Crupina vulgaris*
Common reed	*Phragmities australis ssp. australis*
Creeping yellow cress	*Rorippa sylvestris*
Cutleaf teasel	*Dipsacus laciniatus*
Dodder	
Smoothseed alfalfa	*Cuscuta approximata*
Five-angled	*Cuscuta pentagona*
Bigseed	*Cuscuta indecora*
Dyer's woad	*Isatis tinctoria*
Eurasian watermilfoil	*Myriophyllum spicatum*
False brome	*Brachypodium sylvaticum*
Field bindweed*	*Convolvulus arvensis*
Garlic mustard (T)	*Alliaria petiolata*
Geranium	
Herb Robert	*Geranium robertianum*
Shiny leaf	*Geranium lucidum*
Gorse* (T)	*Ulex europaeus*
Halogeton	*Halogeton glomeratus*
Houndstongue	*Cynoglossum officinale*
Indigo bush	*Amorpha fruticosa*
Ivy	
Atlantic	*Hedera hibernica*
English	*Hedera helix*
Johnsongrass	*Sorghum halepense*

* Biocontrol (See page 4)

(T) T-Designated Weed (See page 4)

(Continued) Table II: B Listed Weeds

Common Name	Scientific Name
Jointed goatgrass	*Aegilops cylindrica*
Jubata grass	*Cortaderia jubata*
Knapweed	
Diffuse*	*Centaurea diffusa*
Meadow*	*Centaurea pratensis*
Russian*	*Acroptilon repens*
Spotted* (T)	*Centaurea stoebe (C. maculosa)*
Knotweed	
Bohemian	*Fallopia x bohemica*
Giant	*Fallopia sachalinensis (Polygonum)*
Himalayan	*Polygonum polystachyum*
Japanese	*Fallopia japonica (Polygonum)*
Kochia	*Kochia scoparia*
Lesser celandine	*Ranunculus ficaria*
Meadow hawkweed (T)	*Pilosella caespitosum (Hieracium)*
Mediterranean sage*	*Salvia aethiopis*
Medusahead rye	*Taeniatherum caput-medusae*
Old man's beard	*Clematis vitalba*
Parrot feather	*Myriophyllum aquaticum*
Perennial peavine	*Lathyrus latifolius*
Perennial pepperweed (T)	*Lepidium latifolium*
Pheasant's eye	*Adonis aestivalis*
Poison hemlock*	*Conium maculatum*
Policeman's helmet	*Impatiens glandulifera*
Puncturevine*	*Tribulus terrestris*
Purple loosestrife*	*Lythrum salicaria*
Ragweed	*Ambrosia artemisiifolia*
Ribbongrass (T)	*Phalaris arundinacea var. Picta*
Rush skeletonweed* (T)	*Chondrilla juncea*
Saltcedar* (T)	*Tamarix ramosissima*
Small broomrape	*Orabanche minor*
South American waterweed	*Egeria densa (Elodea)*
Spanish heath	*Erica lusitanica*
Spikeweed	*Hemizonia pungens*

*Biocontrol (See page 4) (T) T-Designated Weed (See page 4)

(Continued) **Table II: B Listed Weeds**

Common Name	Scientific Name
Spiny cocklebur	*Xanthium spinosum*
Spurge laurel	*Daphne laureola*
Spurge	
Leafy* (T)	*Euphorbia esula*
Myrtle	*Euphorbia myrsinites*
St. Johnswort*	*Hypericum perforatum*
Sulfur cinquefoil	*Potentilla recta*
Swainsonpea	*Sphaerophysa salsula*
Tansy ragwort* (T)	*Senecio jacobaea (Jacobaea vulgaris)*
Thistle	
Bull*	*Cirsium vulgare*
Canada*	*Cirsium arvense*
Italian	*Carduus pycnocephalus*
Milk*	*Silybum marianum*
Musk*	*Carduus nutans*
Scotch	*Onopordum acanthium*
Slender-flowered*	*Carduus tenuiflorus*
Toadflax	
Dalmatian* (T)	*Linaria dalmatica*
Yellow*	*Linaria vulgaris*
Tree of heaven	*Ailanthus altissima*
Velvetleaf	*Abutilon theophrasti*
Ventenata grass	*Ventenata dubia*
Primrose Willow	
Large-flower (T)	*Ludwigia grandiflora*
Water primrose (T)	*Ludwigia hexapetala*
Floating (T)	*Ludwigia peploides*
Whitetop	
Hairy	*Lepidium pubescens*
Lens-podded	*Lepidium chalepensis*
Whitetop (hoary cress)	*Lepidium draba*
Yellow archangel	*Lamiastrum galeobdolon*
Yellow flag iris	*Iris pseudacorus*
Yellow nutsedge	*Cyperus esculentus*
Yellow starthistle*	*Centaurea solstitialis*
*Biocontrol (See page 4)	(T) T-Designated Weed (See page 4)

Oregon
Department of Agriculture

2/2019

EXHIBIT I-1

SOLAR FACILITY DECOMMISSIONING PLAN

Solar Facility Decommissioning Plan

Prepared for:

Powell East Solar Farm LLC

3500 S DuPont Hwy

Dover, DE 19901

Prepared by:

Energy Automation Solutions Engineering – EASE LLC

1999 SW Troon Ave

Bend, OR 97702

March 09, 2021

ENERGY AUTOMATION SOLUTIONS ENGINEERING, LLC.

Contents

1.0 Decommissioning Plan

1.1 General

The following decommissioning plan is to ensure that facilities are properly removed after their useful life of up to 40 years (or longer, as may be the case).

The plan includes provisions for removal of all structures and foundations, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site.

Qualified contractors shall be employed to implement this Decommissioning Plan (as may be amended per approval of applicable county officials and permit holder) and shall comply with requirements of all applicable permits during the decommissioning process.

1.2 Decommissioning and Reclamation

At the end of commercial operations, Applicant will be responsible for removing solar facilities at the site to a depth of 36 inches and to restore and reclaim the site to pre-construction topography and topsoil quality to the extent practical or to a general state suitable for continued agricultural use as permitted for property at time of decommissioning, which is presumed to be substantially similar to prior to construction. Applicant reserves the right to extend the Facility instead of decommissioning at the end commercial operations with landowner permission and upon obtaining all applicable necessary permits (if any required).

Removal of solar facilities, for the purpose of decommissioning as defined here in, includes equipment removal, as further described below, including removing the solar panels, solar panel racking, steel foundation posts and beams, inverters, transformers, overhead and underground cables and lines, equipment pads and foundations, equipment cabinets, and ancillary equipment to a depth of 36 inches. The civil facilities, access road, security fence, and any drainage structures are included in the scope. Dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements will apply depending on the item.

After all equipment is removed, any holes or voids created by poles, piles, concrete pads and other equipment will be filled in with soil to the surrounding grade and seeded or revegetated with a previously County approved seed mix or an agricultural seed consistent with intended future use of the property for agricultural purposes (such as dry wheat).

1.3 List of Decommissioning Activities

1.3.1 Timeline

Decommissioning is estimated to take six to ten weeks to complete and the decommissioning crew will ensure that all equipment and materials are recycled or disposed of properly. Detailed schedule will depend on time of year and final size and design of facility.

1.3.2 Removal and Disposal of Site Components

The removal and disposal details of the site components are found below.

Solar PV Modules: Modules will be removed from site. Depending on owner's intentions for reuse of equipment, they may be inspected for physical damage, tested for functionality, and disconnected and removed from racking. If so, functioning modules may be packed and stored in an offsite facility for reuse or resale. Non-functioning modules or modules not otherwise retained for future use will be packed, palletized and shipped to the manufacturer or a third party for recycling or disposal in accordance with applicable regulations.

Racking: Racking and racking components will be disassembled and removed from the steel foundation posts, sorted, processed to appropriate size, and sent to a third party for recycling or disposal in accordance with applicable regulations.

Steel Foundation Posts: All structural foundation steel posts and other foundation structures will be pulled out to full depth, removed, processed to appropriate size, and shipped to a recycling facility. During decommissioning, the area around the foundation posts may be compacted by equipment and, if compacted, the area will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent with grassland or agricultural uses. Removed piles and posted will be sorted, processed to appropriate size, packaged for shipment, and sent to a third party for recycling or disposal in accordance with applicable regulations.

Overhead and Underground Cables and Lines: As part of the decommissioning of the facility, cables and conduits will be removed up to a depth of 36 inches and shipped to a recycling facility. Topsoil will be segregated and stockpiled for later use prior to any excavation and the subsurface soils will be staged next to the excavation. Following the removal of the cable and conduits, the excavation will be back-filled with the spoils previously removed. The subgrade will be compacted to a density similar to grassland or agricultural uses. Topsoil will be redistributed across the disturbed area. All cable and conduit buried deeper than 36 inches will be left in place and abandoned.

Inverters, Transformers, and Ancillary Equipment: All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at Applicant's sole discretion, consistent with applicable regulations and industry standards.

Equipment Pads and Ancillary Foundations: Topsoil will be removed from an area surrounding the foundation and stockpiled for later use/replacement, as applicable. Foundations will be excavated to a depth sufficient to remove all conduits, cables, aggregate and concrete to a depth of 36 inches below grade. The remaining excavation will be filled with clean subgrade materials of quality comparable to the immediate surrounding area. All unexcavated areas compacted by equipment used in decommissioning will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent and compatible with grassland or agricultural uses. All materials will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at Applicants' sole discretion, consistent with applicable regulations and industry standards.

Fence: All fence parts and foundations will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at Applicant's sole discretion, consistent with applicable regulations and industry standards, except to the extent the

landowner desires the same to remain in place. The surrounding areas will be restored to pre-construction conditions to extent feasible if necessary.

Computers, monitors, hard drives, and other components: All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at Applicants sole discretion, consistent with applicable regulations and industry standards.

Access Roads: On-site facility access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the Landowner, using the following process:

1) After final clean-up, roads may be left intact through mutual agreement of the landowner and Applicant unless otherwise restricted by Federal, State, or Local Regulations.

2) If a road is to be removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately, owner's sole discretion, consistent with applicable regulations and industry standards. Ditch crossings connecting access roads to public roads will be removed unless the landowner requests they remain. The subgrade will be de-compacted to a density similar to surrounding sub-grade material. Topsoil will be distributed across the open area. The access roads and adjacent areas that are compacted by equipment will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent with grassland or agricultural uses.

Land Leveling: As part of site decommissioning, to the extent commercially reasonable, Applicant will restore the area disturbed by construction to pre-construction elevation and contour or to a state suitable for continued agricultural use to extent feasible. (For example, ground may be left more level than prior to facility.) If uneven settling occurs or surface drainage problems develop as a result of Facility decommissioning, Applicant will provide additional land leveling services, or compensation, within 45 days of receiving a landowner's written notice, weather permitting.

1.3.3 Restoration/Reclamation of Site

Applicant will restore and reclaim the site based upon the property use intended by the landowner after decommissioning. Applicant assumes that most site will be utilized for agriculture or pasture after decommissioning and will implement appropriate measures to facilitate such uses. If no specific use is identified, Applicant will vegetate the site with a dry wheat, or a grassland seed mix approved by the County weedmaster. The generally accepted decommissioning practices to minimize erosion and contain sediment that will be employed on the Facility to the extent practicable with the intent of meeting this goal include:

1. Minimize new disturbance and removal of native vegetation to the greatest extent practicable.

2. Removal of solar equipment and access roads up to three feet below surrounding grade, backfill with subgrade material and cover with suitable topsoil to allow adequate root penetration for plants, and so that subsurface structures do not substantially disrupt ground water movements.

3. Any topsoil that is removed from the surface for decommissioning will be stockpiled to be reused when restoring plant communities. Once decommissioning activity is complete, topsoil will be restored to assist in establishing and maintaining plant communities.

4. Stabilize soils and re-vegetate with regional plants appropriate for the soil conditions and adjacent habitat and use local seed sources where feasible, consistent with landowner objectives. Reseeding with native plants will not be performed for site that will be returned to agricultural use or other more intensive beneficial uses.

5. During and after decommissioning activities, install erosion and sediment control measures in all disturbance areas where potential for erosion and sediment transport exists, consistent with storm water management objectives and requirements.

6. Remediate any petroleum product leaks and chemical releases prior to completion of decommissioning, if applicable.

Decommissioning and restoration activities at each site will be completed within 12 months after the date the site ceases to operate.

1.4 Post-Restoration Monitoring

Decommissioning of the site will not require new permits or approvals. Decommissioning should include post-restoration monitoring. In addition, Applicant's Field Representative assigned to decommissioning monitoring will stay in contact with site and county agencies, until conditions have stabilized.

In situations where additional restoration is necessary, the compliant procedure will be followed to determine the need for additional restoration (fertilizing or reseeding) in a manner consistent herewith.

As part of the post restoration monitoring, Applicant's Field Representative will also survey for excessive noxious weeds and address if this is an issue. This may involve consulting an agronomist or biologist if revegetation is not sufficient or if there are problems with noxious weeds during the first growing season, or until Applicant no longer has control over the land.

EXHIBIT I-2
SOLAR DECOMMISSIONING
COST ESTIMATE

Solar PV Facility Removal Cost vs. Salvage Value

In solar, the prevailing industry understanding is that, given the relative simplicity of the facilities and predominance of valued scrap metals in the overall composition of a facility (primarily steel racks and piles, etc), that the salvage value of PV facilities materially exceeds the cost of removal.

Compared to other industrial facilities, decommissioning of a solar PV project is relatively simple, does not require highly skilled or specialized labor, could be undertaken by many regional contractors, and does not result in the generation of hazardous waste (or such is minimal/trace and/or self contained, for example in a transformer, that would be removed as a whole (not demolished)) (See Exhibit I-1, Decommissioning Plan). In addition, the vast majority of the components of the system can be readily sold for scrap value (e.g., aluminum module frames, steel racking, copper conductors, etc.), whereby such residual value is typically estimated to exceed the cost of decommissioning a solar PV plant. For example, there will be thousands of steel piles to which modules are mounted. Thus, such major components have major scrap value, and are expected to result in a number of parties will to pay for the right to remove the facility in order to secure the scrap value.

Thus, the industry understanding is that solar PV facility removal cost is functionally negative, as third parties are expected to be willing to pay to remove the facility in exchange for scrap metals.

Cost Estimate:

Cost estimate for removal: Less than zero. < $0.00.

Salvage value exceeds removal costs materially. Thus the appropriate estimate is negative.

Further, a full actual detailed cost estimate can not be completed until a facility is fully designed and final. This final design cannot occur until final permits are received for the facility, which cannot be even started until after a Conditional Use Permit is secured for the facility.

Thus, *if* any additional cost estimate is required for the facility, it should be done subsequent to prior design, and prior to construction, based on detailed final design. It is not appropriate to provide a project specific removal cost estimate at this time, if any should be required at all, which Applicant believes is not necessary. [Can discuss further at Planning Commission meeting if necessary.]

Conclusion:

Given 1) the negative-cost-of-removal backdrop, and 2) the intrinsic value of the facility (including interconnection) and which is likely to never be removed (only retrofitted with more efficient equipment later): The decommissioning cost does not comprise a material, if any risk to the county or the landowner. Thus security to address removal and decommissioning is not a major concern, and it is thus reasonable to not require posting of decommissioning security at the time of construction.

If any security is required, it should be posted based on a cost estimate for removal completed at Year 10 of operations, and posted, if materially different than the initial estimate (zero) if applicable, at that time. It could be removed every 5-10 years thereafter.

Documentation / Example:

An example of a detailed cost estimate completed for another project (roughly 80 acres in size, located on similarly non-rectangular ground, for a South Carolina project) is attached in *Exhibit I-3 "Example Decommissioning vs Salvage Value Estimate"*. The estimate was prepared by a professional engineering services firm, based on a final facility design, for that specific project.

As you can see in Exhibit I-3, the salvage value ($450,000) exceeded the removal cost ($315,000)

This cost estimate was created using the detailed design data available for the site, and includes interconnection removal and site remediation costs. While the actual number of panels and associated equipment for Wasco Solar Farm will vary, either up or down based on its final design, the outcome will scale in a similar fashion: the cost to remove facility material from the site, and remediate the site to its prior condition shall be less than the salvage value of the equipment removed by about 35%. This brings the cost of decommissioning the site to either a negative number or $0.

Prior to construction, an updated cost estimate for decommissioning the site can be performed for the as-designed facility if required by the Planning Commission as a permit condition. At that time, and at as requested review intervals agreeable to Crook County, financial assurances can be revisited and applied, if any.

EXHIBIT I-3

DECOMMISSIONING AND SALVAGE SUPPORT DOCUMENTS

McGAVRAN
ENGINEERING, P. C.

Decommissioning Report

Nimitz Solar LLC

February 2017

Performed By:

McGavran Engineering, P. C.
801 Baxter Street, Suite 410
Charlotte, North Carolina 28202

February 2, 2017

Nimitz Solar, LLC c/o
Greg S.K. Ness
General Counsel
Southern Current LLC
1634 Ashley River Road
Charleston, SC 29407

Dear Greg,

Please find enclosed the Decommissioning Report for the Nimitz Solar LLC, project located in the town of Ridgeland, South Carolina.

As you will note, these sites are not complicated by any wetland nor navigable waterways, that can be problematic for both construction and decommissioning. The report reflects that fact, and makes it clear that decommissioning, will be a simple matter and a relatively low cost activity.

Also, it is the case that much of the hardware used, (steel, solar panels, etc.) are salvageable, and will have considerable value at the time of decommissioning, which will defray cost issues as well for the decommissioning. In this instance, there will be little or no remediation required, other than preventing the loss of topsoil and erosion control, ongoing mitigation will be minimal as well.

We appreciate the opportunity to do this work for you and look forward to other engagements with you on similar projects.

Please contact me if you have any questions regarding this matter.

Sincerely,

Edward G. (Ted) McGavran, III, P.E.
President
McGavran Engineering P.C.

Engineering Services

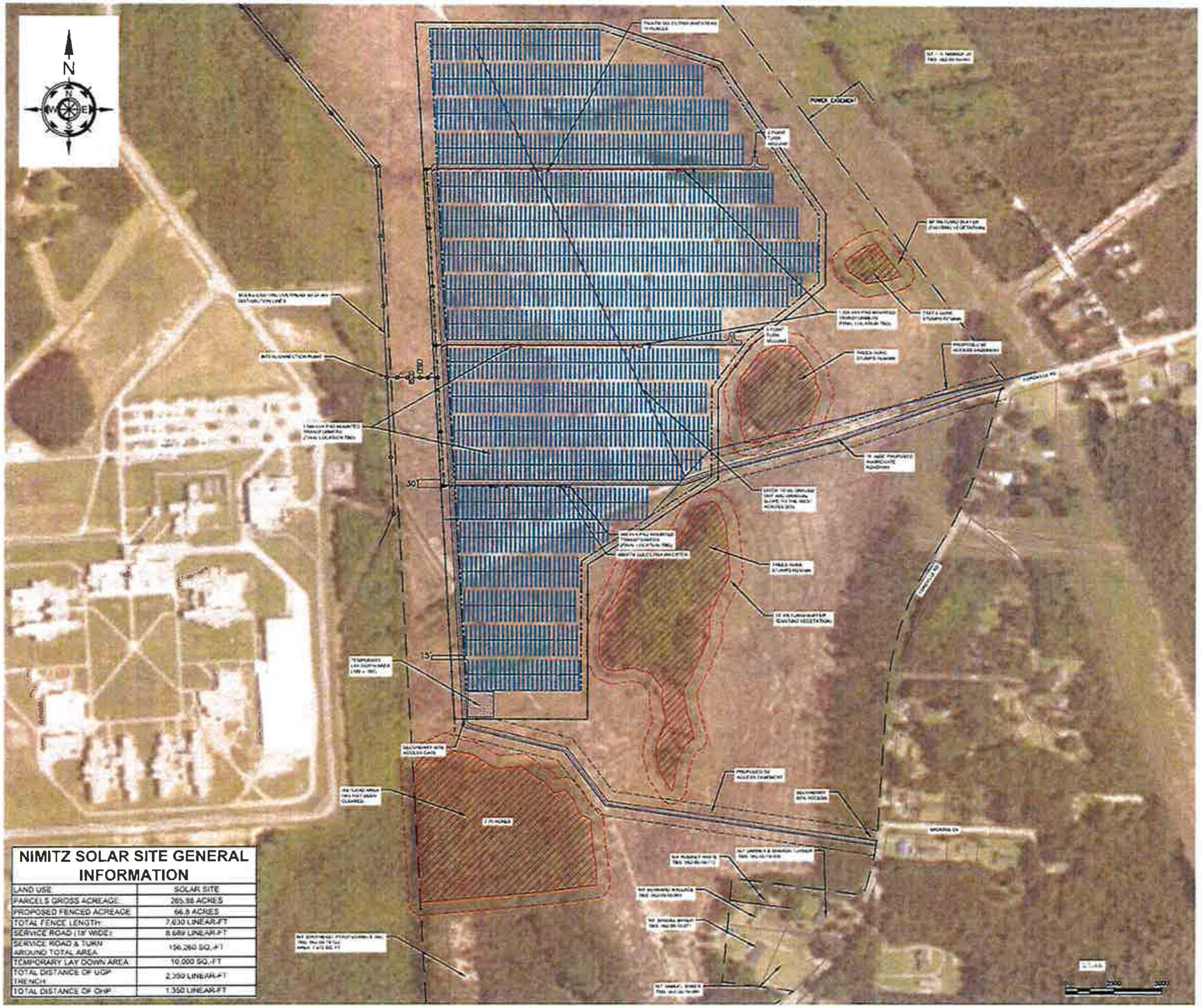
801 Baxter Street Suite 410

Charlotte, NC 28202

704-347-4906 FAX 704-347-4908

Appendix 3

Site Layout



NIMITZ SOLAR SITE GENERAL INFORMATION

LAND USE	SOLAR SITE
PARCELS GROSS ACREAGE	265.98 ACRES
PROPOSED FENCED ACREAGE	66.8 ACRES
TOTAL FENCE LENGTH	7,630 LINEAR-FT
SERVICE ROAD (18' WIDE)	8,689 LINEAR-FT
SERVICE ROAD & TURN AROUND TOTAL AREA	156,260 SQ.-FT
TEMPORARY LAY DOWN AREA	10,000 SQ.-FT
TOTAL DISTANCE OF UGP TRENCH	2,350 LINEAR-FT
TOTAL DISTANCE OF OHP	1,350 LINEAR-FT

SOLAR PV SYSTEM OVERVIEW

Module Name:	FIRST SOLAR 117.5W THIN
(#) of Modules:	89,600
Racking System:	Exotrack HZ
Row to Row Spacing:	18'
(#) Modules in Series:	10
(#) of Strings:	8,960
Inverter Name:	SOLECTRIA 750XTM
(#) of Inverters:	10
Inverter Name:	SOLECTRIA 500XTM
(#) of Inverters:	1
System Size (DC):	10.528 MW
System Size (AC):	8.0 MW
Array Azimuth:	180°

LEGEND

ELECTRIC DISTRIBUTION SYMBOLS

- PM — PRIMARY METER
- RC — RECLOSER
- CUTOUT
- GANG SWITCH
- SCE&G POLE
- SITE UTILITY POLE

SOUTHERN CURRENT

1634 Ashley River Road
Charleston, S.C. 29407

NIMITZ SOLAR, LLC
32°29'55.48"N 80°57'41.83"W
Ridgeland, SC
6.0 MW AC Ground Mount
CONSTRUCTION SITE PLAN

PE STAMP: SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 29008 DAVID E. BRUECK

ENGINEER: David Brueck, P.E.
SC LICENSE # 29008
Certified NABCEP
PV Installer# 042013-17

DRAFTER: Mathew Bath

PROJECT #: D-2016-01

SHEET: 001

SCALE: 1=2,500

NO	DATE	BY	REVISION DESCRIPTION	APRV'D
1	[illegible]	M.BATH	REVISED RACKING SYSTEM	[illegible]
2	[illegible]	M.BATH	CONSTRUCTION SITE PLAN	[illegible]

ANSI-D 34"x22"

Appendix 5

Decommissioning Detailed Cost Estimate

Detailed Decommission Cost Estimate

Project Size: 8 MW ac
Project land area: 93.56 acres

Item	Qty	Cost/Unit	Total Cost
117.5 W Solar Panels First Solar Series 4	89,600	N/A	$25,000.00
Panel Support Posts	4,850	$25.00	$121,250.00
1500 KVA Transformers	5	$1,000.00	$5,000.00
500 KVA Transformers	1	$1,000.00	$1,000.00
Inverters	11	$1,000.00	$11,000.00
Fence Removal			$20,000.00
Conductor Removal (overhead and underground)			$20,000.00
Interconnection Removal			$10,000.00
Site Remediation	94 acres		$100,000.00
Total Cost			**$313,250.00**

Salvage Values

Project Size: 8 MW ac
Project land area: 93.56 acres

Item	Qty	Cost/Unit	Total Cost	Salvage value
117.5 W Solar Panels First Solar Series 4	89,600	$0.40/W	$4,211,120	$421,112*
Aluminum	18 tons	@ $1,000/ton salvage value		$18,000
1500 KVA Transformers	5	$30,000	$150,000	$30,000
500 KVA Transformers	1	$12,000	$12,000	$2,400
Inverters	11	$1,000.00	$11,000.00	
Fence: @ 900 galvanized steel posts, 15lb/post, @ 13,500 Lbs. @ $100/ton				$675
@ 8679' chain link fence @ 5lb/foot @ 43,395 lbs @ $100/ton				@$2100
Conductor (copper and AL) (overhead and underground)				$5,000**
Interconnection (meters, switches, recloser/breaker)				$20,000***
Total Salvage				**$454,295.00**

Notes

*Based on scrap value 10% of original cost given 80 - 85% remaining capacity.
**Experience factor on similar projects including major substation projects decommissioned.
***Same as experience factor above.

EXHIBIT J

EMERGENCY MANAGEMENT PLAN

Contents

Attachments (future)

1 Overall site plan, Site access, Site Muster Locations, proposed Hazardous material storage location
2 Flow Chart in the event of an emergency
3 Emergency Response Jurisdictional Boundary Map
4 Site Specific Safety Plan

1. General Information: Pre-Construction, Construction and Operation

The purpose of this plan is to discuss the procedures that will be implemented in the event of a fire protection and emergency during the construction and operation of the energy facility. It is meant as a working plan for Applicant and local Fire department and public safety officials to better understand the Energy Facility at various Stages of its Development and Construction. It will be updated periodically as site design and specifics become available and are finalized.

1.1 Facility Description

Applicant is proposing to construct a renewable energy facility comprised of photovoltaic (PV) modules, a single-axis tracker or fixed tilt system with an accompanying optional energy storage system (ESS) in Crook County, Oregon. The main electrical generation area within the facility area will include solar modules, step up transformers, switchgear and transmission line substation, solar inverter stations, an energy storage subsystem, monitoring and maintenance facilities, collector lines, and temporary use areas.

The final facility design is expected to occupy up to a maximum of 320 acres within the fenced facility boundary. It will be fenced and seeded in a low growth seed mix to reduce storm water runoff and erosion. See Attachment B — Site Plan. During Construction, a temporary construction trailer/office and laydown yard will be on-site. When operation commences, the PV facility and substation will be unmanned on a daily basis, with periodic visits by maintenance personnel. Existing and permitted farm use may continue at the site in addition to the solar facility.

1.2 Site Access

1.2.1 Site Address

The Powell East Solar Farm (the Facility) will be located in Crook County, OR, on TL 800 and 1900, at the corner of SW Millican and the Gala Solar Access road in Prineville, OR, approximately 9 miles from the center of Prineville, OR. Powell East Solar Farm is just west of the Gala Solar project, at the end of the Gala Access Road. The solar facility will use up to 320 acres of these lots.

1.2.2 Site Driveways

During early development and pre-construction phase, the access road will be unmarked except for a small sign. Once construction begins, the access road will be marked with signage starting with construction activities. The main driveway access will be a 30 ft wide driveway with a 20' wide security gate when gating and fencing is installed. The fence will be locked with a Knox box. Attachment 1 (TBD) to this Appendix provides a map depicting all of the main site access locations.

1.3 Facility Team

Applicant and its associated representatives will manage the development cycle of the Emergency Response Plan during early development phase portions of the contract. Early development phase involves all pre-construction activities and may include site surveying, and assessments of site soils, biology and wildlife and cultures. Once construction is ready to start, and the Engineering, Procurement, and Construction (EPC) contractors are chosen and have

mobilized to the site, Applicant will update the EMP with additional information and contact information based on the EPC contractor chosen. During early development, site contacts are as follows:

Table 1: Applicant Contact Info

Facility Manager	Jake Stephens	(541) 714-3541	jstephens@newsunenergy.net
Engineering and Permitting Manager	Mark Boissevain	(928) 607-1444	mark.boissevain@easeengineers.com

2 Site Specific Fire Prevention and Public Safety Plan

During the early development phases of the project and when on site for official business, with any subcontractors or land surveyors, Applicant or its representatives will carry an Emergency Contact form for quick contact for any possible emergency notifications.

3 Emergency Response and Crisis Management

Different types of Emergencies call for different types of responses for on-site personnel.

Types of Emergencies:

- Fire - Structure fire, wild fire, equipment fire, etc...
- Medical – Injury, Shortness of Breath, Stroke, Heart Attack, etc…
- Hazardous Material Release – Chemical Storage Spill, ruptured equipment (hydraulics hose, engine oil spill) spill
- Natural Disasters / Catastrophic – earthquake, flood, tornado, other high wind event
- Violence - Fight or disturbance, threat of weapons, assault, bomb threat

3.1 Emergency Contacts

Emergency Response Contact(s):

	EMERGENCY CONTACT NUMBERS	Telephone #
EMT	**AMBULANCE 911**	911
HOSPITAL	ST CHARLES HEALTHCARE PRINEVILLE 384 SE COMBS FLAT RD, PRINEVILLE, OR 97754	(541) 447-6354
URGENT CARE	YOUR CARE MEDICAL 3818 SW 21ST PL #100, REDMOND, OR 97756	(541) 548-2899
FIRE EMERGENCY	**FIRE DEPARTMENT Emergency (PRINEVILLE FIRE DEPARTMENT 8900 SW REIF RD, POWELL BUTTE, OR 97753)**	**911**
FIRE DEPARTMENT Non-emergency	Crook County Fire and Rescue, 500 NE Belknap Street, Prineville, Or	(541) 447-5011
POLICE	**POLICE / SHERIFF Emergency**	**911**
POLICE Non-Emergency	PRINEVILE POLICE DEPARTMENT 400 NE 3RD ST, PRINEVILLE, OR 97754	(541) 447-4168
SHERIFF Non-Emergency	CROOK COUNTY SHERIFF 308 NE 2ND ST, PRINEVILLE, OR 97754	(541) 447-6398
SPILL HAZARD	HAZ MAT SPILL RESPONSE CLEAN HARBORS – For any emergency you can reach their Hotline 24 hrs.	(800) 645-8265
EPC	EPC EMERGENCY RESPONSE TEAM (ERT)	TBD
	EPC SAFETY TEAM LEADER # 2:	TBD

3.2 Emergency Safety Communication and Training

Applicant will provide for education, training documentation and a Pre-Fire site plan for Crook County Fire and Rescue and local Public Safety personnel for all necessary precautions that an Emergency or Public Safety response team should be aware of when arriving to the site. Education and site specific information shall be provided for:

- Access Gates to the site and other areas such as facility electrical substation
- Navigating the internal roadways at the site
- Various types of equipment hazard conditions associated with Photovoltaic Solar Arrays
- Emergency AC and DC Disconnect locations
- Shock hazards such as DC or AC voltages which emergency responders should be aware of to ensure emergency responder safety and prior to applying fire suppression methods.
- Other Hazardous Material Presence
- Vegetation Fire procedures and prevention, including landscape and weed maintenance
- Electrical Fires
- EPC Contractor, Subcontractor, & Employee Training & Education requirements specific to Emergency First Response
- EPC Contractor, Subcontractor, & Employee Training & Education for Controlling Hazards & Prevention Practices

EXHIBIT K—CROOK COUNTY FARM COVENANT NOT TO SUE

CROOK COUNTY

FARM COVENANT NOT TO SUE

"DRAFT"

Powell East Solar Farm LLC a Delaware limited liability company ("Grantor"), in accordance with the conditions set forth in the Conditional Use Permit for the Powell East Solar Farm Project, dated _____ and as may be amended from time to time, approving the Powell East Solar Farm Project on real property located in Crook County, Oregon (the "Project") hereby grants to the owners of all property adjacent to the Project Property (and described more specifically in Exhibit A), this Covenant Not to Sue:

1. The Grantor, its heirs, successors, transferees, and assigns hereby acknowledges by granting of the covenant that the Project is situated in a farm zone in Crook County, Oregon, and may be subjected to conditions resulting from farm operations on adjacent lands. Farm management activities ordinarily and necessarily produce noise, dust, odor, and other conditions which may conflict with Grantor's use of the Project Property. Grantor hereby waives all common law rights to object to normal and necessary farm management activities legally conducted on adjacent lands which may conflict with Grantor's use of the Project Property, based on uses in effect at time of Conditional Use Permit approval.

2. Grantor shall comply with all applicable restrictions and conditions for maintaining residences or other non-farm structures in the farm zone that may be required by state and local land use laws and regulations.

3. This covenant is appurtenant to all property adjacent to the Project

Property and shall bind the heirs, successors, transferees, and assigns of Grantor and shall endure for the benefit of the adjacent landowners, their heirs, successors, and assigns.

IN WITNESS WHEREOF, the Grantor has executed this easement on _____, 2021.

GRANTOR:

Powell East Solar Farm LLC,
A Delaware limited liability company

By:

_____
Name:

_____
Title:

By:

_____
Name:

_____
Title:

STATE OF OREGON)
) ss.
COUNTY OF Deschutes)

The foregoing instrument was acknowledged before me this ___ day of _____, 2021, by _____, _____ Powell East Solar Farm LLC, an xxxx limited liability company.

_____
Notary Public for Oregon
My commission expires:_____
Commission No.:_____

STATE OF OREGON)
) ss.
COUNTY OF Deschutes)

The foregoing instrument was acknowledged before me this ___ day of _____, 2021, by _____, _____ of TSR East Solar Farm LLC, a Delaware limited liability company.

_____
Notary Public for Oregon
My commission expires:_____
Commission No.:_____

Attachment A

Legal Description Project Property

All of that real property located in Crook County, Oregon, more particularly described as follows:

EXHIBIT L

WILDLIFE AND FEDERAL SENSITIVE PLANT REVIEW

Wildlife and Federal Sensitive Plant Review

Powell East Solar Farm
Prineville, Oregon 97754

Powell East Solar Farm LLC
2033 East Speedway Boulevard, Suite 200
Tucson, Arizona 85719

July 2020
PBS Project No. 80812.018

PBS
390 NE EMERSON AVENUE
SUITE 201
BEND, OR 97701
541.388.9290 MAIN
866.727.0140 FAX
PBSUSA.COM

TABLE OF CONTENTS

SUPPORTING DATA

APPENDICES

APPENDIX A
FIGURES

APPENDIX B
IPaC Resource List
USFWS ECOS Species by County Report

APPENDIX C
ODFW Email
ODFW-Provided Documentation

APPENDIX D
Site Photographs

INTRODUCTION

PBS Engineering and Environmental, Inc. (PBS) was contracted by Powell East Solar Farm LLC to conduct a wildlife resources review for the proposed Powell East Solar Farm (study area). The approximately 476-acre study area is located 9 miles southwest of the Prineville city center and approximately 3.5 miles east of Powell Butte, Oregon (Appendix A, Figure 1). Based on the Crook County zoning map, the study area is within the Exclusive Farm Use 3 (EFU 3) zone (Crook County 2008). Surrounding lands consist of sagebrush steppe, juniper (*Juniperus occidentalis*) dominated uplands, and rangeland. The study area is identified as tax lot 1900 and portions of tax lots 800 and 2000 on Crook County Assessor's map 16S 15E, Township 16 South, Range 15 East, Sections 15 and 16 W.M. (ORMAP 2020).

DATABASE QUERIES

Oregon Conservation Strategy

The Oregon Conservation Strategy consists of several components, three of which - Ecoregions, Strategy Habitats, and Strategy Species - were drawn upon to inform this report (ODFW 2016a). The Centralized Oregon Mapping Products and Analysis Support System (COMPASS) geographic information system was used to obtain project-level reporting (Table 1) of Conservation Strategy components (ODFW 2020a).

Table 1. COMPASS Report Results

Ecoregion: Blue Mountains	
Strategy Habitats: Grasslands, Sagebrush Habitats	
Strategy Species:	
Birds	Western Meadowlark (*Sturnella neglecta*)
Bell's Sparrow (*Artemisiospiza belli*)	Willow Flycatcher (*Empidonax traillii*)
Brewer's Sparrow (*Spizella breweri*)	Yellow-breasted Chat (*Icteria virens*)
Chipping Sparrow (*Spizella passerina*)	
Common Nighthawk (*Chordeiles minor*)	**Amphibians/Reptiles**
Ferruginous Hawk (*Buteo regalis*)	Northern Sagebrush Lizard (*Sceloporus graciosus graciosus*)
Greater Sage-grouse (*Centrocercus urophasianus*)	Western Toad (*Anaxyrus boreas*)
Lewis's Woodpecker (*Melanerpes lewis*)	Western Rattlesnake (*Crotalus atrox*)
Loggerhead Shrike (*Lanius ludovicianus*)	
Long-billed Curlew (*Numenius americanus*)	**Mammals**
Northern Goshawk (*Accipiter gentilis*)	California Myotis (*Myotis californicus*)
Olive-sided Flycatcher (*Contopus cooperi*)	Hoary Bat (*Lasiurus cinereus*)
Oregon Vesper Sparrow (*Pooecetes gramineus affinis*)	Long-legged Myotis (*Myotis volans*)
Pileated Woodpecker (*Hylatomus pileatus*)	Pallid Bat (*Antrozous pallidus*)
Short-eared Owl (*Asio flammeus*)	Pygmy Rabbit (*Brachylagus idahoensis*)
Swainson's Hawk (*Buteo swainsoni*)	Silver-haired Bat (*Lasionycteris noctivagans*)
Trumpeter Swan (*Cygnus buccinator*)	Townsend's Big-eared Bat (*Corynorhinus townsendii*)
Western Bluebird (*Sialia mexicana*)	Western Gray Squirrel (*Sciurus griseus*)
Western Burrowing Owl (*Athene cunicularia hypugaea*)	

In addition to Strategy species, COMPASS maps winter range habitat for the big game species deer (*Odocoileus hemionus*) and elk (*Cervus elaphus)* (ODFW 2016a). The entirety of the study area is within the ODFW elk mapped winter range, and the majority of the study area with the exception of the northwest portion is within the ODFW deer mapped winter range.

Crook County GIS

Crook County maintains maps of the general ranges of the big game species deer, elk, and pronghorn (*Antilocapra americana*) within the county (Crook County 2019). The Crook County big game ranges were developed using the ODFW winter range data, then refined and updated by district biologists (ODFW 2012a). The study area is not within the Crook County elk general range. However, the southeast part of the study area is mapped to be within the Crook County pronghorn range, and the majority of the study area with the exception of the northwest portion is mapped within the Crook County deer range.

USFWS Information, Planning, and Conservation System (IPaC)

The U.S. Fish and Wildlife Service (USFWS) IPaC system was reviewed to identify the potential presence of wildlife species listed as federally endangered, threatened, or candidate species under the federal Endangered Species Act (ESA) of 1973. The report (Appendix B) indicates that the only listed species expected to occur at this location is the gray wolf (*Canis lupus*) (USFWS 2020a). According to ODFW there are no known or estimated wolf use areas in the vicinity of the study area (ODFW 2020b). Therefore, it is PBS' opinion that the project will have no effect on the gray wolf. The IPaC report is included in Appendix B of this memo.

In addition to endangered, threatened, or candidate species, the IPaC report also lists birds protected under the Migratory Bird Treaty Act of 1918, the Bald and Golden Eagle Protection Act of 1940, and/or birds listed on the USFWS Birds of Conservation Concern (BCC) list, which identifies bird species that are high conservation priorities (USFWS 2015). These birds are listed under Table 2 below:

Table 2. IPaC Migratory Birds

Bird Species	
Brewer's Sparrow (*Spizella breweri*)	Sage Thrasher (*Oreoscoptes montanus*)

Oregon Biodiversity Information Center (ORBIC)

The Portland State University's Oregon Biodiversity Information Center (ORBIC) report was obtained to identify the potential presence of wildlife species with federal status. According to the ORBIC report, no species with federal status are expected to occur on the study area (PSU 2020).

USFWS Environmental Conservation Online System (ECOS) Species By County Report

The USFWS ECOS Species by County report was reviewed to identify the potential presence of wildlife species listed as federally endangered, threatened, or candidate species under the federal ESA of 1973 (USFWS 2020b). The report is included in Appendix B of this memo.

In addition to the gray wolf identified in the IPaC report, the USFWS Species by County report also lists the bull trout (*Salvelinus confluentus*). This species is reliant on cold streams, rivers, or lakes for survival, and none

of these habitats occur within the study area (USFWS 2020c). Therefore, it is PBS' opinion that the project will have no effect on the bull trout.

Federal Sensitive Plants

The USFWS ECOS Species by County report, the ORBIC report, and the Oregon Department of Agriculture (ODA) Listed Plants by County table (ODA 2020) were reviewed to identify the potential presence of plant species listed as federally endangered, threatened, or candidate species under the federal ESA of 1973. No plant species were identified in these reports.

Fish and Wildlife Habitat Mitigation Policy

ODFW uses the Fish and Wildlife Habitat Mitigation Policy to guide its recommendations to permitting agencies for solar development projects. This policy is based on a category framework as defined in Table 3 (ODFW 2014, State of Oregon 2020).

Table 3. ODFW Habitat Categories

Habitat Category	ODFW Mitigation Strategy
"Habitat Category 1" is irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or site-specific basis, depending on the individual species, population or unique assemblage.	Avoidance
"Habitat Category 2" is essential habitat for a fish or wildlife species, population, or unique assemblage of species and is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.	In-kind, in-proximity mitigation
"Habitat Category 3" is essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.	In-kind, in-proximity mitigation
"Habitat Category 4" is important habitat for fish and wildlife species.	In-kind or out-of-kind, in-proximity or off-proximity mitigation
"Habitat Category 5" is habitat for fish and wildlife having high potential to become either essential or important habitat.	Actions that improve habitat conditions
"Habitat Category 6" is habitat that has low potential to become essential or important habitat for fish and wildlife.	Minimize direct habitat loss and avoid off-site impacts

SITE VISIT

PBS conducted site visits to the study area on March 25, 2020 and June 24, 2020 to observe Strategy and other species present onsite. It should be noted that the field surveys were conducted in the spring and early

summer, and species not observed may be present during other times of the year. The study area was visually surveyed by walking linear transects. Wildlife species were identified either by direct observation, call, scat, or tracks, and dense juniper stands were intensively searched for wildlife presence.

Dominant vegetation within the study area consists of low shrub / sagebrush and juniper trees. Various dirt roads are present throughout the site. A powerline corridor is present along the east border of the study area, and an existing solar farm lies just east of the powerline. An inactive corral with associated water tank and two wells were observed on the northeast portion of the study area, and livestock watering troughs were observed on the northwest portion of the study area. Evidence of cattle grazing onsite was observed during the site visit. Photographs from the site visit are included in Appendix D.

Wildlife

During the March 25, 2020 site visit, one species with ODFW Conservation Strategy-modeled strategy wildlife habitat was observed onsite: the western bluebird. During the June 24, 2020 site visit, no strategy species were observed.

Strategy Species are defined as having small or declining populations, are at-risk, and/or are of management concern (ODFW 2016a). ODFW recommends reporting the species presence to ORBIC if the species has a listed status. The western bluebird is not state or federally listed, so no reporting action is necessary. Additionally, the western bluebird is only listed as a strategy species for the Willamette Valley ecoregion, meaning this ecoregion represents the highest priorities for implementing conservation actions (ODFW 2016a). The study area is part of the Blue Mountains ecoregion and therefore outside of the priority conservation area.

Migratory Birds

No ground nests or raptor nests were observed onsite during the site visits. The study area does provide some suitable nesting habitat for non-ground nesting birds, as a few larger trees are present, which are also suitable for perching. However, this type of habitat is not limited in the area. The study area has a history of cattle grazing, which may negatively impact ground nesting birds. Noise from construction and increased traffic may disturb ground-nesting birds, should they exist in the area. PBS recommends that construction take place outside the nesting season to avoid impacts active nest sites. If construction must take place during the nesting season, PBS recommends that a pre-construction survey be conducted between late spring through summer by a qualified biologist to confirm that no active nests will likely be impacted within the project area. If such active nests are located within the project area, and are otherwise unavoidable, such nests should be left undisturbed and monitored until a qualified biologist determines that the nest is no longer occupied.

The Migratory Bird Treaty Act (MBTA) is the primary law protecting migratory birds in the United States (USFWS 2017). The MBTA prohibits the taking, possession, and commerce of migratory birds including their body parts, feathers, nests, or eggs (USFWS 2017). The MBTA defines "take" as to pursue or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect migratory birds, their nests, or their eggs. The US Department of the Interior M-Opinion 37050 states that the MBTA does not prohibit the incidental or unintentional take of migratory birds or their nest contents (US Department of Interior 2017). Given that the proposed project does not include "direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control," the project should not result in take under the MBTA.

Big Game Habitat

Livestock grazing, as evident within the study area, is known to reduce grass and forb cover, the preferred forage for pronghorn (USFWS 1994, Kindschy et al. 1982). Elk have also been shown to avoid areas where livestock are grazing (ODFW 2003). Additionally, SW Millican Road is approximately 0.75 miles east of the study area, and an existing solar farm is located east of the study area. Elk, deer, and pronghorn have a preference against habitat adjacent to roads and/or near areas of human disturbance (Rost and Bailey 1979, Kindschy et al. 1982, Innes 2011). Therefore, PBS does not consider the study area essential big game habitat.

ODFW Communication

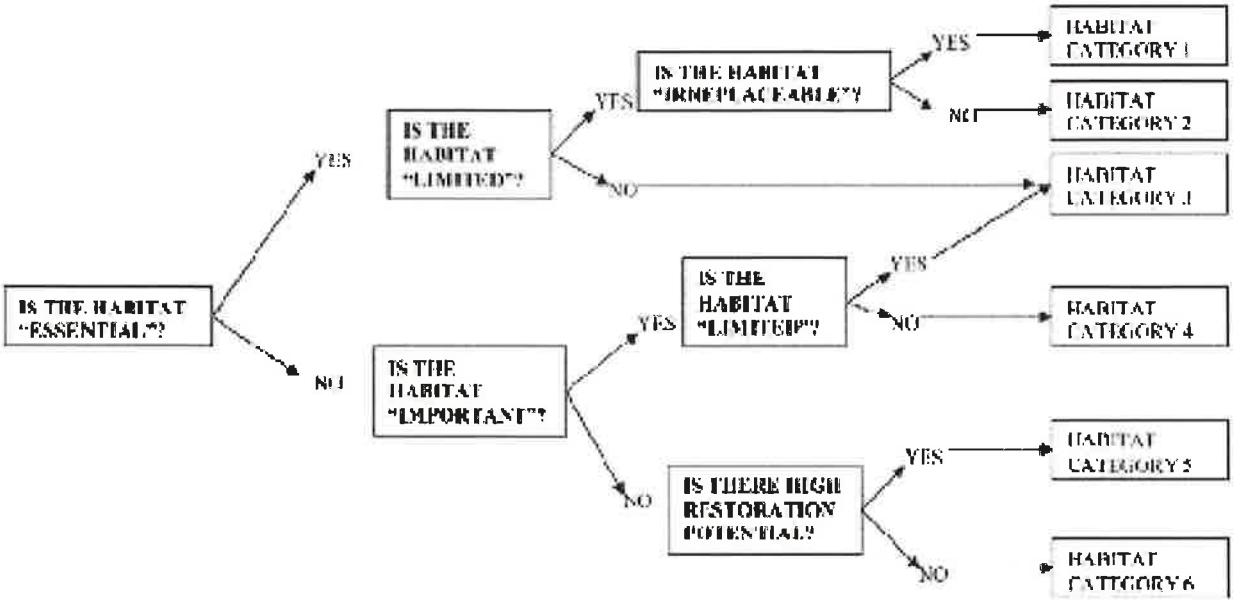
PBS contacted ODFW district wildlife biologist Sara Gregory for opinions about the proposed project's effect on sensitive wildlife in the area. On April 2, 2020 (Gregory, personal communication), Ms. Gregory provided three documents (attached in Appendix C):

1. ODFW's Proposed Changes to the Crook County Comprehensive Plan for Antelope Winter Range, 2011 dated May 2, 2011 (ODFW 2011).
2. ODFW Map Process SN 12 13 12 letter regarding the Goal 5 Big Game Habitat Update (ODFW 2012a)
3. ODFW's Proposed Pronghorn Winter Range Maps for Crook County dated September 20, 2012 (ODFW 2012b).

These documents appear to be part of a deliberative process to reevaluate the big game overlays in Crook County. The ODFW Map Process SN 12 13 12 letter contains the following statement "The final Goal 5 product proposes to designate the western portion of Crook County as 'impacted area,' and to reduce habitat protections in recognition of the degraded habitat in the impacted area. It also recommends removal of Goal 5 big game protections from EFU 3 due to the significant amount of development already in the area." On April 3, 2020 (Gregory, personal communication), Ms. Gregory indicated that the recommendations contained in the letter were never formally adopted; therefore, the historical framework is still in place.

Fish and Wildlife Habitat Mitigation Policy Habitat Categories

ODFW uses the Fish and Wildlife Habitat Mitigation Policy to guide its recommendations to permitting agencies for solar development projects. Designating fish or wildlife habitats into the appropriate Habitat Category involves selecting 'yes' or 'no' in a sequence of questions to determine habitat function and value, based on the following flow chart (ODFW 2020c):



Based on PBS field observations during the site visit, the Habitat Category for the study area for big game was determined as follows:

Step 1: Is the habitat "essential?" No.
Essential habitat is defined as any habitat condition or set of habitat conditions which, if diminished in quality or quantity, would result in depletion of a fish or wildlife species (State of Oregon 2020). Habitat quality is the relative importance of a habitat with regard to its ability to influence species presence and support the life-cycle requirements of the fish and wildlife species that use it (State of Oregon 2020). The study area does not provide any essential, irreplaceable habitat for big game. The reduction of habitat quality or quantity of the study area would not likely result in the depletion of big game species.

Step 2: Is the habitat "important?" Yes.
Important habitat is defined as any habitat recognized as a contributor to sustaining fish and wildlife populations on a physiographic province basis over time (State of Oregon 2020). The study area provides some natural features or processes that have been shown to sustain big game, such as edge habitats, which are important for deer and elk (Leckenby et al. 1982, Innes 2011, Innes 2013), and areas of vegetation at an average height of less than 24 inches, which are preferred by pronghorn (Kindschy et al. 1982, Yoakum et al. 2014). Elk prefer edge habitats, bedding in areas of high canopy cover (75-100%) for thermal and hiding cover, and typically foraging in areas of low canopy cover (0-25%) (ODFW 2003, Innes 2011). Edge habitats provide a higher diversity and greater quantity of forage plants than do either of the adjacent communities individually (Innes 2011). Similar to elk, mule deer prefer edge habitats, bedding in areas of high canopy cover for thermal and hiding cover, and typically foraging in open areas (Leckenby et al. 1982, Innes 2013). Pronghorn prefer a low density of trees in order to visually observe and run from predators. Ideally, an average vegetation structure of approximately 15 to 24 inches is preferred by pronghorn, (Kindschy et al. 1982, Yoakum et al. 2014) which describes several of the larger open areas of the study area.

Step 3: Is the habitat "limited?" Yes.
Limited habitat is defined as an amount insufficient or barely sufficient to sustain fish and wildlife populations over time (State of Oregon 2020). Due to the developed nature of much of the land surrounding the study area, habitat for big game is limited in the area. As the average home ranges and migration distances traveled

for mule deer, elk, and pronghorn are larger than the study area (Kindschy et al. 1982, Innes 2011, Yoakum et al. 2014) the habitat provided within the study area is a limited commodity within big game ranges.

Based on the conditions of the study area observed during the site visit and analysis following the Fish and Wildlife Habitat Mitigation Policy flowchart, PBS concludes that the study area would be classified as "Habitat Category 3" for big game. "Habitat Category 3" is defined as important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population (State of Oregon 2020). In practice, this means that Habitat Category 3 habitat impacts that may occur as a result of the project can be mitigated according to ODFW's mitigation strategy described above in the "Fish and Wildlife Habitat Mitigation Policy" section of this report as "In-kind, in-proximity mitigation." "In-kind habitat mitigation" are measures which recreate similar habitat structure and function to that existing prior to the development action, and "in-proximity habitat mitigation" are measures undertaken within or in proximity to areas affected by a development action (State of Oregon 2020).

CONCLUSIONS

PBS concludes that the study area is not essential habitat as it is impacted by historical and ongoing human activities which agrees with the "impacted area" mapping that was supplied by ODFW. Because the map revisions were never adopted, ODFW's policy is to assign areas within big game overlays as Habitat Category 2. The rationale for this approach is described in the 2013 ODFW Oregon Big Game Winter Habitat (ODFW 2013) document. Page 3 of that document contains a flow chart that shows the decision-making that leads to the Category 2 designation. It would appear that some flexibility is warranted regarding the "Step 1. Is the Habitat 'Essential'?" component of the flow chart. Impacted habitats should carry less weight in this analysis which would inform a reasonable mitigation strategy.

PBS QUALIFICATIONS

Holly Burnett is a Staff Scientist employed at PBS since 2016. Holly completed a Bachelor of Science degree in Biology with concentrations in Ecology and Zoology from Towson University in 2011 and completed a Master of Science degree in Biology with a concentration in Wildlife Biology from Ball State University in 2014. Holly's graduate thesis focused on bat habitat assessments amidst different silviculture methods in an experimental forest ecosystem, and she was a Naturalist with the Maryland Department of Natural Resources following graduate school. Holly has conducted numerous wildlife and raptor surveys and reports for solar development companies during her time at PBS. Holly has also attended professional continuing education courses including the Biological Assessment Writing Workshop and Certified Sediment and Erosion Control Lead Workshop.

Since 2014, Greg Swenson is a Senior Scientist responsible for managing PBS' Natural Resources discipline. Greg completed a Bachelor of Science degree in Forest Resources from the University of Georgia in 1998 and obtained Professional Wetland Scientist certification in 2007. His technical proficiencies include a strong understanding of the regulatory requirements under the federal Clean Water Act, federal Endangered Species Act, National Environmental Policy Act, and Oregon Statewide Planning Goals. Greg has completed numerous sensitive plant and animal studies in Oregon pursuant to ODFW requirements.

REFERENCES

Crook County. 2008. Zoning – Crook County. Available online at https://www.edcoinfo.com/wp-content/uploads/2014/10/Crook-County-Zoning-Map.pdf. Accessed July 9, 2020.

Crook County. 2019. Crook County GIS - Open Data Portal. Available online at https://data-crookcounty.opendata.arcgis.com/. Accessed July 9, 2020.

Innes, R. J. 2011. *Cervus elaphus*. In: Fire Effects Information System. US Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. Available online at https://www.fs.fed.us/database/feis/animals/mammal/ceel/all.html. Accessed July 9, 2020.

Innes, R. J. 2013. *Odocoileus hemionus*. In: Fire Effects Information System. US Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. Available online at https://www.fs.fed.us/database/feis/animals/mammal/odhe/all.html. Accessed July 9, 2020.

Kindschy, R. R., C. Sundstrom, and J. D. Yoakum. 1982. Wildlife Habitats in Managed Rangelands – the Great Basin of Southeastern Oregon: Pronghorns. General Technical Report PNW-GTR-145. Portland, OR, USA. US Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. Available online at https://www.srs.fs.usda.gov/pubs/gtr/gtr_pnw145.pdf. Accessed July 9, 2020.

Leckenby, D. A., D. P. Sheehy, C. H. Nellis, R. J. Scherzinger, I. D. Luman, W. Elmore, J. C. Lemos, L. Doughty, and C. E. Trainer. 1982. Wildlife Habitats in Managed Rangelands – the Great Basin of Southeastern Oregon: Mule Deer. General Technical Report PNW-GTR-139. Portland, OR, USA. US Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. Available online at https://www.fs.usda.gov/treesearch/pubs/5101. Accessed July 9, 2020.

ODA. 2020. Oregon Listed Plants by County. Available online at https://www.oregon.gov/ODA/programs/PlantConservation/Pages/ListedPlants.aspx. Accessed July 9, 2020.

ODFW. 2003. Oregon's Elk Management Plan. Available online at https://www.dfw.state.or.us/wildlife/management_plans/docs/ElkPlanfinal.pdf. Accessed July 9, 2020.

ODFW. 2011. ODFW's Proposed Changes to the Crook County Comprehensive Plan for Antelope Winter Range, 2011. May 2, 2011. Salem, Oregon.

ODFW. 2012a. Goal 5 Big Game Habitat Update. December 12, 2012. ODFW High Desert Region, Prineville Office. Prineville, Oregon.

ODFW. 2012b. ODFW's Proposed Pronghorn Winter Range Maps for Crook County. September 20, 2012. Salem, Oregon.

ODFW. 2013. 2013 ODFW Oregon Big Game Winter Habitat. Available online at https://nrimp.dfw.state.or.us/web%20stores/data%20libraries/files/ODFW/ODFW_885_3_Final%202013%20ODFW%20Big%20Game%20Winter%20Habitat%20Map%20Rationale%20%209_6_13.pdf. Accessed July 9, 2020.

ODFW. 2014. Fish and Wildlife Habitat Mitigation Policy. Available online at https://www.dfw.state.or.us/lands/mitigation_policy.asp. Accessed July 9, 2020.

ODFW. 2016a. The Oregon Conservation Strategy. Available online at http://www.oregonconservationstrategy.org/. Accessed July 9, 2020.

ODFW. 2020a. Compass: Mapping Oregon's Wildlife Habitats. Available online at http://compass.dfw.state.or.us/visualize/#x=-120.50&y=44.09&z=7&logo=true&dls%5B%5D=true&dls%5B%5D=0.5&dls%5B%5D=549&basemap=ESRI+Satellite&tab=data&print=false. Accessed July 9, 2020.

ODFW. 2020b. Oregon Wolf Conservation and Management 2019 Annual Report. Available online at https://www.dfw.state.or.us/wolves/docs/oregon_wolf_program/2019_Annual_Wolf_Report_FINAL.pdf. Accessed July 9, 2020.

ODFW 2020c. Mitigation Category Flow Chart. Available online at https://www.dfw.state.or.us/lands/docs/mitigation_category_flow.pdf. Accessed July 9, 2020.

ORMAP. 2020. The Oregon Map tax map database and viewer. Available online at https://ormap.net/gis/index.html. Accessed July 9, 2020.

PSU. 2020. Oregon Biodiversity Information Center. Portland State University Institute for Natural Resources. Sensitive species database search for the Powell East Solar Farm Project in Crook County. Portland, Oregon.

Rost, G. R., and J. A. Bailey. 1979. Distribution of Mule Deer and Elk in Relation to Roads. Journal of Wildlife Management 43(3):634-641.

State of Oregon. 2020. Oregon Administrative Rules. Department of Fish and Wildlife, Chapter 635. Available online at https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2989. Accessed July 9, 2020.

US Department of the Interior. 2017. The Migratory Bird Treaty Act Does Not Prohibit Incidental Take – Memorandum M-37050. Available online at https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf. Accessed July 9, 2020.

USFWS. 1994. Hart Mountain National Antelope Refuge Comprehensive Management Plan. Available online at https://www.fws.gov/pacific/planning/main/docs/OR/Hart%20Mtn/HartMountainNARcmpEIS.pdf. Accessed July 9, 2020.

USFWS. 2015. Birds of Conservation Concern. Available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php. Accessed July 9, 2020.

USFWS. 2017. Migratory Bird Treaty Act of 1918. Available online at https://www.fws.gov/laws/lawsdigest/migtrea.html. Accessed July 9, 2020.

USFWS. 2020a. Information, Planning, and Conservation System. Available online at http://ecos.fws.gov/ipac/. Accessed July 9, 2020.

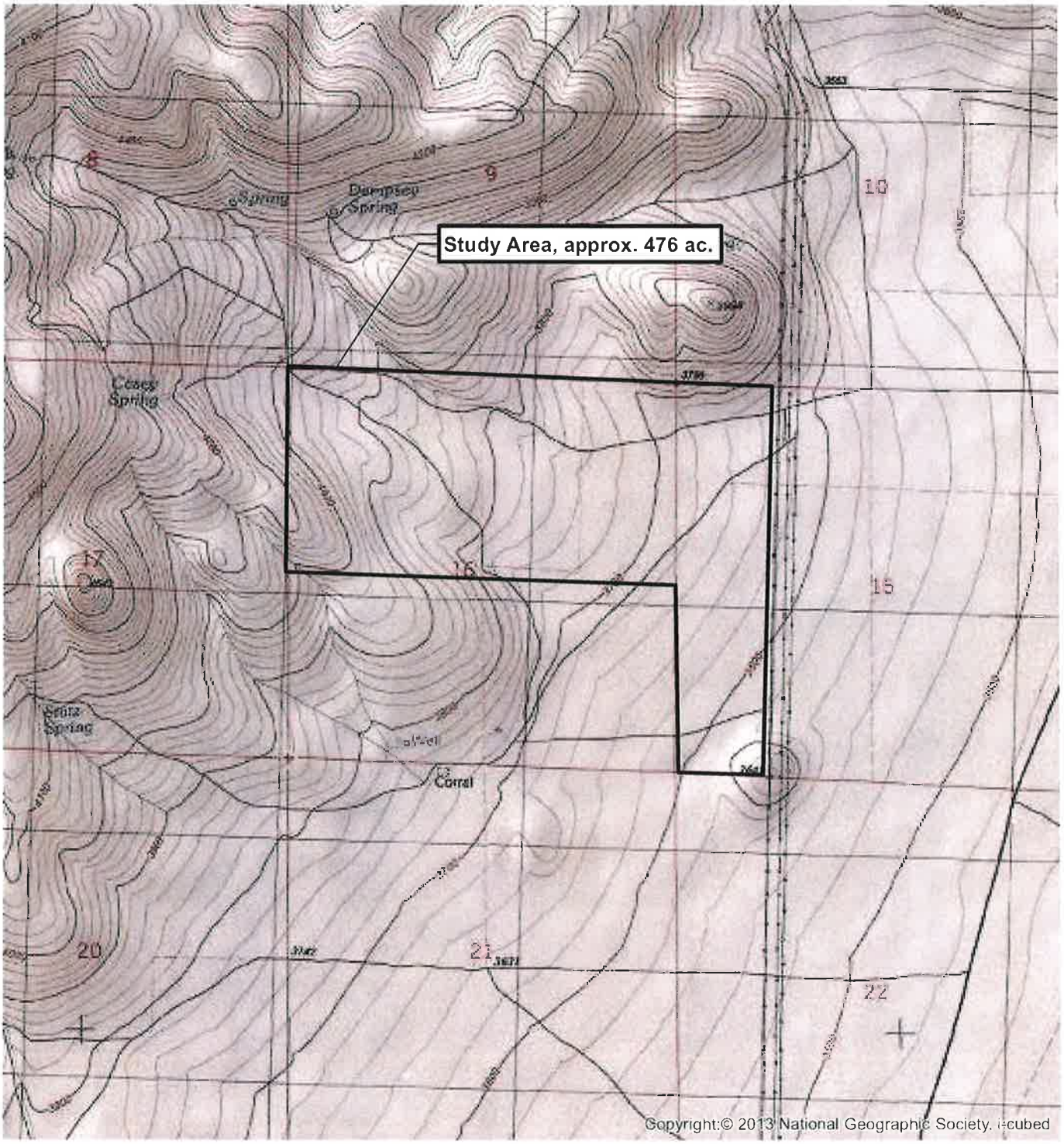
USFWS. 2020b. Environmental Conservation Online System - Species by County Report. Available online at https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=41065. Accessed July 9, 2020.

USFWS. 2020c. Bull Trout. Available online at https://www.fws.gov/oregonfwo/articles.cfm?id=149489411. Accessed July 9, 2020.

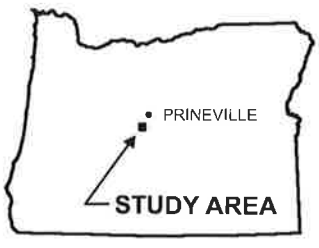
Yoakum, J. D., P. F. Jones, J. Cancino, R. J. Guenzel, R. Seidler, A. Munguia-Vega, I. Cassaigne, and M. Culver. 2014. Pronghorn Management Guides, Fifth Edition. Western Association of Fish and Wildlife Agencies Pronghorn Workshop and New Mexico Department of Game and Fish, Santa Ana Pueblo, New Mexico. 159 pp.

APPENDIX A

Vicinity Map



SOURCE: USGS POWELL BUTTE, OR (1986, UPDATED 1988) 7.5 MINUTE QUADRANGLE.



OREGON

SCALE: 1" = 2,000'

0 1,000 2,000 4,000'

PREPARED FOR: POWELL EAST SOLAR FARM LLC.

PBS

LOCATION MAP

POWELL EAST SOLAR FARM
PRINEVILLE, CROOK COUNTY, OREGON

JUL 2020
80812.018

FIGURE
1

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APPENDIX B

IPaC Resource List
USFWS ECOS Species by County Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish And Wildlife Office
2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398
Phone: (503) 231-6179 Fax: (503) 231-6195
https://www.fws.gov/oregonfwo/articles.cfm?id=149489416

In Reply Refer To:
Consultation Code: 01EOFW00-2020-SLI-0461
Event Code: 01EOFW00-2020-E-00887
Project Name: Powell East Solar Farm Revised Boundaries

June 11, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact the Endangered Species Division at the Service's Oregon Fish and Wildlife Office at (503) 231-6179. For information regarding listed marine and anadromous species under the jurisdiction of NOAA Fisheries Service, please see their website (http://www.nwr.noaa.gov/habitat/habitat_conservation_in_the_nw/habitat_conservation_in_the_nw.html).

Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oregon Fish And Wildlife Office
2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398
(503) 231-6179

Project Summary

Consultation Code: 01EOFW00-2020-SLI-0461

Event Code: 01EOFW00-2020-E-00887

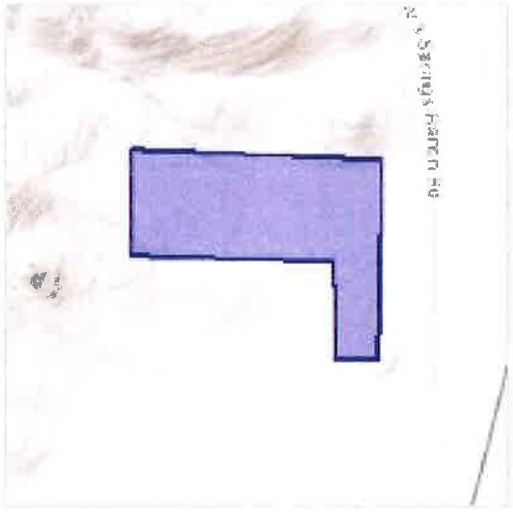
Project Name: Powell East Solar Farm Revised Boundaries

Project Type: POWER GENERATION

Project Description: possible future solar site

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.18341201600006N120.93692596558176W



Counties: Crook, OR

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

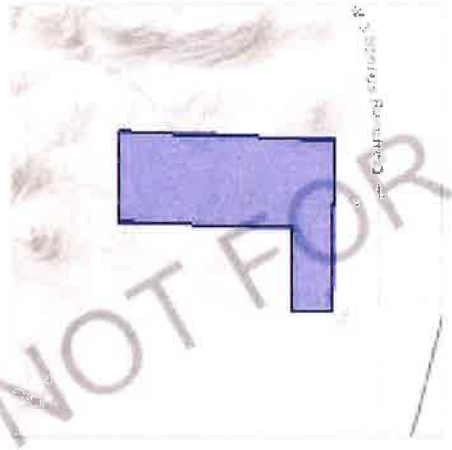
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Crook County, Oregon



Local office

Oregon Fish And Wildlife Office

(503) 231-6179
(503) 231-6195

2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398

https://www.fws.gov/oregonfwo/articles.cfm?id=149489416

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Gray Wolf Canis lupus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4488	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird

species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Brewer's Sparrow Spizella breweri This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9291	Breeds May 15 to Aug 10
Sage Thrasher Oreoscoptes montanus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9433	Breeds Apr 15 to Aug 10

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects,

and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Species By County Report

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the IPaC application.

County: Crook, Oregon

CSV

Need to contact a FWS field office about a species? Follow this link to find your local FWS Office.

Group	Name	Population	Status	Lead Office	Recovery Plan	Recovery Plan Action Status	Rec Pla Sta
Fishes	Bull Trout (*Salvelinus confluentus*)	U.S.A., conterminous, lower 48 states	Threatened	Idaho Fish and Wildlife Office	Recovery Plan for the Coterminous United States Population of Bull Trout (Salvelinus confluentus)	Implementation Progress	Fina
Mammals	Gray wolf (*Canis lupus*)	U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico.	Endangered	Assistant Regional Director-Ecological Services			

APPENDIX C

ODFW Email
ODFW-Provided Documentation

Holly A. Burnett

From: Sara C Gregory <Sara.C.Gregory@state.or.us>
Sent: Friday, April 03, 2020 11:05 AM
To: Holly A. Burnett
Subject: RE: ODFW Opinion

Hi Holly,

It is my understanding that much of what was in those documents that I sent you for reference was not approved and finalized because Ordinance 259 did not go through. So we are still using the historical framework. I apologize for any confusion.

You will need to direct your questions to the County as they are the regulatory body that will be deciding on approval of your project(s).

Have a good weekend,
Sara

Sara Gregory
Wildlife Habitat Biologist
Oregon Department of Fish & Wildlife
61374 Parrell Road
Bend, Oregon 97702

Office: 541-388-6147
Cell: 541-797-3180
sara.c.gregory@state.or.us

MAKE OREGON'S FIRST WILDLIFE PLATE A REALITY.
GET YOUR VOUCHER TODAY!

From: Holly A. Burnett [mailto:Holly.Burnett@pbsusa.com]
Sent: Friday, April 03, 2020 9:55 AM
To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: RE: ODFW Opinion

Thank you very much.
In the word document letter in the attachments you sent me, from December 2012, it had said, "The final Goal 5 product proposes to designate the western portion of Crook County as "impacted area," and to reduce habitat protections in recognition of the degraded habitat in the impacted area. It also recommends removal of Goal 5 big game protections from EFU 3 due to the significant amount of development already in the area."

I saw on the Crook County Planning Zone maps that all of our study areas are within EFU 3, and within the "impacted area" on the "Proposed ODFW Pronghorn SN 9 20 2012" document. My question is: Did the 2012 recommendation to remove Goal 5 big game protections from EFU 3 zones go through? If so, what does that mean for areas within the EFU 3 zones/impacted area that are also in the ODFW/Crook County big game winter ranges?

Holly Burnett | Staff Scientist | PBS Bend | 541.323.5881 (direct) | 541.419.2104 (cell)

From: Sara C Gregory <Sara.C.Gregory@state.or.us>
Sent: Thursday, April 02, 2020 12:53 PM
To: Holly A. Burnett <Holly.Burnett@pbsusa.com>
Subject: RE: ODFW Opinion

Hi Holly,

If you have specific questions I can do my best to help. From your initial message on the 31st, it seems like you've done your due diligence to identify the species that will be impacted by these projects and should be mentioned in your report to the County.

Here is a link to our mitigation policy which will play into this process as well:
https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2989

Best regards,
Sara

Sara Gregory
Wildlife Habitat Biologist
Oregon Department of Fish & Wildlife
61374 Parrell Road
Bend, Oregon 97702

Office: 541-388-6147
Cell: 541-797-3180
sara.c.gregory@state.or.us

MAKE OREGON'S FIRST WILDLIFE PLATE A REALITY.
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From: Holly A. Burnett [mailto:Holly.Burnett@pbsusa.com]
Sent: Thursday, April 02, 2020 12:09 PM
To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: RE: ODFW Opinion

Thank you very much, those documents were helpful.
About the proposed sites themselves, do you have any comments or opinions about the proposed projects' effects on the sensitive wildlife and big game in the area? Thanks again,

Holly Burnett | Staff Scientist | PBS Bend | 541.323.5881 (direct) | 541.419.2104 (cell)

From: Sara C Gregory <Sara.C.Gregory@state.or.us>
Sent: Thursday, April 02, 2020 11:50 AM
To: Holly A. Burnett <Holly.Burnett@pbsusa.com>
Subject: RE: ODFW Opinion

Hi Holly,

I've attached some documents to give you some perspective on the antelope layers.

We look forward to seeing your wildlife report.

Sara

Sara Gregory
Wildlife Habitat Biologist
Oregon Department of Fish & Wildlife
61374 Parrell Road
Bend, Oregon 97702

Office: 541-388-6147
Cell: 541-797-3180
sara.c.gregory@state.or.us

MAKE OREGON'S FIRST WILDLIFE PLATE A REALITY.
GET YOUR VOUCHER TODAY!

From: Holly A. Burnett [mailto:Holly.Burnett@pbsusa.com]
Sent: Wednesday, April 01, 2020 4:18 PM
To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: RE: ODFW Opinion

Hi Sara,
I was wondering when you think you will get a chance to look at these solar farm projects?

Also, we referenced some data from the Crook County GIS antelope range (https://data-crookcounty.opendata.arcgis.com/datasets/antelope-range?geometry=-121.909%2C43.758%2C-118.335%2C44.448). Crook County said in an email that they believe they got their data from ODFW. Do you know how these boundaries were drawn for their antelope range? Thank you.

Holly Burnett | Staff Scientist | PBS Bend | 541.323.5881 (direct) | 541.419.2104 (cell)

From: Holly A. Burnett
Sent: Tuesday, March 31, 2020 1:21 PM

To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: RE: ODFW Opinion

Great – since they're pretty small, I have attached the other 3 sites to this email.

Holly Burnett | Staff Scientist | PBS Bend | 541.323.5881 (direct) | 541.419.2104 (cell)

From: Sara C Gregory <Sara.C.Gregory@state.or.us>
Sent: Tuesday, March 31, 2020 12:53 PM
To: Holly A. Burnett <Holly.Burnett@pbsusa.com>
Subject: RE: ODFW Opinion

Hi Holly,

The Crook Flat shapefile came through and I was able to view it.

Feel free to try sending the others the same way.

Thanks,
Sara

Sara Gregory
Wildlife Habitat Biologist
Oregon Department of Fish & Wildlife
61374 Parrell Road
Bend, Oregon 97702

Office: 541-388-6147
Cell: 541-797-3180
sara.c.gregory@state.or.us

From: Holly A. Burnett [mailto:Holly.Burnett@pbsusa.com]
Sent: Tuesday, March 31, 2020 10:53 AM
To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: RE: ODFW Opinion

I'll try sending 1 at a time. Did you receive 7 shapefile components for Crook Flat attached to this email, that you can open?

Holly Burnett | Staff Scientist | PBS Bend | 541.323.5881 (direct) | 541.419.2104 (cell)

From: Sara C Gregory <Sara.C.Gregory@state.or.us>
Sent: Tuesday, March 31, 2020 10:50 AM

To: Holly A. Burnett <Holly.Burnett@pbsusa.com>
Subject: RE: ODFW Opinion

Unfortunately they did not go through.

Sara Gregory
Wildlife Habitat Biologist
Oregon Department of Fish & Wildlife
61374 Parrell Road
Bend, Oregon 97702

Office: 541-388-6147
Cell: 541-797-3180
sara.c.gregory@state.or.us

MAKE OREGON'S FIRST WILDLIFE PLATE A REALITY.
GET YOUR VOUCHER TODAY!

From: Holly A. Burnett [mailto:Holly.Burnett@pbsusa.com]
Sent: Tuesday, March 31, 2020 10:48 AM
To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: RE: ODFW Opinion

Yes, did these go through? Should be well under 5 MB.

Holly Burnett | Staff Scientist | PBS Bend | 541.323.5881 (direct) | 541.419.2104 (cell)

From: Sara C Gregory <Sara.C.Gregory@state.or.us>
Sent: Tuesday, March 31, 2020 10:45 AM
To: Holly A. Burnett <Holly.Burnett@pbsusa.com>
Cc: Greg Jackle <Greg.S.Jackle@state.or.us>
Subject: RE: ODFW Opinion

Hi Holly,

Thanks for attempting to get through our filters with the .zzz file. It seems the filters have caught on to us and are blocking those disguised zip files.

The good news is that you should be able to attach the shapefile components directly and they should get through. I think our limit for attachments is 5MB so you might need to split them up into a couple of emails. Can you give that a try?

Thanks,
Sara

Sara Gregory
Wildlife Habitat Biologist
Oregon Department of Fish & Wildlife
61374 Parrell Road
Bend, Oregon 97702

Office: 541-388-6147
Cell: 541-797-3180
sara.c.gregory@state.or.us

MAKE OREGON'S FIRST WILDLIFE PLATE A REALITY.
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From: Holly A. Burnett [mailto:Holly.Burnett@pbsusa.com]
Sent: Tuesday, March 31, 2020 9:38 AM
To: Sara C Gregory <Sara.C.Gregory@state.or.us>
Subject: ODFW Opinion

Hello Ms. Gregory,
I'm conducting 4 separate wildlife survey reports for 4 possible solar development sites in Crook County. The names of these are: Crook Flat, Powell East, Prineville West, and TSR North. I have attached the shapefiles with the location of the projects, with a .zzz extension instead of .zip to get through your filters. I ordered ORBIC reports from PSU, which did not identify any species with federal or state status to occur on the sites. I also pulled the ODFW COMPASS data, and got a list of the modeled/observed species likely to be in the area. I have also looked up the IPaC report from USFWS, and the only listed species expected to occur at the locations is the gray wolf. Only 1 of the sites (Powell East) was modeled to be within both the deer and elk ODFW winter ranges. The other 3 sites were not in either deer or elk winter range.

I also looked at the Crook County GIS data for their deer/elk/antelope general ranges. Crook Flat and TSR North are in the antelope range, and Powell East is in the deer and antelope ranges.

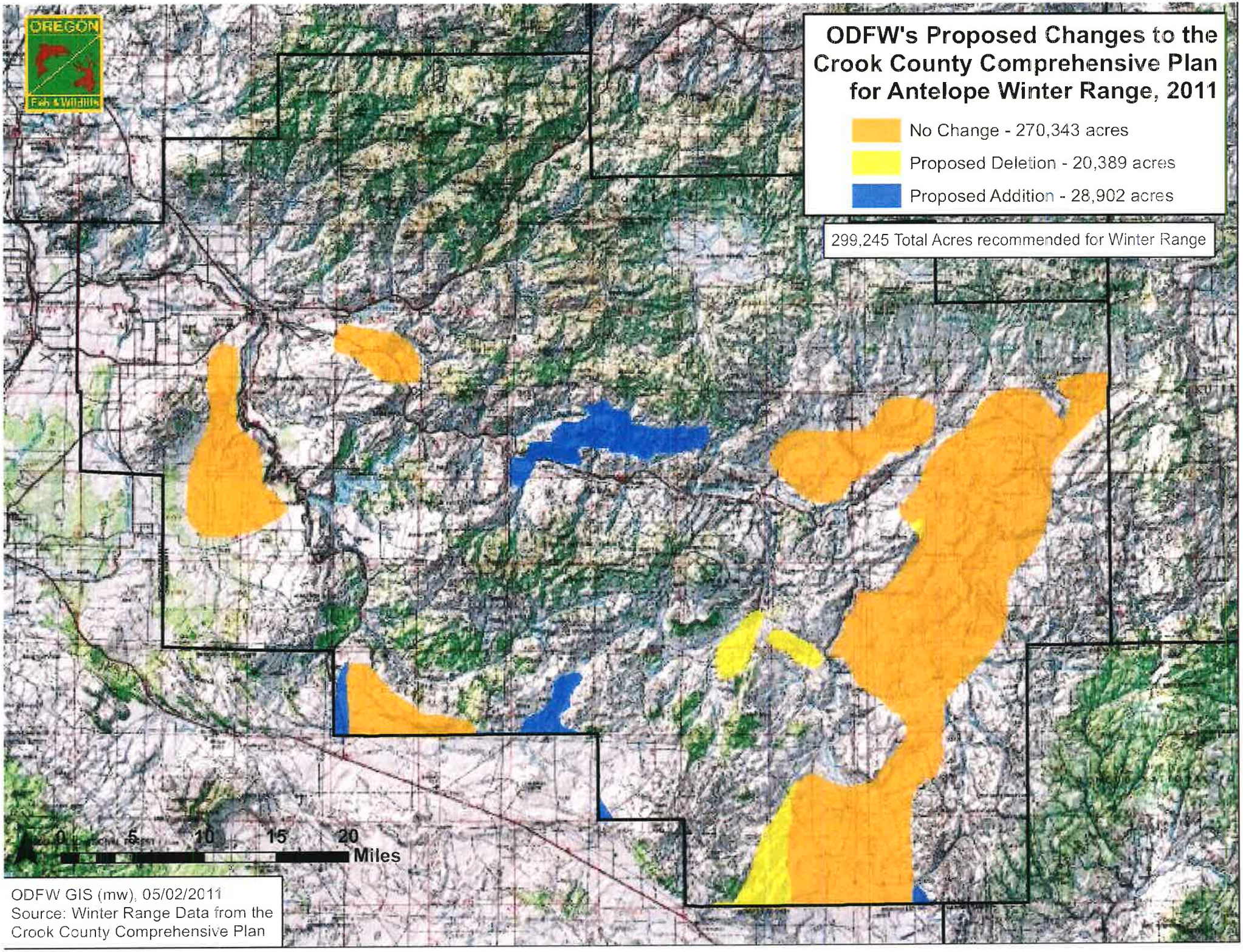
Can you please provide any comments or opinions you might have about the proposed project's effect on the sensitive wildlife and big game in the area? Thank you.

Some additional information about each site:
Crook Flat – approx. 156 ac.
Powell East – approx. 370 ac.
Prineville West – approx. 652 ac.
TSR North – approx. 595 ac.
The sites are going to become separate solar farms with solar panels, and no other taller structures. The gen-tie lines are going to tie in with existing overhead powerlines. Construction hasn't started yet on any site.

Thank you,

Holly Burnett
Staff Scientist

PBS
390 NE Emerson Ave., Suite 201, Bend, OR 97701
office: 541.388.9290 | direct: 541.323.5881 | mobile: 541.419.2104
holly.burnett@pbsusa.com
pbsusa.com


OREGON
Fish & Wildlife
ODFW's Proposed Changes to the Crook County Comprehensive Plan for Antelope Winter Range, 2011
No Change - 270,343 acres
Proposed Deletion - 20,389 acres
Proposed Addition - 28,902 acres
299,245 Total Acres recommended for Winter Range
0 5 10 15 20
Miles
ODFW GIS (mw), 05/02/2011
Source: Winter Range Data from the Crook County Comprehensive Plan

Oregon
John A. Kitzhaber, M.D., Governor

Department of Fish and Wildlife
High Desert Region
Prineville Office
2042 SE Paulina Hwy
Prineville, OR 97754
(541) 447-5111
FAX (541) 447-806

December 12, 2012

Crook County Court
Re: Goal 5 Big Game Habitat Update
Crook County Courthouse
300 NE 3rd St., Rm. 10
Prineville, OR 97754

To the County Court:

The intent of this letter is to clarify the process used by ODFW to produce the maps submitted to Crook County as part of the current Goal 5 update process, as requested by the Crook County Patriots.

In 2009, prior to this Goal 5 update, ODFW began an internal process to create a consistent state-wide map of big game winter range. ODFW's experienced local district biologists began with the adopted Goal 5 habitat maps for each County, and modified them based on professional judgment and data that had been collected since their initial adoption. The intent was to create a map that accurately represented current biological winter range and was consistent across county boundaries. In Crook County, the maps were updated by the Ochoco District Wildlife Biologist, Brian Ferry in coordination with the district biologists in the John Day, Hines and Bend Districts, and ODFW's staff in Salem. Mr. Ferry has a B.S in Wildlife Science from Oregon State University, 28 years of experience working as a Wildlife Biologist in Crook County, and 30 years working on wildlife issues within Oregon's Land Use Planning System. In addition to his expert opinion Mr. Ferry used a wide variety of data to complete the map revisions, including:

Mid-Winter Trend Surveys for Deer, Pronghorn Antelope and Elk

- Local ODFW staff have conducted late fall and mid-winter deer, elk, and pronghorn surveys for decades. Traditionally a general location description was used to describe the area where big game were observed. In recent years, ODFW staff have collected GPS coordinates for these observations, or entered the data directly into a Geographic Information System (GIS) on a portable computer.

The Central Oregon Mule Deer Study

- From 2005-2010, ODFW captured and placed radio-collars on 591 mule deer in 9 eastern Oregon Wildlife Management Units (WMU) to asses biological parameters, migration routes, seasonal distribution, and the effects of human disturbance on mule deer habitat. Although, deer were collared outside of Crook County, the research informed the biologists understanding of deer movements in Central Oregon.

The North and South Ochoco Rocky Mountain Elk Study

- During this study (1989- 1994), ODFW and our partners captured elk in Crook, Grant, and Wheeler Counties on private and public lands in and adjacent to the Ochoco National Forest, fitted them with radio-collars and monitored their movements to identify important calving areas, winter range, and causes of mortality (Ferry, Brian. 1998. South Ochoco Elk Telemetry Project in Central Oregon. Wildlife Information Report. Oregon Department of Fish and Wildlife).

Mule Deer Quadrat flights

- In 2009, ODFW began the Mule Deer Initiative (MDI) which is a focused effort to address potential causes of decline in Oregon's mule deer population. To evaluate the MDI's progress, ODFW began using a more rigorous survey methodology known as the quadrat method. This intensive survey technique results in many observations of mule deer. While conducting these surveys in the Maury WMU, ODFW staff recorded geographic coordinates for each group of deer and incidental elk observed.

ODFW published the completed winter range maps and associated metadata online at:

- https://nrimp.dfw.state.or.us/DataClearinghouse/default.aspx?p=202&XMLname=885.xml

These 2009 maps were used as the starting point for Crook County's Big Game Winter Range update in 2010. They were initially drawn using a broad definition of winter range (that area normally occupied by deer and elk from December through April). ODFW then refined the maps to:

- Specifically address Goal 5
- Recognize the development that has occurred in Crook County since the initial adoption of Goal 5
- Incorporate public input received by way of the Crook County Planning Commission

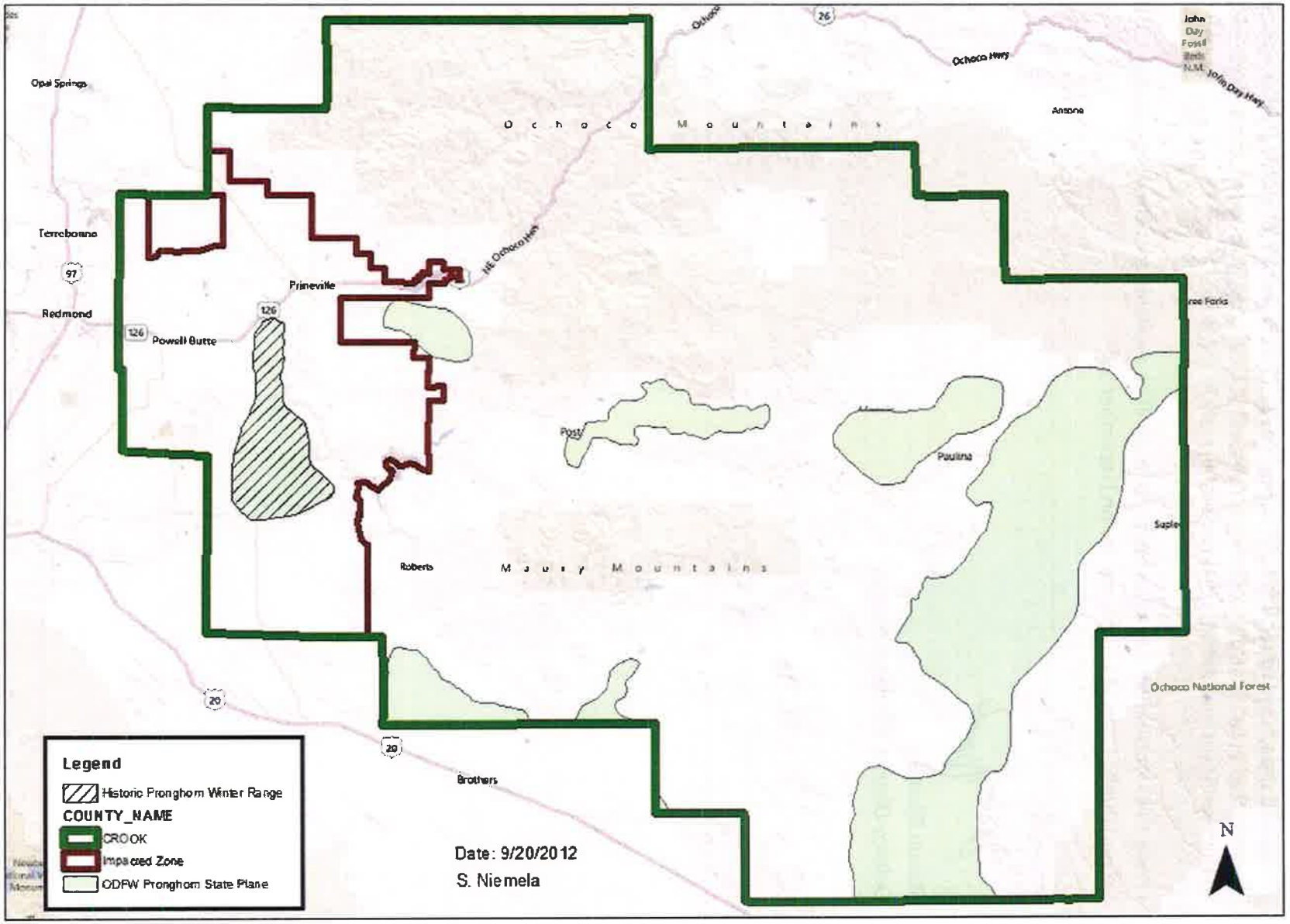
The final Goal 5 product proposes to designate the western portion of Crook County as "impacted area," and to reduce habitat protections in recognition of the degraded habitat in the impacted area. It also recommends removal of Goal 5 big game protections from EFU 3 due to the significant amount of development already in the area.

I hope this information has been helpful and I will be available to answer any questions at the Second Public Hearing on this matter on December 19th.

Sincerely,

Steven Niemela
Ochoco District Wildlife Biologist

ODFW's Proposed Pronghorn Winter Range Maps for Crook County.



APPENDIX D

Site Photographs

Photo 1. View from the southeast corner of the study area, facing northwest.

Photo 2. View from the southeast corner of the study area, facing north along the east study area boundary.

Photo 3. View of the dirt roads entering the study area from the east.

Photo 4. View of the water tank and water well, located in the northeast corner of the study area.

Photo 5. View from the dirt road on the northern portion of the study area, facing west.

Photo 6. View from the south-central portion of the study area, facing north.

Photo 7. View of the livestock watering troughs on the western border of the study area.

Photo 8. View from the western portion of the study area, facing east.

Photo 9. View from atop the hill on the western portion of the study area, facing south.

Photo 10. View from the southwest corner of the study area, facing northeast.

EXHIBIT M

WETLAND DETERMINATION REPORT

Wetland Determination Report for the Powell East Solar Farm LLC

SW Millican Road
Powell Butte, Oregon

Powell East Solar Farm LLC
2033 East Speedway Boulevard Suite 200
Tucson, Arizona 85719

February 23, 2021
PBS Project No. 80812.018

PBS
390 NE EMERSON AVENUE
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TABLE OF CONTENTS

SUPPORTING DATA

TABLES

APPENDICES

APPENDIX A - MAPS

APPENDIX B - DATA FORMS

APPENDIX C - GROUND LEVEL COLOR PHOTOGRAPHS

APPENDIX D - ADDITIONAL TABLES AND INFORMATION

APPENDIX E - LITERATURE CITATIONS

INTRODUCTION

PBS Engineering and Environmental (PBS) was contracted by Powell East Solar Farm LLC to conduct a wetland determination on the Powell East Solar Farm LLC property. The 477.95-acre study area is located in Powell Butte, Oregon (Appendix A, Figure 1) and is identified as tax lots 800 (partial) and 1900 on Crook County Assessor's map no. 16S15E (ORMAP 2021) (Figure 2), Township 16 South, Range 15 East, Sections 15 and 16 W.M. PBS' fieldwork and reporting was conducted by Holly Burnett and Greg Swenson, Professional Wetland Scientist.

A. LANDSCAPE SETTING AND LAND USE

The study area occurs in a scrubland setting located approximately 9 miles southwest of the Prineville city center and approximately 3.5 miles east of Powell Butte, Oregon. Dominant vegetation within the study area consists of heavily grazed low shrubs / sagebrush and juniper trees. The surrounding area is primarily sagebrush scrubland / rangeland, and the existing Gala Solar Project lies just east of the study area. Elevations range from approximately 3,600 to 4,100 feet above mean sea level (USGS 2021). The land use is rangeland for seasonal cattle grazing.

B. SITE ALTERATIONS

Some minor grading and vegetation removal associated with an old livestock corral was observed in the northeast part of the study area. Numerous dirt roads traverse the study area, some with culverts for drainage. An area of relatively recent fill associated with the Loop Road (Figures 7A and 7B) was documented in the east part of the study area. The fill and culvert were partially placed within Intermittent Stream B. Piled woody debris from cleared vegetation was observed by the northern border of the study area.

C. PRECIPITATION DATA AND ANALYSIS

Precipitation data were obtained from the National Oceanic and Atmospheric Administration / National Weather Service (NWS 2021) website and the Natural Resource Conservation Service (NRCS) WETS website for the Prineville, Oregon station (NRCS 2021a) for the March 25, 2020 and December 6, 2020 study dates (Appendix D). For both field dates, below normal precipitation occurred in the two weeks before the field study (Tables 1A and 2A). Cumulative precipitation for the water years starting October 1, 2019 and October 1, 2020 were also below normal. Cumulative precipitation was below the normal range for the three-month period leading up to the March 25, 2020 field study date, and within the normal range for the three-month period leading up to the December 6, 2020 field study date (Tables 1B and 2B). Due to the below normal precipitation patterns immediately prior to the field study dates, the lack of primary hydrology indicators alone was not considered sufficient to rule out the presence of wetland hydrology.

Table 1A. Precipitation To-Date Data (March 25, 2020 Field Study Date)

Field Study Date	Observed Precipitation on the Date of the Field Study (in.)	Observed Precipitation Two Weeks Prior to the Field Study Date	Percentage of Normal Precipitation for the Water Year to Date
March 25, 2020	Trace	0.27 in. (68% of normal 1981-2010 data)	55%

Table 1B. Precipitation Data for the Preceding 3 Months (March 25, 2020 Field Study Date)

Prior Month	WETS Rainfall Percentile (in.)		Measured Rainfall (in.)	Condition: Dry, Wet, Normal	Condition Value: (1=dry, 2=normal, or 3=wet)	Month weight	Multiply previous two columns
	30th	70th					
December	0.59	1.65	0.83	Normal	2	1	2
January	0.53	1.25	1.06	Normal	2	2	4
February	0.51	1.32	0.44	Dry	1	3	3
						Sum	**9**
Rainfall of prior period was: **drier** than normal (sum is 6-9), **normal** (sum is 10-14), **wetter** than normal (sum is 15-18).							Drier

WETS Station: Prineville, OR 1981 - 2010
Measured Rainfall: Prineville, OR December 2019 - February 2020
Data From: http://agacis.rcc-acis.org/?fips=41013

Table 2A. Precipitation To-Date Data (December 6, 2020 Field Study Date)

Field Study Date	Observed Precipitation on the Date of the Field Study (in.)	Observed Precipitation Two Weeks Prior to the Field Study Date	Percentage of Normal Precipitation for the Water Year to Date
December 6, 2020	0.21	0.01 in. (1% of normal 1981-2010 data)	82%

Table 2B. Precipitation Data for the Preceding 3 Months (December 6, 2020 Field Study Date)

Prior Month	WETS Rainfall Percentile (in.)		Measured Rainfall (in.)	Condition: Dry, Wet, Normal	Condition Value: (1=dry, 2=normal, or 3=wet)	Month weight	Multiply previous two columns
	30th	70th					
September	0.12	0.39	0.29	Normal	2	1	2
October	0.55	1.12	0.23	Dry	1	2	2
November	0.81	1.53	1.67	Wet	3	3	9
						Sum	**13**
Rainfall of prior period was: **drier** than normal (sum is 6-9), **normal** (sum is 10-14), **wetter** than normal (sum is 15-18).							Normal

WETS Station: Prineville, OR 1981 - 2010
Measured Rainfall: Prineville, OR September 2020 - November 2020
Data From: http://agacis.rcc-acis.org/?fips=41013

D. METHODS

The method used for determining the presence / absence of wetlands and waters followed the routine approach of the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (U.S. Army Corps of Engineers 2008). Soils, vegetation, and indicators of hydrology were recorded at five sample plot locations on the standard wetland determination data form (Appendix B). Wetland plant ratings were assigned based on the *2018 National Wetland Plant List* (U.S. Army Corps of Engineers 2018). As all areas of the study area were described to have well drained soils (NRCS 2021b), the plot locations were chosen to document mapped National Wetland Inventory (NWI) features and representative locations within the study area. No modification of the standard wetland boundary determination methodology (i.e., presence of hydric soil indicators, hydrophytic plant dominance, and wetland hydrology indicators) was necessary during the delineation.

Non-wetland waters boundaries were delineated based on the ordinary high water elevation using the field indicators described in Section E of this report.

E. DESCRIPTION OF ALL WETLANDS AND OTHER NON-WETLAND WATERS

Intermittent Streams A-C were documented within the study area. The boundaries of the streams were based on the ordinary high water line/mark (OHWL/M) pursuant to field indicators described under OAR 141-085-0515(3)(a-e) (State of Oregon 2021) and Regulatory Guidance Letter No. 05-05 (Riley, D. 2005). The following tables summarize the field results.

Table 3A. Oregon Department of State Lands (ODSL) OHWL Indicators

OHWL Field Indicators	Occurs Within Study Area?
(a) Clear, natural line impressed on the shore	Yes. An impressed line was clearly visible along the edges of the streams.
(b) Change in vegetation from riparian (e.g., willows) to upland (e.g., oak, fir) dominated	Yes. The streams were less vegetated than areas above the OHWL.
(c) Textural change of depositional sediment or changes in the character of the soil (e.g., from sand, sand and cobble, cobble and gravel to upland soils)	Yes. The streambeds had abundant rocks and cobbles. Adjacent uplands generally consisted of finer soils.
(d) Elevation below which no fine debris (needles, leaves, cones, and seeds) occurs	None observed.
(e) Presence of litter and debris, water-stained leaves, water lines on tree trunks	None observed.
(f) Other appropriate means that consider the characteristics of the surrounding areas	N/A

Table 3B. USACE OHWM Indicators

OHWM Field Indicators	Occurs Within Study Area?
Natural line impressed on the bank	Yes. An impressed line was clearly visible along the edges of the streams.
Shelving	None observed.
Changes in the character of soil	Yes. The streambeds had abundant rocks and cobbles. Adjacent uplands generally consisted of finer soils.
Destruction of terrestrial vegetation	None observed.

Presence of litter and debris	None observed.
Wracking	None observed.
Vegetation matted down, bent, or absent	None observed.
Sediment sorting	None observed.
Leaf litter disturbed or washed away	None observed.
Scour	None observed.
Deposition	None observed.
Multiple observed flow events	No.
Bed and banks	Yes.
Water staining	None observed.
Change in plant community	Yes. The streams were less vegetated than areas above the OHWM.

No wetlands were documented within the study area.

F. DEVIATION FROM LWI OR NWI

The National Wetlands Inventory (NWI) (USFWS 2021) mapping within the study area is summarized below and depicted on Figure 3.

Table 4. NWI Mapping

NWI Code	NWI Cowardin Class	Confirmed Within Study Area?
R4SBC	Riverine, intermittent, streambed, seasonally flooded	Yes

The local wetland inventory completed for Prineville, Oregon does not extend into the study area (David Evans and Associates, Inc. 1994).

G. MAPPING METHOD

A recent color aerial photograph with the study area boundary was used as the base map for the field study. The GPS location data for the sample plot locations and photograph locations were collected using a Trimble Geo7X Mapping Grade GPS unit (Figures 7A – 7I). Accuracy for all mapped features is estimated at 1 meter or less based on the manufacturer's reported tolerance for the instrument and the post-processing report. Digitized mapping and cartography were completed in ArcGIS Pro. Soil mapping units are depicted on Figure 4. A current aerial photograph depicting the study area is included as Figure 5. Ground-level site photographs are included in Appendix C.

H. ADDITIONAL INFORMATION

Intermittent Streams A-C were deeply incised likely due to seasonal flows associated with snowmelt. Because of the highly porous soils and minimal topographic relief in the north east part of the study area, Intermittent Streams A and B eventually lack an OHWL/M within the study area. Intermittent Stream C continues offsite and may connect to other downstream waters. By definition intermittent streams are within ODSL jurisdiction.

In terms of USACE jurisdiction, Intermittent Streams A and B are likely not considered jurisdictional tributaries because they lack a connection to a traditional navigable water (TNW). Intermittent Stream C would be within federal jurisdiction if it has a downstream connection to a TNW.

The Roadside Ditch is less than 10 feet wide, created from upland, is not connected or contiguous with wetlands, and does not contain food or game fish; therefore, the ditch does not appear to be within ODSL jurisdiction.

The Roadside Ditch does not appear to be a tributary or relocated tributary and is likely outside of USACE jurisdiction.

I. RESULTS AND CONCLUSIONS

Four features were delineated within the study area and are summarized in the table below.

Table 5. Delineation Summary

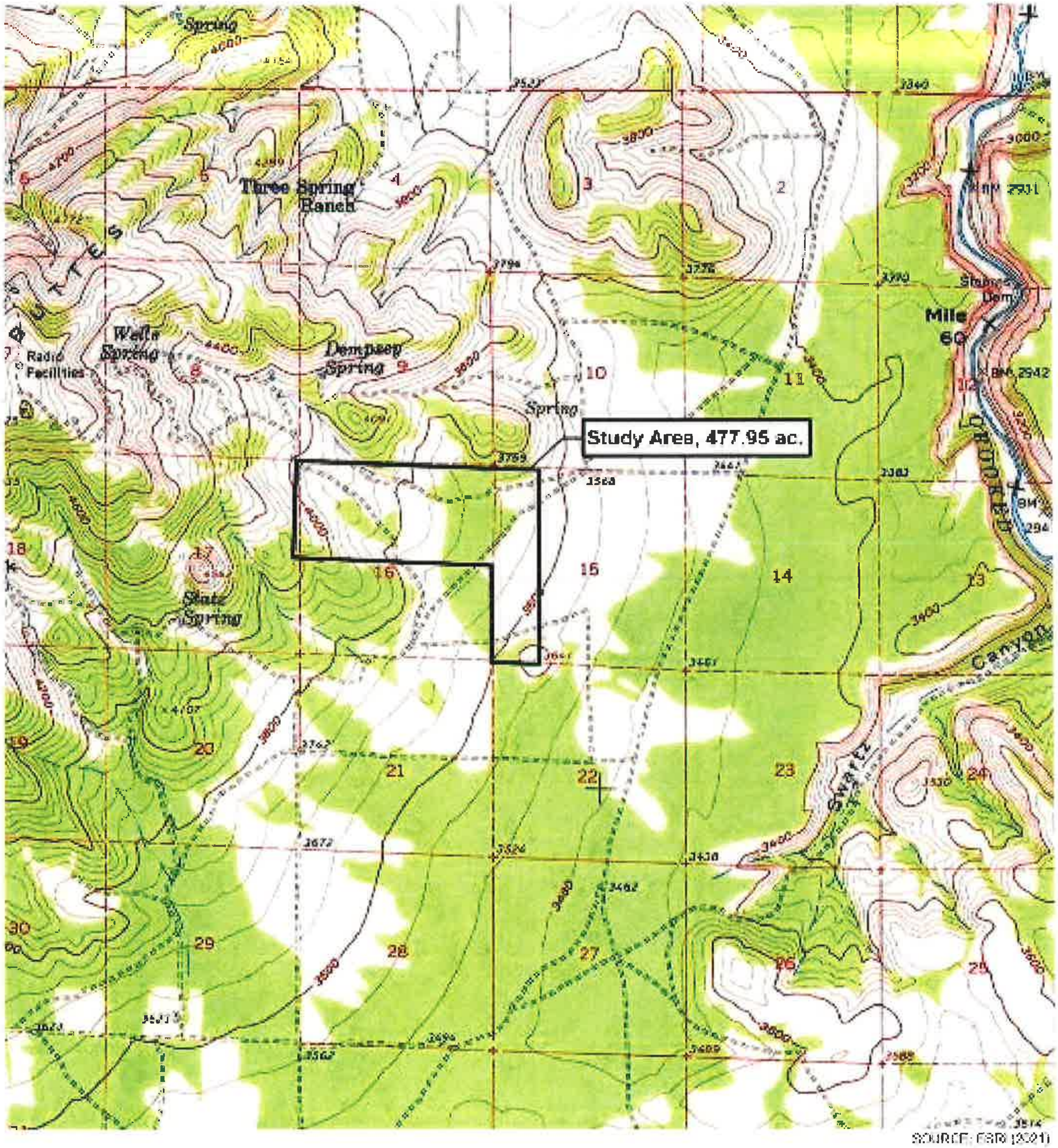
Feature	Area (acre)	Cowardin Class	HGM Class
Intermittent Stream A	0.42	Riverine, intermittent, streambed, seasonally flooded	Riverine
Intermittent Stream B	0.66	Riverine, intermittent, streambed, seasonally flooded	Riverine
Intermittent Stream C	0.02	Riverine, intermittent, streambed, seasonally flooded	Riverine
Roadside Ditch	0.01	N/A	N/A

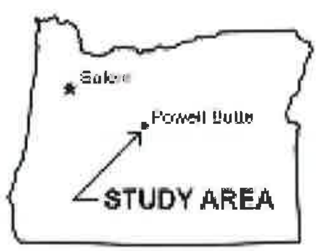
J. REQUIRED DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

APPENDIX A

Maps





OREGON

SCALE: 1" = 4,000' (8.5"X11" SHEET)

0' 2,000' 4,000' 8,000'

PREPARED FOR: POWELL EAST SOLAR FARM LLC.

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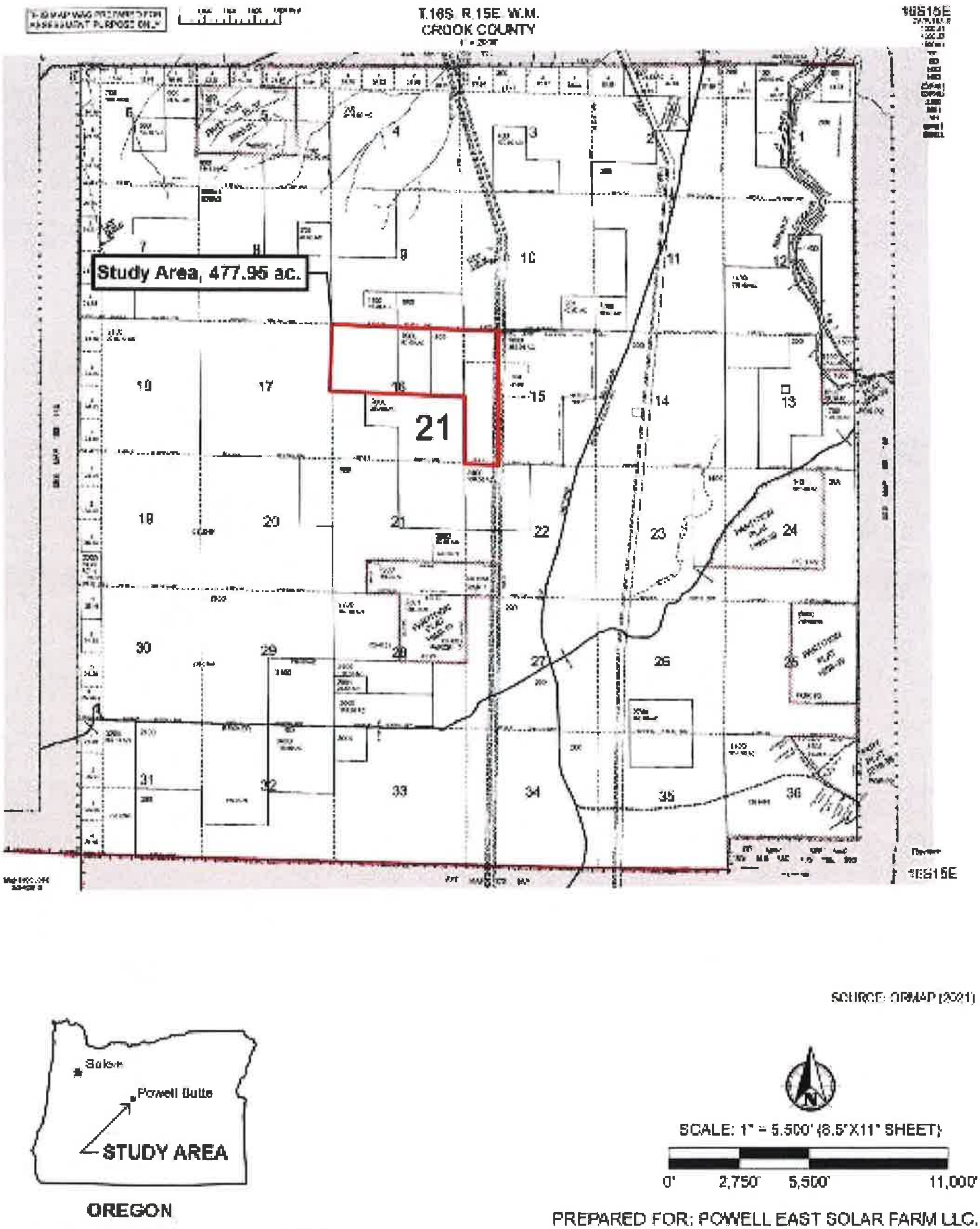
LOCATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.016

FIGURE
1



PREPARED FOR: POWELL EAST SOLAR FARM LLC.

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TAX LOT MAP 16S15E

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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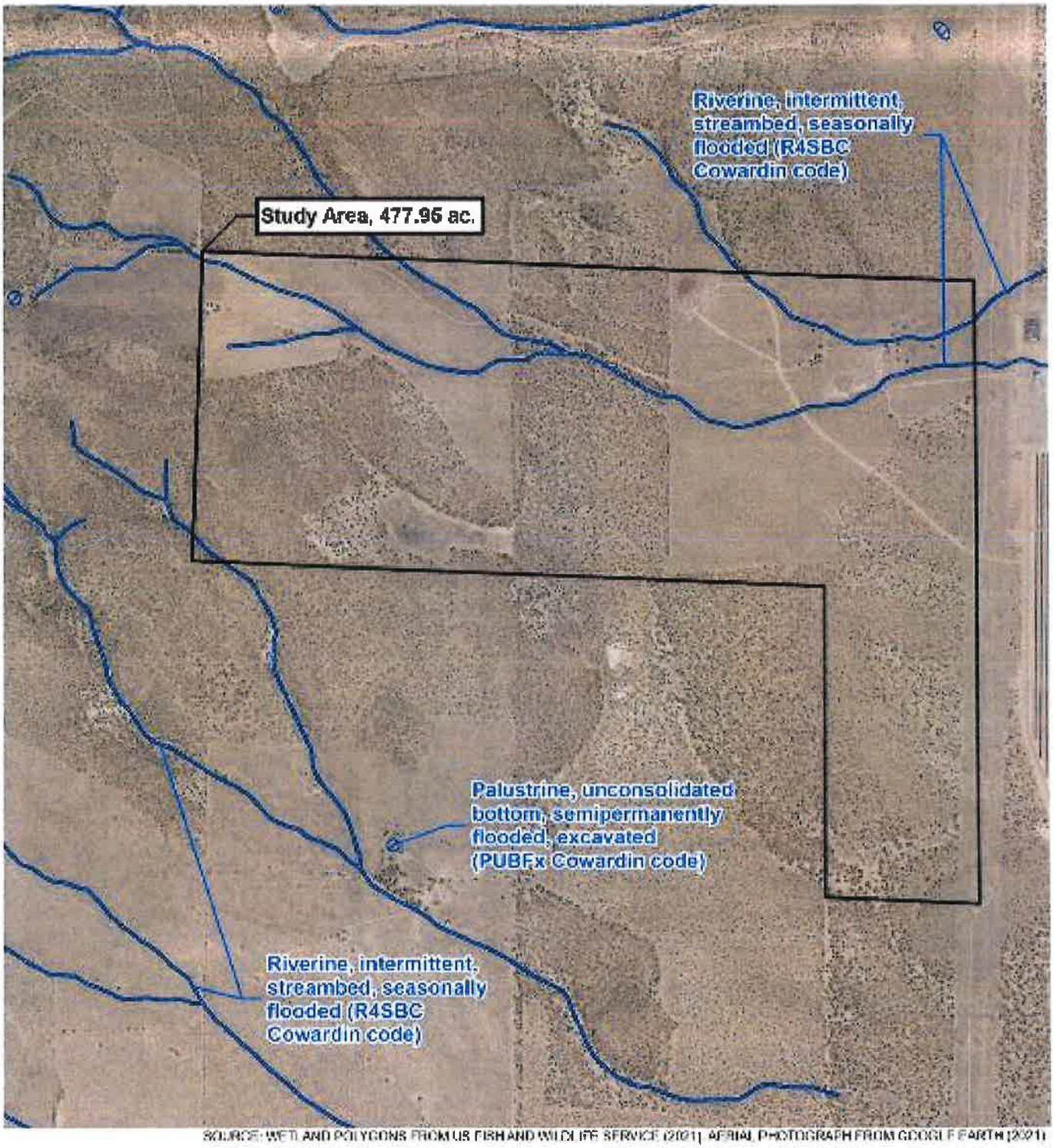
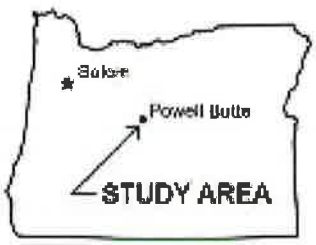
80812.016
FIGURE
2



SOURCE: WETLAND POLYGONS FROM US FISH AND WILDLIFE SERVICE (2021); AERIAL PHOTOGRAPH FROM GOOGLE EARTH (2021)



OREGON

SCALE: 1" = 1,250' (8.5"X11" SHEET)

0' 625' 1,250' 2,500'

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NATIONAL WETLANDS INVENTORY MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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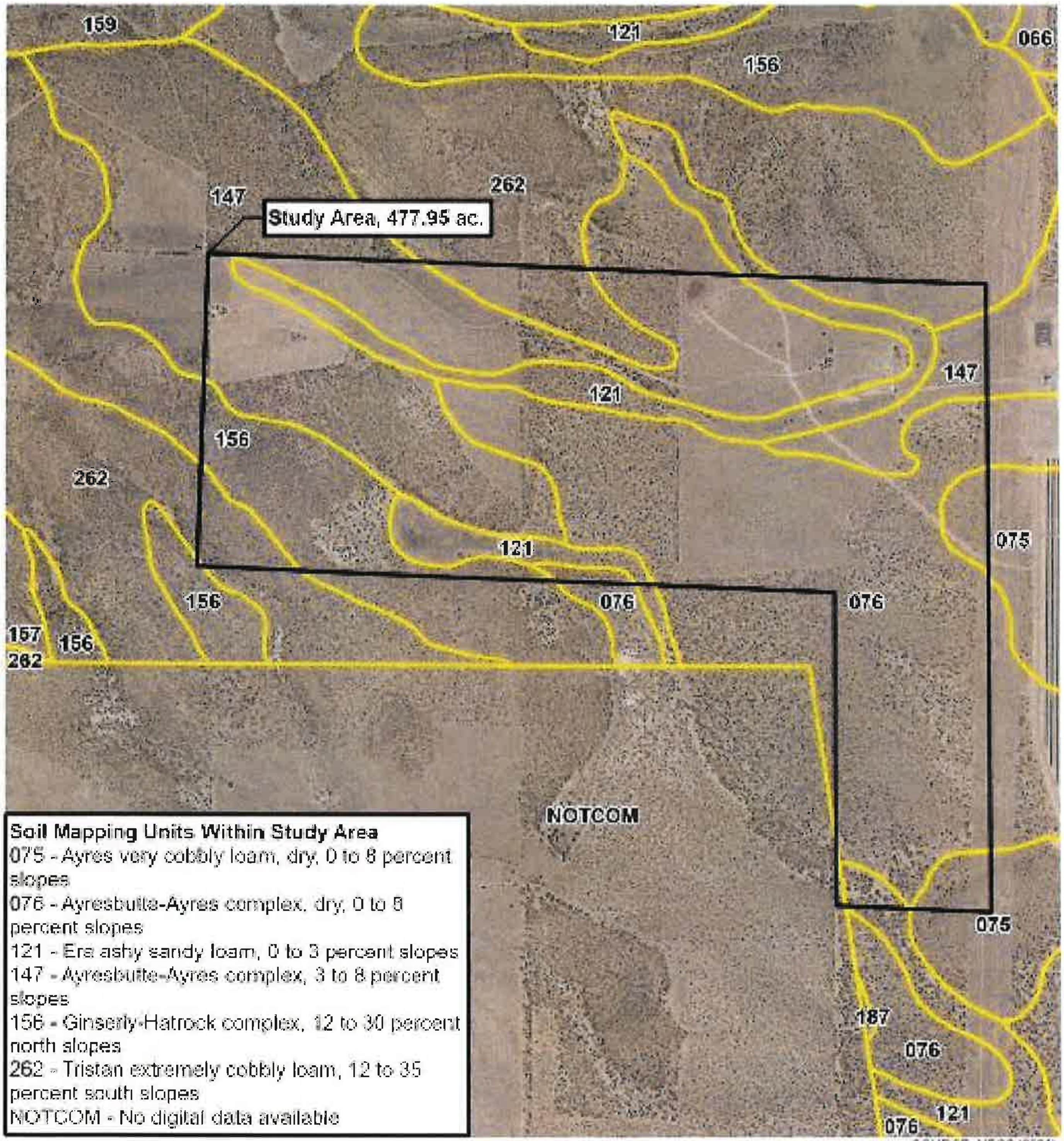
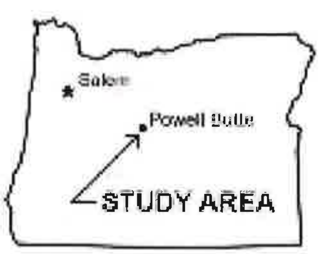
FIGURE
3



Soil Mapping Units Within Study Area
075 - Ayres very cobbly loam, dry, 0 to 8 percent slopes
076 - Ayresbutte-Ayres complex, dry, 0 to 8 percent slopes
121 - Era ashy sandy loam, 0 to 3 percent slopes
147 - Ayresbutte-Ayres complex, 3 to 8 percent slopes
156 - Ginserly-Hatrock complex, 12 to 30 percent north slopes
262 - Tristan extremely cobbly loam, 12 to 35 percent south slopes
NOTCOM - No digital data available

SOURCE: NRCS (2021)



OREGON

SCALE: 1" = 1,250' (8.5"X11" SHEET)

0' 625' 1,250' 2,500'

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COUNTY SOIL SURVEY MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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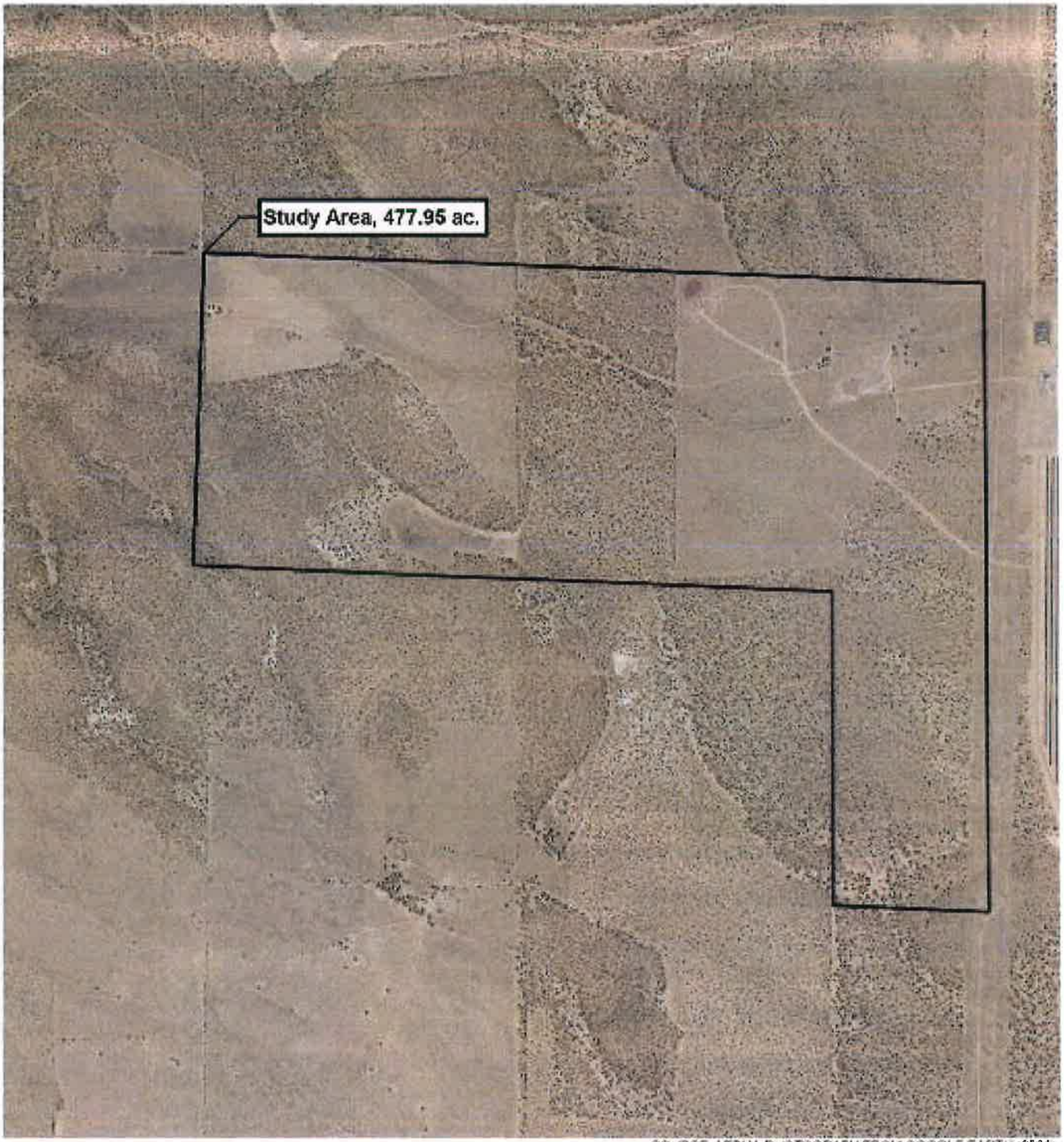
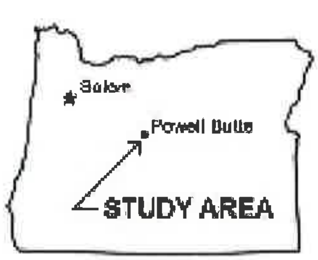
FIGURE
4



SOURCE: AERIAL PHOTOGRAPH FROM GOOGLE EARTH (2021)



OREGON

SCALE: 1" = 1,250' (8.5"X11" SHEET)

0' 625' 1,250' 2,500'

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JULY 27, 2018 AERIAL PHOTOGRAPH

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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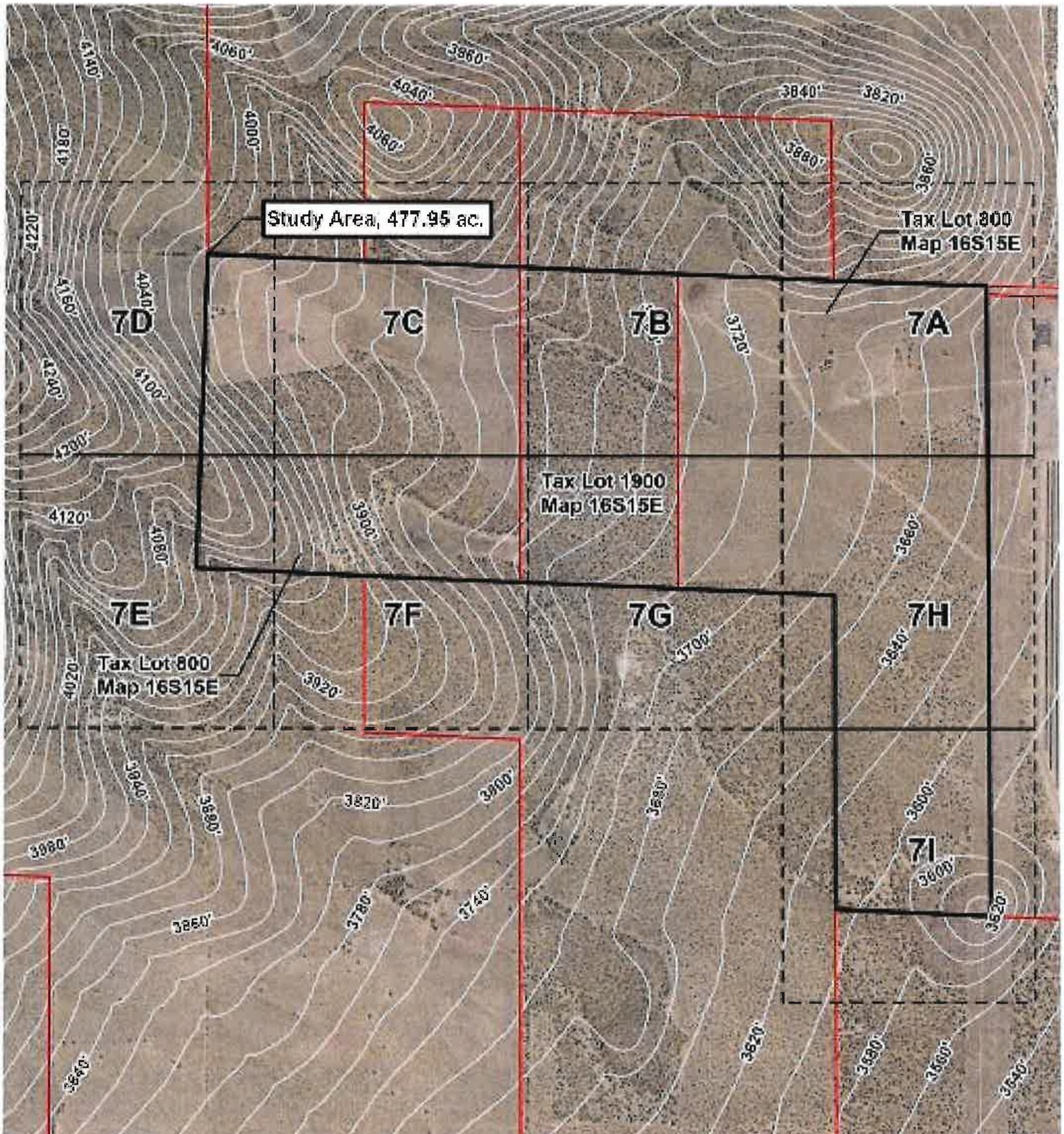
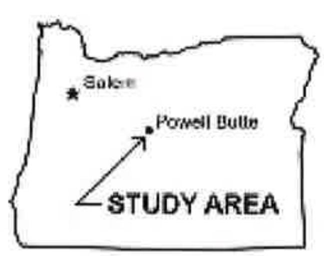
80812.018
FIGURE
5



SOURCE: AERIAL PHOTOGRAPH FROM GOOGLE EARTH (2020)



OREGON

SCALE: 1" = 1,250' (8.5"X11" SHEET)

0' 625' 1,250' 2,500'

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INDEX MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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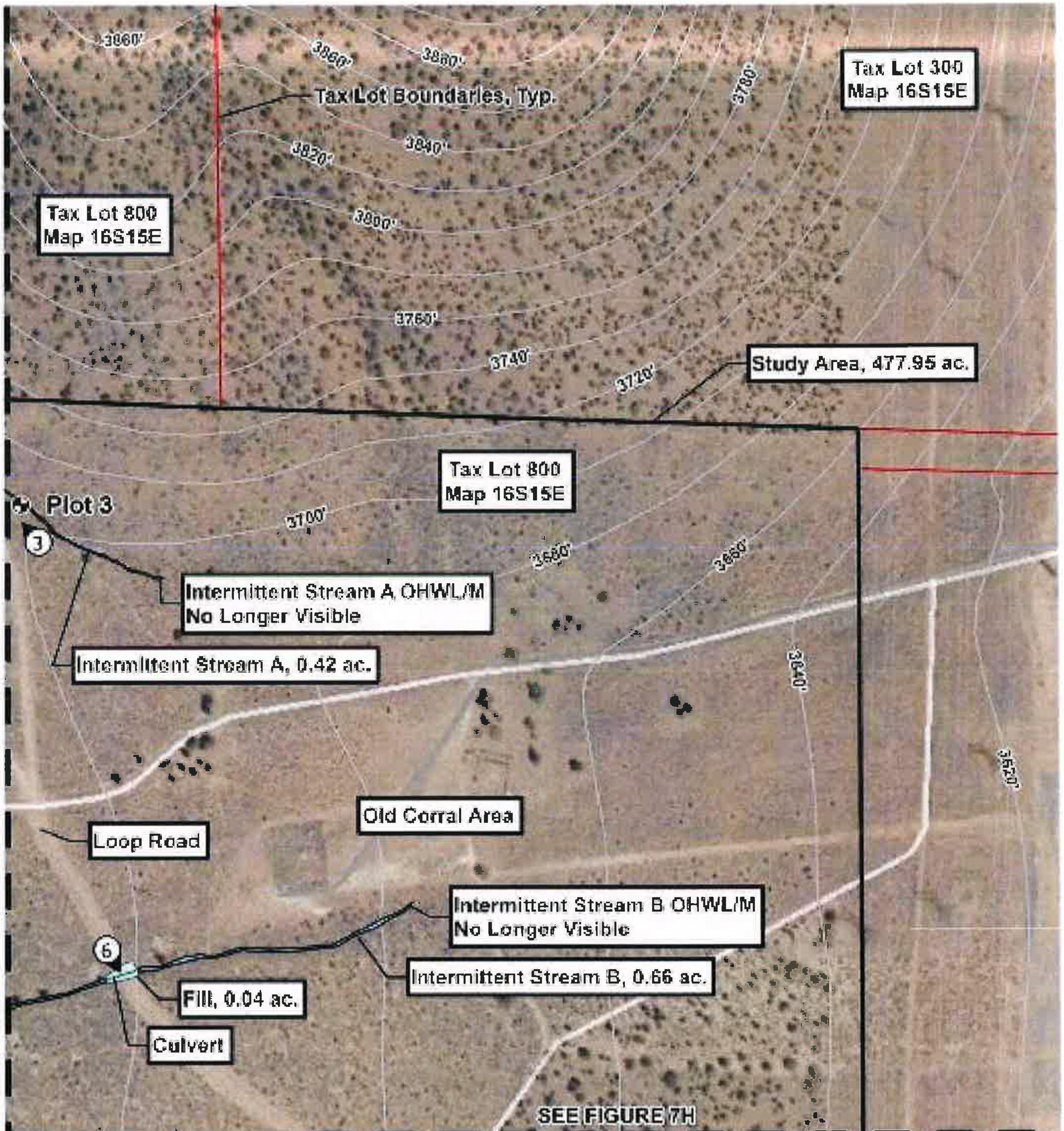
FIGURE
6



Legend

Plot 1 Data Plot Locations

Ground Level Photograph Locations

Intermittent Streams Ordinary High Water Line/Mark (OHWL/M), 1.10-ac. total

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved subimeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021), TOPOGRAPHIC CONTOURS FROM USGS (2021).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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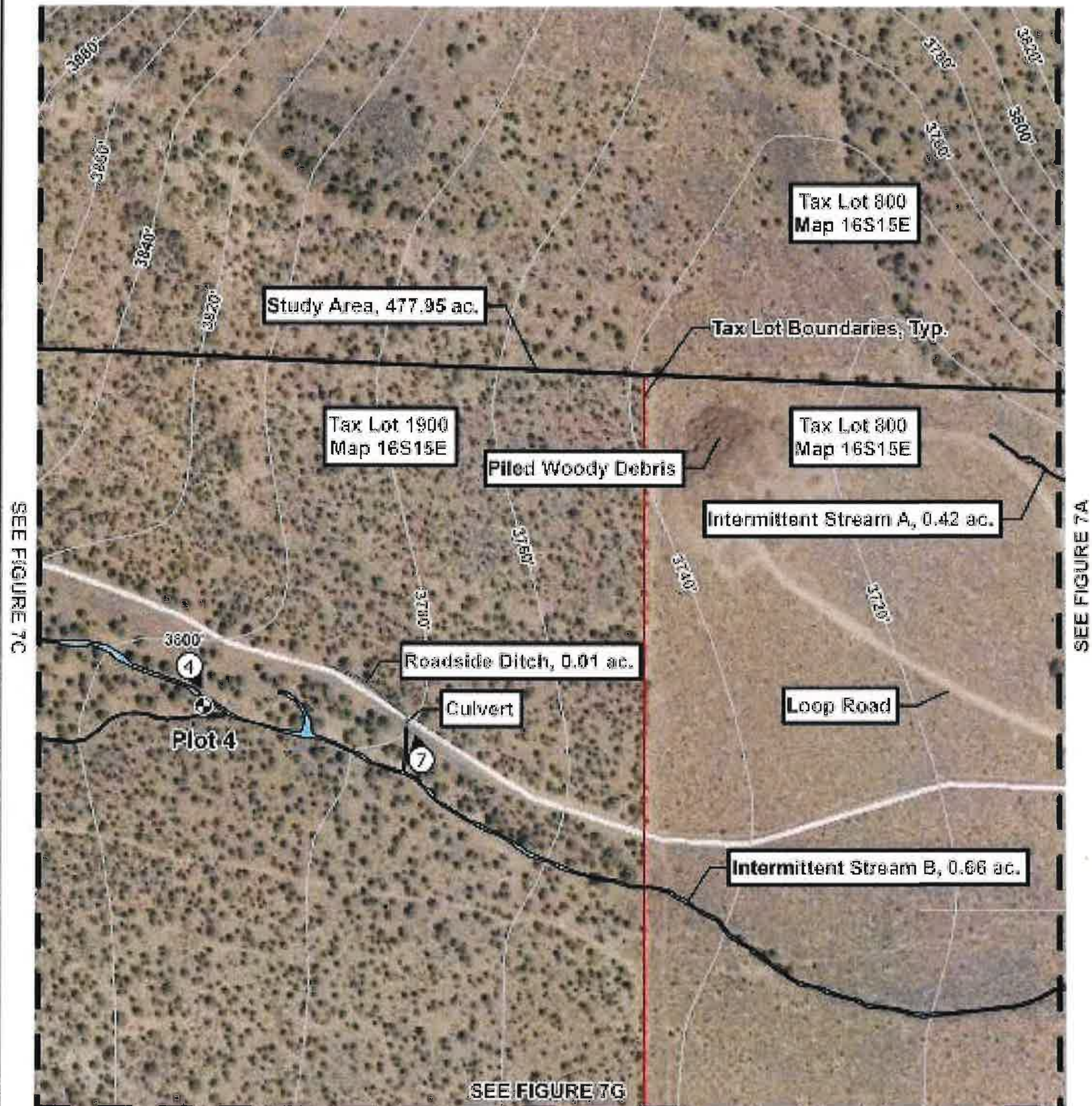
FIGURE
7A



Legend

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1 Ground Level Photograph Locations

Intermittent Streams Ordinary High Water Line/Mark (OHWL/M), 1.10-ac. total

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SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

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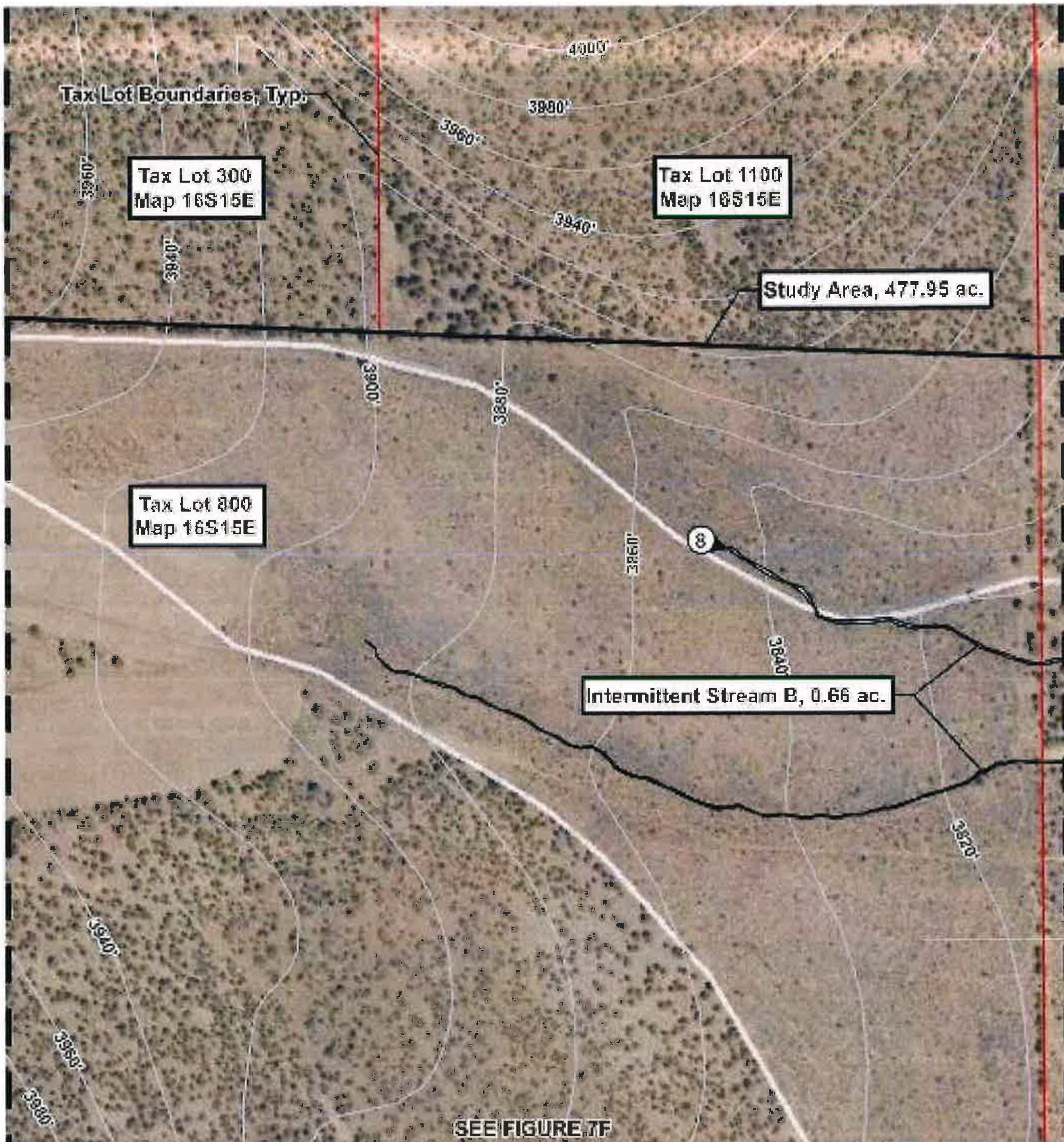
FIGURE
7B



SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021), TOPOGRAPHIC CONTOURS FROM USGS (2021).

Legend

Plot 1 Data Plot Locations (None This Figure)

1 Ground Level Photograph Locations

Intermittent Stream Ordinary High Water Line/Mark (OHWL/M), 1.10-ac. total

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.016

FIGURE
7C

SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021).
TOPOGRAPHIC CONTOURS FROM USGS (2021).

Legend

Plot 1 — Data Plot Locations (None This Figure)

1 — Ground Level Photograph Locations

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

N

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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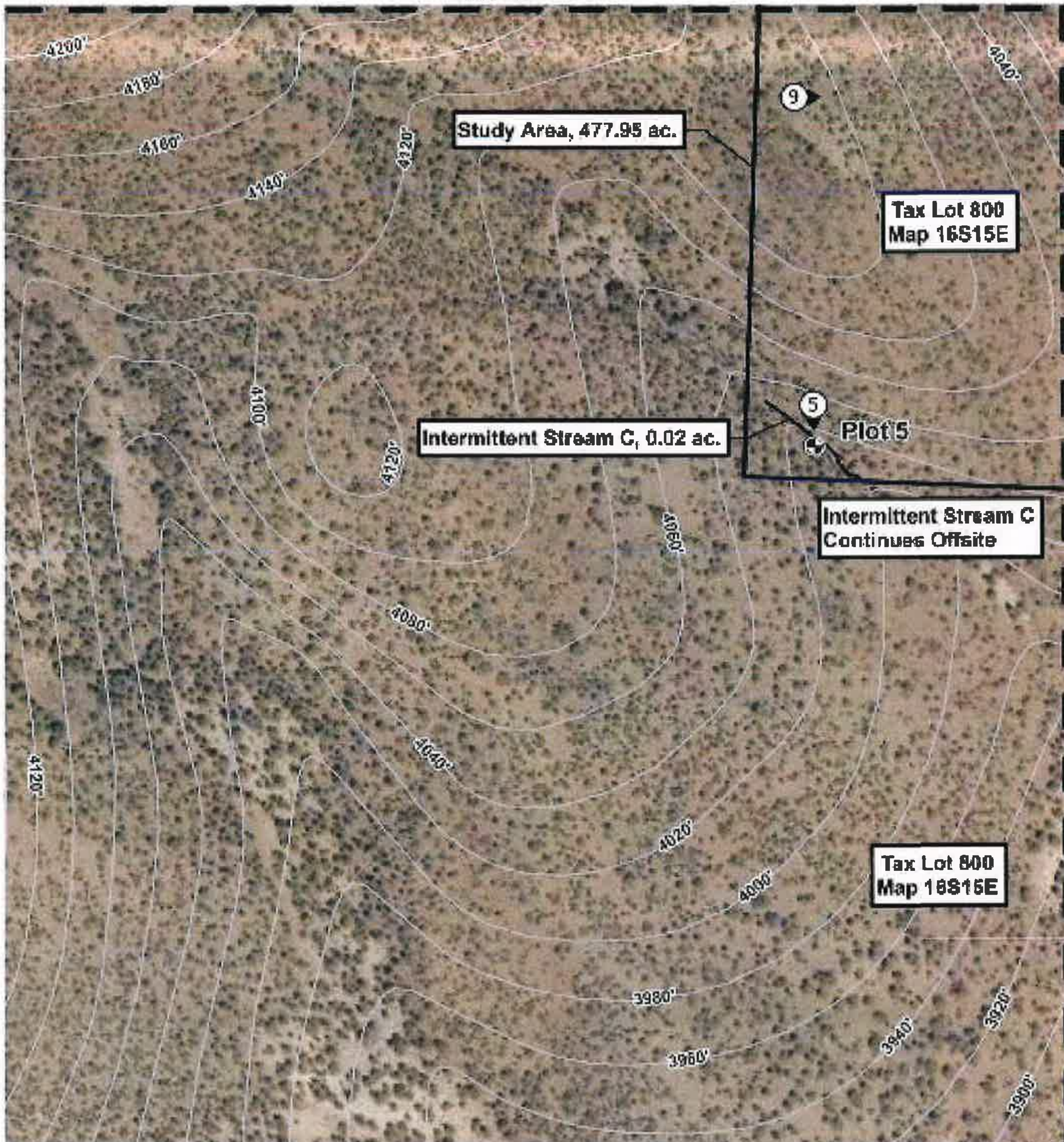
WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.016

FIGURE
7D

SEE FIGURE 7D



SEE FIGURE 7F

Legend

Plot 1 — Data Plot Locations

1 — Ground Level Photograph Locations

Intermittent Stream Ordinary High Water Line/Mark (OHWL/M), 1.10-ac. total

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021), TOPOGRAPHIC CONTOURS FROM USGS (2021).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.018

FIGURE
7E

SEE FIGURE 7C

SEE FIGURE 7E

SEE FIGURE 7G

SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021).
TOPOGRAPHIC CONTOURS FROM USGS (2021).

Legend

Plot 1 Data Plot Locations (None This Figure)

Ground Level Photograph

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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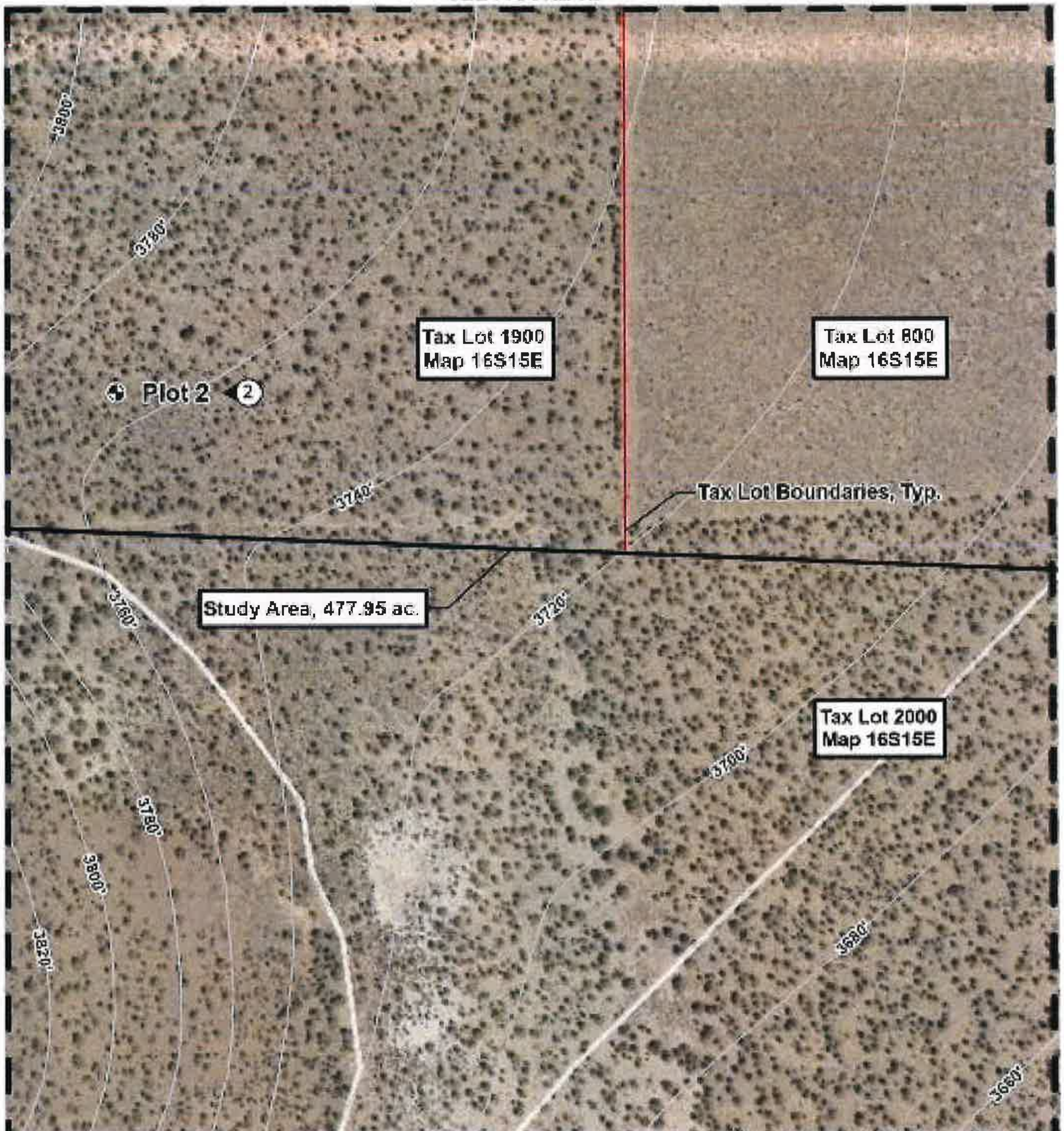
WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.016

FIGURE
7F

SEE FIGURE 7B



SEE FIGURE 7F

SEE FIGURE 7H

SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021).
TOPOGRAPHIC CONTOURS FROM USGS (2021).

Legend

Plot 1 — Data Plot Locations

1 — Ground Level Photograph Locations

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

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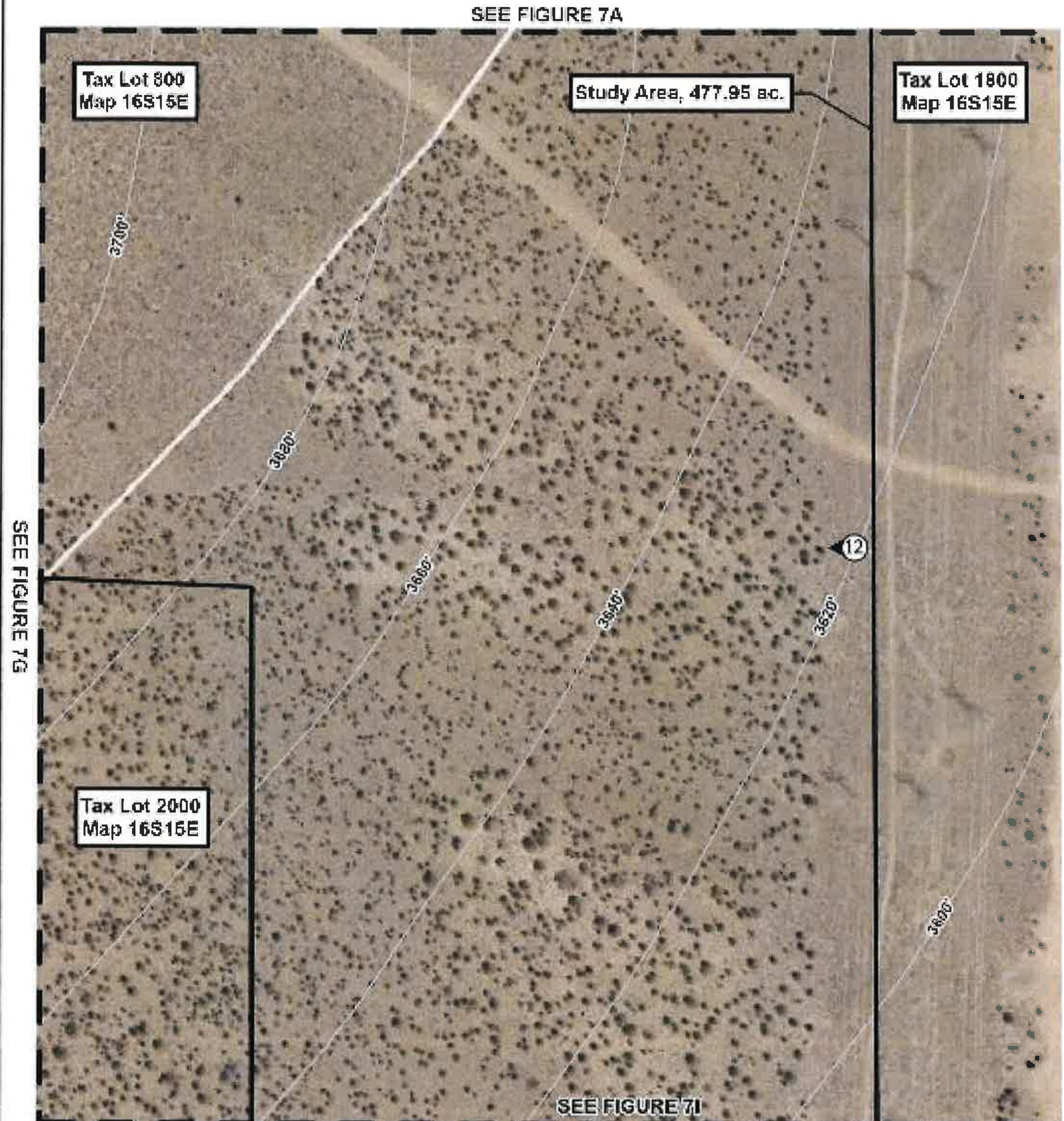
WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.018

FIGURE
7G



SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021).
TOPOGRAPHIC CONTOURS FROM USGS (2021).

Legend

Plot 1 Data Plot Locations (None This Figure)

1 Ground Level Photograph Locations

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

PREPARED FOR: POWELL EAST SOLAR FARM LLC.

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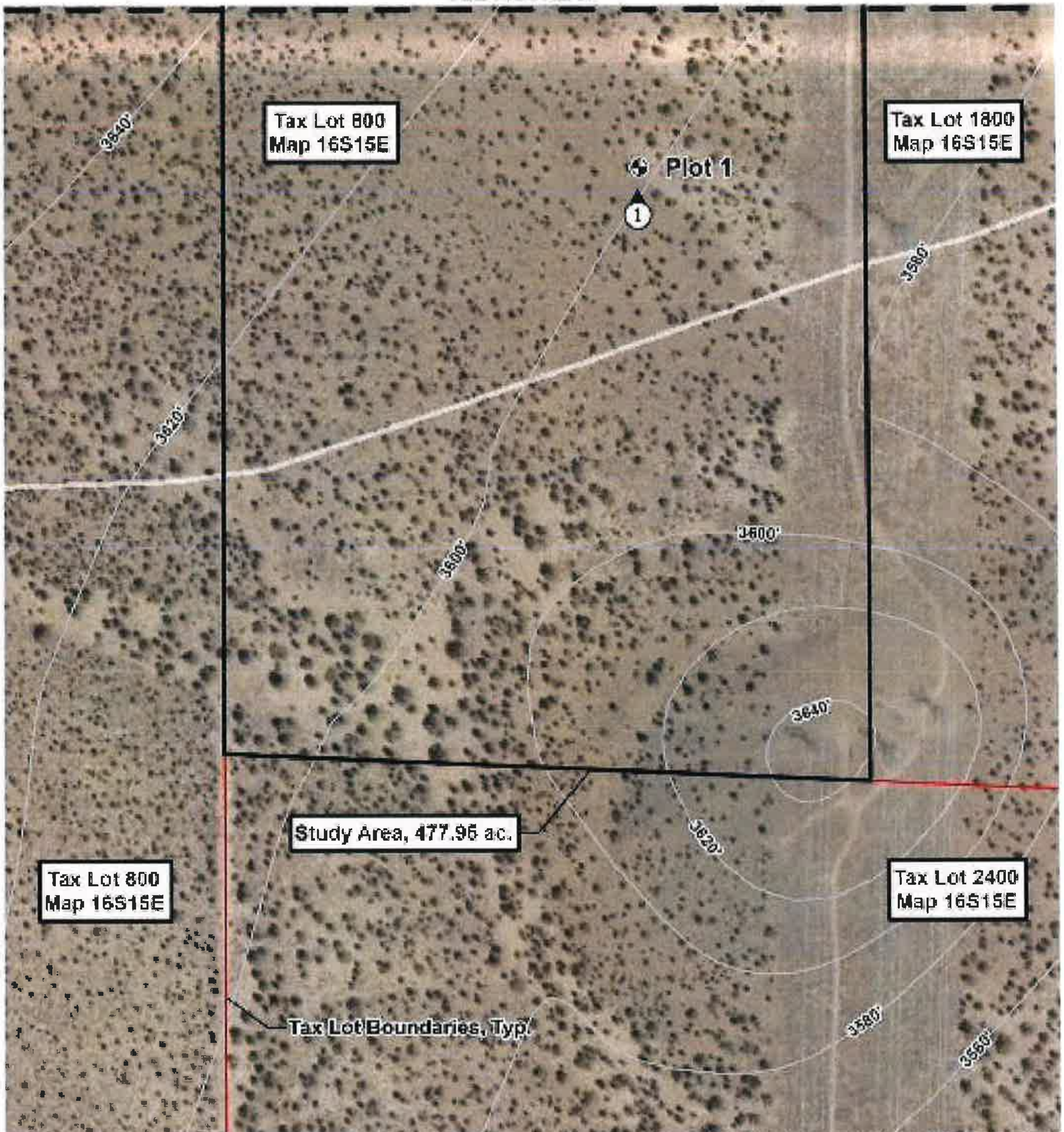
WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80312.016

FIGURE
7H

SEE FIGURE 7F



SOURCE: AERIAL IMAGERY FROM GOOGLE EARTH (2021).
TOPOGRAPHIC CONTOURS FROM USGS (2021).

Legend

Plot 1 — Data Plot

1 — Ground Level Photograph Locations

Sample plots and photo points were mapped using a Trimble Geo7X handheld GPS unit. All features collected achieved submeter accuracy after post-processing. Study area boundaries based on tax lot boundaries and aerial photo interpretation (+/-1 m est. accuracy).

SCALE: 1" = 300' (8.5"X11" SHEET)

0' 150' 300' 600'

PREPARED FOR: POWELL EAST SOLAR FARM LLC.

PBS

WETLAND DETERMINATION MAP

WETLAND DETERMINATION FOR POWELL EAST SOLAR FARM LLC
POWELL BUTTE, CROOK COUNTY, OREGON

FEB 2021
80812.016

FIGURE
7I

APPENDIX B

Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Powell East Solar Farm LLC | City/County: Powell Butte / Crook | Sampling Date: 3/25/2020
Applicant/Owner: Powell East Solar Farm LLC | State: Oregon | Sampling Point: Plot 1
Investigator(s): Holly Burnett | Section, Township, Range: Sec. 15, T. 16S, R. 15E
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 3
Subregion (LRR): LRR D - Interior Deserts | Lat: 44.179201 | Long: -120.925899 | Datum: WGS84
Soil Map Unit Name: Ayresbutte-Ayres complex, dry, 0 to 8 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

SUMMARY OF FINDINGS - Attach site map showing sampling point location, transects, important features, etc.

Hydrophytic vegetation present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric soil present?	Yes ___	No X	
Indicators of wetland hydrology present?	Yes ___	No X	

Remarks:
South part of study area 1,220 feet north of south study area boundary and 457 feet west of east study area boundary.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species	Indicator Status
1. *Juniperus occidentalis*	20	Y	UPL
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Eriogonum wrightii*	15	Y	UPL
2. *Artemisia tridentata*	15	Y	UPL
3. *Juniperus occidentalis*	10	Y	UPL
4. *Chrysothamnus viscidiflorus*	10	Y	UPL
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Festuca idahoensis*	20	Y	UPL
2. *Bromus tectorum*	20	Y	UPL
3. *Alyssum desertorum*	20	Y	UPL
4. *Taeniatherum caput-medusae*	2	N	UPL
5.			
6.			
7.			
8.			
	62 = Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 38 % Cover of Biotic Crust ___

Dominance Test Worksheet
Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 8 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species ___	x 1 =	___
FACW species ___	x 2 =	___
FAC species ___	x 3 =	___
FACU species ___	x 4 =	___
UPL species ___	x 5 =	___
Column totals ___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1]

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Yes ___ No X

Remarks:

SOIL

Sampling Point: Plot 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 4/3	100					ls	dry, gravelly
2-16	7.5YR 3/3	100					sl	dry, gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A10) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Refusal at 16" due to rock fragments.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	_____	No X	Depth (inches):	_____
Water Table Present?	Yes	_____	No X	Depth (inches):	>16
Saturation Present? (includes capillary fringe)	Yes	_____	No X	Depth (inches):	>16

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Aerial photograph

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Powell East Solar Farm LLC | City/County: Powell Butte / Crook | Sampling Date: 3/25/2020

Applicant/Owner: Powell East Solar Farm LLC | State: Oregon | Sampling Point: Plot 2

Investigator(s): Holly Burnett | Section, Township, Range: Sec. 16, T. 16S, R. 15E

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 3

Subregion (LRR): LRR D - Interior Deserts | Lat: 44.184172 | Long: -120.938101 | Datum: WGS84

Soil Map Unit Name: Era ashy sandy loam, 0 to 3 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

SUMMARY OF FINDINGS - Attach site map showing sampling point location, transects, important features, etc.

Hydrophytic vegetation present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric soil present?	Yes ___	No X	
Indicators of wetland hydrology present?	Yes ___	No X	

Remarks:

South-central part of study area 284 feet north of south study area boundary and 2,960 feet east of west study area boundary.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species	Indicator Status
1. *Juniperus occidentalis*	30	Y	UPL
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Artemisia tridentata*	30	Y	UPL
2. *Chrysothamnus viscidiflorus*	10	Y	UPL
3. *Juniperus occidentalis*	10	Y	UPL
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Festuca idahoensis*	10	Y	UPL
2. *Lepidium latifolium*	10	Y	FAC
3. *Taeniatherum caput-medusae*	2	N	UPL
4.			
5.			
6.			
7.			
8.			
	22 = Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 78 % Cover of Biotic Crust ___

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species ___	x 1 =	___
FACW species ___	x 2 =	___
FAC species ___	x 3 =	___
FACU species ___	x 4 =	___
UPL species ___	x 5 =	___
Column totals ___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1]

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Yes ___ No X

Remarks:

SOIL

Sampling Point: Plot 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 4/3	100					ls	dry
2-8	7.5YR 4/2	100					sl	dry
8-24+	7.5YR 3/2	100					sl	dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A10) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >24
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >24

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Aerial photograph

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Powell East Solar Farm LLC | City/County: Powell Butte / Crook | Sampling Date: 12/6/2020
Applicant/Owner: Powell East Solar Farm LLC | State: Oregon | Sampling Point: Plot 3
Investigator(s): Greg Swenson / Holly Burnett | Section, Township, Range: Sec. 16, T. 16S, R. 15E
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 7
Subregion (LRR): LRR D - Interior Deserts | Lat: 44.189851 | Long: -120.930760 | Datum: WGS84
Soil Map Unit Name: Era ashy sandy loam, 0 to 3 percent slopes | NWI Classification: R4SBC
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

SUMMARY OF FINDINGS - Attach site map showing sampling point location, transects, important features, etc.

Hydrophytic vegetation present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	Yes ___ No X
Hydric soil present?	Yes ___	No X		
Indicators of wetland hydrology present?	Yes ___	No X		

Remarks:
Northeast part of study area 218 feet south of north study area boundary and 1,694 feet west of east study area boundary.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species	Indicator Status
1. *Juniperus occidentalis*	5	Y	UPL
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Artemisia tridentata*	40	Y	UPL
2. *Chrysothamnus viscidiflorus*	20	Y	UPL
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Bromus tectorum*	20	Y	UPL
2. *Festuca idahoensis*	5	N	UPL
3. *Eriogonum umbellatum*	2	N	UPL
4. *Achillea millefolium*	2	N	FACU
5.			
6.			
7.			
8.			
	29 = Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 71 % Cover of Biotic Crust ___

Dominance Test Worksheet
Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species ___	x 1 =	___
FACW species ___	x 2 =	___
FAC species ___	x 3 =	___
FACU species ___	x 4 =	___
UPL species ___	x 5 =	___
Column totals ___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1]

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Yes ___ No X

Remarks:
Vegetation in adjacent wash: A. tridentata (40%), B. tectorum (20%), C. viscidiflorus (20%), J. occidentalis (5%), F. idahoensis (5%)

SOIL

Sampling Point: Plot 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16+	7.5YR 3/2	100					cl	dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A10) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >16
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >16

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Aerial photograph

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Powell East Solar Farm LLC | City/County: Powell Butte / Crook | Sampling Date: 12/6/2020
Applicant/Owner: Powell East Solar Farm LLC | State: Oregon | Sampling Point: Plot 4
Investigator(s): Greg Swenson / Holly Burnett | Section, Township, Range: Sec. 16, T. 16S, R. 15E
Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex | Slope (%): 25
Subregion (LRR): LRR D - Interior Deserts | Lat: 44.188623 | Long: -120.937681 | Datum: WGS84
Soil Map Unit Name: Ayresbutte-Ayres complex, 3 to 8 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

SUMMARY OF FINDINGS - Attach site map showing sampling point location, transects, important features, etc.

Hydrophytic vegetation present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric soil present?	Yes ___	No X	
Indicators of wetland hydrology present?	Yes ___	No X	

Remarks:
North-central part of study area 730 feet south of north study area boundary and 3,515 feet west of east study area boundary.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species	Indicator Status
1. *Juniperus occidentalis*	40	Y	UPL
2.			
3.			
4.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Artemisia tridentata*	10	Y	UPL
2. *Juniperus occidentalis*	10	Y	UPL
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Festuca idahoensis*	25	Y	UPL
2. *Lepidium latifolium*	20	Y	FAC
3. *Bromus tectorum*	2	N	UPL
4.			
5.			
6.			
7.			
8.			
	47 = Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 53 % Cover of Biotic Crust ___

Dominance Test Worksheet
Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 5 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species ___	x 1 =	___
FACW species ___	x 2 =	___
FAC species ___	x 3 =	___
FACU species ___	x 4 =	___
UPL species ___	x 5 =	___
Column totals ___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1]

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Yes ___ No X

Remarks:
Vegetation in adjacent wash: L. latifolium (35%), A. tridentata (30%), F. idahoensis (30%), B. tectorum (25%), J. occidentalis (10%)

SOIL

Sampling Point: Plot 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16+	10YR 3/3	100					I	stony, dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A10) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Gravels, cobbles, and stones throughout.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >16
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >16

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Aerial photograph

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Powell East Solar Farm LLC | City/County: Powell Butte / Crook | Sampling Date: 12/6/2020

Applicant/Owner: Powell East Solar Farm LLC | State: Oregon | Sampling Point: Plot 5

Investigator(s): Greg Swenson / Holly Burnett | Section, Township, Range: Sec. 16, T. 16S, R. 15E

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 12

Subregion (LRR): LRR D - Interior Deserts | Lat: 44.183859 | Long: -120.949034 | Datum: WGS84

Soil Map Unit Name: Tristan extremely cobbly loam, 12 to 35 percent south slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (If needed, explain any answers in remarks) Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?

SUMMARY OF FINDINGS - Attach site map showing sampling point location, transects, important features, etc.

Hydrophytic vegetation present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric soil present?	Yes ___	No X	
Indicators of wetland hydrology present?	Yes ___	No X	

Remarks:

Southwest part of study area 68 feet north of south study area boundary and 94 feet east of west study area boundary.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species	Indicator Status
1. *Juniperus occidentalis*	60	Y	UPL
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' r)			
1. *Artemisia tridentata*	20	Y	UPL
2. *Juniperus occidentalis*	10	Y	UPL
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Festuca idahoensis*	75	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust ___

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species ___	x 1 =	___
FACW species ___	x 2 =	___
FAC species ___	x 3 =	___
FACU species ___	x 4 =	___
UPL species ___	x 5 =	___
Column totals ___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1]

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Yes ___ No X

Remarks:

Vegetation in adjacent wash: F. idahoensis (50%), A. tridentata (15%), Achillea millefolium (3%)

SOIL

Sampling Point: Plot 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/2	100					gr. l	dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A10) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Refusal at 4" due to bedrock. Many weathered rock fragments at the surface.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >4
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >4

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Aerial photograph

Remarks:

APPENDIX C

Ground Level Color Photographs

Photo 1. Panoramic photo of the south part of the study area (upland), taken from Plot 1 (not visible), facing north. Photo taken March 25, 2020.

Photo 2. Panoramic photo of the south-central part of the study area (upland), taken from Plot 2 (not visible), facing west. Photo taken March 25, 2020.

Photo 3. Panoramic photo of the north part of the study area (upland), taken from Plot 3 (right of center), facing northwest. Intermittent Stream A is to the left. Photo taken December 6, 2020.

Photo 4. Panoramic photo of the north part of the study area (upland), taken from Plot 4 (right of center), facing southeast. Photo taken December 6, 2020.

Photo 5. Panoramic photo of the southwest part of the study area (upland), taken from Plot 5 (right of center), facing south. Intermittent Stream C is in the background. Photo taken December 6, 2020.

Photo 6. Panoramic photo of fill over Intermittent Stream B. The view is to the southeast. Photo taken December 6, 2020.

Photo 7. View of the culvert under the dirt road, located on the forested central part of the study area. The view is to the north. Photo taken December 6, 2020.

Photo 8. View of the western terminus of Intermittent Stream B. The view is to the east. Photo taken December 6, 2020.

Photo 9. Panoramic photo from the west study area boundary, facing east. Photo taken December 6, 2020.

Photo 10. View from the northwest corner of the study area, facing southeast. Photo taken December 10, 2020.

Photo 11. View from the south-central part of the study area, facing northwest. Photo taken March 25, 2020.

Photo 12. View from the east-central border of the study area, facing west. Photo taken December 10, 2020.

APPENDIX D

Additional Tables and Information

WETS Table

WETS Station: PRINEVILLE, OR

Requested years: 1981 - 2010

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	42.8	25.4	34.1	1.12	0.53	1.25	3	2.0
Feb	48.0	26.8	37.4	1.00	0.51	1.32	3	1.9
Mar	54.7	29.9	42.3	0.87	0.57	1.03	3	0.6
Apr	60.8	32.5	46.7	0.87	0.49	1.02	3	0.2
May	68.5	39.2	53.9	1.17	0.57	1.43	3	0.0
Jun	76.4	44.2	60.3	0.92	0.45	1.16	3	0.0
Jul	85.9	47.9	66.9	0.56	0.13	0.62	1	0.0
Aug	85.4	46.6	66.0	0.34	0.15	0.44	1	0.0
Sep	77.9	40.1	59.0	0.38	0.12	0.39	1	0.0
Oct	64.9	33.6	49.3	0.83	0.55	1.12	3	0.0
Nov	49.8	29.4	39.6	1.18	0.81	1.53	4	1.1
Dec	40.9	23.8	32.4	1.44	0.59	1.65	4	2.2
Annual:					-	-		
Average	63.0	35.0	49.0	-	-	-	-	-
Total	-	-	-	10.68			33	8.0

GROWING SEASON DATES

Years with missing data:	24 deg = 9	28 deg = 8	32 deg = 5
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 21	28 deg = 22	32 deg = 25
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	5/3 to 10/2: 152 days	5/27 to 9/20: 116 days	6/23 to 9/4: 73 days
70 percent *	4/28 to 10/8: 163 days	5/22 to 9/25: 126 days	6/16 to 9/11: 87 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1897	M1.11	1.14	1.43	0.51	0.97	2.53	0.00	0.30	0.89	T	0.92	1.75	11.55
1898	0.36	0.71	0.99		1.61	0.30	0.11	0.03	0.03	0.05	2.60	0.70	7.49
1899	0.23	0.60	0.82	1.44	0.74	0.03	T	0.70	T	1.77	1.37	0.48	8.18
1900	M0.84	0.90	0.15	0.61	0.33	0.89	0.03	0.45	0.73	1.90	0.25	M0.56	7.64
1901	0.72	2.09	M0.66	T	0.37	0.10	T	T	2.42	0.05	0.15	1.25	7.81
1902	0.30	1.00	0.34	1.82	0.94	0.08	0.11	0.46	0.24	0.36	M1.56	1.55	8.76
1903	M0.94	0.39				M0.63	0.20	0.43	0.09	0.32	2.08	0.09	5.17
1904	0.43	1.19	2.14	1.66	0.58	0.15	1.74	0.25	0.43	0.67	0.46	0.94	10.64
1905	1.87		0.99	0.32	0.98	0.90	T	0.00	1.	0.	0.21	0.47	7.61

									36	51			
1906	0.75	0.36	1.25	0.44	1.23	2.10	0.81	0.10	0.55	M0.51	0.72	0.53	9.35
1907	1.14	2.67	1.06	0.96	0.81	1.01	0.25	0.99	T	0.26	0.78	M3.38	13.31
1908	0.33		T	0.33	0.99	1.07	0.74	0.23	0.18	1.30	0.38	0.48	6.03
1909	2.72	0.82	T		M0.42	0.55	0.61	0.00	1.54	0.56	2.25	M0.23	9.70
1910	MT			0.57	1.93	0.64	0.14	T	0.54	0.98	3.24	1.34	9.38
1911	1.02	0.22	0.19	0.20	1.16	1.05	0.00	0.00	0.68	1.48	0.61	0.49	7.10
1912	2.56	1.17	0.73	1.63	2.12								8.21
1913	2.56					1.29	M0.27	1.23	0.40	M0.75	M0.20	M0.20	6.90
1914	MT	MT	M0.20	1.20	0.60	0.90		0.00	0.40	1.00	0.10	0.30	4.70
1915	0.20	2.05	0.38	0.10	1.95	0.40	0.35	0.00	0.50	0.18	1.88	M0.66	8.65
1916	0.93	0.47	0.87	0.50	1.13	2.36	1.53	0.61	0.32	0.02	0.22	0.32	9.28
1917	0.08	1.12	0.54	0.76	1.48	0.04	0.15	0.00	0.73	0.00	1.64	0.69	7.23
1918	1.04	0.86	M0.56	T	1.23	0.22	0.42	0.38	0.22	1.25	0.78	0.48	7.44
1919	1.31	1.62	0.24	0.36	0.39	0.25	0.15	0.24	0.91	0.92	M0.70	1.99	9.08
1920	0.19	M0.10	0.59	0.93	0.05	0.92	0.29						3.07
1921								0.15	0.52	0.24	1.87	0.74	3.52
1922	0.60	M1.06	1.01	0.31	0.34	2.27	0.00	0.09		0.62	2.10	M2.05	10.45
1923	1.86		0.08	1.01	1.25	1.16	1.62	T	0.35	3.04	0.47	1.48	12.32
1924	0.38	0.85	0.40	T	0.01	0.25	0.00	0.35	0.75		M0.29	1.62	4.90
1925	0.71	M0.56	0.45	1.32	2.61		0.00	0.40	1.38	0.15	0.90	0.65	9.13
1926	0.45	M2.15	0.10	1.55	0.62	0.00	0.05	0.85	0.20	0.67	2.90	1.42	10.96
1927	0.85	M0.55	0.95	0.25	M0.35	M3.35		0.55	1.99	M0.80	1.32	M0.71	11.67
1928	1.45	M0.50	0.58	0.21	0.28	0.80	0.04	0.00	0.44	0.09	0.96	0.20	5.55
1929	M0.45	0.21	0.31	0.93	0.25	0.85	T	T	0.02	0.11	0.08	3.32	6.53
1930	0.95	0.30	0.19	1.29	0.86	0.03	0.00	0.57	0.90	0.46	1.06	0.46	7.07
1931	0.18	0.51	1.51	0.51	0.14	1.52	T	T	0.49	0.79	0.78	0.54	6.97
1932	1.26	0.19	1.28	0.67	2.11	0.10	0.01	0.02	0.00	0.44	1.15	0.19	7.42
1933	0.51	0.73	0.45	0.14	1.63	0.43	0.54	0.10	0.85	0.64	0.19	0.48	6.69
1934	1.02	0.53	0.61	1.15	0.35	3.18	0.34	0.01	M0.61	0.76	M1.53	0.90	10.99
1935	0.93	0.32	0.05	1.28	0.74	0.92	0.76	T	0.07	0.96	0.40	1.56	7.99
1936	1.79	0.53	0.08	1.30	1.38	1.35	0.25	0.44	1.09	0.00	0.63	0.99	9.83
1937	0.95	0.51	1.53	1.46	0.34	1.64	0.20	0.21	0.52	0.72	1.44	1.12	10.64
1938	0.61	2.12	0.93	0.92	1.02	0.74	0.27	T	0.42	0.63	0.70	0.31	8.67
1939	0.20	0.72	0.38	0.10	0.39	0.46	0.26	0.19	0.64	0.50	0.06	1.47	5.37
1940	1.15	1.25	1.59	1.29	0.13	0.11	1.34	T	1.	0.	0.82	0.45	10.

									87	96			96
1941	0.67	0.59	0.25	0.73	1.57	1.40	0.63	2.41	M0.68	1.01	1.73	1.34	13.01
1942	1.51	M0.69	0.24	0.67	2.23	0.97	0.30	0.26	0.28	0.86	2.93	1.95	12.89
1943	1.78	0.19	0.88	0.98	0.23	1.95	T	0.56	0.00	2.25	0.73	0.37	9.92
1944	0.42	1.16	0.13	1.06	0.60	2.07	0.18	0.63	0.71	0.49	1.52	1.04	10.01
1945	1.20	0.76	0.29	0.16	3.07	0.06	T	0.12	0.48	0.91	2.13	1.83	11.01
1946	1.12	0.38	0.70	0.06	0.74	0.83	0.09	0.83	0.28	1.25	0.81	0.09	7.18
1947	0.37	0.60	0.88	0.73	0.94	1.60	1.10	0.67	0.30	1.28	1.32	0.70	10.49
1948	0.99	M0.70	0.35	0.92	2.42	2.03	0.41	0.41	0.91	0.27	0.85	1.80	12.06
1949	0.17	0.34	0.77	0.22	0.73	0.60	0.00	0.01	0.15	0.12	1.44	0.26	4.81
1950	1.97	0.37	0.35	0.67	0.13	2.68	0.00	0.06	0.10	2.62	1.18	1.95	12.08
1951	0.81	0.90	0.68	0.65	1.50	0.05	0.30	0.10	0.34	1.76	1.84	1.49	10.42
1952	0.48	1.42	0.28	0.53	M0.49	2.97	T	0.11	0.51	T	0.07	1.66	8.52
1953	1.30	2.10	0.42	0.62	1.88	1.70	0.00	1.87	0.27	0.95	2.27	1.89	15.27
1954	1.32	0.20	0.52	0.18	1.37	1.47	T	0.41	0.62	0.44	0.46	0.43	7.42
1955	0.70	0.27	0.32	0.70	M0.39	0.24	0.51	0.00	0.38	0.73	1.25	3.05	8.54
1956	2.66	0.73	0.20	0.19	3.67	1.19	0.31	0.09	0.09	1.29	0.36	0.52	11.30
1957	0.81	0.60	2.85	0.82	2.20	0.05	0.02	0.17	1.68	1.65	0.42	2.57	13.84
1958	1.92	2.22	0.40	0.86	2.07	2.95	0.70	0.15	0.37	0.04	1.50	1.17	14.35
1959	1.22	0.85	0.47	0.16	1.02	0.56	0.15	0.07	0.90	0.72	0.29	0.26	6.67
1960	1.50	0.75	2.00	0.78	1.06	0.02	0.12	0.12	0.10	0.26	1.79	0.52	9.02
1961	0.46	1.86	0.55	0.25	1.37	0.99	0.05	0.70	0.02	0.65	3.05	1.48	11.43
1962	0.48	0.68	0.61	0.24	2.39	0.19	0.00	1.31	0.76	M2.29	1.75	1.78	12.48
1963	0.82	1.25	0.43		1.67	1.00	0.03		0.97		2.22	1.11	9.50
1964	1.23	0.01	0.15	0.08		1.48	0.45	0.36	0.08	0.41	1.94	6.00	12.19
1965	1.29	0.07	0.04	0.95	0.37	1.35	0.47	1.71	0.08	0.38	1.75	0.09	8.55
1966	1.51	0.27	0.56	0.04	0.15	0.66	1.05	0.03	0.58	0.53		2.21	7.59
1967	2.24	0.07	0.48	1.99	0.13	2.35	0.00	T	0.13	0.71	0.30	0.30	8.70
1968	0.57	1.00	0.06	0.17	1.11	0.54	0.15		0.25		2.58	1.53	7.96
1969	1.10	0.48	0.39	0.52	0.98	2.93	0.17	0.00	0.58	1.13	0.31	1.64	10.23
1970	2.85	0.62	0.67	0.31	0.20	1.18	0.04	0.06	0.38	0.38	2.09	0.50	9.28
1971	2.21	0.47	0.92	0.22	1.34	0.48	0.24	0.11	0.51	0.73	1.61	1.49	10.33
1972	1.56	0.32	1.34	0.31	0.92	1.17	T	0.18	0.43	1.05	0.60	1.40	9.28
1973	0.54	0.62	0.37	0.48	0.90	0.02	0.01	0.08	0.95	1.11	2.90	1.90	9.88
1974	0.48	0.50	1.87	0.53	0.22	0.16	0.34	0.00	0.	0.	0.57	0.87	5.99

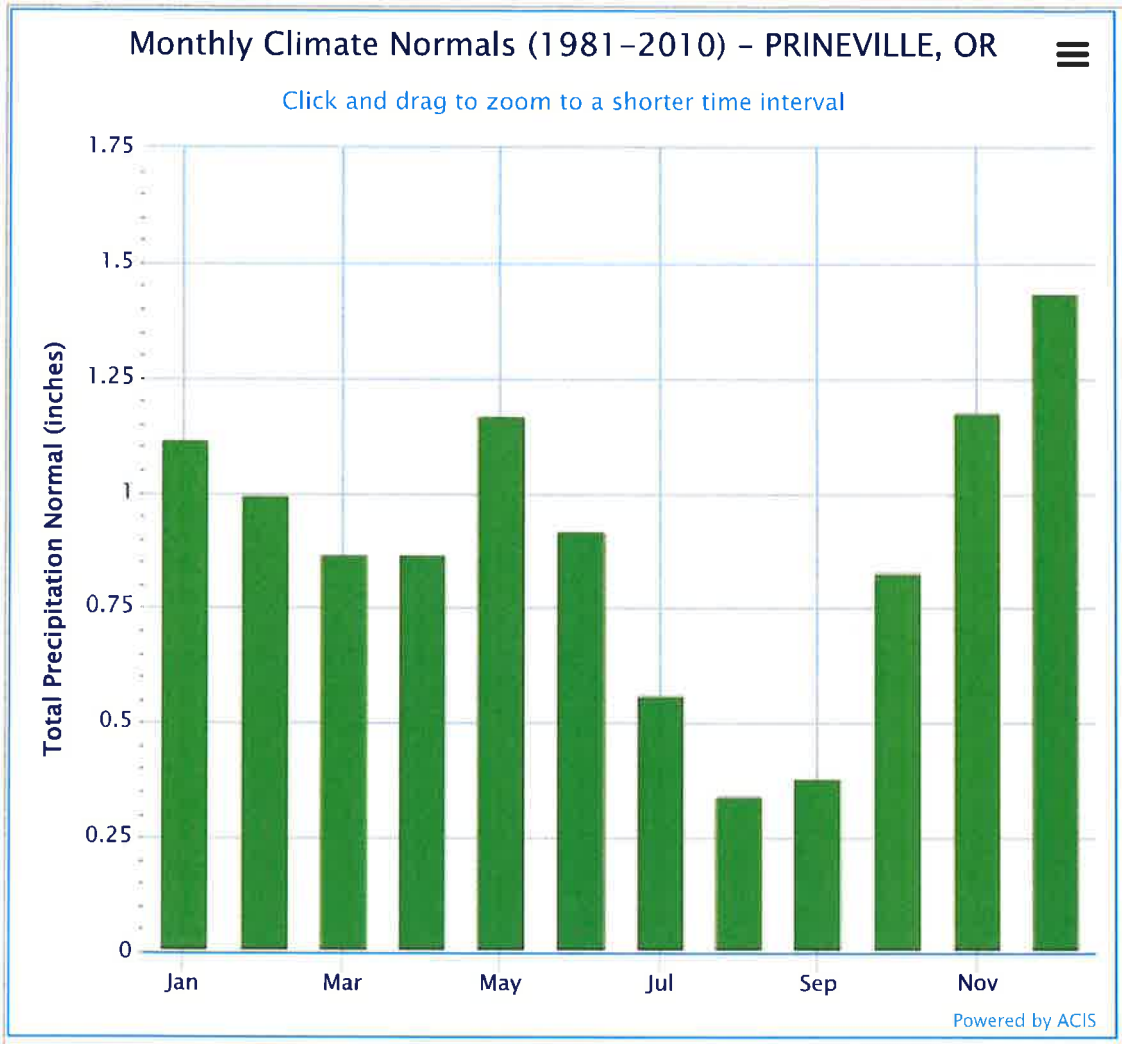
									00	45			
1975	0.87	1.44	1.37	0.29	0.03	1.17	1.50	1.28	0.00	1.17	0.51	1.79	11.42
1976	1.55	0.88	0.35	1.26	0.13	0.89	0.16	4.30	0.10	0.02	0.25	0.02	9.91
1977	0.30	0.60	0.26	T	2.59	0.15	0.06	0.73	0.99	0.45	2.14	2.20	10.47
1978	2.22	0.86	1.55	2.43	0.61	1.39	0.46	0.65	0.53	0.02	1.13	0.76	12.61
1979	1.82	1.17	1.50	0.82	0.88			0.45	0.13	1.62	2.35	0.32	11.06
1980	1.80	1.67	0.46	1.04	1.05	1.66	0.18	0.00	0.81	0.95	1.03	1.72	12.37
1981	0.91	1.85	1.41	1.07	1.52	1.75	0.17	0.11	1.06	0.89	1.68	M4.02	16.44
1982	M0.81	M0.58	0.28	0.57	0.48	1.86	0.89	0.27	1.04	1.27	0.55	M1.49	10.09
1983	1.28	2.06	1.71	0.52	2.26	0.53	1.61	1.55	0.09	1.56	M1.63	M2.91	17.71
1984	0.37	1.09	1.28	1.06	0.28	1.24	0.32	0.39	0.38	1.22	3.02	0.56	11.21
1985	0.21	M0.99	0.58	0.55	0.95	0.49	0.09	T	0.61	0.45	0.73	1.01	6.66
1986	M1.05	M2.16	0.79	0.37	0.62	0.16	0.40	T	1.88	0.55	0.49	0.15	8.62
1987	0.89	1.17	0.87	0.22	0.94	0.27	3.96	0.21			0.60	1.90	11.03
1988	1.33	0.38	0.61	1.25	0.70	0.67	0.00	0.11	0.06	T	2.54	0.18	7.83
1989	1.61	0.72	1.98	2.57	0.87	0.23	0.18	0.30	0.21	0.13	0.38	0.14	9.32
1990	0.83	0.01	0.95	0.56	1.10	0.29	0.60	0.68	0.09	0.64	0.60	0.69	7.04
1991	0.53	0.32	1.20	0.31	1.61	1.97	0.26	0.18	0.01	0.80	1.92	0.87	9.98
1992	0.30	0.74	0.22	1.41	0.45	2.00	1.37	0.00	0.24	1.85	1.26	1.77	11.61
1993	M1.62	0.92	1.73	0.43	2.03	0.83	0.52	0.86	0.00	0.08	0.91	0.24	10.17
1994	0.05	1.08	0.78	0.45	1.08	0.58	T	0.00	0.43	1.10	M0.79	0.33	6.67
1995	2.78	0.82	0.66	1.60	1.01	1.47	3.70	M0.05	M0.38	0.68	1.63	2.02	16.80
1996	1.27	2.96	1.00	M0.87	1.17	M0.13	M0.14	0.07	M0.46	0.64	3.21	M2.27	14.19
1997	M0.76	M0.39	M0.37	M1.32	M0.92	1.90	0.91	0.02	0.83	M0.63	M0.60	0.42	9.07
1998	M1.75	0.16	0.40	0.81	4.40	1.64	0.73	0.26	0.06	1.85	1.62	1.60	15.28
1999	0.71	1.34	0.75	0.09	0.28	0.08	0.12	0.76	0.00	1.04	1.17	0.28	6.62
2000	1.89	1.84	M0.96	0.61	0.36	T	M0.00	M0.00	0.00	1.03	M0.79	M0.00	7.48
2001	MT	M0.45	0.35	M0.38	0.59	0.61	M0.20	M0.00	M0.00	M0.00		M0.01	2.59
2002	M0.10	M0.17	M0.47	M0.61	M0.90	M0.13	0.01	M0.93	M0.32	M0.31	M0.19	M1.75	5.89
2003	M1.94	M0.80	M0.77	M1.15	M1.25	0.06	M0.02	0.66	0.50	0.41	M1.33	2.08	10.97
2004	M1.65	M1.07	0.51	0.69	3.20	1.68	0.22	1.66	0.14	1.78	0.59	2.41	15.60
2005	M0.05	M0.00	M0.46	M0.26	M1.21	M0.63	M0.05	M0.09	M0.03	M0.12	M0.39	M0.19	3.48
2006	M0.64	M0.19	M0.26	M0.15	M0.15	M1.71	M0.00	0.23	M0.19	M0.40	M0.59	M0.87	5.38
2007	M0.41	M0.54	M0.24	M0.10	M0.18	M1.38	0.09	M0.60	M0.06	1.64	M0.12	M0.23	5.59
2008	M0.18	M0.07	M0.23	M0.32	M0.80	M0.00	0.00	0.68	M0.	M0.	M0.	M0.	2.99

									00	30	34	07	
2009	M0.11	M0.29	M0.29	M1.13	M0.02	1.94	0.03	0.31	0.10	0.86	0.55	0.77	6.40
2010	M1.36	M0.60	0.74	M1.61	M1.86	1.07	0.03	0.02	1.24	1.45	1.24	2.98	14.20
2011	M0.62	1.31	M0.78	M0.33	M0.50	0.85	0.25	0.13	0.03	M0.42	0.21	0.76	6.19
2012	1.19	M0.45	M0.69	M1.88	0.79	M0.83	0.18	0.02	0.00	M1.22	M0.53	M0.13	7.91
2013	0.60	0.06	M0.38	M0.48	1.45	1.24		M0.46	M1.26	M0.21	M0.23	M0.37	6.74
2014	0.66	1.91	M1.26	M1.07	0.51	0.42	0.00	M0.23	M0.45	M0.88	1.76	M0.57	9.72
2015	M0.27	M0.48	M0.83	M0.19	M1.19	M0.32	1.05	0.03	0.08	M0.60	M1.00	M2.19	8.23
2016	1.54	0.27	M0.88	M0.27	M2.46	0.91	1.22	0.01	M0.09	1.92	0.38	M1.66	11.61
2017	M2.51	M1.23	0.70	1.59	M0.22	0.34	0.00	M0.00			0.66	0.25	7.50
2018	0.65	0.38	1.05	0.93	0.56	0.85	0.00	0.04	0.03	0.61	0.87	0.63	6.60
2019	1.10	3.01	0.78	1.09	2.40	0.92	0.13	1.95	1.39	0.35	0.38	0.83	14.33
2020	1.06	0.44	0.70	0.60	2.35	0.44	0.04	0.02	0.29	0.23	M1.66		7.83

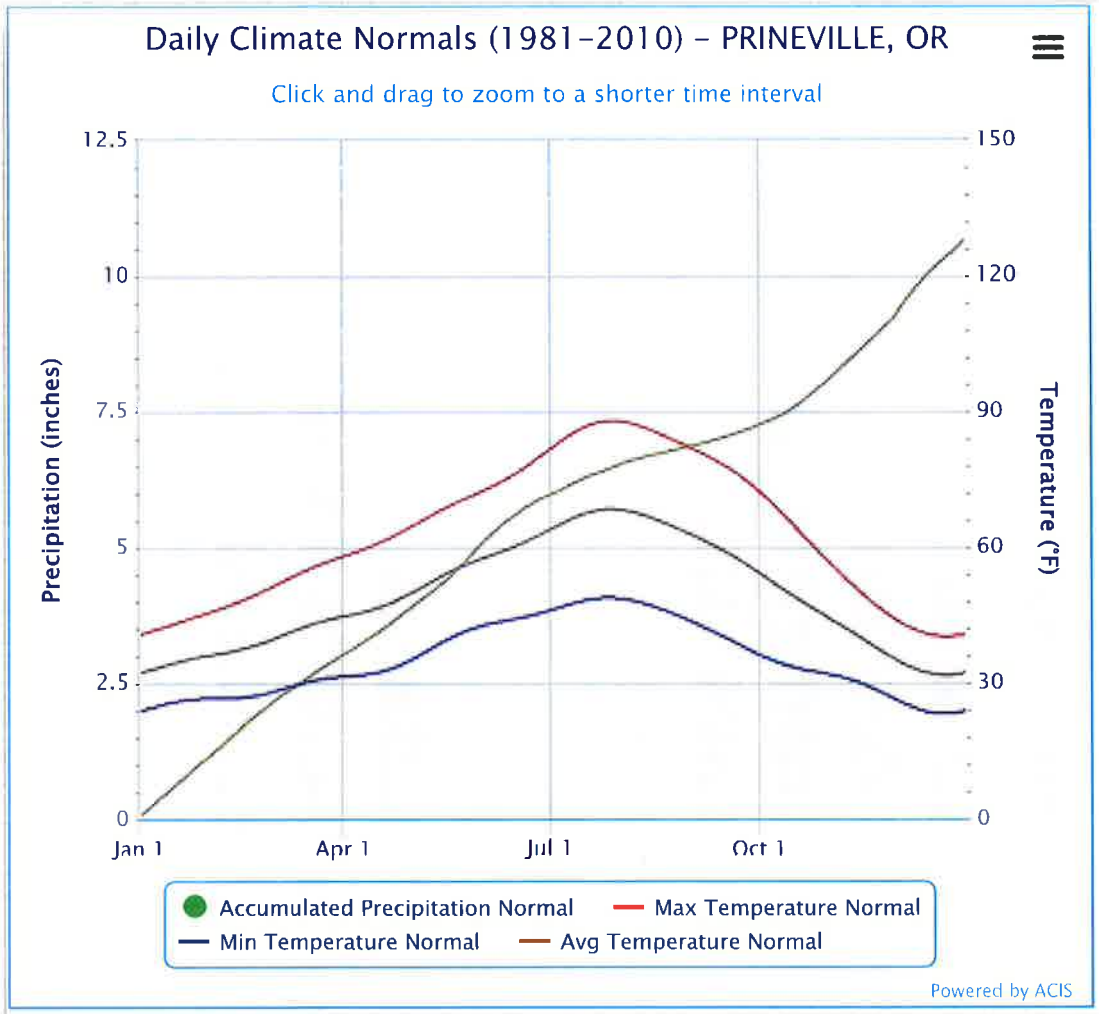
Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22



Month	Total Precipitation Normal (inches)
January	1.12
February	1.00
March	0.87
April	0.87
May	1.17
June	0.92
July	0.56
August	0.34
September	0.38
October	0.83
November	1.18
December	1.44
Annual	10.68



Daily Precipitation Normal (inches)												
Day	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.03	0.03	0.03	0.02	0.03	0.04	0.02	0.02	0.01	0.02	0.03	0.07
2	0.04	0.03	0.04	0.03	0.03	0.04	0.01	0.02	0.01	0.02	0.04	0.06
3	0.03	0.04	0.03	0.03	0.04	0.04	0.02	0.01	0.01	0.01	0.04	0.06
4	0.04	0.04	0.03	0.02	0.03	0.04	0.02	0.01	0.01	0.02	0.03	0.06
5	0.03	0.03	0.03	0.03	0.03	0.04	0.02	0.02	0.01	0.02	0.04	0.06
6	0.04	0.04	0.02	0.02	0.03	0.04	0.02	0.01	0.01	0.01	0.04	0.06
7	0.03	0.04	0.03	0.03	0.03	0.04	0.02	0.01	0.01	0.02	0.04	0.05
8	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.01	0.01	0.02	0.04	0.06
9	0.04	0.04	0.02	0.03	0.04	0.04	0.03	0.01	0.01	0.02	0.04	0.05
10	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.01	0.01	0.02	0.04	0.05
11	0.04	0.03	0.03	0.03	0.03	0.04	0.02	0.01	0.02	0.02	0.04	0.04
12	0.03	0.04	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.02	0.04	0.05
13	0.03	0.04	0.03	0.03	0.04	0.03	0.02	0.01	0.01	0.03	0.04	0.05
14	0.04	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.01	0.02	0.04	0.04
15	0.04	0.04	0.03	0.03	0.04	0.03	0.02	0.00	0.02	0.03	0.03	0.05
16	0.03	0.04	0.03	0.02	0.03	0.03	0.02	0.01	0.01	0.03	0.04	0.04
	0.04	0.03	0.03	0.03	0.04	0.03	0.01	0.01	0.01	0.03	0.04	0.04

17												
18	0.04	0.04	0.03	0.03	0.04	0.04	0.02	0.01	0.02	0.03	0.04	0.04
19	0.03	0.04	0.03	0.03	0.04	0.03	0.02	0.01	0.01	0.03	0.04	0.04
20	0.04	0.03	0.03	0.03	0.04	0.02	0.01	0.01	0.01	0.03	0.04	0.04
21	0.04	0.04	0.03	0.03	0.04	0.03	0.02	0.01	0.02	0.03	0.04	0.04
22	0.04	0.03	0.03	0.03	0.04	0.02	0.01	0.01	0.01	0.04	0.04	0.04
23	0.04	0.03	0.02	0.04	0.05	0.03	0.02	0.01	0.02	0.03	0.04	0.03
24	0.04	0.04	0.03	0.03	0.04	0.02	0.01	0.01	0.01	0.03	0.05	0.04
25	0.03	0.03	0.02	0.03	0.05	0.03	0.02	0.01	0.01	0.03	0.04	0.03
26	0.04	0.03	0.03	0.04	0.04	0.02	0.02	0.01	0.02	0.03	0.04	0.04
27	0.03	0.04	0.03	0.03	0.05	0.02	0.01	0.01	0.01	0.04	0.04	0.04
28	0.04	0.03	0.02	0.03	0.04	0.02	0.02	0.01	0.02	0.04	0.04	0.04
29	0.03	-	0.03	0.03	0.05	0.02	0.02	0.01	0.01	0.03	0.04	0.04
30	0.03	-	0.02	0.03	0.04	0.02	0.01	0.01	0.02	0.04	0.04	0.04
31	0.04	-	0.03	-	0.05	-	0.02	0.01	-	0.04	-	0.05
Max Temperature Normal (°F)												
Day	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	41	45	51	58	65	72	82	88	82	72	57	44
2	41	46	52	58	65	73	82	88	82	72	56	43
3	41	46	52	58	65	73	83	88	82	72	56	43
4	41	46	52	58	65	73	83	88	81	71	55	43
5	41	46	52	59	66	73	83	88	81	71	55	42
6	41	46	53	59	66	74	84	87	81	70	54	42
7	41	46	53	59	66	74	84	87	81	70	54	42
8	42	47	53	59	67	74	84	87	80	69	53	42
9	42	47	53	59	67	74	85	87	80	69	53	41
10	42	47	54	60	67	75	85	87	80	68	52	41
11	42	47	54	60	67	75	85	87	80	68	52	41
12	42	47	54	60	68	75	86	86	79	67	51	41
13	42	48	54	60	68	75	86	86	79	67	51	41
14	42	48	54	60	68	76	86	86	79	66	50	41
15	43	48	55	61	68	76	86	86	78	66	50	40
16	43	48	55	61	69	76	87	86	78	65	49	40
17	43	48	55	61	69	77	87	85	78	65	49	40
18	43	49	55	61	69	77	87	85	77	64	49	40
19	43	49	56	61	69	77	87	85	77	63	48	40
20	43	49	56	62	70	78	87	85	77	63	48	40
21	44	49	56	62	70	78	88	85	76	62	47	40
22	44	50	56	62	70	78	88	84	76	62	47	40
23	44	50	56	62	70	79	88	84	76	61	46	40
24	44	50	57	63	71	79	88	84	75	61	46	40
25	44	50	57	63	71	79	88	84	75	60	46	40
26	44	51	57	63	71	80	88	83	75	60	45	40
27	45	51	57	64	71	80	88	83	74	59	45	40
28	45	51	57	64	71	81	88	83	74	59	45	40

29	45	-	57	64	72	81	88	83	73	58	44	40
30	45	-	58	64	72	81	88	82	73	58	44	40
31	45	-	58	-	72	-	88	82	-	57	-	40

Min Temperature Normal (°F)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	24	26	28	31	35	43	46	49	44	36	32	26
2	24	26	28	31	35	43	46	49	43	36	32	26
3	24	26	28	31	36	43	46	49	43	36	32	26
4	24	26	28	31	36	43	47	48	43	36	31	25
5	24	26	29	31	36	43	47	48	43	35	31	25
6	24	26	29	32	37	43	47	48	43	35	31	25
7	25	26	29	32	37	43	47	48	42	35	31	25
8	25	26	29	32	37	43	47	48	42	35	31	24
9	25	27	29	32	37	44	47	48	42	35	31	24
10	25	27	29	32	38	44	47	48	42	34	31	24
11	25	27	29	32	38	44	48	48	41	34	31	24
12	25	27	30	32	38	44	48	47	41	34	30	24
13	25	27	30	32	39	44	48	47	41	34	30	24
14	25	27	30	32	39	44	48	47	41	34	30	23
15	26	27	30	32	39	44	48	47	40	34	30	23
16	26	27	30	32	39	44	48	47	40	33	30	23
17	26	27	30	32	40	44	48	47	40	33	29	23
18	26	27	30	33	40	44	48	46	40	33	29	23
19	26	27	30	33	40	45	49	46	39	33	29	23
20	26	27	31	33	40	45	49	46	39	33	29	23
21	26	27	31	33	41	45	49	46	39	33	29	23
22	26	27	31	33	41	45	49	46	39	33	28	23
23	26	27	31	33	41	45	49	46	38	33	28	23
24	26	27	31	34	41	45	49	45	38	32	28	23
25	26	27	31	34	42	45	49	45	38	32	28	23
26	26	28	31	34	42	45	49	45	37	32	27	23
27	26	28	31	34	42	46	49	45	37	32	27	23
28	26	28	31	34	42	46	49	45	37	32	27	23
29	26	-	31	35	42	46	49	44	37	32	27	23
30	26	-	31	35	42	46	49	44	36	32	26	24
31	26	-	31	-	43	-	49	44	-	32	-	24

Avg Temperature Normal (°F)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	32	36	40	45	50	58	64	68	63	54	44	35
2	32	36	40	45	50	58	64	68	63	54	44	35
3	32	36	40	45	50	58	64	68	62	54	44	34
4	33	36	40	45	51	58	65	68	62	53	43	34
5	33	36	40	45	51	58	65	68	62	53	43	34
6	33	36	41	45	51	58	65	68	62	53	43	33
7	33	36	41	45	52	59	65	68	61	52	42	33

8	33	37	41	45	52	59	66	68	61	52	42	33
9	33	37	41	46	52	59	66	67	61	52	42	33
10	33	37	41	46	52	59	66	67	61	51	41	33
11	34	37	42	46	53	59	66	67	60	51	41	32
12	34	37	42	46	53	59	67	67	60	51	41	32
13	34	37	42	46	53	60	67	67	60	50	40	32
14	34	37	42	46	54	60	67	67	60	50	40	32
15	34	37	42	46	54	60	67	66	59	50	40	32
16	34	37	43	47	54	60	67	66	59	49	40	32
17	34	38	43	47	54	61	68	66	59	49	39	32
18	35	38	43	47	55	61	68	66	59	49	39	32
19	35	38	43	47	55	61	68	66	58	48	39	32
20	35	38	43	47	55	61	68	65	58	48	38	32
21	35	38	43	47	55	61	68	65	58	48	38	32
22	35	38	43	48	56	62	68	65	57	47	38	32
23	35	39	44	48	56	62	68	65	57	47	37	32
24	35	39	44	48	56	62	68	65	57	47	37	32
25	35	39	44	48	56	62	68	64	56	46	37	32
26	35	39	44	49	56	63	68	64	56	46	36	32
27	36	39	44	49	57	63	68	64	56	46	36	32
28	36	39	44	49	57	63	68	64	55	45	36	32
29	36	-	44	49	57	63	68	64	55	45	35	32
30	36	-	44	50	57	64	68	63	55	45	35	32
31	36	-	45	-	57	-	68	63	-	44	-	32

Climatological Data for PRINEVILLE, OR - October 2019

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2019-10-01	46	30	38.0	-16.3	27	0	0.00	0.0	0
2019-10-02	48	24	36.0	-18.0	29	0	0.00	0.0	0
2019-10-03	61	29	45.0	-8.6	20	0	0.00	0.0	0
2019-10-04	60	34	47.0	-6.3	18	0	0.01	0.0	0
2019-10-05	59	29	44.0	-8.9	21	0	0.00	0.0	0
2019-10-06	61	28	44.5	-8.1	20	0	0.00	0.0	0
2019-10-07	71	28	49.5	-2.7	15	0	0.00	0.0	0
2019-10-08	76	32	54.0	2.1	11	0	0.00	0.0	0
2019-10-09	59	27	43.0	-8.5	22	0	0.01	0.0	0
2019-10-10	49	18	33.5	-17.7	31	0	0.00	0.0	0
2019-10-11	56	19	37.5	-13.4	27	0	0.00	0.0	0
2019-10-12	65	21	43.0	-7.5	22	0	0.00	0.0	0
2019-10-13	66	24	45.0	-5.2	20	0	0.04	0.0	0
2019-10-14	66	32	49.0	-0.8	16	0	0.00	0.0	0
2019-10-15	64	29	46.5	-3.0	18	0	0.00	0.0	0
2019-10-16	69	30	49.5	0.3	15	0	0.00	0.0	0
2019-10-17	68	40	54.0	5.2	11	0	0.06	0.0	0
2019-10-18	56	40	48.0	-0.5	17	0	0.02	0.0	0
2019-10-19	55	39	47.0	-1.2	18	0	0.16	0.0	0
2019-10-20	49	31	40.0	-7.9	25	0	0.04	0.0	0
2019-10-21	54	35	44.5	-3.0	20	0	0.01	0.0	0
2019-10-22	63	44	53.5	6.3	11	0	0.00	0.0	0
2019-10-23	69	28	48.5	1.6	16	0	0.00	0.0	0
2019-10-24	63	28	45.5	-1.1	19	0	0.00	0.0	0
2019-10-25	72	29	50.5	4.2	14	0	0.00	0.0	0
2019-10-26	76	27	51.5	5.5	13	0	0.00	0.0	0
2019-10-27	51	22	36.5	-9.2	28	0	T	0.0	0
2019-10-28	51	18	34.5	-10.9	30	0	0.00	0.0	0
2019-10-29	54	18	36.0	-9.1	29	0	0.00	0.0	0
2019-10-30	37	10	23.5	-21.3	41	0	0.00	0.0	0
2019-10-31	54	10	32.0	-12.4	33	0	0.00	0.0	0
Sum	1848	853	-	-	657	0	0.35	0.0	-
Average	59.6	27.5	43.6	-5.7	-	-	-	-	0.0
Normal	64.9	33.6	49.3	-	489	1	0.83	0.0	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : unknown
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - November 2019

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2019-11-01	62	19	40.5	-3.6	24	0	0.00	0.0	0
2019-11-02	57	19	38.0	-5.8	27	0	0.00	0.0	0
2019-11-03	66	19	42.5	-1.0	22	0	0.00	0.0	0
2019-11-04	68	27	47.5	4.3	17	0	0.00	0.0	0
2019-11-05	71	26	48.5	5.6	16	0	0.00	0.0	0
2019-11-06	69	24	46.5	3.9	18	0	0.00	0.0	0
2019-11-07	57	21	39.0	-3.3	26	0	0.00	0.0	0
2019-11-08	58	21	39.5	-2.5	25	0	0.00	0.0	0
2019-11-09	72	27	49.5	7.8	15	0	0.00	0.0	0
2019-11-10	71	33	52.0	10.6	13	0	0.00	0.0	0
2019-11-11	66	32	49.0	7.9	16	0	0.00	0.0	0
2019-11-12	60	31	45.5	4.8	19	0	0.00	0.0	0
2019-11-13	58	29	43.5	3.1	21	0	0.00	0.0	0
2019-11-14	63	32	47.5	7.4	17	0	T	0.0	0
2019-11-15	50	37	43.5	3.7	21	0	0.00	0.0	0
2019-11-16	57	27	42.0	2.5	23	0	T	0.0	0
2019-11-17	62	30	46.0	6.9	19	0	0.00	0.0	0
2019-11-18	65	31	48.0	9.2	17	0	0.00	0.0	0
2019-11-19	61	33	47.0	8.5	18	0	0.00	0.0	0
2019-11-20	48	31	39.5	1.3	25	0	0.07	0.0	0
2019-11-21	40	19	29.5	-8.3	35	0	0.00	0.0	0
2019-11-22	49	18	33.5	-4.0	31	0	0.00	0.0	0
2019-11-23	56	22	39.0	1.8	26	0	0.00	0.0	0
2019-11-24	59	26	42.5	5.6	22	0	0.00	0.0	0
2019-11-25	55	28	41.5	5.0	23	0	0.02	0.5	1
2019-11-26	45	23	34.0	-2.2	31	0	0.01	T	T
2019-11-27	34	27	30.5	-5.4	34	0	0.10	1.8	2
2019-11-28	31	24	27.5	-8.1	37	0	**0.17**	**2.5**	4
2019-11-29	27	17	22.0	-13.3	43	0	0.01	0.1	3
2019-11-30	28	4	16.0	-19.0	49	0	0.00	0.0	2
Sum	1665	757	-	-	730	0	0.38	4.9	-
Average	55.5	25.2	40.4	0.8	-	-	-	-	0.4
Normal	49.8	29.4	39.6	-	762	0	1.18	1.1	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : unknown
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - December 2019

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2019-12-01	34	7	20.5	-14.2	44	0	0.05	0.6	3
2019-12-02	45	19	32.0	-2.5	33	0	0.00	0.0	1
2019-12-03	50	21	35.5	1.3	29	0	0.00	0.0	T
2019-12-04	55	24	39.5	5.6	25	0	0.00	0.0	T
2019-12-05	50	22	36.0	2.3	29	0	0.00	0.0	0
2019-12-06	50	26	38.0	4.6	27	0	0.00	0.0	0
2019-12-07	47	39	43.0	9.8	22	0	0.09	0.0	0
2019-12-08	50	34	42.0	9.0	23	0	0.04	0.0	0
2019-12-09	52	28	40.0	7.2	25	0	0.00	0.0	0
2019-12-10	50	24	37.0	4.4	28	0	0.00	0.0	0
2019-12-11	47	24	35.5	3.1	29	0	0.01	0.0	0
2019-12-12	46	34	40.0	7.7	25	0	0.08	0.0	0
2019-12-13	52	33	42.5	10.4	22	0	0.38	0.0	0
2019-12-14	40	29	34.5	2.5	30	0	0.10	0.0	0
2019-12-15	41	19	30.0	-1.9	35	0	0.00	0.0	0
2019-12-16	41	21	31.0	-0.8	34	0	0.00	0.0	0
2019-12-17	41	22	31.5	-0.2	33	0	0.00	0.0	0
2019-12-18	38	25	31.5	-0.1	33	0	0.00	0.0	0
2019-12-19	41	28	34.5	2.9	30	0	0.04	0.0	0
2019-12-20	51	34	42.5	11.0	22	0	0.03	0.0	0
2019-12-21	57	48	52.5	21.0	12	0	0.00	0.0	0
2019-12-22	58	29	43.5	12.0	21	0	0.00	0.0	0
2019-12-23	40	29	34.5	3.0	30	0	0.01	T	T
2019-12-24	45	M	M	M	M	M	0.00	0.0	0
2019-12-25	M	M	M	M	M	M	0.00	0.0	0
2019-12-26	M	M	M	M	M	M	T	T	T
2019-12-27	M	M	M	M	M	M	0.00	0.0	0
2019-12-28	41	22	31.5	-0.2	33	0	0.00	0.0	0
2019-12-29	51	26	38.5	6.7	26	0	T	0.0	0
2019-12-30	39	29	34.0	2.1	31	0	0.00	0.0	0
2019-12-31	34	29	31.5	-0.5	33	0	0.00	0.0	0
Sum	1286	725	-	-	764	0	0.83	0.6	-
Average	45.9	26.9	36.4	4.1	-	-	-	-	0.1
Normal	40.9	23.8	32.3	-	1012	0	1.44	2.2	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : unknown
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - January 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-01-01	53	34	43.5	11.4	21	0	0.11	0.0	0
2020-01-02	49	30	39.5	7.3	25	0	T	0.0	0
2020-01-03	46	26	36.0	3.6	29	0	0.00	0.0	0
2020-01-04	60	28	44.0	11.5	21	0	0.00	0.0	0
2020-01-05	45	31	38.0	5.4	27	0	0.00	0.0	0
2020-01-06	45	25	35.0	2.2	30	0	0.00	0.0	0
2020-01-07	53	32	42.5	9.6	22	0	0.00	0.0	0
2020-01-08	54	29	41.5	8.5	23	0	T	T	T
2020-01-09	42	26	34.0	0.8	31	0	0.05	0.1	T
2020-01-10	37	25	31.0	-2.3	34	0	0.00	0.0	0
2020-01-11	48	31	39.5	6.0	25	0	0.03	0.0	0
2020-01-12	41	32	36.5	2.9	28	0	0.01	0.1	T
2020-01-13	44	23	33.5	-0.3	31	0	0.07	0.3	T
2020-01-14	38	23	30.5	-3.4	34	0	0.18	1.9	2
2020-01-15	34	7	20.5	-13.6	44	0	T	T	2
2020-01-16	41	23	32.0	-2.2	33	0	T	0.0	1
2020-01-17	35	15	25.0	-9.3	40	0	0.06	T	1
2020-01-18	39	18	28.5	-6.0	36	0	T	T	1
2020-01-19	48	28	38.0	3.4	27	0	T	0.0	0
2020-01-20	54	33	43.5	8.8	21	0	0.00	0.0	0
2020-01-21	52	36	44.0	9.2	21	0	0.03	0.0	0
2020-01-22	47	30	38.5	3.6	26	0	0.03	0.0	0
2020-01-23	49	32	40.5	5.4	24	0	T	0.0	0
2020-01-24	55	30	42.5	7.3	22	0	0.13	0.0	0
2020-01-25	53	31	42.0	6.7	23	0	0.06	0.0	0
2020-01-26	58	38	48.0	12.6	17	0	0.11	0.0	0
2020-01-27	49	31	40.0	4.5	25	0	T	0.0	0
2020-01-28	49	32	40.5	4.9	24	0	0.06	0.0	0
2020-01-29	48	29	38.5	2.8	26	0	0.06	0.0	0
2020-01-30	45	32	38.5	2.8	26	0	0.07	0.0	0
2020-01-31	53	34	43.5	7.7	21	0	0.00	0.0	0
Sum	1464	874	-	-	837	0	1.06	2.4	-
Average	47.2	28.2	37.7	3.6	-	-	-	-	0.2
Normal	42.8	25.4	34.1	-	958	0	1.12	2.0	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : unknown
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - February 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-02-01	60	34	47.0	11.1	18	0	0.00	0.0	0
2020-02-02	59	31	45.0	9.0	20	0	0.12	T	T
2020-02-03	38	16	27.0	-9.1	38	0	T	T	T
2020-02-04	38	16	27.0	-9.2	38	0	0.00	0.0	0
2020-02-05	32	17	24.5	-11.8	40	0	0.05	0.5	1
2020-02-06	47	32	39.5	3.2	25	0	0.00	0.0	0
2020-02-07	56	38	47.0	10.6	18	0	0.00	0.0	0
2020-02-08	60	30	45.0	8.5	20	0	0.00	0.0	0
2020-02-09	44	21	32.5	-4.1	32	0	T	0.0	0
2020-02-10	47	19	33.0	-3.7	32	0	0.00	0.0	0
2020-02-11	50	21	35.5	-1.3	29	0	0.00	0.0	0
2020-02-12	54	21	37.5	0.6	27	0	0.00	0.0	0
2020-02-13	53	18	35.5	-1.6	29	0	0.00	0.0	0
2020-02-14	61	21	41.0	3.8	24	0	T	0.0	0
2020-02-15	48	31	39.5	2.2	25	0	0.02	0.1	T
2020-02-16	39	32	35.5	-1.9	29	0	0.25	0.0	0
2020-02-17	49	26	37.5	-0.1	27	0	0.00	0.0	0
2020-02-18	45	16	30.5	-7.2	34	0	0.00	0.0	0
2020-02-19	48	16	32.0	-5.9	33	0	0.00	0.0	0
2020-02-20	51	19	35.0	-3.0	30	0	0.00	0.0	0
2020-02-21	55	21	38.0	-0.2	27	0	0.00	0.0	0
2020-02-22	62	24	43.0	4.7	22	0	0.00	0.0	0
2020-02-23	60	27	43.5	5.0	21	0	0.00	0.0	0
2020-02-24	57	23	40.0	1.3	25	0	T	0.0	0
2020-02-25	48	21	34.5	-4.3	30	0	0.00	0.0	0
2020-02-26	62	25	43.5	4.5	21	0	0.00	0.0	0
2020-02-27	57	23	40.0	0.8	25	0	0.00	0.0	0
2020-02-28	67	26	46.5	7.1	18	0	0.00	0.0	0
2020-02-29	70	27	48.5	9.0	16	0	0.00	0.0	0
Sum	1517	692	-	-	773	0	0.44	0.6	-
Average	52.3	23.9	38.1	0.7	-	-	-	-	0.0
Normal	48.0	26.8	37.4	-	773	0	1.00	1.9	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : unknown
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - March 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-03-01	47	23	35.0	-4.6	30	0	0.00	0.0	0
2020-03-02	47	25	36.0	-3.8	29	0	0.00	0.0	0
2020-03-03	56	29	42.5	2.5	22	0	0.00	0.0	0
2020-03-04	60	27	43.5	3.3	21	0	0.00	0.0	0
2020-03-05	60	27	43.5	3.1	21	0	0.00	0.0	0
2020-03-06	71	30	50.5	9.9	14	0	0.00	0.0	0
2020-03-07	62	33	47.5	6.7	17	0	0.09	0.0	0
2020-03-08	48	26	37.0	-4.0	28	0	0.01	0.0	0
2020-03-09	48	26	37.0	-4.2	28	0	0.03	0.0	0
2020-03-10	54	21	37.5	-3.9	27	0	0.00	0.0	0
2020-03-11	62	23	42.5	0.9	22	0	0.00	0.0	0
2020-03-12	61	20	40.5	-1.3	24	0	0.00	0.0	0
2020-03-13	55	20	37.5	-4.4	27	0	0.00	0.0	0
2020-03-14	58	25	41.5	-0.6	23	0	0.16	0.4	T
2020-03-15	40	20	30.0	-12.3	35	0	0.09	1.5	2
2020-03-16	27	21	24.0	-18.5	41	0	0.02	0.2	1
2020-03-17	37	19	28.0	-14.6	37	0	0.00	0.0	T
2020-03-18	54	21	37.5	-5.3	27	0	T	0.0	0
2020-03-19	55	24	39.5	-3.5	25	0	0.00	0.0	0
2020-03-20	61	25	43.0	-0.1	22	0	0.00	0.0	0
2020-03-21	63	25	44.0	0.8	21	0	0.00	0.0	0
2020-03-22	62	23	42.5	-0.9	22	0	0.00	0.0	0
2020-03-23	65	25	45.0	1.5	20	0	0.00	0.0	0
2020-03-24	53	27	40.0	-3.7	25	0	T	0.0	0
2020-03-25	49	27	38.0	-5.8	27	0	T	0.0	0
2020-03-26	47	17	32.0	-11.9	33	0	T	0.0	0
2020-03-27	51	19	35.0	-9.0	30	0	0.00	0.0	0
2020-03-28	49	29	39.0	-5.1	26	0	T	0.0	0
2020-03-29	54	39	46.5	2.2	18	0	0.01	0.0	0
2020-03-30	58	40	49.0	4.6	16	0	0.02	0.0	0
2020-03-31	54	34	44.0	-0.5	21	0	0.27	T	T
Sum	1668	790	-	-	779	0	0.70	2.1	-
Average	53.8	25.5	39.6	-2.7	-	-	-	-	0.1
Normal	54.7	29.9	42.3	-	704	0	0.87	0.6	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : unknown
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - September 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-09-01	77	48	62.5	-0.3	2	0	0.00	0.0	0
2020-09-02	94	50	72.0	9.4	0	7	0.00	0.0	0
2020-09-03	93	51	72.0	9.7	0	7	0.00	0.0	0
2020-09-04	98	52	75.0	12.9	0	10	0.00	0.0	0
2020-09-05	100	53	76.5	14.6	0	12	0.00	0.0	0
2020-09-06	95	45	70.0	8.4	0	5	0.00	0.0	0
2020-09-07	94	48	71.0	9.6	0	6	0.00	0.0	0
2020-09-08	84	37	60.5	-0.6	4	0	0.00	0.0	0
2020-09-09	75	35	55.0	-5.9	10	0	0.00	0.0	0
2020-09-10	85	38	61.5	0.9	3	0	0.00	0.0	0
2020-09-11	89	41	65.0	4.6	0	0	0.00	0.0	0
2020-09-12	66	40	53.0	-7.1	12	0	0.00	0.0	0
2020-09-13	82	42	62.0	2.1	3	0	0.00	0.0	0
2020-09-14	83	44	63.5	3.9	1	0	0.00	0.0	0
2020-09-15	88	45	66.5	7.2	0	2	0.00	0.0	0
2020-09-16	84	41	62.5	3.5	2	0	0.00	0.0	0
2020-09-17	88	42	65.0	6.3	0	0	0.00	0.0	0
2020-09-18	83	44	63.5	5.0	1	0	0.00	0.0	0
2020-09-19	74	43	58.5	0.3	6	0	0.08	0.0	0
2020-09-20	71	38	54.5	-3.4	10	0	0.00	0.0	0
2020-09-21	75	38	56.5	-1.1	8	0	0.00	0.0	0
2020-09-22	77	39	58.0	0.7	7	0	0.00	0.0	0
2020-09-23	75	50	62.5	5.6	2	0	0.00	0.0	0
2020-09-24	79	51	65.0	8.4	0	0	0.06	0.0	0
2020-09-25	68	40	54.0	-2.3	11	0	0.00	0.0	0
2020-09-26	63	46	54.5	-1.5	10	0	0.15	0.0	0
2020-09-27	65	36	50.5	-5.2	14	0	0.00	0.0	0
2020-09-28	71	35	53.0	-2.3	12	0	0.00	0.0	0
2020-09-29	82	37	59.5	4.5	5	0	0.00	0.0	0
2020-09-30	94	40	67.0	12.4	0	2	0.00	0.0	0
Sum	2452	1289	-	-	123	51	0.29	0.0	-
Average	81.7	43.0	62.4	3.4	-	-	-	-	0.0
Normal	77.9	40.1	59.0	-	202	22	0.38	0.0	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 7am
Min Temperature : 7am
Precipitation : 7am
Snowfall : 7am
Snow Depth : 7am

Climatological Data for PRINEVILLE, OR - October 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-10-01	87	41	64.0	9.7	1	0	0.00	0.0	0
2020-10-02	90	42	66.0	12.0	0	1	0.00	0.0	0
2020-10-03	88	41	64.5	10.9	0	0	0.00	0.0	0
2020-10-04	84	39	61.5	8.2	3	0	0.00	0.0	0
2020-10-05	81	40	60.5	7.6	4	0	0.00	0.0	0
2020-10-06	84	39	61.5	8.9	3	0	0.00	0.0	0
2020-10-07	86	39	62.5	10.3	2	0	0.00	0.0	0
2020-10-08	81	38	59.5	7.6	5	0	0.00	0.0	0
2020-10-09	77	39	58.0	6.5	7	0	0.00	0.0	0
2020-10-10	79	39	59.0	7.8	6	0	0.03	0.0	0
2020-10-11	59	38	48.5	-2.4	16	0	0.13	0.0	0
2020-10-12	60	40	50.0	-0.5	15	0	T	0.0	0
2020-10-13	64	43	53.5	3.3	11	0	0.00	0.0	0
2020-10-14	67	35	51.0	1.2	14	0	0.07	0.0	0
2020-10-15	60	29	44.5	-5.0	20	0	0.00	0.0	0
2020-10-16	64	29	46.5	-2.7	18	0	0.00	0.0	0
2020-10-17	78	34	56.0	7.2	9	0	0.00	0.0	0
2020-10-18	71	38	54.5	6.0	10	0	0.00	0.0	0
2020-10-19	69	38	53.5	5.3	11	0	0.00	0.0	0
2020-10-20	71	38	54.5	6.6	10	0	0.00	0.0	0
2020-10-21	66	39	52.5	5.0	12	0	0.00	0.0	0
2020-10-22	55	24	39.5	-7.7	25	0	0.00	0.0	0
2020-10-23	52	24	38.0	-8.9	27	0	0.00	0.0	0
2020-10-24	66	24	45.0	-1.6	20	0	0.00	0.0	0
2020-10-25	46	17	31.5	-14.8	33	0	0.00	0.0	0
2020-10-26	40	12	26.0	-20.0	39	0	0.00	0.0	0
2020-10-27	58	16	37.0	-8.7	28	0	0.00	0.0	0
2020-10-28	71	22	46.5	1.1	18	0	0.00	0.0	0
2020-10-29	76	27	51.5	6.4	13	0	0.00	0.0	0
2020-10-30	78	27	52.5	7.7	12	0	0.00	0.0	0
2020-10-31	64	25	44.5	0.1	20	0	0.00	0.0	0
Sum	2172	1016	-	-	412	1	0.23	0.0	-
Average	70.1	32.8	51.4	2.1	-	-	-	-	0.0
Normal	64.9	33.6	49.3	-	489	1	0.83	0.0	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time). Observation times may have changed during this period.
Max Temperature : 7am, 8am
Min Temperature : 7am, 8am
Precipitation : 7am, 8am
Snowfall : 7am, 8am
Snow Depth : 7am, 8am

Climatological Data for PRINEVILLE, OR - November 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-11-01	63	23	43.0	-1.1	22	0	0.00	0.0	0
2020-11-02	70	25	47.5	3.7	17	0	0.00	0.0	0
2020-11-03	79	29	54.0	10.5	11	0	0.00	0.0	0
2020-11-04	72	33	52.5	9.3	12	0	0.00	0.0	0
2020-11-05	75	41	58.0	15.1	7	0	0.00	0.0	0
2020-11-06	75	40	57.5	14.9	7	0	0.47	0.0	0
2020-11-07	41	35	38.0	-4.3	27	0	0.06	0.0	0
2020-11-08	46	27	36.5	-5.5	28	0	0.05	0.9	1
2020-11-09	32	19	25.5	-16.2	39	0	0.00	0.0	T
2020-11-10	39	23	31.0	-10.4	34	0	T	0.0	0
2020-11-11	47	27	37.0	-4.1	28	0	0.02	0.0	0
2020-11-12	47	20	33.5	-7.2	31	0	0.00	0.0	0
2020-11-13	43	23	33.0	-7.4	32	0	0.07	0.0	0
2020-11-14	45	28	36.5	-3.6	28	0	0.36	T	T
2020-11-15	42	30	36.0	-3.8	29	0	0.54	0.0	0
2020-11-16	55	36	45.5	6.0	19	0	0.09	0.0	0
2020-11-17	60	44	52.0	12.9	13	0	0.00	0.0	0
2020-11-18	61	41	51.0	12.2	14	0	0.00	0.0	0
2020-11-19	50	35	42.5	4.0	22	0	T	0.0	0
2020-11-20	49	20	34.5	-3.7	30	0	0.00	0.0	0
2020-11-21	51	18	34.5	-3.3	30	0	0.00	0.0	0
2020-11-22	52	23	37.5	0.0	27	0	0.00	0.0	0
2020-11-23	45	28	36.5	-0.7	28	0	0.00	0.0	0
2020-11-24	49	22	35.5	-1.4	29	0	0.00	0.0	0
2020-11-25	56	25	40.5	4.0	24	0	0.01	0.0	0
2020-11-26	45	23	34.0	-2.2	31	0	0.00	0.0	0
2020-11-27	49	19	34.0	-1.9	31	0	0.00	0.0	0
2020-11-28	55	21	38.0	2.4	27	0	0.00	0.0	0
2020-11-29	55	18	36.5	1.2	28	0	0.00	0.0	0
2020-11-30	54	20	37.0	2.0	28	0	T	0.0	0
Sum	1602	816	-	-	733	0	1.67	0.9	-
Average	53.4	27.2	40.3	0.7	-	-	-	-	0.0
Normal	49.8	29.4	39.6	-	762	0	1.18	1.1	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : 8am
Snow Depth : 8am

Climatological Data for PRINEVILLE, OR - December 2020

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2020-12-01	47	19	33.0	-1.7	32	0	0.00	0.0	0
2020-12-02	48	15	31.5	-3.0	33	0	0.00	0.0	0
2020-12-03	41	15	28.0	-6.2	37	0	0.00	0.0	0
2020-12-04	45	16	30.5	-3.4	34	0	0.00	0.0	0
2020-12-05	52	18	35.0	1.3	30	0	0.00	0.0	0
2020-12-06	55	20	37.5	4.1	27	0	0.21	0.8	1
2020-12-07	46	25	35.5	2.3	29	0	T	0.0	0
2020-12-08	56	31	43.5	10.5	21	0	0.00	0.0	0
2020-12-09	64	32	48.0	15.2	17	0	T	0.0	0
2020-12-10	50	19	34.5	1.9	30	0	0.00	0.0	0
2020-12-11	40	20	30.0	-2.4	35	0	T	T	T
2020-12-12	42	24	33.0	0.7	32	0	0.05	0.5	1
2020-12-13	41	29	35.0	2.9	30	0	T	T	T
2020-12-14	39	31	35.0	3.0	30	0	0.11	T	T
2020-12-15	41	27	34.0	2.1	31	0	T	0.0	0
2020-12-16	51	27	39.0	7.2	26	0	0.01	0.0	0
2020-12-17	47	30	38.5	6.8	26	0	0.01	0.0	0
2020-12-18	M	M	M	M	M	M	M	M	M
2020-12-19	M	M	M	M	M	M	M	M	M
2020-12-20	M	M	M	M	M	M	M	M	M
2020-12-21	M	M	M	M	M	M	M	M	M
2020-12-22	M	M	M	M	M	M	M	M	M
2020-12-23	M	M	M	M	M	M	M	M	M
2020-12-24	M	M	M	M	M	M	M	M	M
2020-12-25	M	M	M	M	M	M	M	M	M
2020-12-26	M	M	M	M	M	M	M	M	M
2020-12-27	M	M	M	M	M	M	M	M	M
2020-12-28	M	M	M	M	M	M	M	M	M
2020-12-29	M	M	M	M	M	M	M	M	M
2020-12-30	M	M	M	M	M	M	M	M	M
2020-12-31	M	M	M	M	M	M	M	M	M
Sum	805	398	-	-	500	0	0.39	1.3	-
Average	47.4	23.4	35.4	2.4	-	-	-	-	0.1
Normal	41.6	24.3	33.0	-	545	0	0.89	1.2	-

Above Normals represent the month through 2020-12-17.

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).
Max Temperature : 8am
Min Temperature : 8am
Precipitation : 8am
Snowfall : 8am
Snow Depth : 8am

APPENDIX E

Literature Citations

LITERATURE CITATIONS

David Evans and Associates, Inc. 1994. Local Wetlands Inventory, City of Prineville, Crook County, Oregon. Prepared by David Evans and Associates, Inc., 2828 SW Corbett Avenue, Portland, Oregon 97201. Prepared for City of Prineville, City Hall, 400 East Third Street, Prineville, Oregon 97754.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual.* Technical Report Y-87-1. U.S. Department of the Army, Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.

NRCS. 2021a. Natural Resources Conservation Service, U.S. Department of Agriculture. WETS data for the Prineville, OR station. Available online at http://agacis.rcc-acis.org/?fips=41013. Accessed February 4, 2021.

NRCS. 2021b. Natural Resources Conservation Service, U.S. Department of Agriculture. Web Soil Survey. Available online at https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 4, 2021.

NWS. 2021. National Weather Service precipitation data for the Prineville, OR station. Available online at https://www.weather.gov/pdt/. Accessed February 4, 2021.

ORMAP. 2021. The Oregon Map tax map database and viewer. Available online at https://ormap.net/gis/index.html. Accessed February 4, 2021.

Riley, D. 2005. U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05. December 7, 2005. Available at: https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf. Accessed February 19, 2021.

State of Oregon. 2021. Oregon Administrative Rules. Salem, Oregon. Available at: http://sos.oregon.gov/archives/Pages/oregon_administrative_rules.aspx. Accessed February 19, 2021.

U.S. Army Corps of Engineers. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS. U.S. Army Corps of Engineer Research and Development Center.

U.S. Army Corps of Engineers. 2018. National Wetland Plant List, version 3.4. U.S. Army Corps of Engineers. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Available online at http://wetland-plants.usace.army.mil. Accessed February 4, 2021.

USFWS. 2021. U.S. Fish and Wildlife Service. Publication date 1977 to present. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Available online at https://www.fws.gov/wetlands/data/Mapper.html. Accessed February 4, 2021.

USGS. 2021. U.S. Geological Survey, National Geospatial Program. USGS NED 1/3 arc-second Contours for Bend E, Oregon 20200810 1 X 1 degree Shapefile. Reston, Virginia. Downloaded from The National Map application. Available online at https://viewer.nationalmap.gov/basic/#/. Accessed February 4, 2021.

EXHIBIT N

TRAFFIC ASSESSMENT LETTER

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	May 14, 2021
To:	Paul Stern
From:	Joe Bessman, PE
Project Reference No.:	1561
Project Name:	Powell East Solar Facility

This letter provides an assessment of the transportation impacts anticipated with the proposed 320-acre solar farm located on the west side of George Millican Road, immediately west of the existing Gala Solar Farm at 12515 SW George Millican Road, Prineville, OR 97754. Vehicular access to the site is provided from the site to SW George Millican Road through an existing access road within an 80' wide strip along the northern border of the existing solar farm. The overall tax lot (tax lot 1615000000800) is a 2,447-acre site zoned for Exclusive Farm Use, which per CCC 18.24.025 allows commercial photovoltaic energy systems to the extent permitted by State law. Within the overall parcel approximately 320 acres will be used for the solar facility. Figure 1 illustrates the overall location of the tax lot, the approximate solar facility boundaries, and the location of the proposed access route.

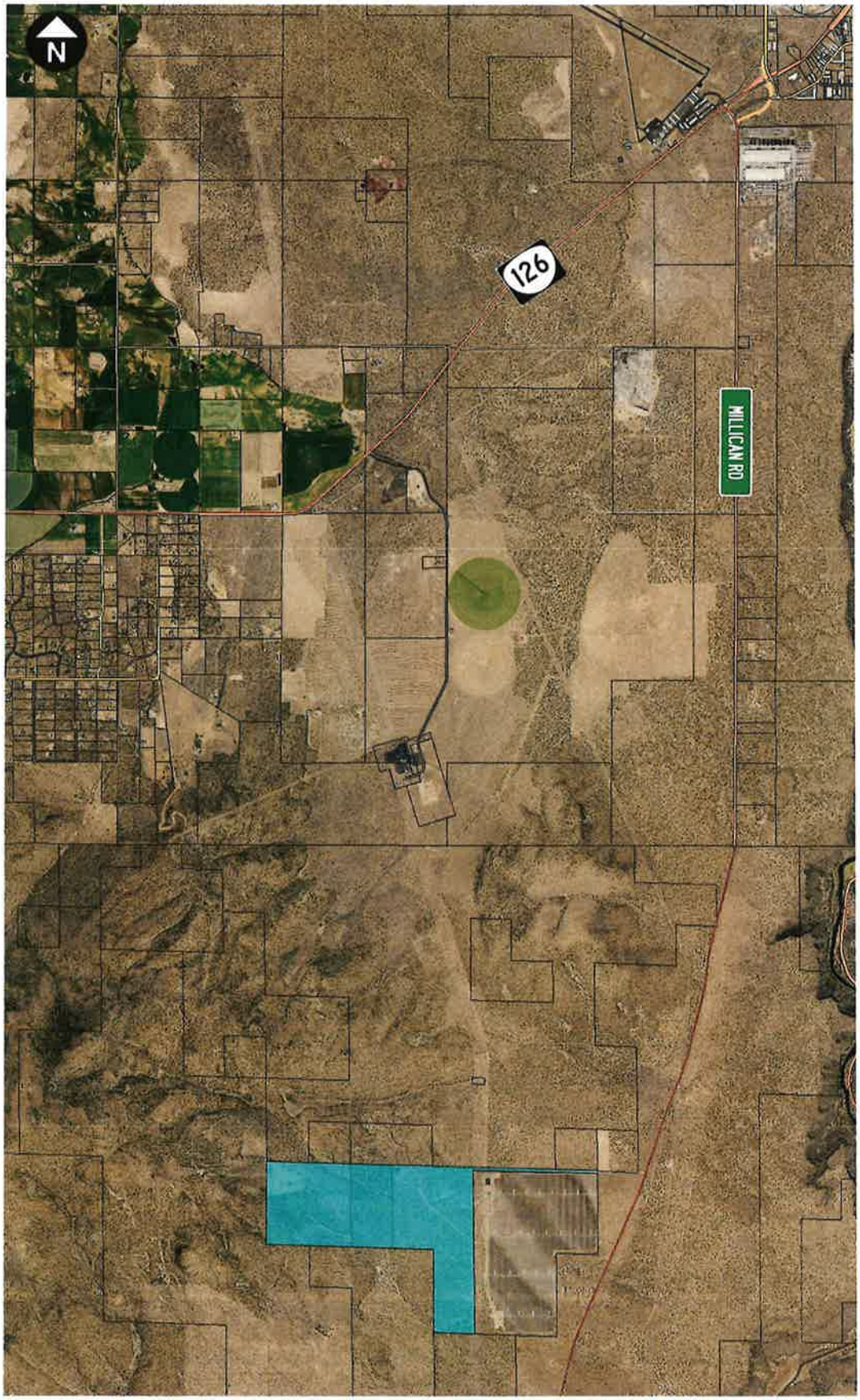


Figure 1. Site Vicinity Map. *Image Source: Crook County GIS.*

Figure 2 contains a site plan, with the areas for solar development indicated within the purple outline.

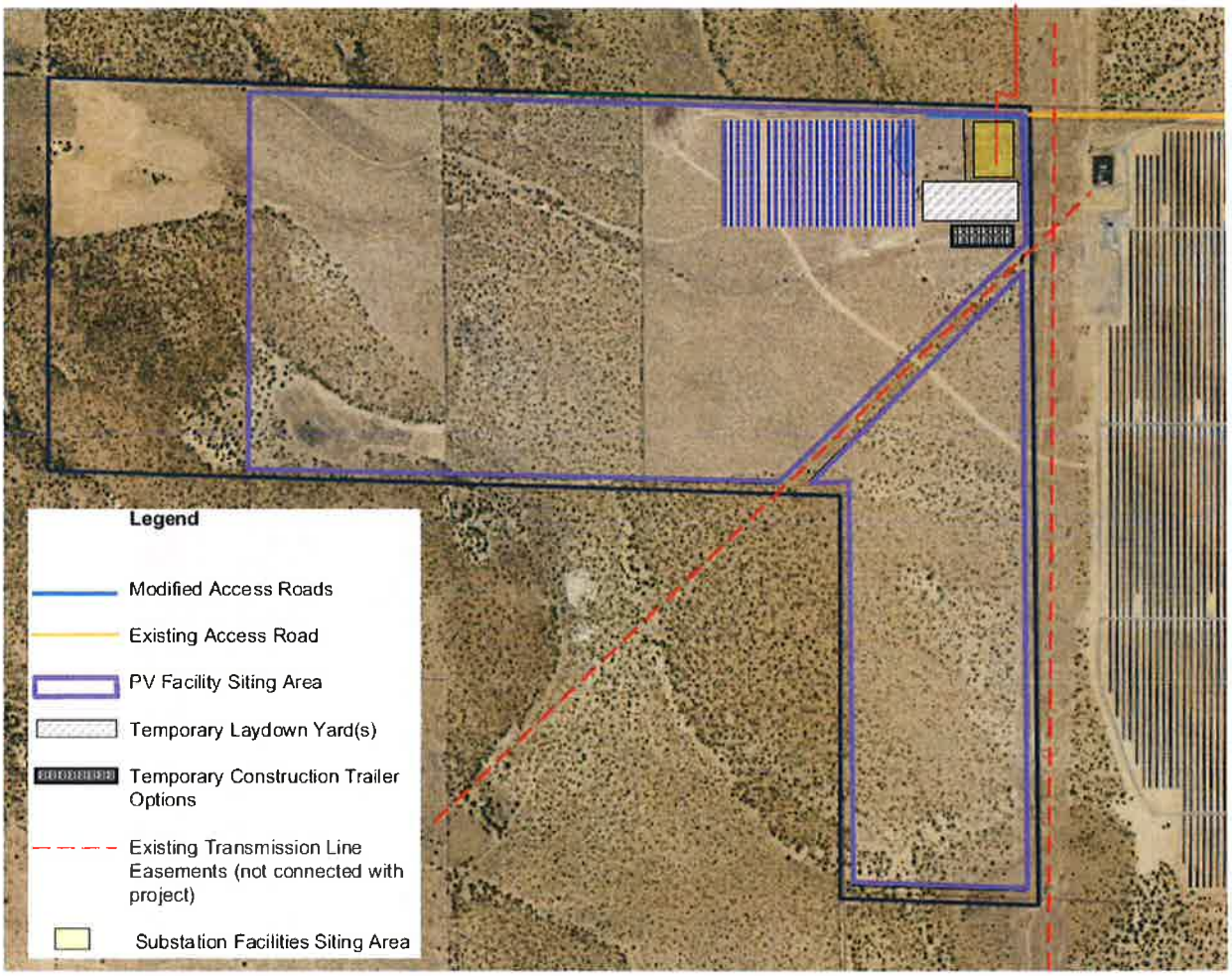


Figure 2. Preliminary Site Layout.

Access to the property is proposed from a driveway connection onto George Millican Road, which is located along a straight, flat tangent segment of the facility. There is currently an existing gated access near this location that served prior phases of the Gala Solar Farm, as shown in Figure 3. It was noted that the location of the access is along a portion of Millican Road that permits passing maneuvers today with a dashed centerline stripe.

Figure 3. Existing gravel access drive into the Gala Solar Farm. *Photo date: May 14, 2021.*

TRIP GENERATION

Trip generation estimates are typically prepared for new development using the standard reference *Trip Generation, 10th Edition,* published by the Institute of Transportation Engineers (ITE). However, this manual generally contains information applicable only in suburban and urban areas. Trip generation data for solar facilities is not available, and so in most jurisdictions is based on estimates of employee/maintenance trips when the facility is fully built-out.

Based on information from other solar facilities, only nominal trip generation occurs with full build-out. These trips are typically associated with security, on-site maintenance of equipment, and inspections. Inspections and maintenance occur throughout the year on both a scheduled and an as-needed basis. Accounting for both inbound and outbound trips, a solar facility will typically generate up to about four trips per day (one to two vehicles per day both in and out) as summarized in Table 1. There is likely little to no impact during the weekday p.m. peak hour as these trips do not occur on typical shift schedules. For transportation purposes it was assumed that one vehicle was exiting during the weekday p.m. peak hour as shown in Table 1.

Table 1. Trip Generation Summary (Full Build-out)

Land Use	ITE Code	Size	Weekday Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Powell East Solar Facility	n/a	320 acres	4	1	0	1

Crook County Code 18.180 identifies the thresholds for when a formal Transportation Impact Analysis is required. This identifies the following conditions:

- The development generates 25 or more peak hour trips (or more than 250 daily trips)
- An access spacing exception is required for the site access driveway and the development generates 10 or more peak hour trips (or 100 or more daily trips)
- The development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.
- The development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high crash locations or areas that contain a high concentration of pedestrians or bicyclists (such as school zones)
- A change in zoning or a plan amendment designation.
- ODOT requirements.

The proposed solar facility generates less than the County trip thresholds, will conform with County access requirements and is not located near a high crash location. None of the County thresholds are met to require a Transportation Impact Analysis, and with the limited trip generation of the site, conducting a study would not identify any capacity needs. Accordingly, this transportation assessment focuses on construction needs to maintain safety at the access for the development of the site. This will conform with the County's Transportation Assessment Letter (TAL) requirements.

Crash History Review

Intersection crash records were obtained from the ODOT crash database for all of Crook County for the period between January 1, 2014 and December 31, 2018. This reflects the most recent five-year period available. Crashes that are required to be reported to ODOT during this period includes any collision that involves one or more motor vehicle, results in more than $1,500 in property damage (increased to $2,500 in 2018), or results in any level of personal injury.

There was a single reported crash in the vicinity of the existing access. This crash occurred on Millican Road on June 8, 2017, at 12:00 p.m. during clear and dry conditions. The crash records indicate that a single vehicle towing a trailer was involved in an overturn crash, with the cause cited as improper driving. No personal injury resulted from the crash. No crash patterns or safety deficiencies were identified as a result of this crash.

Access Characteristics

Access to the facility will be provided from Millican Road via the existing paved approach to the Gala Solar Plant, located directly east of the site. This roadway's connection to Millican Road has already been designed to accommodate the turning radius of the construction vehicles and trucks supporting solar equipment, with no changes planned. Internally, access roads will extend both west and south from the northeast corner of the parcel, as illustrated in the site plan in Figure 2.

The location of the existing access along Millican Road provides adequate sight lines in the northbound and southbound directions. As travel speeds are high within this roadway section it is recommended that Intersection Sight Distance as recommended within the standard reference *A Policy on Geometric Design of Highways and Streets, 7th Edition*, published by the American Association of State Highway and Transportation Officials (AASHTO) be verified during the access permit process for a 65 mile per hour design speed. The specific requirements for trucks entering a two-lane facility with this speed are shown below in Figure 4.

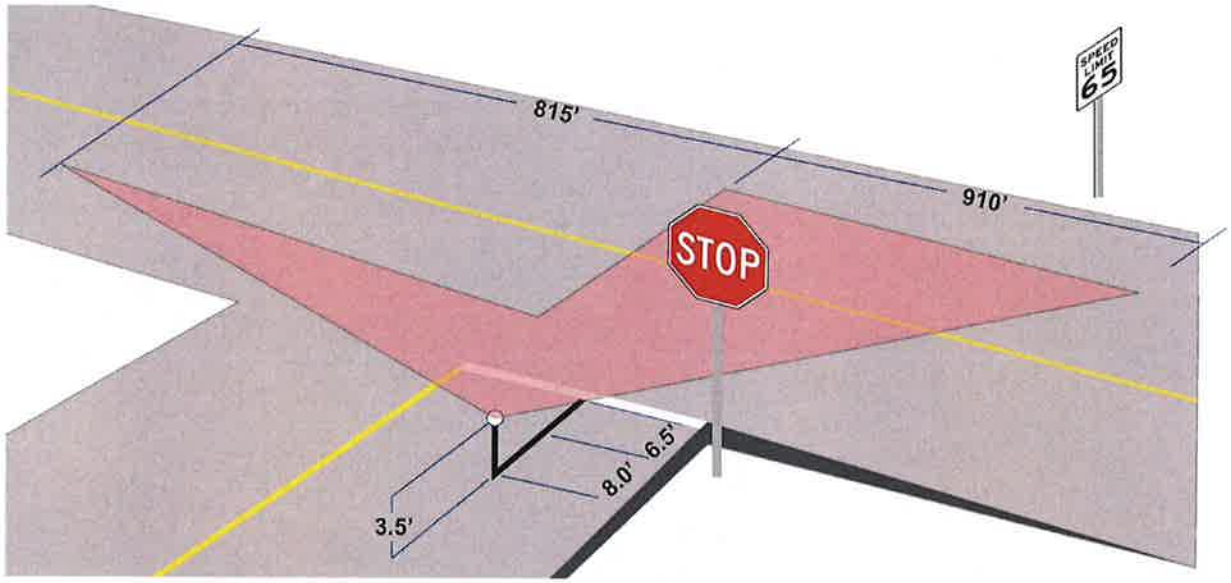


Figure 4. AASHTO Recommended Distance Dimensions for Single-Unit Trucks.

Field review along Millican Road indicates that these sight lines can easily be met with the current road grades and characteristics of the existing frontage. Figures 5 and 6 illustrate the current sight lines in this area.

Figure 5. Shared access location onto Millican Road facing south, highlighting the clear sight lines. *Photo date: May 14, 2021.*

Figure 6. Shared access location onto Millican Road facing north, highlighting the clear sight lines. *Photo date: May 14, 2021.*

TEMPORARY CONSTRUCTION CONDITIONS

Similar to other solar facilities, to address construction traffic needs, similar temporary construction signage is recommended at the access following the same treatments installed for the Gala site. To maintain the safety of the access connection to Millican Road and to increase visibility and awareness for deliveries and labor trips that are unfamiliar with the area, the following summarizes the recommended construction mitigation measures:

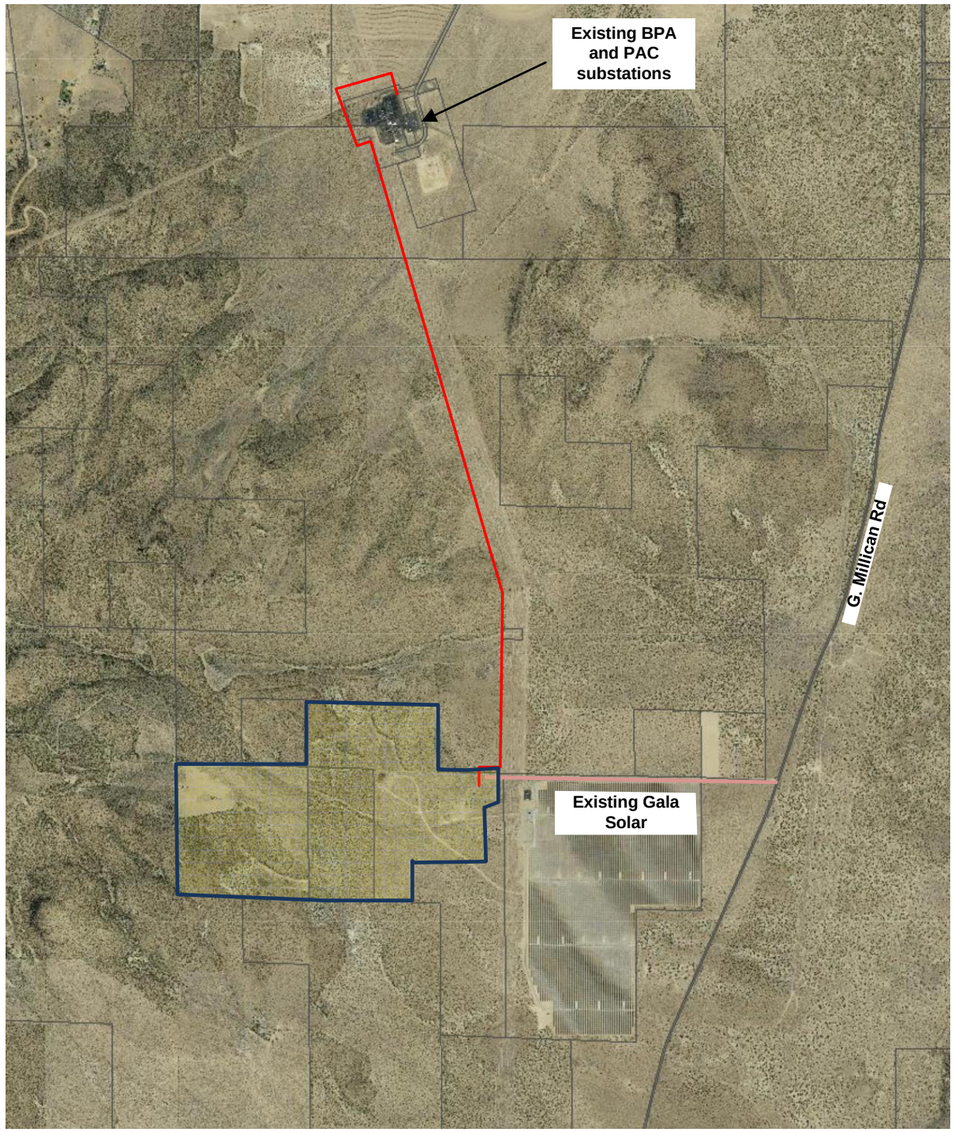
- "Trucks Entering Highway" temporary construction signage should be installed on either side of the access throughout the construction period to warn motorists of construction activity.
- The applicant should coordinate with the Crook County road master to ensure a plan is in place to prevent rocks and debris from entering Millican Road. This should include extending an asphalt driveway apron a minimum of 75-feet into the property.
- The allowed passing maneuvers along Millican Road should be restricted while construction activity is occurring. This may be provided through No Passing Zone (W14-3) or Do Not Pass/Pass with Care signage per the MUTCD.
- Separate on-site areas should be designated for passenger vehicle parking and truck staging. No parking should be permitted along the Millican Road shoulders.
- The applicant should coordinate with the Crook County road master on any permits required to support the solar facility along internal site roadways and secondary access roads. With the same use as previously approved for Gala a new access permit onto Millican Road should not be required.

We trust this letter provides a general understanding of the long-term build-out and construction needs of the proposed Powell East Solar Facility. The operations of the facility will not trigger the County's formal Transportation Impact Analysis requirements. If you have any questions or need any additional information on this traffic letter please contact me at (503) 997-4473 or via email at joe@transightconsulting.com.

Site Plan: Present Overview

Legend

- Site Boundaries
- Existing Access/Driveways (easement granted)
- Existing/Proposed Transmission Line(not associated with project)
- Proposed Gen-Tie Routing Line (Alt. Routes Possible)
- Existing residential power line
- Existing Buildings



GENERAL NOTES

1. DISTANCES, LOCATIONS, AND ROUTING OF ASSOCIATED TRANSMISSION LINES AND ACCESS ARE APPROXIMATE AND SUBJECT TO APPLICANT'S FINAL DESIGN.

2. SOLAR PV FACILITIES SUBJECT TO APPLICABLE ACREAGE RESTRICTIONS.

3. PV FACILITIES FOOTPRINT WILL NOT EXCEED 320 ACRES TOTAL.

4. SETBACK REQUIREMENTS SHALL CONFORM TO CROOK COUNTY STANDARDS FOR PARCELS ZONED EFU-3 INCLUDING TAX LOT BOUNDARIES.

5. CALCULATION FOR ACREAGE OF AGGREGATE GEN-TIE TO BE BASED ON GROUND FOOTPRINT OF POLE AND OTHER GROUND MOUNTED STRUCTURES.

6. ASSOCIATED TRANSMISSION LINES/GEN-TIE(S) ROUTING SUBJECT TO FINAL DESIGN FOR FACILITIES, WITH ROUTING OPTIONS TO INCLUDE BOTH AS SHOWN, AND OTHER ROUTES, INCLUDING AND ALONG OTHER TRANSMISSION AND ROAD FACILITIES IN THE PROJECT SITING AREA AND VICINITY.

7. NOT ALL POWER LINES AND RELATED FACILITIES IN AREA SHOWN.

Notes:
Preliminary, Not for Construction

Revised 2022-06-14

ENERGY AUTOMATION SOLUTIONS ENGINEERING, LLC.

Prepared for: Powell East Solar Farm LLC

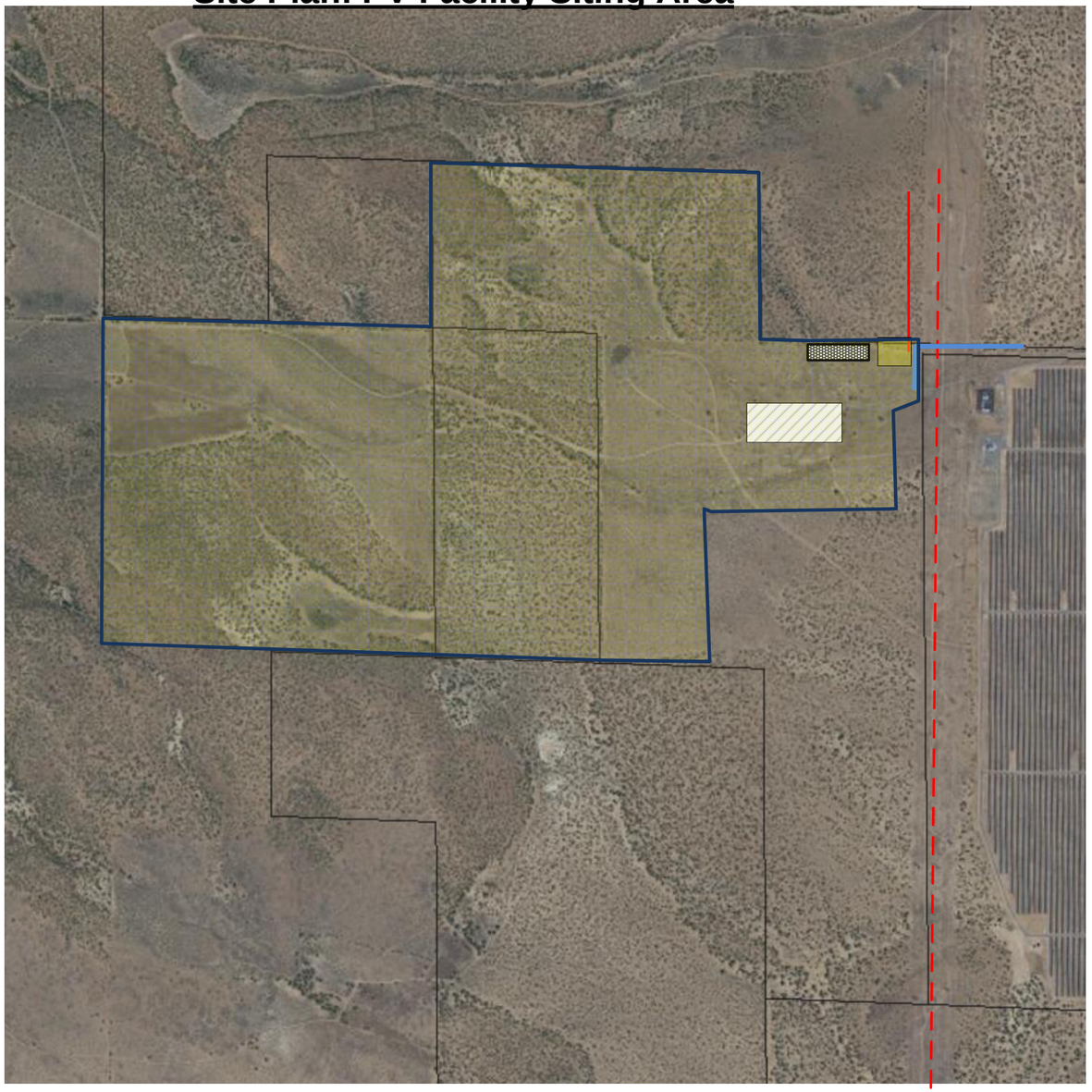
TITLE:	**SITE PLAN OVERALL**
DRAWN BY:	**Mark Boissevain**
REV: **NA**	PAGE: **P1 of 3**

Site Plan: PV Facility Siting Area

Legend

- Modified Access Roads
- Existing Access Road
- PV Facility Siting Area
- Temporary Laydown Yard(s)
- Temporary Construction Trailer Options
- Existing/ Transmission Line(not associated with project)
- Associated Transmission Line(s) (example routing)
- Substation Facilities Siting Area*

* generally to be adjacent to solar facilities and/or transmission system in vicinity of site.



GENERAL NOTES

1. DISTANCES, LOCATIONS, AND ROUTING OF ASSOCIATED TRANSMISSION LINES AND ACCESS ARE APPROXIMATE AND SUBJECT TO APPLICANT'S FINAL DESIGN.

2. SOLAR PV FACILITIES SUBJECT TO APPLICABLE ACREAGE RESTRICTIONS.

3. CONSTRUCTION LAYDOWN AREAS TO BE FINALIZED BASED ON FINAL DESIGN.

4. SETBACK REQUIREMENTS SHALL CONFORM TO CROOK COUNTY STANDARDS FOR PARCELS ZONED EFU-3.

5. PV FACILTIES FOOTPRINT WILL NOT EXCEED 320 ACRES TOTAL.

Notes:
Preliminary, Not for Construction

Revised 2022-06-14

ENERGY AUTOMATION SOLUTIONS ENGINEERING, LLC.

Prepared for: Powell East Solar Farm LLC

TITLE: **SITE PLAN OVERALL**

DRAWN BY: **Mark Boissevain**

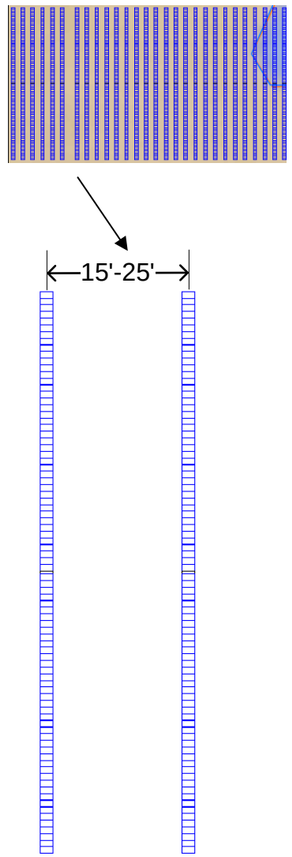
REV: **NA**

PAGE: **P2 of 3**

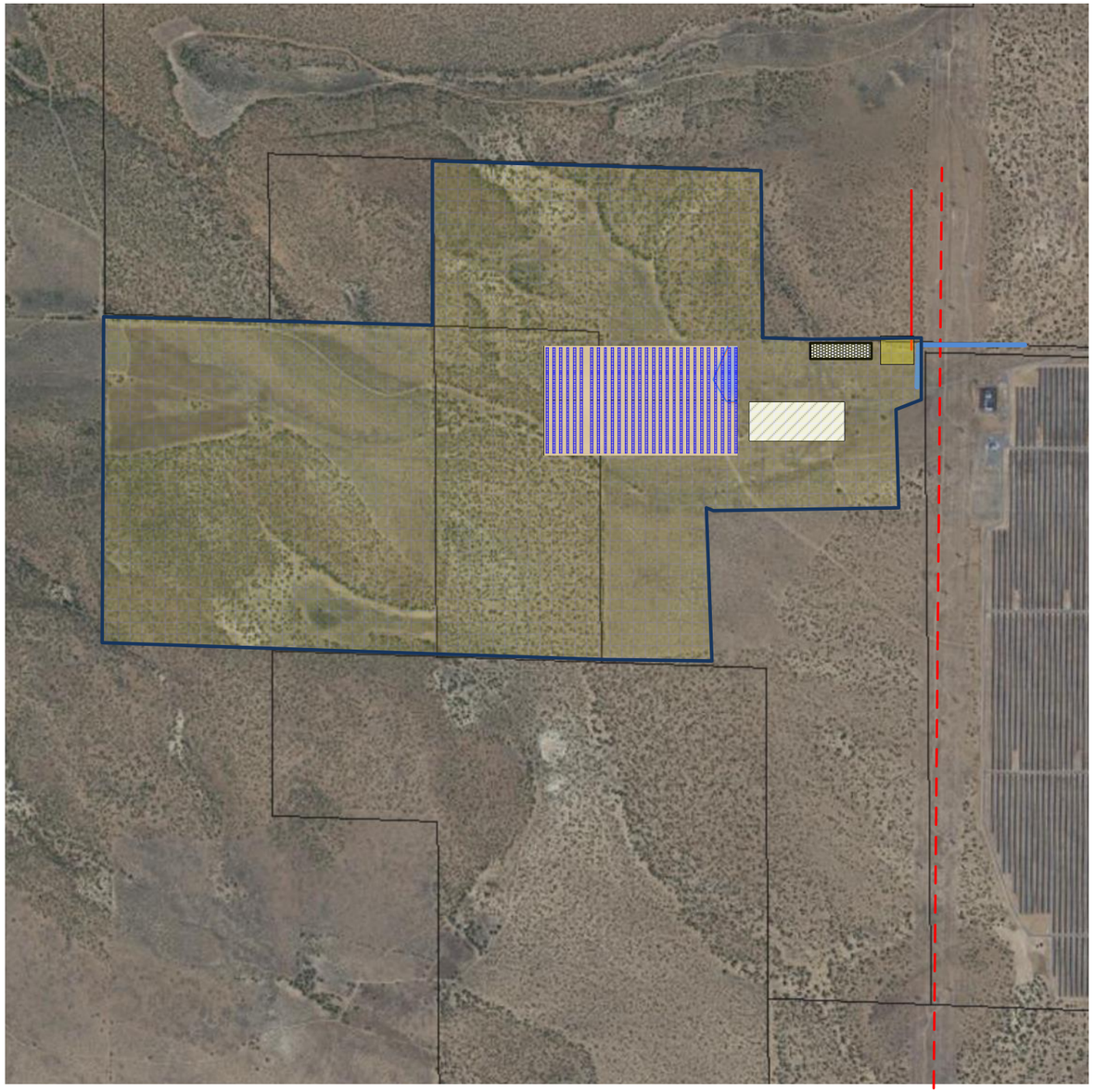
Site Plan: Example Solar PV Facility

(for illustrative purposes only)

ZOOMED IN VIEW OF MODULE/ TRACKER ROWS



Row-to-Row distance may vary and be increased or decreased in final design.



GENERAL NOTES

1. DISTANCES, LOCATIONS, AND ROUTING OF ASSOCIATED TRANSMISSION LINES AND ACCESS ARE APPROXIMATE AND SUBJECT TO APPLICANT'S FINAL DESIGN.

2. SOLAR PV FACILITIES SUBJECT TO APPLICABLE ACREAGE RESTRICTIONS. TOTAL PV FACILITIES SITING AREA CONSIDERED IS LESS THAN 320 ACRES.TOTAL.

3. INTERCONNECTION MAY BE TO ONE OR MORE VARIOUS TRANSMISSION AND DISTRIBUTION FACILITIES IN VICINITY.

4. SETBACK REQUIREMENTS SHALL CONFORM TO CROOK COUNTY STANDARDS FOR PARCELS ZONED EFU-3.

5. PV STRUCTURES LAYOUTS ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. TRACKER ROWS RUN NORTH SOUTH, FIXED RACKS RUN EAST-WEST. ACTUAL LOCATION SUBJECT TO FINAL DESIGN.

6. DRAWING NOT TO SCALE.

Legend

- Modified Access Roads
- Existing Access Road
- PV Facility Siting Area
- Temporary Laydown Yard(s)
- Temporary Construction Trailer Options
- Existing Transmission Line (not connected with project)
- Substation Facilities Siting Area

Notes:
Preliminary, Not for Construction

Revised 2022-06-14

ENERGY AUTOMATION SOLUTIONS ENGINEERING, LLC.

Prepared for: Powell East Solar Farm LLC

TITLE:	**SITE PLAN: PV LAYOUT EXAMPLE**
DRAWN BY:	**Mark Boissevain**
REV: **NA**	PAGE: **P3 of 3**