

**BEFORE THE
ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON**

In the Matter of the Application for Site Certificate
For the Obsidian Solar Center

)
) PROPOSED ORDER ON
) APPLICATION FOR SITE
) CERTIFICATE

October 9, 2020

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ACRONYMS AND ABBREVIATIONS

AC	Alternating Current
ASC	Application for Site Certificate for the Obsidian Solar Center
BMP	Best Management Practice
BPA	Bonneville Power Administration
Council	Oregon Energy Facility Siting Council
dBA	A-weighted decibel
Department	Oregon Department of Energy
DC	Direct Current
DEQ	Oregon Department of Environmental Quality
DOGAMI	Oregon Department of Geology and Mineral Industries
DSL	Oregon Department of State Lands
EFSC	Oregon Energy Facility Siting Council
ESCP	Erosion and Sediment Control Plan
<u>HMP</u>	<u>Habitat Mitigation Plan</u>
kV	kilovolts
MW	Megawatt(s)
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
ORBIC	Oregon Biodiversity Information Center
ORS	Oregon Revised Statutes
pASC	Preliminary Application for Site Certificate
PGE	Portland General Electric
RAI	Request for Additional Information
SAG	Special Advisory Group
USFWS	United States Fish and Wildlife Service
WHMMP	Wildlife Habitat Mitigation and Monitoring Plan

I. INTRODUCTION

The Oregon Department of Energy (Department) issues this ~~draft~~ proposed order (DPO) in accordance with Oregon Revised Statute (ORS) 469.370(4~~4~~), based on its review of the Application for Site Certificate (ASC) for the proposed Obsidian Solar Center (proposed facility) and comments and recommendations received by state agencies, local governments, and tribal governments. This DPO includes recommended conditions of approval for inclusion in the site certificate to ensure or maintain compliance with applicable rules and standards during proposed facility construction, operation and retirement. This PO also presents additional analysis to support recommended findings of facts and amended conditions from those presented in the draft proposed order based on comments received on the record of the draft proposed order public hearing (March 12 through July 20, 2020). Based upon its review, including recommending findings of fact, conclusions of law and conditions, the Department recommends Council approve the ASC and issue a site certificate for the proposed facility.

The proposed facility would be located within north Lake County, approximately eight miles northwest of Christmas Valley and would occupy approximately 3,590 acres within an approximately 3,921-acre site boundary. The applicant, Obsidian Solar Center LLC (applicant), owned by Obsidian Renewables, LLC and Lindgren Development, Inc. (parent companies), seeks Energy Facility Siting Council (EFSC or Council) approval to construct and operate up to 400 megawatts alternating current (MWac) of solar photovoltaic (PV) energy generation equipment (modules, posts, inverter/transformer units, electrical collection system) and related or supporting facilities including up to four collector substations (1 acre/each); a 115/500 kilovolt (kV) step-up substation (3 acres); up to two operations and maintenance (O&M) buildings; access and service roads, perimeter fencing and security gates; 50 megawatts (MW) of dispersed or centralized battery storage systems (including cell stack, balance of plant, and enclosures); and, an approximately two mile 115 kV generation-tie (gen-tie) transmission line.

The proposed facility is subject to EFSC review pursuant to ORS 469.300(11)(a)(D)(iii) as it is proposed as a solar photovoltaic power generation facility that would use more than 1,920 acres of “other” (nonarable) land, where “other” land is neither high-value farmland as defined in ORS 195.300(10) nor land predominately composed of soils in a capability class I to IV.¹ Approval of a site certificate by EFSC is therefore required for the construction, operation, and retirement of the proposed facility as defined in ORS 469.300(11).

In addition to the conditions recommended in this DPO, the applicant would be subject to the conditions and requirements contained in applicable substantive criteria ~~in local ordinances~~ in effect on the date the preliminary application was submitted and the rules and standards of the Council and state laws in effect on the date the site certificate is executed.² Under ORS 469.401(2), the site certificate shall require the Council and applicant to abide by local

¹ OSCAPDoc4 ASC Exhibit K. Soil within the proposed site boundary is Natural Resources Conservation Service (NRCS) Soil Class VI and considered nonarable.

² OAR 345-021-0000(9) and 469.504(1)(b)(A).

ordinances and state law and the rules of the Council in effect on the date the site certificate is executed, except upon a clear demonstration showing of a significant threat to public health, safety, or the environment that requires application of later-adopted laws or rules, then the Council may require compliance with such later-adopted laws or rules. The Department recognizes that many specific tasks related to the design, construction, operation, and retirement of the proposed facility would be undertaken by the applicant's agents or contractors. Nonetheless, the certificate holder remains responsible for ensuring compliance with all provisions of the site certificate.

The Council does not have jurisdiction over matters that are not included in and governed by the site certificate or amended site certificate, including design-specific construction or operating standards and practices that do not relate to siting, as well as matters relating to employee health and safety, building code compliance, wage and hour or other labor regulations, or local government fees and charges. However, nothing in ORS chapter 469 shall be construed to preempt the jurisdiction of any state agency or local government over matters that are not included in and governed by the site certificate or amended site certificate.³ Also, outside the Council's jurisdiction are matters of land-acquisition, land purchases, land leases, and right-of-way easements.

A site certificate is a binding agreement between the State of Oregon and the applicant, authorizing the applicant to design, construct, operate, and retire a facility on an approved site, incorporating all conditions imposed by the Council on the applicant. A site certificate issued by EFSC binds the state and all counties, cities and political subdivisions of Oregon. Once EFSC issues a site certificate, any affected state agency, county, city or political subdivision with an applicable permit identified in the ASC and to be governed by the site certificate, must, upon submission by the applicant of the proper applications and payment of the proper fees, but without hearing or other proceeding, promptly issue the permits, licenses and certificates addressed in the site certificate. The Council has continued authority over the site for which the site certificate is issued and may inspect, or direct Department staff to inspect, or request another state agency or local government to inspect, the site at any time in order to ensure that the facility is being operated consistently with the terms and conditions of the site certificate.

~~I.A. Name and Address of Applicant~~

~~Obsidian Solar Center LLC
c/o Obsidian Renewables, LLC
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035~~

~~Parent Companies of the Applicant~~

³ ORS 469.401(4).

~~Obsidian Renewables, LLC
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035~~

~~Lindgren Development, Inc.
260 Townsend Street
San Francisco, California 94107~~

Applicant Contact

~~David W. Brown, Manager and Owner
Obsidian Solar Center LLC
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035~~

II. PROCEDURAL HISTORY

II.A. Notice of Intent

On January 16, 2018, the applicant submitted to the Department a Notice of Intent (NOI) to file an application for site certificate (ASC). On February 7, 2018, the Department issued public notice of the NOI to the Council's general mailing list and to adjacent property owners as defined at OAR 340-020-0011(1)(f). Further, in accordance with OAR 345-020-0040, on February 7, 2018, the Department distributed the NOI to the Lake County Board of Commissioners, the appointed Special Advisory Group (SAG) for site certificate proceedings associated with the proposed facility, and reviewing agencies, along with a memorandum requesting comments on the NOI.⁴ On February 23, 2018, the Council appointed the Lake County Board of Commissioners as the SAG, in accordance with ORS 469.480(1).

The Department published notice of the NOI on February 7, 2018 in the Lake County Examiner, a newspaper of general circulation in the area of the proposed facility. The NOI comment deadline was March 9, 2018. Pursuant to OAR 345-015-0140, the Department provided the applicant with copies of each public comment for consideration in the development of the ASC.

II.B. Project Order

Pursuant to ORS 469.330(3) and OAR 345-015-0160(1) and (3), the Department issued a project order on May 24, 2018 which specified the state statutes and administrative rules, and local, state, and tribal laws, regulations, ordinances and other requirements applicable to the siting of the proposed facility. The project order outlines the ASC requirements from OAR 345-021-0010 that are relevant to the proposed facility. Under OAR 345-015-0160, the project order also

⁴ Council appointed the Lake County Board of Commissioners as the SAG, in accordance with ORS 469.480(1), on February 23, 2018.

1 establishes analysis areas for the proposed facility which are areas containing resources that
2 the proposed facility may significantly affect and that must be evaluated in the application for
3 site certificate.⁵ A proposed facility might have different analysis areas for different types of
4 resources. Further, the Department considered the size and type of the proposed facility in
5 determining the study areas the applicant must evaluate in the application.⁶ Finally, under OAR
6 345-015-0160(3), the Department or Council may amend the project order at any time.

8 **II.C. Application for Site Certificate**

10 The Department received the pASC on September 20, 2018. The applicant distributed the pASC
11 to reviewing agencies as defined in OAR 345-001-0010, with a review request memo issued by
12 the Department consistent with OAR 345-021-0050, requesting comments on the pASC. The
13 Department also sent the review request memo via email to all reviewing agencies. The memos
14 included a comment deadline of October 29, 2018, with an opportunity for a deadline
15 extension if requested by the reviewing agency. An announcement was posted on the
16 Department's website, notifying the public that the pASC had been received.

18 Pursuant to OAR 345-015-0190(1), on November 19, 2018 the Department determined the
19 pASC to be incomplete. On November 19, 2018 and December 18, 2018, the Department issued
20 Requests for Additional Information (RAIs).⁷ The applicant began providing revised pASC
21 exhibits and responses to the information requests beginning on December 4, 2018 and
22 submitted the remainder of requested information to the Department on June 30, 2019. After
23 reviewing the revised pASC exhibits and supplemental materials, the Department determined
24 the pASC to be complete on September 16, 2019. Under OAR 345-015-0190(5), an ASC is
25 complete when the Department finds that an applicant has submitted information adequate for
26 the Council to make findings or impose conditions on all applicable Council standards. Also,
27 under this rule, the Department may find that the application is complete without requiring the
28 applicant to submit all of the required information. Pursuant to OAR 345-015-0190, the date of
29 filing of the ASC was October 17, 2019, the date the Department received the application. The
30 applicant filed a complete ASC on October 17, 2019. Consistent with OAR 345-021-0055(1), the
31 ASC was submitted as a "...total revision of the application...to provide a clear presentation of
32 new information." In ASC Exhibit P (Fish and Wildlife Habitat) and Exhibit S (Historic, Cultural
33 and Archaeological Resources), the applicant indicated it intended to submit additional
34 information at a later date. Specifically, the applicant had not finalized its proposal for the
35 Habitat Mitigation Plan (HMP) in coordination with the Oregon Department of Fish and Wildlife
36 (ODFW), and the applicant had not submitted information for the archaeological permits
37 reviewed by the Oregon State Historic Preservation Office (SHPO) ~~and had outstanding issues~~
38 ~~with its field methodology proposal being reviewed by SHPO.~~ These are discussed further in
39 Section IV.H., *Fish and Wildlife Habitat*, and IV.K., *Historic, Cultural, and Archaeological*
40 *Resources*, respectively.

⁵ OAR 345-015-0160(1)(f) and OAR 345-001-0010(2).

⁶ OAR 345-015-0160(2).

⁷ OSCAPDoc19 pASC ODOE Determination Letter and Request for Additional Information 2018-11-19, and
OSCAPPDoc22 pASC ODOE Cover Letter and Request for Additional Information 2 - 2018-12-18

Public notice of the complete ASC was issued on October 30, 2019, with the notice published in the Lake County Examiner on October 30, 2019, the Desert Whispers and Community Breeze on November 1, 2019. The notice included information about an informational meeting held on the ASC. The Department held a public information meeting on the complete ASC on November 14, 2019 at the North Lake School. Pursuant to OAR 345-015-0200, the Department distributed electronic copies of the complete ASC to reviewing agencies, along with a request for agency reports on the complete ASC with a deadline of December 9, 2019. The Department received comments from seven reviewing agencies, including the SAG. Those comment letters and other reviewing agency comments referenced in this DPO are included in Attachment C.

On October 25, 2019 the Council appointed Joe Allen, Senior Administrative Law Judge at the Oregon Office of Administrative Hearings, as the hearing officer to conduct the draft proposed order public hearing and the contested case proceeding.⁸

As noted in the ASC completeness and filing date letters sent to the applicant, pursuant to OAR 345-015-0190(9), during the Department's continued review of the application and the preparation of the DPO, the Department may identify the need for additional information and the applicant must submit the information requested.⁹ The submission of additional information does not constitute an amendment of the application. The Department issued additional RAI's on February 5 and 11, 2020 for clarification on the HMP, retirement cost estimate, and proposed substation components. The applicant provided responses to the RAI's from February 05, 2020 to March 2, 2020.¹⁰ Further, the applicant indicated its intent to modify its proposal regarding retirement of the proposed facility on March 5, 2020 and provided supporting documentation for the modified proposal on March 9, 2020, this is discussed further in Section IV.G., *Retirement and Financial Assurance* of this order. The Department combined the ASC additional information package and made it available on the project webpage on March 12, 2020 and made note of the additional information in the notice of the DPO, discussed below.¹¹

Site Boundary Refinement from NOI

Site boundary means the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas and all corridors and micro-siting corridors proposed by the applicant.¹² For this proposed facility, the applicant originally proposed an approximately 7,000 acre site boundary including four main areas for solar facility components and associated gen-tie transmission line corridors. In the NOI, these areas were referred to as Areas A, B, C and D. Based on results of desktop and field surveys, as well as comments from tribal governments and reviewing agencies, the applicant reduced the size of

⁸ OSCAPDoc3 ASC Hearing Officer Appointment 2019-10-25.

⁹ OSCAPDoc1 ASC Completeness Letter_2019-09-16 and OSCAPDoc2 ASC Filing Date Letter 2019-10-17.

¹⁰ OSCAPDoc19 ASC ODOE Additional RAIs_Combined 2020-02-05 to 2020-03-02.

¹¹ OSCAPDoc20 ASC Applicant Responses to Additional RAIs_Combined 2020-02-24 to 2020-03-09.

¹² OAR 345-001-0010(54)

the site boundary from approximately 7,000 to 3,921 acres to avoid impacts to resources, as summarized below:

- Area B was eliminated to avoid impacts on sensitive resources, including non-wetland waters, habitat, and cultural resources;
- Two gen-tie corridors extending from Area B were eliminated due to removal of Area B from site boundary;
- Area C and gen-tie corridor extending from Area C was eliminated to avoid impacts on sensitive resources.

The site boundary, as proposed in the ASC, includes the perimeter of Area A, Area D, and the gen-tie transmission line corridor extending from Area A to Area D. As illustrated in ASC Exhibit B, Figure B-1, Area A is the larger area that would contain the solar modules, inverters, collector system, collector substations, and O&M buildings. The proposed facility and its related or supporting facilities are discussed further in Section III.A., *Proposed Facility Components*, of this order. Area D is the smaller, triangle portion of the site boundary where the applicant proposes to construct a 115/500 kV step-up substation near the point of interconnection with the Portland General Electric 500 kV transmission line. The two mile 115 kV gen-tie transmission line corridor connects Area A and Area D.

II.D. Council Review Process

On March 12, 2020, the Department issued the draft proposed order and notice for public comment; the comment period extend~~ing~~ from March 12, 2020 and ~~closes onto~~ April 23, 2020, at the close of the scheduled public hearing. On March 8, 2020, Governor Brown issued Executive Order No. 20-03 declaring a State of Emergency due to the spread of the Coronavirus (COVID-19) outbreak in Oregon. On April 15, 2020, Governor Brown issued Executive Order No. 20-16 which outlined measures to ensure safety measures are taken to keep the public safe while government operations continue, including public meetings and hearings.¹³ The Department issued notice of postponement or rescheduled hearing on March 25, 2020; April 29, 2020; and on May 28, 2020 in response to the Governor's Executive Orders and in response to procedural issues identified in comments on the record for the proposed facility.¹⁴ On June 17, 2020, the Department issued notice of the public hearing on the DPO to be held in-person in the affected area, in accordance with applicable Executive Orders for public and staff safety, as well as by webinar with a phone in option.¹⁵ The public hearing and opportunity for in-

¹³ Under sub (2.) of the EO; Public Meetings. During the COVID-19 emergency period: The governing body of a public body (as defined by ORS 192.610(3) and (4)) shall hold public meetings and hearings by telephone, video, or through some other electronic or virtual means, whenever possible. For all public meetings and hearings held by telephone, video, or through other electronic or virtual means, the public body shall make available a method by which the public can listen to or virtually attend the public meeting or hearing at the time it occurs, and the public body does not have to provide a physical space for the public to attend the meeting or hearing. https://www.oregon.gov/gov/Documents/executive_orders/eo_20-16.pdf Accessed 07-28-2020.

¹⁴ See OSCAPDoc4-16 through OSCAPDoc4-16.3 DPO Public Comment Reeder 2020-05-15 through 2020-07-13.

¹⁵ ORS 469.370(2).

1 person and remote testimony on the DPO ~~is was scheduled held~~ on July 20, 2020 at the
2 Christmas Valley Community Hall 87345 Holly Lane Christmas Valley, Oregon and by WebEx
3 webinar. to occur on April 23, at the April 23 EFSC meeting at 5:45 PM at North Lake School in
4 north Lake County, Oregon. In addition The Department accepted to accepting written
5 comments during the 131-day comment period from March 12, 2020 to ~~April 23~~ July 20, 2020,
6 the Council or its hearing officer ~~will~~ also accepted oral testimony at the public hearing. At the
7 DPO hearing, the Hearing Officer extended the record for the applicant until July 22, 2020,
8 based upon request, to afford the applicant the opportunity to respond to comments received
9 on the DPO.¹⁶ The public comment period closed at the conclusion of the July 20, 2020 hearing.
10 The record of the DPO will closed on July 22, 2020 at 12:20 p.m. at the conclusion of the DPO
11 comment period on April 23, 2020, as described in the public notice. Subject to OAR 345-015-
12 0220(3)(j), the Council will not accept or consider any further public comment on the site
13 certificate application or on the draft proposed order after the close of the record of the public
14 hearing (~~April 23~~ July 22, 2020).

15
16 Notice of public hearing was issued on ~~March 12~~ June 17, 2020 and distributed to all persons on
17 the Council's general mailing list, to the special list established for the proposed facility, to an
18 updated list of property owners supplied by the applicant, and to a list of reviewing agencies as
19 defined in OAR 345-001-0010(52). The Department also published notice of the public hearing
20 in the Lake County Examiner on ~~March 18~~ June 24, 2020, the Desert Whispers and Community
21 Breeze on ~~April~~ July 1, 2020, ~~a newspaper~~ s of general circulation in the area of the proposed
22 facility (south and north Lake County).

23
24 Under OAR 345-015-0230(1), at the July 24 and at the August 21, 2020 EFSC meetings, following
25 the close of the record of the DPO public hearing, Council reviewed the DPO, comments
26 received and the applicant's responses to DPO comments. All comments received on the record
27 of the DPO and applicant responses are available on the project webpage. Attachment B to this
28 order also includes a comment index for comments on the DPO and crosswalk. The DPO
29 comment crosswalk is intended to help individuals who commented on the DPO find the
30 applicable section in this proposed order where the Department or Council responded to the
31 comment, however some comments did not have specificity enough to respond to and not all
32 comments are referenced in this order.

33
34 On October 9, 2020, Following the close of the record of the public hearing and Council's review
35 of the DPO, the Department ~~will~~ issued a proposed order, taking into consideration Council
36 comments, any comments received "on the record of the public hearing" (i.e., oral testimony
37 provided at the public hearing and written comments received by the Department after the
38 date of the notice of the public hearing and before the close of the public hearing), and agency
39 consultation.¹⁷ Concurrent with the issuance of the proposed order, the Department ~~will~~ issued
40 a notice of proposed order and contested case ~~and a public notice of the proposed order.~~¹⁸ The

¹⁶ OAR 345-015-0220(5)(b).

¹⁷ OAR 345-015-0230(2).

¹⁸ See ORS 469.370(4) and OAR 345-015-0014.

notice of proposed order and contested case was issued via U.S. mail, email or both, dependent upon individual's contact information on file, pursuant to OAR 345-015-0230(3), and sent to all persons on the Council's general mailing list, the special mailing list established for the project (i.e. individuals that signed up to receive electronic Department-related notifications via Govdelivery or ClickDimensions for this project or all EFSC projects), all persons who commented in person or in writing on the record of the DPO public hearings, and the property owners listed in ASC Exhibit F.

Contested Case Proceeding Participation Eligibility

Only those persons who commented in person or in writing on the record of the DPO public hearing may request to participate as a party or limited party in the contested case proceeding. To raise an issue in a contested case proceeding, the issue must be within the jurisdiction of the Council, and the person must have raised the issue in person or in writing on the record of the public hearing, unless the Department did not follow the DPO noticing and public hearing procedural requirements pursuant to ORS 469.370(2) or (3), respectively, or unless "[t]he action recommended in the proposed order, including any recommended conditions of approval, differs materially from that described in the draft proposed order, in which case only new issues related to such differences may be raised [Emphasis added].¹⁹ These provisions are further described in OAR 345-015-0016.

As emphasized above, ORS 469.370(5) and OAR 345-015-0016 allow persons eligible to participate in the contested case proceeding to raise new issues related to material differences between the actions recommended in the proposed order and the actions recommended in the DPO. The Department interprets these provisions to only apply to any differences between the DPO and the proposed order that could result in a substantive change to a recommended Council action, including recommended findings of compliance with a standard or applicable law, a site certificate condition, or the Council's decision to approve or deny the site certificate. The Department does not consider a change to its analysis of underlying facts to be a material difference subject to the provisions of ORS 469.370(5)(b) unless there is a corresponding substantive change to a recommended Council action.

Contested Case Proceeding

If the Council finds that a request for contested case identifies one or more properly raised issues that justify a contested case proceeding, the Council shall grant a contested case proceeding on the proposed order. To raise an issue in a contested case proceeding, the issue must be within Council jurisdiction, and the person must have raised the issue on the record of the public hearing with "sufficient specificity to afford the decision maker an adequate opportunity to respond to the issue."²⁰ To raise an issue with sufficient specificity, a person must have presented facts, on the record of the DPO public hearings, that support the person's

¹⁹ ORS 469.370(5)(b)

²⁰ OAR 345-015-0016(3)

1 position on the issue. The purpose of OAR 345-015-0016(3) is to ensure that commenters
2 provide the applicant, Department and Council all comments, including any documents or
3 statutory or regulatory citations, that the commenter believes are relevant to the analysis
4 conducted by the Department and Council at a point in the process where the Department,
5 Council and applicant have “an adequate opportunity to respond to the issue”(as stated in OAR
6 345-015-0220(5) – i.e., at a point when the Department, Council and applicant can address any
7 relevant issues raised by those comments in the proposed order.

8
9 The contested case proceeding will include the following general steps/opportunities (subject
10 to approval of and terms established by the hearing officer): discovery; motion for summary
11 determination; direct testimony; rebuttal testimony; request for cross examination; live cross
12 examination; and closing briefs. At the conclusion of a contested case proceeding, the hearing
13 officer will issue a proposed contested case order stating the hearing officer’s findings of fact,
14 conclusions of law and recommended site certificate conditions on the issues raised in the
15 contested case. Pursuant to OAR 345-015-0085(5), the hearing officer shall provide notification
16 to contested case parties of an opportunity to file an exception to the proposed contested case
17 order, file responses to exceptions once received and distributed, and of an opportunity to
18 provide written or oral testimony at a hearing, to occur at a regularly scheduled Council
19 meeting. Following Council’s review of exceptions, responses to exceptions and written and
20 oral testimony provided during the public hearing, the Council may adopt, modify or reject the
21 hearing officer’s proposed contested case order.²¹ ~~Based upon Council’s direction to adopt,~~
22 ~~modify or reject the hearing officer’s proposed contested case order, the~~ findings of the
23 hearing officer’s proposed contested case order, and any modifications requested by Council
24 following the exception process, are then incorporated into the Council’s final order on the ASC.

25
26 Following the contested case proceeding, the Council will issue a final order either approving or
27 denying the ASC based upon the standards adopted under ORS 469.501, and any additional
28 state statutes, rules, or local government regulations or ordinances determined to be applicable
29 to the facility in the project order.²² The Council’s final order is subject to judicial review by the
30 Oregon Supreme Court. Only a party to the contested case proceeding may request judicial
31 review and the issues on appeal are limited to those raised by the parties to the contested case
32 proceeding. A petition for judicial review must be filed with the Supreme Court within 60 days
33 after the date of service of the Council’s final order or within 30 days after the date of a petition
34 for rehearing is denied or deemed denied.²³

35 36 **III. DESCRIPTION OF THE PROPOSED FACILITY**

37
38 The information presented in this section is based upon details provided in ASC Exhibits B and
39 C. Section III.A., *Proposed Facility Components* describes proposed facility components and

²¹ OAR 345-015-0085.

²² ORS 469.370(7).

²³ ORS 469.403.

Section III.B., *Proposed Facility Location and Site Boundary* described the proposed facility location and site boundary.

A proposed facility includes the energy facility together with any related or supporting facilities. Related or supporting facilities means any structure proposed by the applicant to be constructed or substantially modified in connection with the construction of an energy facility.²⁴ The proposed facility is described below as the energy facility and its related or supporting facilities. As stated in ASC Exhibit B, the proposed facility includes a solar photovoltaic (PV) energy generation facility and related or supporting facilities, with a nominal generating capacity of up to 400 MWac.

In the ASC, the applicant analyzes impacts associated with two design scenarios:

1. Full build-out without battery storage (“PV only”)
2. Full build-out with battery storage (dispersed or centralized) (“PV plus storage”)

There is one potential layout presented for PV only (ASC Exhibit B, Figure B-2), and two potential layouts presented for PV plus storage: one with centralized battery storage and one with dispersed battery storage (ASC Exhibit B, Figures B-3 and B- 4). The dispersed battery storage layout would likely have greater potential impacts on resources than centralized battery storage, due to the increased number of battery storage enclosures; therefore, the applicants’ analyses throughout the ASC and this order is based on the greater impacts associated with the PV plus storage layout.

III.A. Proposed Facility Components²⁵

Solar Photovoltaic (PV) Energy Facility

The proposed energy facility would be comprised of up to 1.7 million solar PV modules consisting of solar panels, trackers, racks, posts, inverter/transformer units and above- and belowground cabling. The proposed energy facility would include approximately 246,444 galvanized steel posts for solar panels, which would be hydraulically driven into the ground at a depth of 5 to 8 feet, with an approximately 4-foot aboveground height. Solar panels with anti-reflective coating would be dark bluish in color, with anti-reflective coating. Solar PV modules

²⁴ OAR 345-001-0010(21) and – (50)

²⁵ OSCAPPDoc4-6 DPO Comments Applicant 2020-04-28. Applicant requests removal or revisions to certain facility descriptions throughout the DPO. The descriptions and details in this order are derived from information provided in the ASC. The Department has not incorporated most of the applicant requests to revise proposed facility descriptions and retains descriptions from the ASC. The description of proposed facility components relate to the evaluation of potential impacts under applicable Council standards and other applicable rules. However, the Department notes that Mandatory Condition OAR 345-025-0006(3), recommended in this order as General Standard Condition 3, provides that the applicant shall design, construct, operate, and retire the facility substantially as described in the site certificate. Further, under ORS 469.401(4), matters that are not included in and governed by the site certificate include but are not limited to design or operational issues that do not relate to siting the facility.

would be placed on non-specular metal galvanized steel racks, with dimensions of approximately 3' x 7' x 7' at full tilt. The inverter/transformer units and cabling are part of the 34.5 kV electrical collection system, as further described below.

Related or Supporting Facilities²⁶

Proposed related or supporting facilities, as further described below, would include:

- 34.5 kV electrical collection system
- Up to 4 collector substations (approximately 1 acre each)
- 115/500 kV step-up substation (on approximately 3 acres)
- Up to 2 operations and maintenance (O&M) building(s); and, Supervisory Control and Data Acquisition (SCADA) System
- Site access/gates, approximately 50 miles of internal/perimeter roads, and 7-foot tall perimeter fencing
- 2 miles of 115 kV transmission line

Battery Storage System Components:

- Long-Duration Flow Batteries
- Battery Storage Enclosures
- Cell Stack
- Balance of Plant

34.5 kV Electrical Collection System

Proposed 34.5 kV electrical collection system components would include combiner boxes, up to 2 million miles of above- and belowground cable, approximately 160 Power Electronics FS3000M or similar solar inverter units with integrated transformers, and approximately 160 “home run” underground cables.

Combiner boxes would be located throughout each module block, and larger direct current (dc) cables would run from combiner boxes to inverter stations. Depending on the exact solar panel brand that would be selected between 3,000 and 6,000 ~~Up to 2 million~~ miles of mostly underground collector cable would be installed in 5' x 3' excavated trenches.²⁷ Where necessary due to ground conditions or sensitive areas (i.e. delineated playas, ASC Exhibit J), the collector cable would be located above ground in trays mounted on the racking below the panels. The

²⁶ In the ASC, the applicant proposes and describes temporary construction staging areas as related or supporting facilities. The applicant explains that it or its contractor would use temporary staging areas to facilitate construction of the proposed facility, equipment would be delivered to facilitate assembly and installation of materials. The Department notes that because the applicant anticipates these areas would become part of the permanent site boundary and are considered permanent impacts under the Council's standards, they would not be considered related or facilities, therefore are not listed as such in this order.

²⁷ OSCAPPDoc4-6.5 DPO Comments Applicant Responses to DPO Comments 2020-07-22; Email from Donny Gallagher, Director of Engineering at Swinerton Renewable Energy.

inverter alternating current (ac) output voltage would be stepped up to a higher voltage (34.5 kV) by integrated transformer/solar inverter units, which would then be stepped up to 34.5 kV within the solar array for transmission to the proposed collector substations.

Collector Substations

Four collector substations are proposed, with each substation containing an oil-filled transformer, with substation equipment heights up to 10 feet (with lightening protection up to 40 feet tall). The substation area would be approximately 1 acre, each. Each collector substation would include equipment, foundations, poles, and anchoring systems.

115/500 kV Step-up Substation

The proposed 115/500 kV step-up substation would occupy approximately 3 acres and would contain approximately one 115 kV input structure, two 115 kV circuit breakers, two 115/500 kV transformers, two 500 kV circuit breakers, 500 kV output structures, and a control building for housing control and communication equipment. The transformers would contain approximately 50,000 (total) gallons of transformer oil. The height of the main electrical equipment would ~~not exceed~~be approximately 10 feet, however, the lightning and structural components receiving power from the 115 kV gen-tie line or sending the power from the step-up substation to the Portland General Electric (PGE) point of interconnection (POI) would be around 65 feet to 100 feet (with lightning protection up to 40 feet tall).²⁸ All equipment and structures would be electrically grounded in accordance with NESC standards. The proposed step-up substation would be enclosed on all four sides by a 7 to 8-foot chain-link fence. A metal access gate would also be approximately 20 feet wide and be 7 to 8 feet high. The perimeter fence and gates would be fitted with barbed wire for increased security. The substation would be accessed by a 20-foot wide new access road connecting to Connley Lane.

The proposed step-up substation would have access and maintenance lighting. The access lighting would be low-intensity and controlled by photo sensors. Maintenance lights would be used only when required for maintenance outages and emergency repairs occurring at night. Lights would be directed downward and shielded to reduce glare.

Once the power is “stepped up,” it would be transferred to an adjacent, not yet constructed, Portland General Electric (PGE) substation for interconnection to the regional grid. The proposed 115/500 kV step-up substation and the PGE substation would share a fence line. Applicant would own the 500-kV output structure until it crosses the shared fence line at which point PGE would own the 500 kV output structure and would control the interconnection point at the PGE substation.

²⁸ [OSCAPPD20 ASC Applicant Responses to Additional RAIs Combined 2020-02-24 to 2020-03-09.](#)

Operation and Maintenance (O&M) Building(s); ~~and SCADA System~~

Two O&M buildings are proposed, to be used for storage of extra equipment and supplies. The O&M building(s) would consist of a warehouse-like storage area; restrooms and employee work areas; an exempt groundwater well; and possibly a septic system as discussed further in IV.M., *Public Services*, of this order. Each O&M building would be located on approximately 0.5 acres (including parking areas) and consist of a building approximately 50 by 50 feet in size and approximately 14 feet in height. The applicant may opt to not install a bathroom and sink for operational staff and site visitors to use, in which case applicant would contract with a local service provider for portable toilets and handwashing stations. Under this scenario, no on-site septic system would be required.

Supervisory Control and Data Acquisition (SCADA) System

A proposed supervisory control and data acquisition (SCADA system) would be installed to collect operating and performance data from the solar array. The SCADA system would allow remote operation of the proposed facility. Fiber optic cables for the SCADA system would be installed with the collection system. In areas where the collection system would be buried, the fiber cables would be installed in the same trench. Where the collection system is aboveground, the fiber cables would be mounted on overhead poles with conductors. The O&M buildings would contain ~~a supervisory control and data acquisition (the SCADA)~~ human machine interface (HMI) system. The SCADA HMI software platform would be programmed with various multi-level priority alarms for electrical hazards, fire and other operational issues.

Site Access, Internal/Perimeter Roads and Perimeter Fencing

Primary access to Area A would be provided from Oil Dri Road (County Road S-14 G), a local access road that provides connection between Christmas valley Road and Country Road 5-12 A. Secondary access to Area A would be located north of County Road 5-12A. Primary access to Area D would be provided from Connley Lane (County Road 5-10 C).

Approximately 50 miles of internal and perimeter roads would be constructed within the proposed facility perimeter fence. Internal and perimeter road materials would include compacted native soil or gravel; roads would be designed to act as fire breaks and would be sufficiently sized for emergency vehicle access in accordance with 2014 Oregon Fire Code or the current fire code. Internal roads would be a minimum of 12 feet in width; the perimeter road would be 20 feet wide with additional space to provide at least a 30-foot, noncombustible, defensible space clearance to help prevent the spread of any fires from within or outside of the site boundary.

An approximately 18-mile, 7-foot chain-link fence, including 1-foot of barbed wire, would be installed around the perimeter of the proposed facility.

1 *115 kV Transmission Line*

2
3 The proposed facility would include a new, overhead double-circuit 115 kV transmission line,
4 extending approximately 0.5 mile within a private property transmission easement, to be
5 secured prior to construction, and then for approximately 1.5 miles within an existing county
6 road (Connley Lane) right-of-way from Area A to Area D. The proposed 115 kV transmission line
7 would be supported by approximately 37, single steel monopole structures up to 6 feet in
8 diameter, spaced approximately 300 feet apart, and approximately 70 feet in height. The
9 monopole structures would be set on concrete foundations up to 20 feet deep, which may have
10 directional anchoring system structures.

11
12 *Battery Storage System*

13
14 The proposed battery storage system would include flow technology batteries and related
15 components, enclosed within up to 134 steel-framed structures, approximately 50 feet wide, 67
16 feet long and up to 30 feet tall, located at a centralized location or at dispersed locations within
17 the facility perimeter fence. Flow technology batteries store energy in a non-hazardous liquid
18 electrolyte which is then flowed through a stack of electrodes. The battery system containers
19 for the flow batteries would likely be shipped and installed dry with the electrolyte added
20 onsite (e.g., water will be brought onsite in water trucks or tanks and added to the other redox
21 components). Following installation, the electrolyte system would be sealed and would not
22 require replacement or additives.²⁹

23
24 The estimated capacity of battery storage facilities is up to approximately 50 MW of
25 charge/discharge capacity and up to 250 megawatt-hours (MWh) of long-term storage (5–6
26 hours).³⁰ Technological advances currently enable up to approximately 200 MW of
27 charge/discharge capacity and up to 800 MWh of long-term storage within any increase in the
28 number of battery storage enclosures or related components, only requiring additional non-
29 hazardous liquid electrolyte. ASC Exhibit B Figures B-3 and B-4 represents potential layouts for
30 the dispersed and centralized battery storage facilities. To represent the maximum impacts
31 associated with the proposed facility, the applicant assumes that the dispersed battery storage
32 facilities would be used. The applicant explains that approximately 134 battery storage
33 enclosures (with concrete foundations) would be utilized under the dispersed battery storage
34 scenario.

35
36 The proposed facility would use approximately 160 Power Electronics FS3000M or similar
37 inverters to convert from dc to ac power and may include converters to convert the voltage of
38 the dc current in and out of the battery.³¹ Inverters would be outdoor rated, negatively
39 grounded and would include ground fault detection and interruption capable of detecting
40 ground faults in the dc current carrying conductors and components, intentionally grounded

²⁹ OSCAPDoc4 ASC 22 OSC ASC Exhibit V 2019-10-17, V.2.2.

³⁰ OSCAPDoc4 ASC 02 OSC ASC Exhibit B 2019-10-17, B.3.

³¹ OSCAPDoc4 ASC 02 OSC ASC Exhibit B 2019-10-17, B.2.

conductors, insulation monitoring, dc and ac overvoltage protection and lightning protection, humidity control, and data acquisition and communication monitoring interface.

Flow batteries consist of a cell stack with the balance of plant (BOP) on either side. The BOP consists of large polymer tanks on each side of the cell stack, pumps, piping (polyvinyl chloride), thermal controls, and power conversion hardware (single stage, bidirectional inverters). The BOP storage tanks contain a non-hazardous, water-based electrolyte/polymer used as redox-active compounds to store energy. The BOP system would have primary and secondary spill containment devices to avoid inadvertent mixing of the aqueous electrolytes contained in the tanks with groundwater or soils. The electrolyte fluid is non-toxic, non-flammable, and thermally stable. The thermal system control in the BOP is a combination of a heating, ventilation, air conditioning (HVAC) air-to-air and glycol-to-air (non-toxic) heat exchanger, keeping the batteries thermally stable over a wide operating range.³²

III.B. Proposed Facility Location and Site Boundary

As discussed in the previous section, the site boundary encompasses approximately 3,921 acres and includes geographic areas referred to as Area A, Area D, and the transmission line corridor. Within the proposed site boundary, approximately 332 acres are identified as ~~avoidance non-disturbance~~ areas where ~~no disturbance would occur the applicant commits to prohibiting placement of facility structures and any facility related disturbance~~ due to sensitivity of environmental resources.

The proposed site boundary is approximately 10 miles east of Fort Rock and 6 miles northwest of Christmas Valley, which are both unincorporated communities in northern Lake County. Within the proposed site boundary, Area A contains approximately 3,863 acres, located mostly on private land and some public lands (about 640 acres) owned by the Oregon Department of State Lands (DSL). The land within Area A is mostly sagebrush shrubland, but also contains relatively small areas of sand dunes and playas. The primary existing land use in Area A is light to moderate seasonal cattle grazing. The areas adjacent to Area A are mostly pivot-irrigated crop circles and some sagebrush shrubland. Oil Dri North Road runs along the eastern border of Area A as well as a portion of the northern border. Area ~~AD~~ would contain the solar PV module blocks, battery storage enclosures, inverter/transformer units, collector substations, above and belowground 34.5 kV electrical collection system, operations and maintenance buildings, and other associated components and would be enclosed in a perimeter fence with gated access.

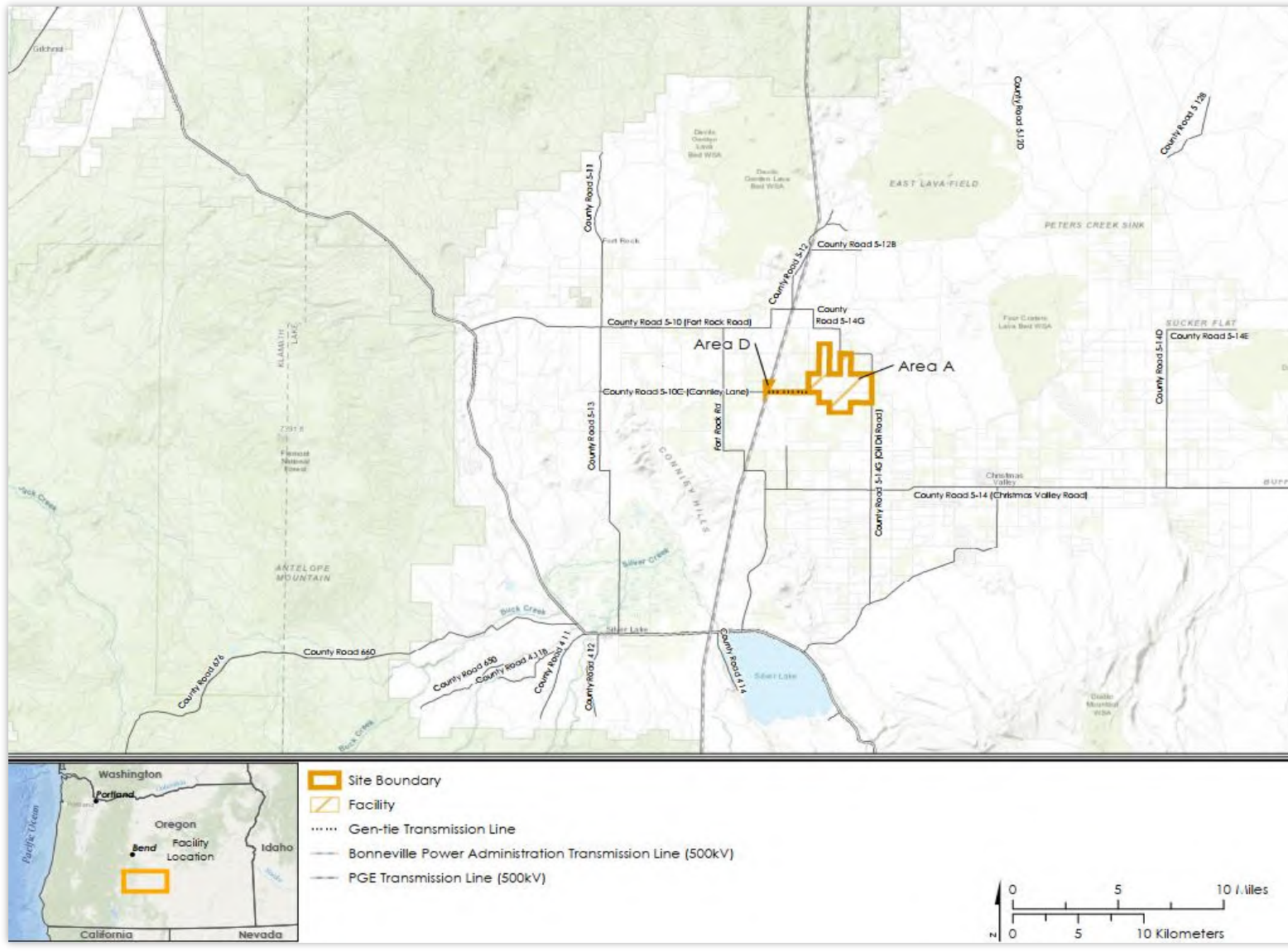
Area D is approximately 2 miles west of Area A, located on private land and contains approximately 44 acres. Area D would contain the 115/500 kV step-up substation and point of interconnection. The land within Area D is mostly non-native forb habitats except for a small portion of pivot-irrigated crop circle in the northeastern corner, which would not be impacted by the proposed step-up substation (Area D is not included in the water right place of use).

³² OSCAPDoc4 ASC 02 OSC ASC Exhibit B 2019-10-17, B.3.

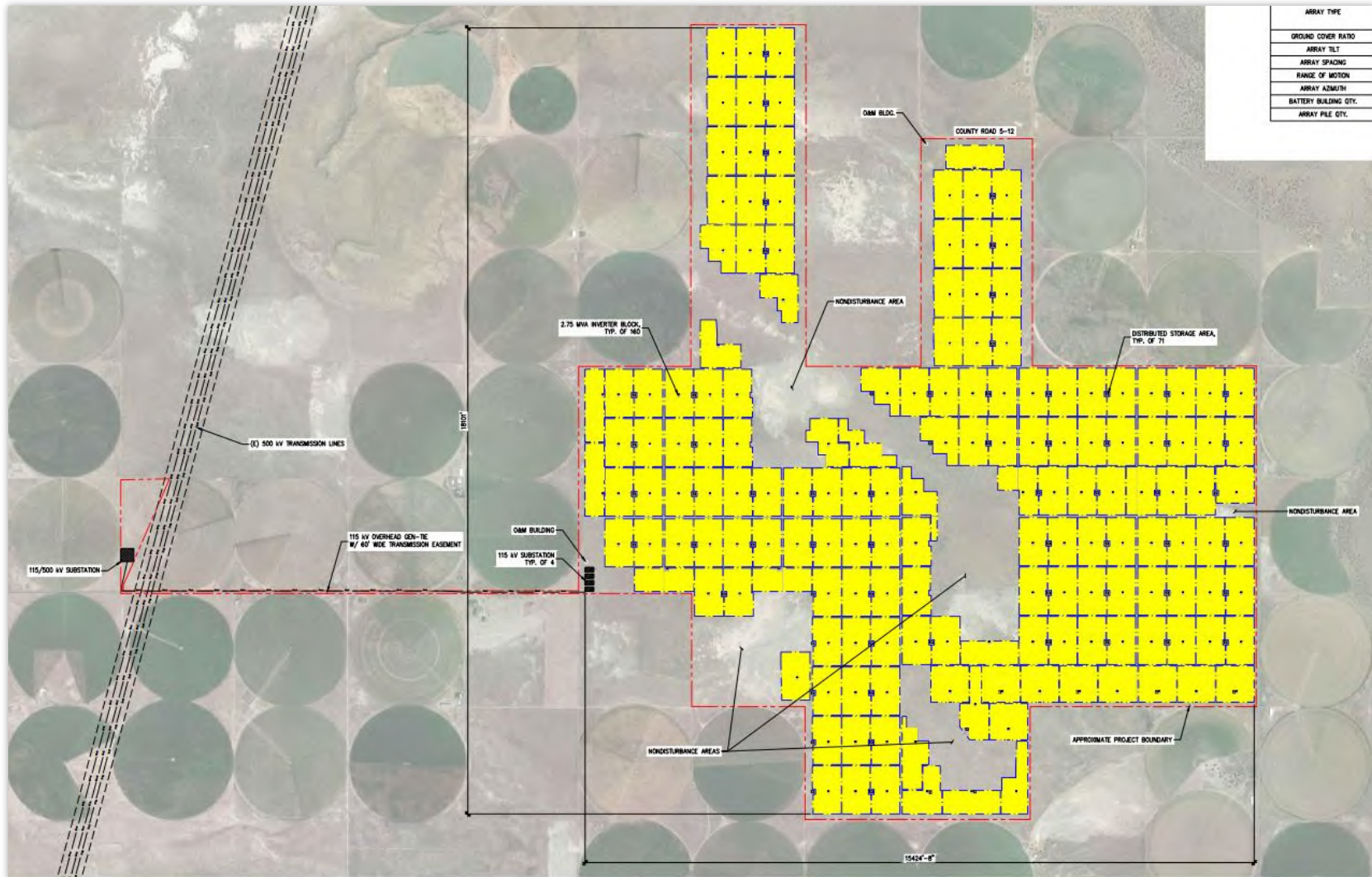
1 The proposed transmission line corridor would be 60 feet in width and would extend
2 approximately 2 miles from the proposed collector substation in Area A to the proposed
3 115/500 kV step-up substation in Area D. For approximately 0.5 miles from Area A, the corridor
4 would be located within private property, within a 60 foot wide transmission easement, to be
5 secured prior to construction. For the remaining 1.5 miles to Area D, the corridor would be
6 located within an existing 60-foot county road (Connley Lane) right-of-way, to be authorized by
7 the county prior to construction.

8
9 The regional location of the proposed facility site boundary and transmission line corridor are
10 presented in Figure 1, *Proposed Facility Location*. The location of proposed facility components
11 are presented in Figure 2, *Proposed Facility Layout (with Dispersed Battery Storage)*.

1 **Figure 1: Proposed Facility Location**



1 **Figure 2: Proposed Facility Layout (with Dispersed Battery Storage)**



2

3

IV. EVALUATION OF COUNCIL STANDARDS

As discussed above, ORS 469.320 requires a site certificate from the Energy Facility Siting Council (EFSC or Council) before construction of a “facility.” ORS 469.300(14) defines “facility” as an “energy facility together with any related or supporting facilities.” The proposed facility qualifies as an “energy facility” under the definition in ORS 469.300(11)(a)(D)(iii) because it is a solar photovoltaic power generation facility that would use more than 1,920 acres of nonarable (i.e. lands not considered high-value farmland pursuant to ORS 195.300(10) or arable land.³³

To issue a site certificate for a proposed facility, the Council must determine that “the facility complies with the applicable standards adopted by the Council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh any adverse effects on a resource or interest protected by the applicable standards that the facility does not meet.”³⁴ The Council must also determine that the proposed facility complies with all other applicable Oregon statutes and administrative rules, as identified in the project order, excluding requirements governing design or operational issues that do not relate to siting³⁵ and excluding compliance with requirements of federally-delegated programs.³⁶ Nevertheless, the Council may consider these programs in the context of its own standards to ensure public health and safety and protection of the environment.³⁷

Under ORS 469.310, the Council is charged with ensuring that the “siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety.” ORS 469.401(2) further provides that the Council must include in the site certificate “conditions for the protection of the public health and safety,” for the time for completion of construction, and to ensure compliance with the standards, statutes and rules described in ORS 469.501 and ORS 469.503.”³⁸ The Council implements this statutory framework and ensures the protection of public health and safety by adopting findings of fact, conclusions of law, and conditions of approval concerning the proposed facility’s compliance with the Council’s Standards for Siting Facilities at OAR 345, Divisions 22, 24, 26, and 27.

This order includes the Department’s initial analysis of whether the proposed facility meets each applicable Council Standard (with mitigation and subject to compliance with recommended conditions, as applicable), based on the information in the ASC. Following the

³³ The definitions contained in ORS 469.300 and OAR 345-001-0010 apply to terms used in this ~~draft~~ proposed order.

³⁴ ORS 469.503(1).

³⁵ As stated above, such matters include design-specific construction or operation standards and practices that do not relate to siting, as well as matters relating to employee health and safety, building code compliance, wage and hour or other labor regulations, or local government fees and charges.

³⁶ ORS 469.401(4); ORS 469.503(3).

³⁷ The Council does not have jurisdiction over matters that are not included in and governed by the site certificate or amended site certificate. However, the Council may rely on the determinations of compliance and the conditions in the permits issued by these state agencies and local governments in deciding whether the facility meets other standards and requirements under its jurisdiction.

³⁸ ORS 469.401(2).

42-day comment period on the DPO, public hearing on April 23, 2020, and Council's review of the DPO and comments received at a subsequent Council meeting, the proposed order would be issued presenting the Department's evaluation of the comments and additional evidence, if received on the record of the DPO.

IV.A. General Standard of Review: OAR 345-022-0000

(1) To issue a site certificate for a proposed facility or to amend a site certificate, the Council shall determine that the preponderance of evidence on the record supports the following conclusions:

(a) The facility complies with the requirements of the Oregon Energy Facility Siting statutes, ORS 469.300 to ORS 469.570 and 469.590 to 469.619, and the standards adopted by the Council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh the damage to the resources protected by the standards the facility does not meet as described in section (2);

(b) Except as provided in OAR 345-022-0030 for land use compliance and except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council, the facility complies with all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a site certificate for the proposed facility. If the Council finds that applicable Oregon statutes and rules, other than those involving federally delegated programs, would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

(4) In making determinations regarding compliance with statutes, rules and ordinances normally administered by other agencies or compliance with requirement of the Council statutes if other agencies have special expertise, the Department of Energy shall consult such other agencies during the notice of intent, site certificate application and site certificate amendment processes. Nothing in these rules is intended to interfere with the state's implementation of programs delegated to it by the federal government.

Findings of Fact

OAR 345-022-0000 provides the Council's General Standard of Review and requires the Council to find that a preponderance of evidence on the record supports the conclusion that a proposed facility would comply with the requirements of EFSC statutes and the siting standards adopted by the Council and that a proposed facility would comply with all other Oregon

1 statutes and administrative rules applicable to the issuance of a site certificate for the proposed
2 facility.³⁹

3
4 The requirements of OAR 345-022-0000 are discussed in the sections that follow. The
5 Department consulted with reviewing agencies including; state agencies, tribal governments,
6 and the Lake County Board of Commissioners during review of the ASC to aid in the evaluation
7 of whether the proposed facility would satisfy the requirements of applicable statutes, rules,
8 and ordinances otherwise administered by other agencies and governments.⁴⁰ Additionally, in
9 many circumstances the Department relies upon these reviewing agencies' special expertise in
10 evaluating compliance with the requirements of Council standards.

11
12 OAR 345-022-0000(2) and (3) apply to ASCs where an applicant has shown that the proposed
13 facility cannot meet Council standards, or has shown that there is no reasonable way to meet
14 the Council standards through mitigation or avoidance of the damage to protected resources;
15 and, for those instances, establish criteria for the Council to evaluate in making a balancing
16 determination. The applicant does not assert that the proposed facility would not meet an
17 applicable Council standard. Therefore, OAR 345-022-0000(2) and (3) do not apply to this
18 review.

19
20 Certificate Expiration (OAR 345-027-0013)

21
22 Under OAR 345-015-0085(8), the site certificate is effective upon execution by the Council and
23 the applicant. ORS 469.370(12) requires the Council to "specify in the site certificate the date by
24 which construction of the facility must begin." ORS 469.401(2) requires that the site certificate
25 contain a condition "for the time for completion of construction." Under OAR 345-025-0006(4),
26 the certificate holder must begin construction on the facility no later than the construction
27 beginning date specified by Council in the site certificate. "Construction" is defined in ORS
28 469.300(6) and OAR 345-010-0010(12) to mean "work performed on a site, excluding surveying,
29 exploration or other activities to define or characterize the site, the cost of which exceeds
30 \$250,000."

31
32 In the ASC Exhibit B, the applicant explains that it anticipates having a rolling construction
33 schedule, with "modest" construction activities in the beginning and then an "average rate of
34 0.8 MW per day (with up to 2 MW per day during peak summer months)", with construction
35 completion two years after beginning full build out.⁴¹ ASC Exhibit U describes that construction
36 is expected to take approximately two years, with crews typically working on ~~1 to 2 megawatts,~~

³⁹ OAR 345-022-0000(2) and (3) apply to proposed facilities where an applicant has shown that the proposed facility cannot meet Council standards or has shown that there is no reasonable way to meet the Council standards through mitigation or avoidance of adverse effects to protected resources; and, for those instances, establish criteria for the Council to evaluate in making a balancing determination. The applicant does not assert that the proposed facility cannot meet an applicable Council standard. Therefore, OAR 345-022-0000(2) and (3) do not apply to this review.

⁴⁰ Reviewing agencies, as defined in OAR 345-001-0010 (51).

⁴¹ OSCAPPDoc4 ASC 02 OSC ASC Exhibit B 2019-10-17, B.1.

approximately 60-acre⁷ sections at a time.⁴² The applicant does not request Council to consider a specific construction commencement or completion deadline, but states in the ASC that construction would be completed within two years after beginning. The applicant's impact analysis related to construction impacts assumes a "worse-case" scenario of all construction activities occurring for two years until the proposed facility is complete.

While each ASC is evaluated on its own facts, the Council has decided during its review of previous energy facility ASCs that an applicant should typically have up to three years to commence construction⁷ and three to six years to complete construction ~~of all facility components~~from the date of Council action. An applicant request to begin and complete construction within a longer timeframe must be balanced against potential changes in the existing environment (such as wildlife habitat) and in land use ordinance provisions and Council standards in the interim. In contrast, the Council should also consider unforeseen factors that could impact a certificate holder's ability to meet the construction commencement and completion deadlines, such as financial, economic, or technological changes. The Department also points to the pre-construction obligations in conditions of approval that are recommended to Council in this order. An applicant is obligated to comply with all applicable pre-construction conditions prior to beginning construction activities. Recommended pre-construction conditions include verification surveys related to wildlife habitat, geotechnical, and cultural, as well as the finalization of impact and mitigation plans currently in draft form, as discussed in this order. Several pre-construction conditions include review and approval by the Department, in coordination with applicable reviewing agencies. This review and approval process must occur for the applicant to begin construction activities, as defined in OAR 345-010-0010(12), for a portion or all the proposed facility, even for the applicant-proposed "rolling construction schedule." Because the applicant does not request Council to consider a specific timeframe to begin construction, consistent with other EFSC-approved facilities, the Department recommends allotting up to three-years after the date of Council action for the applicant to begin construction.

In the ASC, the applicant represents that construction would be completed construction within two years of commencement, but requests that Council impose a construction completion deadline based on the date of Council action (i.e. Council decision on Final Order on ASC), resulting in a construction duration extending 6 years. The Department concurs that an applicant should be afforded flexibility on the timing of construction commencement – reflected in recommended General Standard Condition 1 which authorizes up to 3 years from the date of Council action for the applicant to commence construction. In contrast, however, the Department does not consider flexibility of up to 6 years to complete construction appropriate based on the 2-year construction duration evaluated in the ASC.⁴³ however, due to

⁴² OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.

⁴³ In comments on the record of the DPO, applicant requests that recommended General Standard Condition 1 be amended to authorize construction completion 6 years following the effective date of the site certificate. The Council has moved from establishing construction commencement and construction deadlines based on effective date of site certificate to deadlines based on date of Council action to avoid authorizing additional time within

~~the size and scope of this proposed facility, the Department recommends increasing the timeframe to complete construction activities. Further, in the Department and EFSC experience with other approved facilities, longer construction windows allow for unplanned construction interruptions.~~ The Department recommends allotting up to three years to complete construction of all the facility components, from the date of construction commencement. The Department recommends a timeline consistent with previously approved facilities, noting that the applicant may begin construction after issuance of a site certificate, pending compliance with pre-construction conditions discussed above.

Recommended General Standard Condition 1: The certificate holder shall begin and complete construction of the facility by the dates specified in the site certificate.

- a. Construction of the facility shall commence within three years after the date of Council action [DATE TO BE SPECIFIED]. Within 7 days of construction commencement, the certificate holder shall provide the Department written verification of the construction commencement date and that it has met the construction commencement deadline.
- b. Construction of all facility components shall be completed within three years after construction commencement identified in (a.) of this condition. Within 7 days of construction completion, the certificate holder shall provide the Department written verification that it has met the construction completion deadline.

[GEN-GS-01; Mandatory Condition OAR 345-025-0006(4)]

Mandatory and Site-Specific Conditions in Site Certificates [OAR 345-025-0006 and OAR 345-025-0010]

OAR 345-025-0006 lists certain mandatory conditions that the Council must adopt in every site certificate. Mandatory conditions OAR 345-025-0006(7) through (9) and (16) are discussed and applied in Section IV.G., *Retirement and Financial Assurance*, of this order as they relate to the restoration of the site, Council approval of a retirement plan, and bonding requirements of the applicant. Mandatory conditions OAR 345-025-0006(12) through (14) are discussed and applied in Section IV.C, *Structural Standard*, because they are associated with the design, construction and the operation of the proposed facility to avoid dangers of seismic hazards, coordination with and notifications to the Department of Geology and Mineral Industries. In addition, pursuant to OAR 345-025-0006(10), the Council shall include as conditions in the site certificate all representations in the ASC and supporting record the Council deems to be binding commitments made by the applicant, as necessary to avoid or minimize a potential impact. Mandatory conditions that are not otherwise addressed in the evaluation of compliance with specific standards are discussed below, in the context of the Council's General Standard of Review.

The following are applicable mandatory conditions required pursuant to OAR 345-025-0006:

[construction timeframes as a result of time incurred during transaction of site certificate execution. OSCAPDoc4-6 DPO Comments Applicant 2020-04-28.](#)

Recommended General Standard Condition 2: The certificate holder shall submit a legal description of the site to the Oregon Department of Energy within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identify the outer boundaries that contain all parts of the facility.

[OPR-GS-01; Mandatory Condition OAR 345-025-0006(2)]

Recommended General Standard Condition 3: The certificate holder shall design, construct, operate, and retire the facility:

- a. Substantially as described in the site certificate;
- b. In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the site certificate is issued; and
- c. In compliance with all applicable permit requirements of other state agencies.

[GEN-GS-02; Mandatory Condition OAR 345-025-0006(3)]

Recommended General Standard Condition 4: Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under this section, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the certificate holder has construction rights on all parts of the site. For the purpose of this rule, “construction rights” means the legal right to engage in construction activities. For the transmission line associated with the energy facility, if the certificate holder does not have construction rights on all parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-0010, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and the certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of a transmission line occurs during the certificate holder’s negotiations to acquire construction rights on another part of the site.

[PRE-GS-01; Mandatory Condition OAR 345-025-0006(5)]

Recommended General Standard Condition 5: If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and any affected site certificate conditions.

[GEN-GS-03; Mandatory Condition OAR 345-025-0006(6)]

Recommended General Standard Condition 6: Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for facility operation and dispose of all timber, brush,

1 refuse and flammable or combustible material resulting from clearing of land and
2 construction of the facility.

3 [OPR-GS-01; Mandatory Condition OAR 345-025-0006(11)]
4

5 In ASC Exhibit B, the applicant discusses that it may lease, sell, share ownership of portions of
6 the proposed facility with outside customers. In the event there is a change in the ownership,
7 possession or control of the facility or the then certificate holder, a transfer of the site
8 certificate is required subject to the requirements of OAR 345-027-0100. A transfer of the site
9 certificate does not terminate the transferor's duties and obligations under the site certificate
10 until the Council approves a request for amendment to transfer the site certificate and issues
11 an amended site certificate. Mandatory Condition OAR 345-025-0006(15) below is included in
12 each site certificate, and the Department highlights the condition specific to the applicant's
13 discussion of transferring portions of the proposed facility in the ASC.
14

15 **Recommended General Standard Condition 7:** Before any transfer of ownership of the
16 facility or ownership of the site certificate holder, the certificate holder shall inform the
17 Department of the proposed new owners. The requirements of OAR 345-027-0100 apply to
18 any transfer of ownership that requires a transfer of the site certificate.

19 [GEN-GS-04; Mandatory Condition OAR 345-025-0006(15)]
20

21 *Site Specific Conditions [OAR 345-025-0010]*
22

23 In addition to mandatory conditions imposed on all facilities, the Council rules also include "site
24 specific" conditions at OAR 345-025-0010 that the Council may include in the site certificate to
25 address issues specific to certain facility types or proposed features of facilities.⁴⁴
26

27 Because the proposed facility includes a 115-kV transmission line, the Department recommends
28 the Council adopt the following site-specific conditions:
29

30 **Recommended General Standard Condition 8:** The certificate holder shall:

- 31 a. Design, construct and operate the transmission line in accordance with the
32 requirements of the National Electrical Safety Code as approved by the American
33 National Standards Institute; and
34 b. The certificate holder shall develop and implement a program that provides
35 reasonable assurance that all fences, gates, cattle guards, trailers, or other objects
36 or structures of a permanent nature that could become inadvertently charged with
37 electricity are grounded or bonded throughout the life of the line.

38 [GEN-GS-05; Site Specific Condition OAR 345-025-0010(4)]
39

⁴⁴ Site-Specific Conditions at OAR 345-025-0010(1)-(3), and (6)-(7) do not apply to the proposed facility based on facility energy source/type (solar photovoltaic power generation facility with related and supporting facilities including a proposed 115 kV transmission line).

Recommended General Standard Condition 9: The certificate holder is authorized to construct a 115-kV transmission line anywhere within the approved corridor, subject to the conditions of the site certificate. The approved corridor extends approximately 2 miles from Area A to Area D. From east to west, the first 0.5-mile corridor extends 60 feet in width within a private property transmission easement, and the remaining 1.5-mile corridor extending 60 feet in width within the exiting road right-of-way of Connley Lane, as further described in ASC Exhibits B and C and as presented in Figure 1 of the site certificate. [GEN-GS-06; Site Specific Condition OAR 345-025-0010(5)]

Construction and Operation Rules for Facilities [OAR Chapter 345, Division 26]

The Council ~~has~~ adopted rules at OAR Chapter 345, Division 26 to ensure that construction, operation, and retirement of facilities are accomplished in a manner consistent with the protection of the public health, safety, and welfare and protection of the environment. These rules include requirements for compliance plans, inspections, reporting and notification of incidents prior to and during construction and during operation of the proposed facility. For instance, under OAR 345-026-0080(1)(a), within six months after beginning construction, and every six months thereafter during construction of the proposed facility and related or supporting facilities, the certificate holder must submit a semiannual construction progress report (semiannual report) to the Department. The semiannual report includes construction progress updates, subjects listed in OAR 345-026-0080(2)(a), (d), (f) and (g), and any other reporting requirements detailed in site certificate conditions. Once the proposed facility is operational, between January 1 and April 30 of each year, the applicant must submit an annual report to the Department addressing the subjects listed in OAR 345-026-0080(2). When the reporting date coincides for the semiannual report and the annual report, the applicant may include the construction progress report within the annual report. The certificate holder must construct the facility substantially as described in the site certificate and the certificate holder must construct, operate, and retire the facility in accordance with all applicable rules adopted by the Council in OAR Chapter 345, Division 26.⁴⁵

The Department recommends that the Council adopt General Standard Condition 10, as presented below, to support the Department's review of ongoing site certificate compliance, in accordance with OAR Chapter 345, Division 26.

Recommended General Standard Condition 10: At least 90 days prior to beginning construction of the facility (unless otherwise agreed to by the Department), the certificate holder shall submit to the Department a compliance plan documenting and demonstrating actions completed or to be completed to satisfy the requirements of all site certificate terms and conditions and applicable statutes and rules. The plan shall be provided to the Department for review and compliance determination for each requirement. The

⁴⁵ Applicable rule requirements established in OAR Chapter 345, Division 26 include OAR 345-026-0005 to OAR 345-026-0170.

Department may request additional information or evaluation deemed necessary to demonstrate compliance.

[PRE-GS-02; OAR 345-026-0048]

Conclusions of Law

Based on the foregoing recommended findings of fact, conclusions of law, and subject to recommended conditions, the Department recommends Council find that the proposed facility would satisfy the requirements of OAR 345-022-0000.

IV.B. Organizational Expertise: OAR 345-022-0010

(1) To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant's experience, the applicant's access to technical expertise and the applicant's past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.

(2) The Council may base its findings under section (1) on a rebuttable presumption that an applicant has organizational, managerial and technical expertise, if the applicant has an ISO 9000 or ISO 14000 certified program and proposes to design, construct and operate the facility according to that program.

(3) If the applicant does not itself obtain a state or local government permit or approval for which the Council would ordinarily determine compliance but instead relies on a permit or approval issued to a third party, the Council, to issue a site certificate, must find that the third party has, or has a reasonable likelihood of obtaining, the necessary permit or approval, and that the applicant has, or has a reasonable likelihood of entering into, a contractual or other arrangement with the third party for access to the resource or service secured by that permit or approval.

(4) If the applicant relies on a permit or approval issued to a third party and the third party does not have the necessary permit or approval at the time the Council issues the site certificate, the Council may issue the site certificate subject to the condition that the applicant shall not commence construction or operation as appropriate until the third party has obtained the necessary permit or approval and the applicant has a contract or other arrangement for access to the resource or service secured by that permit or approval.

1 **Findings of Fact**

2
3 Subsections (1) and (2) of the Council's Organizational Expertise standard require that the
4 applicant demonstrate its ability to design, construct and operate the proposed facility in
5 compliance with Council standards and all site certificate conditions, and in a manner that
6 protects public health and safety, as well as its ability to restore the site to a useful, non-
7 hazardous condition. The Council may consider the applicant's experience and past
8 performance in constructing, operating and retiring other facilities in determining compliance
9 with the Council's Organizational Expertise standard. Subsections (3) and (4) address third party
10 permits.

11
12 *Construction, Operation and Retirement of the Proposed Facility*

13
14 To evaluate whether the applicant has demonstrated an ability to comply with Council's
15 Organizational Expertise standard, the Department presents an evaluation of the applicant's
16 relevant experience with constructing and operating similar facilities and considers whether
17 any regulatory citations have been received for its facilities. The Council may consider an
18 applicant's past performance, including but not limited to; the quantity or severity of any
19 regulatory citations in the construction or operation a facility, type of equipment, or process
20 similar to the facility, in evaluating whether the applicant has demonstrated an ability to design,
21 construct and operate a facility in compliance with Council standards and site certificate
22 conditions.⁴⁶

23
24 Obsidian Solar Center, LLC is a project-specific LLC and therefore relies upon the organizational
25 expertise and experience of its two parent companies, Obsidian Renewables, LLC, and Lindgren
26 Development, Inc. to demonstrate compliance with the Council's Organizational Expertise
27 standard, as presented in ASC Exhibit D.⁴⁷

28
29 ASC Exhibit D states that Obsidian Renewables "was the first and remains one of the most
30 active developers of utility-scale solar photovoltaic facilities in the Pacific Northwest," and has
31 experience in the design, construction, and operation of multiple utility-scale solar energy
32 facilities, specifically in southeast Oregon and Lake County, Oregon. ASC Exhibit D states that
33 Obsidian Renewables has developed or financed 24 solar PV facilities and has locally permitted
34 three other solar PV facilities, in addition to the Obsidian Solar Center, currently in
35 development in Lake County. These solar facilities are: Fossil Lake Solar (10 MW) in the
36 Christmas Valley/north Lake County area, and Airport Solar (47.25 MW) and Airport 10 (10
37 MW) in the Lakeview/south Lake County area.

38
39 Lindgren Development, as stated in ASC Exhibit D, is a subsidiary of Swinerton Incorporated,
40 and through its subsidiaries, Swinerton Builders and Swinerton Renewable Energy, has

⁴⁶ OAR 345-021-0010(1)(d)(D)

⁴⁷ OSCAPDoc4 ASC 04 OSC ASC Exhibit D 2019-10-17.

constructed, operated, and maintained solar PV projects totaling over 3 gigawatts.⁴⁸ Swinerton Renewable Energy has experience engineering, procuring, and construction capabilities, and includes, SOLV which is a division that provides full-service operation and maintenance of solar facilities, as well as real-time performance monitoring through its proprietary supervisory control and data acquisition platform. ASC Exhibit D also states that the facility is likely to be operated by Swinerton Renewable Energy or its affiliate.

The ASC describes that neither Obsidian Renewables nor Lindgren Development have developed a battery storage system substantially similar to the proposed battery storage system. In ASC Exhibit D, however, the applicant explains that Lindgren Development's affiliate company, Swinerton Builders, has constructed a 20 MW battery storage facility in California, and Swinerton Builders is expected to be involved in the Obsidian Solar Center facility development.

The applicant affirms that neither the LLC or its parent companies have received regulatory citations or complaints for any of its solar facilities.

Because the organizational expertise of the applicant's parent companies, Obsidian Renewables and Lindgren Development, as well as Lindgren Development's sister companies at Swinerton Builders, is relied upon to satisfy the requirements of the standard, the Department recommends Council impose the following condition to ensure that the applicant notifies the Department of any changes in the corporate structure of the applicant's parent companies:⁴⁹

Recommended Organizational Expertise Condition 1: During construction and operation of the facility, the certificate holder shall report to the Department, within 21 days, any change of the parent companies, Obsidian Renewables, LLC and Lindgren Development, Inc., such as changes within the Board of Directors, President or Chief Executive Office, where the certificate holder considers such change to that could impact its the certificate holder's access to the resources or expertise of the parent companies.

[GEN-OE-01]

While ASC Exhibit D and Exhibit E describe that the builder of the proposed facility would likely be Swinerton Incorporated or its subsidiaries, Swinerton Builders and Swinerton Renewable Energy, it is possible that a different builder is ultimately hired to construct the proposed facility. Because the ultimate responsibility for compliance with the site certificate would lie with the certificate holder, Obsidian Solar Center LLC, but it is recognized that the certificate holder would hire various contractors to design and build components of the proposed facility,

⁴⁸ OSCAPPD4 ASC 04 OSC ASC Exhibit D 2019-10-17, D.2.

⁴⁹ In comments on the record of the DPO, the applicant requests that recommended Organizational Expertise Condition 1 be revised to specify the types of changes to the parent company that would necessitate notification to the Department. The Department acknowledges that the requested change is consistent with recent changes to similar conditions imposed in other site certificates and considers the requested revision to represent an improvement in the specificity of the condition. The Department recommends Council amend the recommended condition as requested. OSCAPPD4-6 DPO Comments Applicant 2020-04-28.

the Department recommends that Council adopt the following conditions that clarify and confirm that the responsibility of compliance with the site certificate would be with the certificate holder.

Recommended Organizational Expertise Condition 2: Before beginning construction of the facility, the certificate holder shall notify the Department of the identity and qualifications of the major design, engineering and construction contractor(s). The certificate holder shall select contractors that have substantial experience in the design, engineering and construction of similar facilities. The certificate holder shall report to the Department any changes of major contractors.

[PRE-OE-01]

Recommended Organizational Expertise Condition 3: During design, construction, operation, and retirement of the facility, the certificate holder shall contractually require all contractors and subcontractors to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. The contractual obligation shall be required of each contractor and subcontractor prior to that firm working on the facility. Such contractual provisions shall not operate to relieve the certificate holder of responsibility under the site certificate.

[GEN-OE-02]

Recommended Organizational Expertise Condition 4: Any matter of non-compliance under the site certificate is the responsibility of the certificate holder. Any notice of violation issued under the site certificate will be issued to the certificate holder. Any civil penalties under the site certificate will be levied on the certificate holder.

[GEN-OE-03]

Recommended Organizational Expertise Condition 5: In addition to the requirements of OAR 345-026-0170, within 72 hours after discovery of incidents or circumstances that violate the terms or conditions of the site certificate, the certificate holder must report the conditions or circumstances to the Department.

[GEN-OE-04]

In ASC Exhibit D, the applicant discusses that while it does not have specific experience implementing mitigation projects as would be required based on the Department's recommendations elsewhere in this order, it has experience in in developing multiple solar PV projects in Oregon, and has hired or is working with multiple experienced professionals with experience in developing and implementing mitigation projects, specifically habitat compensatory mitigation projects. The Department further notes that Exhibit P and the associated habitat mitigation plan describes how the applicant would develop and implement habitat mitigation projects in compliance with Council standards, as well as in Exhibit S describing how the application would implement mitigation related to cultural, historical, and archaeological resources. The Department has been working with the applicant's legal, permitting, environmental, and archaeological consultants during the review of the ASC. The

1 Department recommends Council find that the applicant has the ability to successfully
2 implement mitigation requirements, including habitat and cultural resources mitigation, as
3 described elsewhere in this order and as would be required as conditions of approval of a site
4 certificate, based on the Department's recommendations to Council.

5
6 *Public Health and Safety*

7
8 The proposed solar facility components and transmission line could result in health and safety
9 risks from risks to public providers of fire service during fire response events. The Department's
10 evaluation of these risks is presented in Section IV.M., *Public Services* of this order.

11
12 The applicant is only seeking EFSC approval to install and operate a flow-battery system, and
13 not lithium batteries. Flow batteries use a non-toxic and non-flammable electrolyte fluid that is
14 not expected to pose a risk to public health and safety. Furthermore, the facility would have
15 primary and secondary containment to reduce the risk of the fluid from spilling or otherwise
16 leaking and reaching the ground.⁵⁰

17
18 Based upon the evidence and reasoning provided in the ASC and as described here, and in
19 compliance with the recommended conditions, the Department recommends Council find that
20 the applicant provides reasonable assurance that it can design, construct, operate, and retire
21 the proposed facility in a manner that protects public health and safety in accordance with the
22 Organizational Expertise standard.

23
24 *Ability to Restore the Site to a Useful, Non-Hazardous Condition*

25
26 The applicant's ability to restore the facility site to a useful, non-hazardous condition is
27 evaluated in Section III.G., *Retirement and Financial Assurance* of this order, in which the
28 Department recommends that Council find that the applicant has demonstrated an ability to
29 comply with the Retirement and Financial Assurance standard.

30
31 *ISO 900 or ISO 14000 Certified Program*

32
33 OAR 345-022-0010(2) is not applicable because the applicant has not proposed to design,
34 construct or operate the proposed facility according to an ISO 9000 or ISO 14000 certified
35 program.

36
37 *Third-Party Permits*

38
39 OAR 345-022-0010(3) addresses the requirements for potential third party contractors. Further,
40 the standard requires that prior to issuing a site certificate, the Council must find that the
41 applicant has, or has a reasonable likelihood of entering into, a contractual or other

⁵⁰ OSCAPDoc4 ASC 02 OSC ASC Exhibit B. 2019-10-17, Section B.3

1 arrangement with the third party for access to the resource or service secured by that permit or
2 approval.

3
4 The applicant states in Exhibit E that it may rely on construction contractors to obtain the
5 following permits: an onsite sewage disposal construction installation permit for the O&M
6 building; a water pollution control facility permit (1700-B) for washwater produced from
7 equipment-cleaning activities⁵¹; and an oversized load movement permit. These third-party
8 permits are ministerial and would not ordinarily be reviewed by the Council to determine
9 compliance, nor governed by the site certificate, and if necessary, must be secured by the third-
10 party contractors independent of the site certificate process.

11 **Conclusions of Law**

12
13
14 Based on the evidence in the record, and subject to compliance with the recommended
15 conditions of approval, the Department recommends that the Council find that the applicant
16 would satisfy the Council's Organizational Expertise standard.

17 **IV.C. Structural Standard: OAR 345-022-0020**

18
19
20 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the*
21 *Council must find that:*

22
23 *(a) The applicant, through appropriate site-specific study, has adequately*
24 *characterized the seismic hazard risk of the site;*

25
26 *(b) The applicant can design, engineer, and construct the facility to avoid dangers to*
27 *human safety and the environment presented by seismic hazards affecting the site,*
28 *as identified in subsection (1)(a);*

29
30 *(c) The applicant, through appropriate site-specific study, has adequately*
31 *characterized the potential geological and soils hazards of the site and its vicinity*
32 *that could, in the absence of a seismic event, adversely affect, or be aggravated by,*
33 *the construction and operation of the proposed facility; and*

34
35 *(d) The applicant can design, engineer and construct the facility to avoid dangers to*
36 *human safety and the environment presented by the hazards identified in subsection*
37 *(c).*

38
39 *(2) The Council may not impose the Structural Standard in section (1) to approve or deny*
40 *an application for an energy facility that would produce power from wind, solar or*

⁵¹ It is unclear if DEQ continues to require the 1700-B permit related to solar panel washwater. Nevertheless, if such a permit is required, the application states that the applicant's third-party contractor would secure the permit, if necessary, and as such it is not subject to EFSC jurisdiction nor is it governed by the site certificate.

geothermal energy. However, the Council may, to the extent it determines appropriate, apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

***⁵²

Findings of Fact

As provided in section (1) above, the Structural Standard generally requires the Council to evaluate whether the applicant has adequately characterized the potential seismic, geological and soil hazards of the site, and whether the applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment from these hazards. Pursuant to OAR 345-022-0020(2), the Council may issue a site certificate for a solar energy facility without making findings regarding compliance with the Structural Standard; however, the Council may apply the requirements of the standard to impose site certificate conditions.

The analysis area for review of geologic and soil stability, as evaluated under the Council's Structural Standard, is the area within the site boundary. The applicant also assesses earthquakes within 50-miles from the proposed site boundary and faults outside the site boundary.

DOGAMI Consultation

Council's information requirements under OAR Chapter 345 Division 21 include applicant consultation with the Oregon Department of Geology and Mineral Industries (DOGAMI) on the appropriate methodology and scope of the seismic hazards and geology and soil-related hazards assessments, and the appropriate site-specific geotechnical work to be completed to demonstrate compliance with the Council's Structural Standard. The applicant consulted with DOGAMI on June 6, 2018. Through consultation, DOGAMI provided recommendations, which were incorporated and reflected in ASC Exhibit H. DOGAMI recommended that, to inform ASC Exhibit H, the applicant conduct a seismic analysis using a range of estimated soil conditions, but that subsurface explorations including borings be conducted prior to construction to inform final design. DOGAMI also recommended that the applicant rely upon both the 2015 and 2018 International Building Code (IBC) and the updated Oregon Structural Specialty Code (OSSC) (2014). The applicant provides notes, as reviewed and concurred with edits by DOGAMI staff (Yumei Wang, DOGAMI geotechnical engineer), from the DOGAMI consultation in ASC Exhibit H Attachment H-2.⁵³

Potential Seismic, Geologic, and Soil Hazards within Analysis Area

OAR 345-022-0020(1)(a) requires the Council to find that the applicant, through appropriate site-specific study, has adequately characterized the seismic, geologic, and soil hazards of a

⁵² OAR 345-022-0020(3) does not apply to this ASC because the proposed facility would not meet the criteria for a special criteria facility as defined in ORS 469.373(1).

⁵³ OSCAPPDoc4. ASC 08 OSC ASC Exhibit H, 2019-10-17.

proposed site. The applicant provides a preliminary site-specific geologic and geotechnical assessment of the proposed facility site in ASC Exhibit H, Attachment H-1, prepared by an Oregon certified engineering geologist, a registered geologist and registered professional engineer with Cornforth Consultants, a 's geotechnical and geological consultant. ~~Cornforth Consultants, prepared a preliminary geotechnical and geological summary report (preliminary geotechnical report) of the proposed facility site, provided in ASC Exhibit H, Attachment H-1.~~⁵⁴ ~~Cornforth Consultants is an Oregon-based geotechnical firm established in 1983 that performs a wide array of complex geotechnical and landslide studies. The Department considers~~ qualifications of the consultants, including Oregon registered and certified engineers and geologists, to be the first set of facts relevant to the Council's evaluation of the appropriateness of the site-specific study.

Seismic Hazards

Potential seismic hazards within the analysis area include faults and earthquakes. To evaluate these potential hazards, the applicant conducted a literature review, geologic site reconnaissance survey, and deterministic ground motion studies to characterize the potential seismic hazards within and near the proposed facility site. Literature publications reviewed include existing geological maps and reports, Oregon Department of Water Resources well log reports, United States Geological Survey (USGS) Search Earthquake Catalogue, National Resource Conservation Service Soil Survey Geographic Database for Lake County, and seismic analysis. The site reconnaissance was conducted on May 29-31, 2018 by a senior engineering geologist of Cornforth Consulting, which included a visual evaluation of existing soil and exposures, classification of soils including a soil laboratory analysis, and observation of typical slopes within the area of proposed facility components.

In ASC Exhibit H and Attachment H-1, based on the literature review, the applicant describes that there are two fault zones near the proposed site boundary, where a fault zone includes faults expressed as a zone of numerous small fractures. The two fault zones include the Southeast Newberry Fault Zone (east and west of the proposed site boundary), capable of generating a maximum earthquake magnitude of 6.3, and the Paulina Marsh Fault Zone (about 4 miles southwest of the proposed site boundary), capable of generating a maximum earthquake magnitude of 7.0. The Southeast Newberry Fault Zone is identified as the likely seismic source that would control ground motion at the site.

Based on the applicant's USGS literature review, there is a fair amount of moderate earthquake activity and Quaternary faults surrounding the area, but there are no known faults traveling through the site boundary. Local crustal faults and the Cascadia Subduction Zone are the two principle sources of potential seismic activity that could cause strong ground shaking within and near the site boundary. Based on the applicant's literature review, as presented in ASC Exhibit H

⁵⁴ *Id.* The preliminary geotechnical and geological summary report conducted by Cornforth consultants evaluates areas within a proposed site boundary which include Areas A, C, D, and the Gen-tie Corridor; however, as discussed in Section II.C. *Application for Site Certificate* of this order, and the applicant removed Area C from the site boundary proposed in the ASC.

Appendix H-3, 13 earthquakes within 50 miles of the site boundary have been recorded since 1991; however, none were stronger than a 3.8 magnitude, and the closest (17.2 radial miles) recent (12/25/13) recorded earthquake was a 2.7 magnitude.⁵⁵ Based on the location and history of seismic sources and activity within the area, the applicant represents that seismic risk from ground shaking and structural damage is considered low or very low.

Based on soil sampling conducted during the site reconnaissance survey, a wide range of soil types were identified within the site boundary. Using the site classification procedures for seismic design outlined in the American Society of Civil Engineers (ASCE 7-16) Section 20 and the wide-range of soil types identified, soil site classes B through E could reasonably be encountered. For site classifications B through E, the applicant mapped maximum considered earthquake (MCE) Response Spectra to inform design requirements, resulting in 0.821g and 0.302g for short (S_s) and 1-second (S_1) based on 2012/15 IBC; and 0.756g and 0.289 for short (S_s) and 1-second (S_1) based on 2018 IBC. The site also contains potential for Site class F, which is collapsible diatomaceous clay and requires a site response analysis in accordance with ASCE 7-16 Section 21.1 to evaluate design requirements. MCE ground motions at the site are presented in Table 1: *Maximum Considered Earthquake Ground Motions for IBC*.

Table 1: Maximum Considered Earthquake Ground Motions for IBC

Site Class	IBC 2012/2015		IBC 2018	
	S_{Ms} (g)	S_{M1} (g)	S_{Ms} (g)	S_{M1} (g)
B	0.821	0.302	0.680	0.231
C	0.880	0.453	0.907	0.433
D	0.962	0.543	0.905	0.584
E	0.915	0.844	0.983	0.825
F	Requires site responses analysis			

Non-Seismic Geologic Hazards

Potential non-seismic soil related hazards within the site boundary include erosion of loose surficial soils, collapse of the wind-blown sand and silt soils, minor flooding in low-lying areas, and the potential for layers of diatomite in the subsurface leading to long-term settlement of high load structures. Potential non-seismic geologic hazards within the site boundary include volcanic eruptions, flooding, evaporates, diatomite, blowing sand, and ground settlement.

The Newberry Volcano is located about 50 miles to the northwest of the proposed site, with the most recent activity occurring between 1,450 and 1,250 years ago. Hazards from volcanic eruptions could include direct blast, mudflows, pyroclastic flows, ash falls, lava flows and floods.

⁵⁵ OSCAPPDoc4. ASC 08 OSC ASC Exhibit H, 2019-10-17, Attachment H-3.

Design, Engineer and Construct Proposed Facility to Avoid Potential Seismic and Non-Seismic Hazards within Surrounding Area

The Structural Standard requires the Council to find that, based on an adequate characterization of the seismic risks of the site – as presented above, that the applicant demonstrates an ability to design, engineer and construct the proposed facility to avoid potential seismic and non-seismic hazards within the surrounding area.

In ASC Exhibit H, the applicant describes that the final facility design, including foundation design, would avoid seismic and non-seismic hazards at the site because it would be based on a site-specific geotechnical investigation report; and, would adhere to the current version of the IBC, OSSC and building codes in effect at the time of construction. In ASC Exhibit H, the applicant proposes the following condition to inform the general scope of work to be completed through the pre-construction geotechnical investigation, which the Department ~~The Department agrees and~~ recommends Council impose ~~the following pre-construction condition:~~

Recommended Structural Standard Condition 1: At least 60-days prior to construction of the facility, the certificate holder shall:

1. ~~C~~onduct a site-specific geotechnical investigation in accordance with the 2014 version of the Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports, or newer guidelines if available. The investigation report shall be submitted to DOGAMI and the Department, for review. The geotechnical investigation will include the following:
 - a. Borings sufficient to develop seismic site classification(s) to facilitate engineering studies and site design;
 - b. Foundation-specific investigations appropriate for the structures and their accompanying loads; and
 - c. As recommended by licensed project engineers, soil and rock laboratory tests, such as soil and rock classification and strength testing, electrical resistance, corrosivity, scanning electron microscopy, soil collapsibility, and other parameters.
2. The certificate holder's final facility engineering must include geotechnical engineering design for foundations (substations, O&M buildings, inverter/transformer pads, battery systems), including seismic design that incorporates detailed site-specific conditions, based on the results of the site-specific investigation report described in this condition. [PRE-SS-01]

The applicant proposes to utilize the results of pre-construction geotechnical work to refine its soil protection and erosion control measures, as represented in recommended Soil Protection Condition 1. In addition, the Council's Mandatory Conditions at OAR 345-025-0006(12) – (14) provide structural related design requirements, which the Department recommends Council find sufficient to address the applicant's ability to design the proposed facility to minimize public health and safety risk from a seismic or non-seismic related event, as represented below:

Recommended Structural Standard Condition 2: The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule “seismic hazard” includes ground shaking, ground failure, landslide, liquefaction triggering and consequences (including flow failure, settlement buoyancy, and lateral spreading), cyclic softening of clays and silts, fault rupture, directivity effects and soil-structure interaction.

[GEN-SS-01; Mandatory Condition OAR 345-025-0006(12)]

Recommended Structural Standard Condition 3: The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the application for a site certificate. After the Department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division to propose and implement corrective or mitigation actions.

[GEN-SS-02; Mandatory Condition OAR 345-025-0006(13)]

Recommended Structural Standard Condition 4: The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site. After the Department receives notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division to propose and implement corrective or mitigation actions.

[GEN-SS-03; Mandatory Condition OAR 345-025-0006(14)]

To minimize potential soil erosion risks during construction and operation, the applicant relies upon the best management practices (BMPs) that would be imposed through its National Pollutant Discharge Elimination Permit (NPDES) 1200-C Stormwater Permit, to be issued prior to construction by the Oregon Department of Environmental Quality (DEQ). The NPDES 1200-C permit would include an Erosion and Sediment Control Plan, which includes detailed engineering drawings of the site and specific measures necessary to minimize the potential of any sources of dirt and debris from polluting waterways and waters of the state. As presented in Section IV.D. *Soil Protection* of this order, the draft NPDES permit including an Erosion and Sediment Control Plan is included as Attachment I-1 in both ASC Exhibit I and this order. Because the applicant relies upon the BMPs imposed through its NPDES 1200-C to minimize potential erosion-related impacts, the Department recommends Council impose conditions requiring that the applicant remit a copy of its DEQ-issued NPDES 1200-C permit to the Department, and maintain records of inspection forms, and remit to the Department upon request if continuous corrective actions are required at the site~~document through its semi-annual construction and annual reporting to the Department its ongoing compliance with the permit requirements.~~

1 *Disaster Resilience and Climate Change Adaption*
2

3 Applicants are required to address disaster resiliency of a proposed facility and future climatic
4 conditions that could impact the proposed facility, in accordance with the Council's Exhibit H
5 information requirement at OAR 345-021-0010(1)(h)(F)(i) and (ii). The applicant asserts that
6 solar facilities are inherently resilient due to generation systems that are less complex with
7 fewer moving parts, and no ignition sources, compared to other technologies. The applicant
8 also relies upon its pre-construction site-specific geotechnical investigation as representative of
9 a disaster resilient design because it would utilize subsurface exploration data to inform
10 foundation design, where foundations would be designed to withstand modeled major seismic
11 disasters, and component location, where high risk areas would be avoided.
12

13 ASC Exhibit H explains that future climatic conditions within the region include more common
14 extreme heat and storm events, small increases in drought frequency, longer fire seasons,
15 altered precipitation patterns and shifting streamflow seasonality. Potential risks at the site
16 from these conditions, such as increased fire risk, would be mitigated through the applicant's
17 proposed facility design, including a perimeter road which would act as a fire break,
18 coordination with local fire districts, electronic onsite monitoring, and maintaining appropriate
19 onsite fire response equipment, as further detailed in the draft Fire Protection and Emergency
20 Response Plan (see Attachment U-3 of this order).
21

22 **Conclusions of Law**
23

24 Based on the foregoing analysis, and in compliance with OAR 345-022-0020(2), the Department
25 recommends Council include the conditions listed above in the site certificate to address the
26 Council's Structural Standard.
27

28 **IV.D. Soil Protection: OAR 345-022-0022**
29

30 *To issue a site certificate, the Council must find that the design, construction and*
31 *operation of the facility, taking into account mitigation, are not likely to result in a*
32 *significant adverse impact to soils including, but not limited to, erosion and chemical*
33 *factors such as salt deposition from cooling towers, land application of liquid effluent,*
34 *and chemical spills.*
35

36 **Findings of Fact**
37

38 The Soil Protection standard requires the Council to find that, taking into account mitigation,
39 the design, construction, and operation of a proposed facility are not likely to result in a
40 significant adverse impact to soils. The applicant's assessment of potential soil impacts and
41 compliance with the Soil Protection standard are included in ASC Exhibit I. Additional
42 information related to the proposed facility's potential effects to soils and proposed mitigation

measures, as described by the applicant can be found in ASC Exhibit G (Materials Analysis) and ASC Exhibit K (Land Use).

The analysis area for the Soil Protection standard is the area within the site boundary and 500 feet from the site boundary, as established in the project order discussed in Section II.B., *Project Order*, of this order. The applicant describes in ASC Exhibit P that construction of the facility would result in approximately 3,588 acres of permanent disturbance and a negligible (1.2 acres) temporary disturbance.⁵⁶

Existing Soil Conditions and Land Use

Existing soil conditions within the analysis area are shown in ASC Exhibit I. The applicant classifies soil types using Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database. As represented in ASC Exhibit I, Figure I-1, there are five major soil types within the analysis area. A description of the soil types, including information regarding erodibility and other technical information, can be found in ASC Exhibit I, Section I.2. All soil types are considered Capability Class VI by the Natural Resources Conservation Service. There is no irrigation within the site boundary; lacking irrigation, the land is considered non-arable. Irrigated cultivated land is present in the analysis area but outside the site boundary.⁵⁷ The primary land use within the site boundary is light to moderate seasonal cattle-grazing, and ASC Exhibit K states that all lands within the analysis area are Agricultural Use Zone (A-2) under Lake County Zoning Ordinance (LCZO).⁵⁸ There is no high-value farmland in the site boundary.

Potential Adverse Impacts to Soil

ASC Exhibit I includes the applicant's assessment of how the proposed facility may impact soils. Additional information related to the facility's potential impacts to soils, as described by the applicant, and proposed mitigation measures can be found in ASC Exhibit G and Exhibit K.

Construction and operation of the proposed facility would impact soils within the site boundary, though the applicant states that the site would not be fully graded or excavated, resulting in minimal soil-related disturbance impacts. Grading would be required for site preparation in areas to be used for access roads and facility components requiring foundations – such as operations and maintenance buildings, collector substations, 115/500 kV step-up substation, battery storage systems, and inverter/transformer units associated with solar modules and battery storage systems. Posts required to support the solar modules would be hydraulically driven into the ground and would not require concrete foundations.

Other potential soil impacts include erosion from wind or water, accidental chemical spills, noxious weed infestation, or revegetation failure. The applicant also describes that impacts

⁵⁶ OSCAPDoc4 ASC 16 OSC ASC Exhibit P 2019-10-17, Table P-1.

⁵⁷ OSCAPDoc4 ASC 09 OSC ASC Exhibit I. 2019-10-17, I.2 and I.3.

⁵⁸ OSCAPDoc4 ASC 11 OSC ASC Exhibit K 2019-10-17, K.3.

1 from application of liquid effluent are unlikely, as the applicant would apply water to control
2 dust during construction in accordance with an NPDES 1200-C construction stormwater permit,
3 and during operations, if necessary, solar module washing would only be conducted with water
4 without cleaning solvents.⁵⁹

5
6 To address these potential impacts, the applicant proposes a number of management and
7 mitigation measures. The mitigation measures and best management practices (BMPs) specific
8 to soils are included in the applicant's NPDES 1200-C permit application, specifically the Erosion
9 and Sediment Control Plan (ESCP). The NPDES and ESCP are included in Exhibit I, Attachment I-
10 1. NPDES 1200-C permits are federally-delegated from EPA to DEQ, and are therefore not
11 included in or governed by the site certificate (draft ESCP is provided as Attachment I-1 of this
12 order). The NPDES 1200-C permit applies during construction, and is intended to regulate and
13 manage stormwater, as well as reduce erosion and sedimentation. Oregon DEQ issued a letter
14 on the record of the ASC stating that the permit application was complete and that permit
15 issuance would occur following issue the permit pending a determination on the site certificate
16 by EFSC. To ensure compliance with the NPDES 1200-C permit and the ESCP, the Department
17 recommends that the Council adopt the following condition, requiring the applicant to
18 implement all provisions of the NPDES 1200-C permit and the final ESCP, as approved by DEQ:⁶⁰

19
20 **Recommended Soil Protection Condition 1:**

- 21 a. Prior to obtaining the DEQ-issued NPDES 1200-C permit, the certificate holder shall
22 evaluate the results of the preconstruction Geotechnical Investigation to develop
23 appropriate, site-specific erosion and dust control measures, to be reflected in the
24 Erosion and Sediment Control Plan.
- 25 b. Prior to construction of the facility, the certificate holder shall provide a copy to the
26 Department of its DEQ-issued NPDES 1200-C permit, including final Erosion Sediment
27 Control Plan and associated drawings (as provided in Attachment I-1 of the Final Order
28 on the ASC).
- 29 c. During construction of the facility, the certificate holder shall conduct all work in
30 compliance with a final Erosion and Sediment Control Plan that is satisfactory to the
31 Oregon Department of Environmental Quality as required under the National Pollutant
32 Discharge Elimination System Construction Stormwater Discharge General Permit 1200
- 33 d. The certificate holder must provide ~~include~~ copies of completed Erosion and Sediment
34 Control Inspection Forms (forms) for Department review during construction
35 inspections and, if requested by the Department based on continuous erosion and dust
36 issues and corrective actions at the site, must provide form copies to the Department
37 within 7-days of inspections, in electronic format, to allow the Department, in
38 consultation with Oregon Department of Environmental Quality and Lake County Public
39 Works Department, the ability to recommend additional site control~~evidence of~~

⁵⁹ OSCAPDoc4 ASC 09 OSC ASC Exhibit I. 2019-10-17, I.4.

⁶⁰ In comments on the record of the DPO, applicant comments to utilizing the results of the preconstruction geotechnical investigation to inform the measures to be implemented in the Erosion and Sediment Control Plan, as represented in recommended Soil Protection Condition 1. OSCAPDoc4-6.5 DPO Comments Applicant Responses to DPO Comments (p.2) 2020-07-22.

~~compliance with the permit in its semi-annual construction reports and annual reports to the Department.~~

[GEN-SP-01]

A monitoring program is required as part of the ESCP and NPDES 1200-C permit, and the monitoring schedule is described in the ESCP submitted as Exhibit I, Attachment I-1. The ESCP, including the monitoring component, would be required to be implemented in accordance with DEQ requirements and recommended Soil Protection Condition 1. Recommended Soil Protection Condition 1 includes a provision requiring that the applicant be required to provide evidence of compliance with the ESCP and NPDES 1200-C permit to the Department in its semi-annual and annual reports; the intent of this provision was to provide the Department the ability to review implementation and monitoring of BMPs that, while required by the NPDES 1200-C permit, would effectively minimize construction-related erosion impacts as required under the standard. The Department recommends the Soil Protection Condition 1 be revised in the proposed order to specify that evidence of compliance be in the form of the Erosion and Sediment Control Inspection Forms completed as part of the NPDES 1200-C permit, and that those forms be made available to Department staff during construction site inspections.

The Department further recommends that the condition specify that if, based on review of the forms during construction inspections, the Department considers that the rate of corrective actions implemented at the site to control erosion and soil related impacts is of concern, the Department may then require that the forms be submitted electronically to the Department, within 7-days of inspection, to allow the Department the opportunity to review the corrective actions and environmental conditions more frequently and within a shorter timeframe from the time of impact, in consultation with Oregon Department of Environmental Quality and Lake County Public Works Department, to determine if there are other controls that could be implemented at the site to further minimize dust and erosion impacts.⁶¹

As presented in Section IV.M. *Public Services* of this order, the applicant proposes to implement a Dust Abatement and Management Plan (Attachment U-4 of this order) to minimize and control dust from wind erosion generated during onsite construction activities. The Dust Abatement and Management Plan requires implementation of stabilization measures which could include laying crimped straw, straw mulch and hydromulch to disturbed areas. The applicant also proposes to control dust through daily, continuous use of water trucks along access roads. As referenced in the Dust Abatement and Management Plan and in recommended Public Services Conditions 1 and 2, the applicant also commits to affixing a large sign on the perimeter fence with contact information for an onsite dust control representative, available for persons that identify any dust issues around or near the site to report the issue. As

⁶¹ In comments on the record of the DPO, the applicant requests that the reporting component of recommended Soil Protection Condition 1(c) be removed because it was considered to be an overly burdensome requirement and unnecessary given DEQ's authority over the NPDES 1200-C permit. The Department recommends Council adopt revisions to the condition, to clarify that the inspection forms be available during construction compliance visits and that forms would only need to be submitted to the Department if corrective actions were continuously being implemented at the site, necessitating additional agency review. OSCAPDoc4-6 DPO Comments Applicant 2020-04-28.

presented in the condition, the Department recommends Council require that the applicant report any nuisance dust complaints to the Department, along with the applicant's response time and measures implemented, to allow the Department an opportunity to review the issue and ensure the applicant is adhering to the requirements of applicable conditions and plans related to dust control.^{62, 63}

The applicant ~~will~~^{would} also be required to implement the provisions of its Revegetation and Noxious Weed Control Plan (see Attachment P-3), which would include revegetation of areas not permanently impacted by facility components. Successful revegetation would reduce erosion at the site. Additional discussion of the Revegetation and Noxious Weed Control Plan and associated measures is included in Section IV.H., *Fish and Wildlife Habitat*. The applicant also explains it will implement measures to reduce erosion on the site and water used by not completely clearing the site of vegetation which is expected to help control dust. Additionally, wood waste will be chipped in the onsite grinder and used (together with other measures, such as straw and silt fencing) for road and ~~landscape-soil~~ stabilization in order to reduce water needs for reduction of dust generation.

As described by the applicant, potential impacts to soils from proposed facility construction and operation could include accidental spills from oil, grease, or other chemicals used onsite. As described in ASC Exhibit B, proposed facility operations would have minimal likelihood of impacting soils from potential spills of oil or other materials because oil-containing equipment including solar facility inverters and transformers, and flow battery storage systems would be stored in contained modules on concrete pads, all of which would be inspected regularly by facility personnel. Nevertheless, the Department notes that there would be a large quantity of electrolyte fluid stored in the flow battery systems, noted in ASC Exhibit G, as up to 14,000 gallons per MW, as well as up to 800 gallons of transformer oil contained in each of up to 200 transformers.

⁶² OSCAPDoc4-10 DPO Public Comment SWCD Ferrell 2020-05-19.

⁶³ Comments received from Fort Rock/Silver Lake Soil and Water Conservation District Manager Justin Ferrell express soil-related concerns of wind and water erosion, and compaction at the proposed facility site. The comments evaluate soil types within the proposed facility site, along with the best management practices proposed by the applicant, and provide additional recommendations, based on assessment from Soil Scientist Terry L. Craig. The recommendations include: pre-disturbance, staged establishment of vegetative cover (nonnative crested Wheatgrass or similar monoculture), with irrigation, to increase likelihood of successful revegetation within the site in order to reduce erosion potential during facility operation; during construction, use mowing instead of scalping for road construction preparation; phase development; after construction, till or rip in equipment use areas to mitigate for compaction; and contract with the Soil and Water Conservation District to support long-term monitoring and adaptive management strategies related to wind and water erosion impacts. OSCAPDoc4-10 DPO Public Comment SWCD Ferrell 2020-05-19. The Department consulted with Lake County Planning Department Planning Manager, Darwin Johnson, and DEQ Stormwater Specialist Fredrick Morrow on issues raised and sufficiency of applicant measures across mitigation plans and conditions. Based on agency consultation, there were no additional measures recommended. Therefore, the Department does not recommend that Council impose conditions based on comments from the Fort Rock/Silver Lake Soil and Waste Conservation District.

In addition to containment systems and other facility design features intended to reduce the potential for a spill or release of material, in order to further reduce the risk of spills or leaks, and reduce the risk of impact to soils, the applicant proposed to develop and implement a Spill Management Plan (Plan). In ASC Exhibit G, the applicant describes implementing a Hazardous Substances Management Plan/Program, which the applicant incorporates into the Department notes that the components of the applicant's proposal for managing hazardous wastes are contained within the Spill Management Plan (Attachment I-2 of this order). For additional information about the types of waste, including small amounts and proposed handling of hazardous waste, that would be addressed in the Plan see Section IV.N., *Waste Minimization*, of this order. A draft of the Spill Management Plan is included as Attachment I-2. The Plan describes material handling and management procedures, training requirements, response procedures, and reporting requirements for both facility construction and operation. The Spill Management Plan should be specific to construction and operation of the proposed facility. The draft Spill Management Plan included as I-2 contains requisite language to serve as the language regarding a Spill Prevention Control and Countermeasure Plan (SPCC), should an SPCC be required under state of federal requirements. An SPCC plan is a specific requirement of the EPA and DEQ related to potential risk of oil spills reaching navigable waters. It is unclear if the proposed facility would require an SPCC plan; if so, that requirement is outside of EFSC jurisdiction. ~~The Spill Management Plan described in this section, and recommended in Soil Protection Condition 2, is distinct from and not intended to duplicate an SPCC plan. The Spill Management Plan would be required if Council approves. The Department recommends~~ Soil Protection Condition 2 regardless of whether or not an SPCC plan is required in order to implement the applicant's proposed spill management and hazardous substance management programs. Additionally, the Spill Prevention Plan should consider for management of any hazardous material that could impact the environment if not properly managed, and not limited to only oil or petroleum-based products as is the case with an SPCC plan.

The Department recommends the Council adopt the following condition, requiring the applicant to finalize and implement the Spill Management Plan prior to facility construction and prior to facility operation. Additionally, the Department recommends including provisions outlined in the applicant's Hazardous Substances Management Plan into the Spill Management Plan.

Recommended Soil Protection Condition 2:

- a. Prior to construction of the facility, the certificate holder must submit to the Department ~~for review and approval~~ an updated a Spill Management Plan for Construction (i.e. materials inventory). The Spill Management Plan shall contain the measures discussed in the ASC for managing and disposing of hazardous materials. The certificate holder must construct the facility in compliance with the ~~Department-approved~~ plan.
- b. Prior to operation of the facility, the certificate holder must submit to the Department ~~for review and approval~~ an updated Spill Management Plan for Operation (i.e. materials inventory). The certificate holder must operate the facility in compliance with the ~~Department-approved~~ plan.

[GEN-SP-02]

Subject to compliance with the recommended conditions above, the Department recommends that the Council find the design, construction, and operation of the proposed facility would not result in a significant adverse impact to soils.

Conclusions of Law

Based on the foregoing findings of fact and conclusions, and subject to compliance with the recommended site certificate conditions, the Department recommends that the Council find that the proposed facility would comply with the Council's Soil Protection standard.

IV.E. Land Use: OAR 345-022-0030

(1) To issue a site certificate, the Council must find that the proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission.

(2) The Council shall find that a proposed facility complies with section (1) if:

(a) The certificate holder elects to obtain local land use approvals under ORS 469.504(1)(a) and the Council finds that the facility has received local land use approval under the acknowledged comprehensive plan and land use regulations of the affected local government; or

(b) The applicant elects to obtain a Council determination under ORS 469.504(1)(b) and the Council determines that:

(A) The proposed facility complies with applicable substantive criteria as described in section (3) and the facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3);

(B) For a proposed facility that does not comply with one or more of the applicable substantive criteria as described in section (3), the facility otherwise complies with the statewide planning goals or an exception to any applicable statewide planning goal is justified under section (4); or

(C) For a proposed facility that the Council decides, under sections (3) or (6), to evaluate against the statewide planning goals, the proposed facility complies with the applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under section (4).

(3) As used in this rule, the "applicable substantive criteria" are criteria from the affected local government's acknowledged comprehensive plan and land use ordinances that are required by the statewide planning goals and that are in effect on the date the applicant submits the application. If the special advisory group recommends applicable substantive criteria, as described under OAR 345-021-0050, the Council shall apply them. If the special advisory group does not recommend applicable substantive criteria, the Council shall decide either to make its own determination of the applicable substantive criteria and apply them or to evaluate the proposed facility against the statewide planning goals.

(4) The Council may find goal compliance for a proposed facility that does not otherwise comply with one or more statewide planning goals by taking an exception to the applicable goal. Notwithstanding the requirements of ORS 197.732, the statewide planning goal pertaining to the exception process or any rules of the Land Conservation and Development Commission pertaining to the exception process, the Council may take an exception to a goal if the Council finds:

(a) The land subject to the exception is physically developed to the extent that the land is no longer available for uses allowed by the applicable goal;

(b) The land subject to the exception is irrevocably committed as described by the rules of the Land Conservation and Development Commission to uses not allowed by the applicable goal because existing adjacent uses and other relevant factors make uses allowed by the applicable goal impracticable; or

(c) The following standards are met:

(A) Reasons justify why the state policy embodied in the applicable goal should not apply;

(B) The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the Council applicable to the siting of the proposed facility; and

(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.

Findings of Fact

The Land Use standard requires the Council to find that a proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission (LCDC). Under ORS 469.504(1)(b)(A), the Council may find compliance with statewide planning goals if the Council finds that a proposed facility "complies with applicable substantive criteria from the affected local government's acknowledged comprehensive plan and land use

1 regulations that are required by the statewide planning goals and in effect on the date the
2 application is submitted...” The preliminary ASC was received on September 20, 2018.

3
4 The analysis area for potential land use impacts, as defined in the project order, is the area
5 within and extending one-half mile from the proposed site boundary.

6
7 The proposed facility would be located within Lake County. Therefore, the governing body
8 within Lake County, Lake County Board of Commissioners, is the Special Advisory Group
9 (SAG).⁶⁴ On February 23, 2018, prior to receipt of the pASC, the Council appointed the Lake
10 County Board of Commissioners as the SAG for all site certificate proceedings related to the
11 proposed facility.⁶⁵

12 13 IV.E.1 Local Applicable Substantive Criteria

14
15 Under OAR 345-022-0030(2), the Council must apply the applicable substantive criteria
16 recommended by the SAG, as long as those criteria are required by the statewide planning
17 goals and in effect on the date the pASC is submitted. Applicable substantive criteria identified
18 by the applicant in ASC Exhibit K are presented in Table 2: *Lake County Applicable Substantive*
19 *Criteria*.

⁶⁴ Under ORS 469.480(1), the Council must designate as a Special Advisory Group the governing body of any local government within whose jurisdiction the facility is proposed or proposed changes of a facility would be located.

⁶⁵ OSCNOIDoc4-2 Lake County Special Advisory Group Appointment Order 2018-02-23

Table 2: Lake County Applicable Substantive Criteria

Lake County Zoning Ordinance (LCZO)	
<i>Article 3 Agricultural Use Zone: A-2</i>	
Section 3.02	Permitted Uses – Subsection C
Section 3.04	Conditional Uses – Subsection B
Section 3.05	Dimensional Standards – Subsections F, G and H
<i>Article 18 Significant Resource (SR) Combining Zone</i>	
Section 18.05	Reduced Preservation Review Criteria – Subsection D
<i>Article 20 Supplementary Provisions</i>	
Section 20.01	Supplementary Provisions
Section 20.08	Vision Clearance Area
Section 20.09	Riparian Habitat – Subsections A, B and C
Section 20.12	Fences
Section 20.13	Compliance with and Consideration of State and Federal Agency Rules and Regulations
<i>Article 24 Conditional Uses</i>	
Section 24.01	Authorization to Grant or Deny Conditional Uses – Subsections A
Section 24.18	Renewable Energy Facilities
Section 24.19	Criteria for Nonfarm Uses, Excluding Farm Related or Accessory Uses, in an A-1 or A-2 Zone
Lake County Comprehensive Plan	
Goal 2 Planning Process – Policies 17 and 18	
Goal 3 Agricultural Lands – Policy 12	
Goal 5 Open Space, Scenic and Historic Areas and Natural Resources – Policies 3, 4, 5, 8, 10, 13, 14 and 16	
Goal 6 Air, Water and Land Resource Quality – Policies 1, 3, 4, 5 and 11	
Goal 9 Economic Development – Policies 1, 6 and 8	
Goal 11 Public Services and Facilities – Policies 1, 4 and 6	
Goal 12 Transportation – Policy 8	
Goal 13 Energy Conservation – Policies 1 and 3	
Goal 14 Urbanization – Policy 9	

Lake County Zoning Ordinance (LCZO)

The proposed facility would be located on agricultural use (A-2) zoned land in Lake County. Pursuant to LCZO Section 3.01 Agricultural Use Zone, the purpose of the A-2 zone is to preserve grazing and other agricultural land. The A-2 zone is considered a qualifying exclusive farm use (EFU) zone by the Oregon Department of Land Conservation and Development (LCDC) and

1 therefore subject to the provisions of Oregon Administrative Rules (OAR) Chapter 660, Division
2 33 which specifically apply to EFU zoned lands.

3
4 As presented in this section, the proposed facility is evaluated as two separate land use
5 categories within A-2 zoned land: Utility Facilities Necessary for Public Service (proposed 2 mile
6 115 kV transmission line and 115/500 kV step-up substation); and, Commercial Utility Facilities
7 for the Purpose of Generating Power for Public Use by Sale (commercial utility facilities)
8 (proposed 400 MWac of solar photovoltaic energy generation equipment including modules
9 and accessory equipment like trackers, posts, cabling, inverter/transformer units, collection
10 system, collector substations, O&M buildings, perimeter fencing, gates, and 50 MW of battery
11 storage equipment). An evaluation of the applicable substantive criteria for these uses within A-
12 2 zoned land is presented below.

13
14 *LCZO Article 3: Agricultural Use Zone: A-2*

15
16 *LCZO Section 3.02 Permitted Uses..In an A-2 Zone, the following uses and their accessory*
17 *uses are permitted outright:*

18 *****

19 *C. Utility facilities necessary for public service, except commercial facilities for the*
20 *purpose of generating power for public use by sale and transmission towers over*
21 *200 feet in height.*

22
23 LCZO Section 3.02(C) identifies utility facilities “necessary” for public service, and their
24 accessory uses, as a use permitted outright on A-2 zoned land.⁶⁶ A utility facility is necessary for
25 public service if it is an associated transmission line as defined in ORS 215.274, or utility
26 facilities which otherwise satisfy the requirements under ORS 215.275.⁶⁷ Based on the proposed
27 facility description included in ASC Exhibit B, proposed utility facilities not considered part of
28 the commercial utility facility would include up to 2 miles of a parallel double-circuit 115 kV
29 transmission line and an approximately 3 acre 115/500 kV step-up substation. The proposed
30 transmission line would include steel, monopole structures that could extend up to 70 feet in
31 height and therefore would not exceed the 200-foot height restriction established in LCZO
32 Section 3.02(C).

33
34 As provided in Section IV.E.2. *Directly Applicable State Statutes and Administrative Rules*, the
35 Department recommends that the proposed 115 kV transmission line and 115/500 kV step-up
36 substation be evaluated as “utility facilities necessary for public service” under ORS 215.275,
37 rather than ORS 215.274, as presented in ASC Exhibit K. Utility facilities necessary for public
38 service, under ORS 215.274, must meet the definition under ORS 469.300(2) of an “associated
39 transmission line,” defined as “new transmission lines constructed to connect an energy facility
40 to the first point of junction of such transmission line or lines with either a power distribution

⁶⁶ LCZO Article 1 defines Accessory Structure or Use as, “A use of a structure, or a portion of a structure, the of which is incidental and subordinate to the main use of the property or structure and is located on the same premises as the main or primary use and/or structure.

⁶⁷ ORS 215.283(1)(c)(B)

1 system or an interconnected primary transmission system or both or to the Northwest Power
2 Grid.” As presented, ORS 215.274 specifically refers to transmission lines, extending to but not
3 inclusive of the first point of junction, whereas ORS 215.275 refers to utility facilities necessary
4 for public service, omitting specific definition. Based on the size and operating function, the
5 Department does not consider the proposed 115/500 kV substation to be an accessory use,
6 incidental and subordinate, to the proposed 115 kV transmission line, rather it considers the
7 component to be a utility facility. The Department recommends, then, that Council evaluate the
8 proposed 115 kV transmission line and 115/500 kV step-up substation as a utility facility
9 necessary for public service under ORS 215.275 as presented in Section IV.E.2 *Directly*
10 *Applicable State Statutes and Administrative Rules* of this order.

11
12 Based on the evaluation presented in Section IV.E.2. *Directly Applicable State Statutes and*
13 *Administrative Rules*, the Department recommends Council find that the proposed 115 kV
14 transmission line and 115/500 kV step-up substation would be a utility facility necessary for
15 public service and would satisfy the requirements under ORS 215.275; therefore, the
16 Department recommends Council find that the proposed 115 kV transmission and 115/500 kV
17 step-up substation are a use permitted outright under LCZO Section 3.02(C).

18
19 *LCZO Section 3.04 Conditional Uses. In an A-2 Zone, the following uses and their*
20 *accessory uses are permitted when authorized in accordance with the requirements of*
21 *this Article and Article 24 of this Ordinance.*

22 ***

23 *B. Type II. Conditional Uses.*

24 ***

25 *6. Commercial utility facilities for the purpose of generating power for public use by sale.*

26
27 LCZO Section 3.04(B)(6) identifies “commercial utility facilities for the purpose of generating
28 power for public use by sale” (commercial utility facilities), and their accessory uses, as a Type II
29 permitted conditional use in an A-2 zone, subject to the zoning requirements under Article 3
30 and 24. The proposed solar facility, not including the proposed 115 kV transmission line and
31 115/500 kV step-up substation, is evaluated under the commercial utility facilities land use
32 category. The evaluation of compliance with LCZO Article 3 and 24 provisions is provided below.

33
34 The applicant would be required to secure zoning, building, onsite sewage disposal system and
35 a conditional use permit for the proposed facility. Therefore, the Department recommends
36 Council adopt the following condition:

37
38 **Recommended Land Use Condition 1:** Prior to construction of the facility, the certificate
39 holder shall:

- 40 a. Submit a conditional use and zoning permit application along with the proper filing fees
41 to Lake County Planning Department for issuance pursuant to ORS 469.401(3); and
42 b. Obtain all other necessary local permits, including building permits and onsite sewage
43 treatment system permits.

44 [PRE-LU-01]

Lake County has not amended LCZO Section 3.04(B)(6) to reflect the Oregon Land Conservation and Development Commission (LCDC) administrative rules governing conditional uses within agricultural lands, which include specific requirements that must be satisfied and require a governing body to take an exception to the statewide policy embodied in Goal 3 for proposed solar facilities that would use, occupy or cover more than 320 acres of nonarable lands, as applicable to the proposed facility. Therefore, the requirements under OAR 660-033-0130(38) apply directly to the proposed facility, as evaluated in Section IV.E.2. *Directly Applicable State Statutes and Administrative Rules* below.

LCZO Section 3.05 Dimensional Standards. In an A-2 Zone, the following Dimensional Standards shall apply:

F. For nonfarm uses permitted in areas not designated by the Plan as Farm Residential, Rural Residential or Rural Center, the minimum lot or parcel size shall be one (1) acre and should not be more than necessary to accommodate the intended or proposed use.

LCZO Section 3.05(F) requires lots or parcels used by nonfarm uses to be at least 1-acre in size but not more than necessary for the proposed use. In ASC Exhibit K, the applicant indicates that the proposed facility would not result in new lots or parcels. Further, the Department confirms that based on review of a 2018/19 Lake County tax assessor map of the proposed facility site boundary and surrounding properties, all parcels for which the proposed facility would be located are at least 1-acre or greater.⁶⁸ Therefore, the Department recommends Council find that the proposed facility would satisfy the dimensional standards under LCZO Section 3.05(F).

G. The minimum Front and Rear yard setbacks shall be 20 feet, and sideyard setbacks shall be 10 feet, except that a sideyard of a nonfarm use adjacent to a farm use in an area not designated as Farm Residential, Rural Residential or Rural Center shall be 50 feet.

LCZO Section 3.05(G) establishes minimum setback distances from nonfarm uses to adjacent farm uses, including 50-feet for sideyards and 20 feet for front and rear yards. In ASC Exhibit K, the applicant asserts that the proposed facility design would meet or exceed the minimum setback distance requirements⁶⁹. To ensure compliance with the applicable setback requirement, the Department recommends Council impose the following setback condition:

Recommended Land Use Condition 2: Prior to construction of the facility, the certificate holder shall demonstrate to the Department and Lake County Planning Department through mapping or other engineering drawing that the final facility layout complies with the following county yard setback and vision clearance area requirements:

⁶⁸ <https://ormap.net/gis/index.html>

⁶⁹ Recommended Land Use Condition 2 (d) and (e) are recommended in the condition to demonstrate compliance with LCZO Section 20.08, as evaluated below.

- a. 50-foot minimum sideyard setback distance from permanent foundations (inverter/transformer units, collector/step-up substations, O&M buildings, battery storage enclosures) to adjacent non-participating property boundaries.
- b. 20-foot minimum front and rear yard setback distance from permanent foundations (inverter/transformer units, collector/step-up substations, O&M buildings, battery storage enclosures) to adjacent non-participating property boundaries.
- c. 45-foot minimum setback from the centerline of any county or other public or street right-of-way to permanent foundations (inverter/transformer units, collector/step-up substations, O&M buildings, battery storage enclosures).
- d. ~~At the intersection of any two streets, existing and constructed,~~ 20-foot minimum triangular vision clearance area at access road driveways constructed by the facility that provide access to a public roadway.
- e. ~~At the intersection of any two streets, existing and constructed,~~ 2.5-foot height restriction on planting, fence, wall, structure, or temporary or permanent obstruction, measured from the top of the curb or, where no curb exists, from the established street center line grade, except that trees exceeding this height may be located in this area, provided all branches and foliage are removed to a height eight (8) feet above grade.

[PRE-LU-02]

Based on the applicant's assertion and compliance with the recommended condition above, the Department recommends Council find that the proposed facility would satisfy the dimensional standards under LCZO Section 3.05(F).

H. All structures shall be setback at least 60 feet from the centerline of any State or Federal Highway rights-of-way and 45 feet from the centerline of any County or other public road or street right-of-way.

LCZO Section 3.05(H) establishes minimum setback distances for structures from road rights-of-way, including a 45-foot minimum setback distance from the centerline of any County or other public or street right-of-way; and, a 60 foot minimum setback distance from the centerline of any State or Federal Highway right-of-way. Based on ASC Exhibit C, there are no state or Federal Highway rights-of-way within 0.5 miles of the proposed site boundary. Nonetheless, the applicant asserts that all proposed structures would be located more than 60-feet from any public road right-of-way. To ensure compliance with the applicable setback requirement, the Department recommends Council impose Land Use Condition 2(c).

Based on the applicant's assertion and compliance with the recommended condition above, the Department recommends Council find that the proposed facility would satisfy the dimensional standards under LCZO Section 3.05(H).

Article 18: Significant Resource (SR) Combining Zone

LCZO Article 18 establishes requirements for permissible uses within a Significant Resource (SR) Combining Zone, which includes the County's Goal 5 mapped resources such as Big Game

Winter Range Habitat. In ASC Exhibit K, the applicant describes, but does not graphically present, that a small portion of the northeastern corner of the site boundary is within the County's Goal 5 mapped Big Game Habitat Winter Range. Based on the Department's consultation with Lake County Planning Director Darwin Johnson, and review of the county's goal 5 maps overlain with the proposed facility site boundary, approximately 269 acres within the proposed facility site boundary would be within the County's Goal 5 Big Game Winter Range Habitat.⁷⁰ Therefore, the provisions of LCZO Article 18 Section 18.05 are applicable and evaluated below.

Section 18.05 Reduced Preservation Review Criteria. The environmental, social, economic and energy consequences of allowing the proposed use or activity shall be described in sufficient detail to provide a clear demonstration that the applicable criteria set forth hereinafter are met.

D. Big Game Habitat Restrictions

1. Definitions

- a) "Big Game Winter Range" means an area designated as winter range for big game by the comprehensive plan.*
- b) "Dwelling" includes resource and nonresource dwellings.*
- c) "Tract" means one or more contiguous lots or parcels under the same ownership.*

- 2. All uses allowed in big game winter range must comply with the applicable standards for the underlying zone;*

3. Siting Standards

- a) New structures shall be located as close as possible to existing adjacent structures.*
- b) Structures shall share a common access road wherever possible.*
- c) Where it is impractical or unreasonable to share a common access road the structure shall be located as close as possible to the nearest existing public road in order to minimize the length of access from said existing public road.*

LCZO Section 18.05(D)(2) and (3) require uses allowed in the county's Goal 5 mapped big game winter range to describe the environmental, social, economic and energy consequences of the proposed use; and, to comply with applicable standards for the underlying zone, A-2, and specific siting standards for structures and access roads. An evaluation of the environmental, social, economic and energy consequences of the proposed use is presented in Section IV.E.3 *Goal 3 Exception* of this order. As presented above, the Department recommends Council find that the proposed facility would comply with the applicable standards for the conditionally permitted uses (commercial utility facility) within A-2 zoned land.

The applicant explains that there are no existing structures within the proposed site boundary; and, explains that proposed facility structures would be located within a fenced area and would

⁷⁰ However, the entire site boundary is located in ODFW-mapped big game winter range habitat; see Section IV.H *Fish and Wildlife Habitat* for additional discussion and assessment.

share newly constructed internal and perimeter roads. Primary access to the proposed facility would be provided via County Road 5-12, 5-12 A, 5-10, 5-10 C (Connley Road) and 5-14 G (Oil Dri Road). The only existing road within the county's mapped Goal 5 Big Game Winter Range habitat, that would be used during proposed facility construction or operation, is County Road 5-12 A. Based on representations provided in ASC Exhibit U, applicant proposes to construct a driveway proposed new access roads or road approaches would be constructed from onto the site from County Road 5-10 C (Connley Road) and 5-14 G (Oil Dri Road), and have not been identified from County Road 5-12 A. If an access road or road approach from the facility site to County Road 5-12 A is constructed as part of the facility, the applicant must demonstrate, in accordance with LCZO Section 18.05(D)(3), that the access road or road approach length represents a minimal length from the county road to the facility perimeter fenceline. To ensure compliance with LCZO Section 18.05(D)(3)(c), the Department recommends Council impose the following condition:

Recommended Land Use Condition 3: Prior to construction of the facility, the certificate holder shall provide a map presenting facility site boundary, access roads and road approaches; county roads; and, the County's mapped Goal 5 Big Game Winter Range habitat overlay. If the certificate holder identifies-constructs new facility access roads or road approaches from County Road 5-12 A onto the site, certificate holder shall demonstrate to the Department and Lake County Planning Department how the length of the road or road approach has been minimized to reduce big game habitat impacts from road related habitat fragmentation complies with LCZO Section 18.05(D)(3)(c).
[PRE-LU-03]

Based on compliance with the recommended condition above, the Department recommends Council find that the proposed facility would satisfy the applicable requirements within the SR zone under LCZO Section 18.05(D)(2) and (3).

Article 20: Supplementary Provisions

Section 20.01 Supplementary Provisions. The following provisions generally apply to all uses in all zones except as specified in respective sections.

Section 20.08 Vision Clearance Area. A clear-vision area shall be maintained on the corners of all property at the intersection of any two streets or a street and a railroad.

- A. A clear-vision area shall consist of a triangular area, two sides of which are lot lines measured from the corner intersection of the street lot lines for a distance of 20' or where the lot lines have rounded corners, the lot lines extended in a straight line to a point of intersection and so measured, and third side of which is a line across the corner of the lot joining the non-intersecting ends of the other two sides.*
- B. A clear-vision area shall contain no planting, fence, wall, structure, or temporary or permanent obstruction exceeding 2.5 feet in height, measured*

1 *from the top of the curb or, where no curb exists, from the established street*
2 *center line grade, except that trees exceeding this height may be located in*
3 *this area, provided all branches and foliage are removed to a height eight (8)*
4 *feet above grade.*

5
6 LCZO Section 20.08 establishes a 20 foot vision clearance requirement on corner properties and
7 height restriction for plantings, fencing, walls, structures or other obstructions from an
8 established street center line grade. LCZO Section 20.08 describes the vision clearance area as a
9 triangular area measured from the corner intersection of the street lot lines, and requires this
10 area to contain no planting, fence, wall, structure, or temporary or permanent obstruction
11 exceeding 2.5 feet in height. For purposes of this standard, corner properties should be
12 identified along the outside property lines of the applicant's leased boundary, not the internal
13 property lines located within the site boundary.

14
15 The applicant represents proposed access roads would be designed to meet LCZO Section 20.08
16 clear vision area requirements. As presented above, the Department recommends Council
17 impose in Land Use Condition 2 to ensure compliance with the requirements. Based on
18 compliance with the above-recommended condition, the Department recommends Council find
19 that the proposed facility would comply with LCZO Section 20.08.

20
21 *Section 20.09 Riparian Habitat. In A-1, A-2 and F-1 zones, structural setbacks as follows*
22 *shall be provided to recognize the value of riparian habitat.*

- 23 *A. On perennial streams and rivers, structural development shall be set back*
24 *at least 50 feet from the high water mark.*
25 *B. On intermittent streams or drainages, structural development shall be set back at*
26 *least 25 feet from the high water mark.*
27 *C. On lakes or reservoirs, structural development shall be set back a sufficient distance*
28 *determined by the Planning Commission as needed to protect riparian habitat*

29
30 LCZO Section 20.09 establishes setback distances from structure foundations to the high water
31 line or mark along perennial streams and rivers; intermittent streams or drainages; and, on
32 lakes or reservoirs. As presented in ASC Exhibit J, within the site boundary, the only state
33 jurisdictional waters are four playas, or playa lakes, which are seasonally flooded and provide
34 habitat and foraging for migratory birds. However, these playa lakes are not considered
35 perennial streams or rivers; intermittent streaks or drainages; or, lakes or reservoirs because
36 they do not permanently and continually hold water. Therefore, the established setbacks would
37 not apply.

38
39 *Section 20.12 Fences. Fences are permitted in any Zone and do not require a permit for*
40 *construction, however, with the exception of the A-1, A-2, F-1 and other "resources*
41 *zones," barbed wire and similar hazardous materials are not permitted except as*
42 *approved otherwise by the County. Also, in the non-resource zones, fences exceeding a*
43 *height of six (6) feet require a building permit. In no zone shall sight-obscuring fences be*
44 *maintained in violation of vision clearance requirements and in all zones fences shall be*

1 *maintained in good condition.*

2
3 LCZO Section 20.12 establishes requirements for fencing, including a restriction on barbed wire
4 or similar hazardous materials in A-2 zoned land, unless otherwise approved by the governing
5 body; compliance with vision clearance requirements, fence maintenance obligations, and
6 building permit requirements for fences exceeding 6' in height. The applicant proposes to install
7 a 7' chain-link perimeter fence, inclusive of 1' of barbed wire. Therefore, the applicant would be
8 required to obtain a building permit for the perimeter fence and obtain Council approval for use
9 of barbed wire. Based on consultation with the Lake County Planning Director, Darwin Johnson,
10 consistent with the county's position for use of barbed wire for other solar facility fencing, the
11 Department recommends Council authorize use of 1' of barbed wire for the proposed 7'
12 perimeter fence.⁷¹

13
14 As presented above, the Department recommends Council impose Land Use Condition 1
15 requiring that, prior to construction, the applicant obtain all necessary local permits, including a
16 building permit for the perimeter fence. To ensure that the applicant maintain its perimeter
17 fence is good condition, the Department recommends Council impose the following condition:

18
19 **Recommended Land Use Condition 4:** During facility operation, the certificate holder shall
20 include in the annual report the condition of the perimeter fence and identify whether any
21 repairs were completed within the reporting year, or if scheduled for following reporting
22 year.
23 [OPR-LU-01]

24
25 *Section 20.13 Compliance With and Consideration of State and Federal Agency Rules and*
26 *Regulations.*

27
28 *Approval of any use or development proposal pursuant to the provisions of this*
29 *Ordinance shall require compliance with and consideration of all applicable State and*
30 *Federal Agency rules and regulations. Specific rules and regulations which may affect any*
31 *specific use or development proposal, and for which compliance is required for approval*
32 *by the County include, but are not limited to, the following:*

33
34 *A. Air quality standards administered by DEQ and EPA.*

35
36 LCZO Section 20.13(A) requires permitted uses to comply with applicable air quality standards
37 administered by the Oregon Department of Environmental Quality (DEQ) and United States
38 Environmental Protection Agency (EPA). The EPA is responsible for setting and enforcing
39 National Ambient Air Quality Standards (NAAQS) applicable to aircraft, locomotives and vehicles
40 through the Clean Air Act. Title V of the Clean Air Act establishes a federal permit program for
41 large stationary emission sources, which has been delegated to DEQ.
42

⁷¹ OSCAPDoc18-1 ASC Reviewing Agency Comment Lake County Planning Department_Johnson 2020-03-03.

1 The proposed facility would not include stationary emission sources, and therefore would not
2 trigger any air quality standards enforced by either DEQ or EPA. Particulate matter or dust
3 would be generated during earth-moving construction activities such as road building.
4 However, the applicant proposes to control dust through daily watering via onsite water trucks.
5 Based on the above analysis, the Department recommends Council find that there are no
6 applicable air quality standards for which the proposed facility must comply.

7
8 *B. Noise pollution standards administered by EPA.*
9

10 LCZO Section 20.13(B) requires permitted uses to comply with noise pollution standards
11 administered by the EPA. As presented in ASC Exhibit K, there are no noise pollution standards
12 administered by EPA for which the applicant must comply; however, as presented in ASC
13 Exhibit X and evaluated in Section IV.Q.1. *Noise Control Regulations* of this order, the
14 Department recommends Council find that the proposed facility would satisfy the applicable
15 noise pollution standards under DEQ's Noise Control Regulations. The Department recommends
16 Council find that there are no applicable EPA-administrated noise pollution standards for which
17 the proposed facility must comply.

18
19 *C. Water quality standards administered by DEQ and WRD.*
20

21 LCZO Section 20.13(C) requires permitted uses to comply with water quality standards
22 administered by DEQ and Oregon Water Resources Department (WRD), which for the proposed
23 facility, includes DEQ's National Pollution Discharge Elimination System Stormwater Discharge
24 Permit program. There are no applicable WRD water quality standards.

25
26 The proposed facility would be located on or within jurisdictional waters of the state (i.e.
27 various playas and playa mosaics), which requires compliance with DEQ's water quality
28 standards administered under ORS 468B.050 and Section 402 of the Federal Clean Water Act
29 through the National Pollution Discharge Elimination System Stormwater Discharge Permit
30 program (1200-C permit). As presented in ASC Exhibit I and evaluated in Section IV.D. *Soil*
31 *Protection* of this order, a 1200-C permit would be required for proposed facility construction;
32 the Department recommends Council impose recommended Soil Protection Condition 1 to
33 ensure compliance with the water quality standards administered through compliance with the
34 1200-C permit requirements. Based on compliance with this condition, the Department
35 recommends Council find that the proposed facility would comply with LCZO Section 20.13(C).

36
37 *D. Sewage Disposal regulations administered by DEQ.*
38

39 LCZO Section 20.13(D) requires permitted uses to comply with sewage disposal regulations
40 administered by DEQ, such as OAR Chapter 340 Division 71, which apply to onsite wastewater
41 treatment systems. In ASC Exhibit E, the applicant identifies that an Onsite Sewage Disposal
42 Construction Installation Permit would be needed for onsite septic fields to be constructed to
43 support O&M building restroom facilities (sewage disposal permit). Sewage disposal permits are
44 regulated by the Oregon Department of Environmental Quality (DEQ), but have been delegated

1 to Lake County through the Lake County Building Department. To ensure compliance with the
2 applicable sewage disposal permit requirements, the Department recommends the Council
3 adopt Land Use Condition 1, as presented above, to ensure all applicable local permits are
4 obtained prior to construction. Based on compliance with recommended Land Use Condition 1,
5 the Department recommends Council find that the proposed facility would comply with LCZO
6 Section 20.13(D).

7
8 *E. Uniform Building Code.*
9

10 LCZO Section 20.13(E) requires permitted uses to comply with Uniform Building Codes, which
11 are addressed in local building permits to be obtained prior to construction, as recommended,
12 be imposed in Land Use Condition 1. Based on compliance with recommended Land Use
13 Condition 1, the Department recommends Council find that the proposed facility would comply
14 with LCZO Section 20.13(E).

15
16 *F. Surface and Ground Water Withdrawals by WRD.*
17

18 LCZO Section 20.13(F) requires permitted uses to comply with Oregon Water Resources
19 Department (WRD) surface and groundwater withdrawals. As evaluated in Section IV.Q.3.
20 *Water Rights* of this order, the applicant proposes to withdraw groundwater from two 5,000-
21 gallon per day groundwater wells, which would be exempt based on daily usage from WRD
22 permit requirements under ORS 537.545(1)(f). Based on the proposed water sources for
23 construction and operation, the applicant has not identified that a groundwater permit, surface
24 water permit, or water right transfer would be needed. Pursuant to OAR 690-190-0100, WRD
25 establishes recording requirements for permit exempt groundwater wells, which the
26 Department recommends be imposed in Water Rights Condition 1. Based on compliance with
27 this proposed condition, the Department recommends Council find that the proposed facility
28 would comply with LCZO Section 20.13(F).

29
30 *G. Scenic Area rules administered by State Highway Division.*
31

32 LCZO Section 20.13(G) requires permitted uses to comply with State Highway Division Scenic
33 Area rules. The land use analysis area extends 0.5-mile within and extending from the proposed
34 facility site boundary, in which there are no scenic roadways. Therefore, LCZO Section 20.13(G)
35 would not apply.

36
37 *H. Forest Practices Act administered by DOF.*
38

39 LCZO Section 20.13(H) requires permitted uses to comply with Oregon Department of Forestry's
40 Forest Practices Act, which establish requirements within forest-zoned lands. The proposed
41 facility would be located within lands zoned for cattle grazing, and would not be located on any
42 forest-zoned lands. Therefore, LCZO Section 20.13(H) would not apply.

43
44 *I. Access regulations administered by State Highway Div.*

LCZO Section 20.13(I) requires permitted uses to comply with Oregon Department of Transportation (ODOT) access regulations. While ODOT access regulations require an approach permit for construction of any new approach or change of use of an existing connection to a highway, the applicant has not identified any new or changes to existing approaches to state highways. Therefore, LCZO Section 20.13(I) would not apply.

J. Surface mining regulations administered by DOGAMI.

LCZO Section 20.13(J) requires permitted uses to comply with the Oregon Department of Geology and Mineral Industries (DOGAMI) surface mining regulations. The applicant has not proposed to conduct any surface mining or related activities (i.e. blasting) as part of the proposed facility. Therefore, LCZO Section 20.13(J) would not apply.

Article 24: Conditional Uses

Section 24.01 Authorization to Grant or Deny Conditional Uses. Conditional Uses listed in this Ordinance may be permitted, enlarged or otherwise altered when authorized in accordance with the standards and procedures set forth in this Article. In the case of a use existing prior to the effective date of this Ordinance, and classified herein as a Conditional Use, a change in use, enlargement or alteration of such use shall conform with the provisions for a conditional use. An application for a Conditional Use may be approved, modified, approved with conditions or denied.

A. General Criteria. In determining whether or not a Conditional Use shall be approved or denied, it shall be determined that the following criteria are either met or can be met through the compliance with specific conditions.

1. The proposal is in compliance with the applicable Comprehensive Plan and Policies set forth thereby.

LCZO Section 24.01(A)(1) requires conditionally permitted uses to demonstrate compliance with applicable Comprehensive Plan and Policies. Based on the evaluation presented in the subsection below, the Department recommends Council find that the proposed facility would comply, or be consist with, with applicable Comprehensive Plan policies, including Goal 2 Policies 17 and 18; Goal 3 Policy 12; Goal 5 Policies 3, 4, 5, 8, 10, and 14; Goal 6 Policies 1, 3, 4, 5 and 11; Goal 9 Policies 1, 6 and 8; Goal 11 Policies 1, 4 and 6; Goal 12 Policy; Goal 13 Policies 1 and 3; Goal 14 Policy 9.

2. The proposal is in compliance with the standards and requirements set forth by the applicable primary Zone, any applicable Combining Zone, and the standards and conditions set forth by this Article and any other provisions of this Ordinance.

LCZO Section 24.01(A)(2) requires conditionally permitted uses to demonstrate compliance with

1 applicable code provisions established for the primary and any applicable combining zone. As
2 presented in this section, the Department recommends Council find that the proposed facility
3 would comply with all applicable LCZO provisions.

- 4
5 *3. That, for proposals requiring approvals or permits from other local, State and/or*
6 *federal agencies, evidence of such approval or permit compliance is established or*
7 *can be assured prior to final approval.*
8

9 LCZO Section 24.01(A)(3) requires conditionally permitted uses to provide evidence or
10 assurance that local, State and/or federal permits necessary for the proposed facility can be
11 obtained. In ASC Exhibit E, the applicant represents various local, State and federal approvals
12 and permits that may be required prior to construction of the proposed facility. To ensure all
13 necessary permits are obtained prior to construction, the Department recommends Council
14 impose Land Use Condition 1 (for local permits) and Land Use Condition 5 below:
15

16 **Recommended Land Use Condition 5:** The certificate holder shall:

- 17 a. Prior to construction of the facility, provide to the Department a list of all State and
18 federal permits or approval necessary for construction or operation of the facility.
19 Certificate holder shall consider ASC Exhibit E in identifying necessary permits.
20 b. At least 90-day following construction commencement, provide evidence of all State
21 and federal permits or approval identified per sub(a) of this condition.

22 [GEN-LU-1]
23

24 Based on compliance with the recommended conditions, the Department recommends Council
25 find that the proposed facility would comply with LCZO Section 24.01(A)(3).
26

- 27 *4. That no approval be granted for any use which is or is expected to be found to exceed*
28 *resource and public service/facility carrying capacities, or for any use which is found*
29 *to not be in compliance with applicable air, water, land, solid waste, or noise*
30 *pollution standards.*
31

32 LCZO Section 24.01(A)(4) prohibits approval of conditionally permitted uses if the use is
33 expected to exceed resource carrying capacities or would not comply with air, water land, solid
34 waste, or noise pollution standards. As presented in Section IV.M. *Public Services* of this order
35 and in the evaluation of LCZO Section 20.13, the Department recommends Council find that the
36 proposed facility would not result in significant adverse impacts on the ability of public or
37 private service providers to provide a service or result in non-compliance with any applicable
38 standards. Therefore, based on the above-referenced evaluation, the Department recommends
39 Council find that the LCZO Section 24.01(A)(4) use prohibition would not need to be exercised.
40

41 *Section 24.18 Renewable Energy Facilities. For proposed facilities under Oregon Energy*
42 *Siting Council (EFSC) jurisdiction, conditional use permits shall be granted consistent with*
43 *the EFSC siting standards as adopted in Oregon Administrative Rules Chapter 345, or*
44 *amended hereafter. For facilities not under EFSC jurisdiction, the following siting*

standards shall apply: ***

LCZO Section 24.18 requires conditionally permitted uses under EFSC jurisdiction to comply with OAR Chapter 345. The proposed facility is an EFSC-jurisdictional facility. OAR Chapter 345 requirements are established in Divisions 22 and 24 and are evaluated in Section IV of this order. Based on the evaluation presented in this order, the Department recommends Council find that the proposed facility would comply with LCZO Section 24.18.

Section 24.19 Criteria for Nonfarm Uses, Excluding Farm Related or Accessory Uses, in an A-1 or A-2 Zone. Nonfarm uses, excluding farm related or farm accessory uses, may be approved in an A-1 or A-2 zone upon findings that each such use:

A. Is compatible with farm uses described in ORS 215.203(2) and is consistent with the intent and purposes set forth in ORS 215.243;

LCZO Section 24.19(A) requires nonfarm uses within an A-1 or A-2 zone to demonstrate compatibility with ORS 215.203(2) and consistency with the intent and purpose set forth in ORS 215.243.⁷² ORS 215.203(2) defines farm use and ORS 215.243 provides the policy statements made by the legislature to support broad application of the Exclusive Farm Use zone across open lands of the state. As presented in ASC Exhibit C, the proposed facility would occupy up to 3,921 acres of land within Lake County's A-2 zone, a zone designated for cattle grazing.

The proposed facility site contains no water rights and is in an area that has been under a WRD moratorium preventing issuance of new groundwater rights for irrigation since the mid- 1980s. Additionally, the applicant provides an August 2, 2019 letter from one of the underlying landowners – Mr. Richard Morehouse – affirming that while the land has been historically grazed, the land and soil conditions are inadequate to support a viable commercial grazing operation.

Based on the August 2, 2019 landowner letter and explanation of historic and current use of the land within the proposed site boundary, because ORS 215.203(2) defines farm uses as specific

⁷² Pursuant to ORS 215.203(2)(a) "farm use" means "the current employment of land for the primary purpose of obtaining a profit in money by raising, harvesting and selling crops or the feeding, breeding, management and sale of, or the produce of, livestock, poultry, fur-bearing animals or honeybees or for dairying and the sale of dairy products or any other agricultural or horticultural use or animal husbandry or any combination thereof. "Farm use" includes the preparation, storage and disposal by marketing or otherwise of the products or by-products raised on such land for human or animal use. "Farm use" also includes the current employment of land for the primary purpose of obtaining a profit in money by stabling or training equines including but not limited to providing riding lessons, training clinics and schooling shows. "Farm use" also includes the propagation, cultivation, maintenance and harvesting of aquatic, bird and animal species that are under the jurisdiction of the State Fish and Wildlife Commission, to the extent allowed by the rules adopted by the commission. "Farm use" includes the on-site construction and maintenance of equipment and facilities used for the activities described in this subsection. "Farm use" does not include the use of land subject to the provisions of ORS chapter 321, except land used exclusively for growing cultured Christmas trees as defined in subsection (3) of this section or land described in ORS 321.267 (3) or 321.824 (3)."

uses of land for the primary purpose of obtaining a profit in money, the Department does not consider that land within the proposed site boundary, because it is not currently employed – even as a wasteland under ORS 215.203(2)(b)(E) – for the primary purpose of obtaining a profit in money, to be a farm use. Therefore, the proposed facility is only obligated to demonstrate consistency with the intent and purpose of ORS 215.243 – which focuses on maintaining conditions within the zone. While the applicant requests a Goal 3 exception under OAR 660-033-0130(38), the applicant relies upon a reasons exception request rather than a zone change. Therefore, because the underlying A-2 zone would be maintained, the Department recommends Council find that the proposed facility would comply with the applicable requirements of LCZO Section 24.19(A).

B. Does not interfere seriously with accepted farming practices as defined in ORS 215.203(2)(c), on adjacent lands devoted to farm use;

LCZO Section 24.19(B) requires that within an A-1 or A-2 zone, nonfarm uses demonstrate serious interference with or significant increases in the cost of accepted farming practices, as defined in ORS 215.203(2)(c), on adjacent lands devoted to farm use would not occur. The Department considers the language of this code, while not exactly the same as ORS 215.296(1) and OAR 660-033-0130(5), to mirror the intent and purpose. ORS 215.296(1) and OAR 660-033-0130(5) require a demonstration that conditionally permitted uses within EFU zoned land would not significantly increase the cost of, or significantly impact, accepted farm practices.

In ASC Exhibit K, the applicant identifies that accepted farming practices on surrounding lands include irrigated agriculture and grazing/ranching activities. Based on these practices, the applicant ~~defines-identifies potential adverse impacts arising from serious interference as impacts to the source availability~~ of irrigation water, increased traffic, increased dust, and spread of invasive weed species. The applicant then evaluated whether these potential adverse impacts would be considered serious interference with accepted farming practices. The proposed facility ~~has not required does not include a request for~~ a limited water use license or water use permit from WRD; therefore, the proposed facility would not be expected to interfere with existing irrigation water rights. Any potential traffic impacts would be limited to the duration of construction, which the applicant proposes to minimize through implementation of best management practices covered under a Construction Traffic Management Plan (Attachment U-2 of this order). The applicant proposes to implement dust abatement through continuous, daily watering via water trucks and implementation of a Dust Abatement and Management Plan. Control measures included in the Dust Abatement and Management include employing a designated fugitive dust control coordinator to manage the requirements of the plan and monitor dust conditions. The draft plan includes speed limits and requirements for earth moving activities and hauling. In addition, it establishes a hotline program, to be advertised through facility signage located on the perimeter fence. ; and, to control weeds, the applicant proposes to through implement ~~the requirements~~ of a Revegetation and Noxious Weed Control Plan (Attachment P-3 of this order).

Concerns of potential adverse impacts from displacement of mammal (big game) and rodents from the proposed facility site, following installation of perimeter fencing, to adjacent agricultural practices were raised on the record of the DPO.⁷³ Commenters expressing concern of the potential impact of mammal and rodent displacement did not provide facts or legal arguments to support the Department's evaluation of the issue. Nonetheless, based on Council input during the July 22 and August 21, 2020 DPO review, the Department consulted with Oregon State University Extension Service (Lake and Klamath counties), Lake County Planning Department, DLCD and ODFW on the issue. Based on agency consultation, while the issue is in fact valid, the significance is relatively uncertain. However, specific to the issue of mammal displacement, agencies recommended that Council acknowledge ODFW's existing rules and program designed to address elk damage on private land. In 2020, ODFW adopted administrative rules for a new elk damage hunt program which allows a new general season antlerless elk damage tag to be used in parts of the state with high elk damage.

In addition, landowners may be eligible for ODFW's Landowner Damage Program, which is intended to address damage caused by elk on privately owned lands. See ORS 498.012; ORS 496.158; OAR 635-075-0011. The Landowner Damage Program provides issuance of damage tags for landowner property; allows landowner to pick who receives a tag; allows for customized hunt dates; and establishes no limits on tags other than no more than 5 tags at a time. The applicant proposes wildlife monitoring and mitigation measures during facility operation, as reflected in recommended Fish and Wildlife Habitat Condition 11. Consistent with the wildlife monitoring and mitigation goals of the plan and statutory agricultural landowner consultation requirements applicable to energy infrastructure projects (ORS 218.276), the Department recommends Council impose an additional requirement in the plan to address concerns raised regarding potential mammal displacement, requiring that, prior to and during construction, the applicant provide information to adjacent landowners (within 500-feet of the property of the site boundary) of ODFW's Landowner Damage Program. In addition, the Department recommends that, prior to and during construction, the applicant be required to consult with ODFW on any new or modified rules or programs related to elk damage and mitigation, to ensure that the notification provides best available data.⁷⁴

The Department similarly consulted with the above-referenced agencies on the issue of rodent displacement, where there were no additional recommendations received. Based on the applicant's evaluation, obtained by Fosters Natural Resource Contracting, rodent displacement may and could occur up to 0.5-mile from the proposed facility site, for up to 6 months, but would not be expected to be significant unless the site, for unknown reasons, experienced

⁷³ OSCAPDoc4-24 DPO Public Comment Reeder. OSCAPDoc4-25 DPO Public Comment Meiering WWLLC 2020-07-20. OSCAPDoc4-33 DPO Public Comment Horton and Hogan.

⁷⁴ Recommendations received from the Rocky Mountain Elk Foundation, a member-based organization, included ongoing coordination between applicant and ODFW to ensure minimal impacts to elk during migration. While the Department refrains from making recommendations to Council based on public comments that do not include specific supporting facts or analysis, the Department acknowledges that RMEF recommendations are consistent with those independently provided by the Department. OSCAPDoc4-20 DPO Public Comment Richardson RMEF 2020-07-16.

1 exceptionally high rodent levels prior to disturbance at the site. In the Foster evaluation, it is
2 explained that over 50 percent of the site would be undisturbed or revegetated, and that
3 construction would occur over a rolling schedule, further minimizing the likelihood of any
4 significant offsite rodent displacement issues.⁷⁵
5

6 Based on compliance with recommended conditions presented in this order and mitigation
7 plans attached to this order, the Department recommends Council find that the proposed
8 facility would not result in serious interference with ~~or significantly increase the cost of~~
9 accepted farming practices on adjacent lands devoted to farm use and would therefore comply
10 with LCZO Section 24.19(B).
11

12 *C. Does not materially alter the stability of the overall land use pattern of the area;*
13

14 LCZO Section 24.19(C) requires that within an A-1 or A-2 zone, nonfarm uses demonstrate that
15 the overall land use pattern of the area would not be materially altered. The applicant describes
16 the land use within the area as remote and rural, with sparse population averaging about one
17 person per square mile. Approximately 23 percent of the land area in the county (about
18 1,227,648 acres) is privately owned. As of 2012, 657,055 acres were in farms, with
19 approximately 67 percent in pastureland, 20 percent in cropland, and the remainder in
20 woodland or other uses. The proposed facility would occupy approximately 3,921.3 acres of
21 land that otherwise could be used for occasional grazing. This amounts to only 0.32 percent of
22 the privately owned land in the county, or 0.6 percent of the acres in farms. Based on this
23 information, the applicant asserts, and the Department agrees, that the proposed facility would
24 not materially alter the land use pattern of the area. Therefore, the Department recommends
25 Council find that the proposed facility would satisfy LCZO Section 24.19(C).
26

27 *D. Is situated upon generally unsuitable land for the production of farm crops and*
28 *livestock, considering the flooding, vegetation, location and size of the tract;*
29

30 LCZO Section 24.19(D) requires that within an A-1 or A-2 zone, nonfarm uses be situated upon
31 generally unsuitable land for the production of farm crops and livestock, considering the
32 flooding, vegetation, location and size of the tract. In ASC Exhibit I and P, the applicant provides
33 information/mapping on the vegetation and soil conditions of the site, including low quality soil
34 (Class VI and VIII) and a mix of shrublands and bare earth. As referenced above, the applicant
35 provides a letter from one of the underlying landowners – Mr. Richard Morehouse – supporting
36 the applicant's representations that the land is not economically viable for use by commercial
37 cattle grazing. Therefore, based on land conditions and landowners' supporting letter, the
38 Department recommends Council find that the proposed facility would satisfy LCZO Section
39 24.19(D).
40

41 *E. Complies with other applicable natural resource provisions; and*
42

⁷⁵ OSCAPPDoc4-6.3 DPO Comments Applicant Responses to Comments 2020-07-16.

LCZO Section 24.19(E) requires that within an A-1 or A-2 zone, nonfarm uses demonstrate compliance with other applicable natural resource provisions. Other applicable natural resource provisions of LCZO include Article 18, which include the requirements within the County's mapped Goal 5 Big Game Winter Range. As presented in this order in the evaluation of LCZO Section 18.05(D), based on compliance with recommended conditions, the Department recommends Council find that the proposed facility would comply with the other LCZO natural resource provisions and therefore would comply with LCZO Section 24.19(E).

F. Complies with such other conditions as the County considers necessary.

LCZO Section 24.19(F) requires that within an A-1 or A-2 zone, nonfarm uses must comply with other conditions considered necessary by the governing body. As presented throughout this order, the Department recommend Council impose various conditions to satisfy the requirement of LCZO provisions and other Council standards and applicable rules. Based on compliance with the recommended conditions, as presented in Attachment 1 of this order, the Department recommended Council find that the proposed facility would comply with LCZO Section 24.19(F).

Lake County Comprehensive Plan

As presented in Table 2: Lake County Applicable Substantive Criteria, the following Lake County Comprehensive Plan Goals and policies were identified as applicable to the proposed facility.

Goal 2 Planning Process – Policies 17 and 18

Goal 3 Agricultural Lands – Policy 12

Goal 5 Open Space, Scenic and Historic Areas and Natural Resources – Policies 3, 4, 5, 8, 10, 13, 14 and 16

Goal 6 Air, Water and Land Resource Quality – Policies 1, 3, 4, 5 and 11

Goal 9 Economic Development – Policies 1, 6 and 8

Goal 11 Public Services and Facilities – Policies 1, 4 and 6

Goal 12 Transportation – Policy 8

Goal 13 Energy Conservation – Policies 1 and 3

Goal 14 Urbanization – Policy 9

Based on the analysis presented in Section IV.E.1. *Local Applicable Substantive Criteria*, which presents the evaluation of the proposed facility's compliance with applicable code provisions as implemented in the county zoning ordinance to meet the goals and policies of the comprehensive plan, the Department recommends that the proposed facility would be consistent with the goals and policies of the Lake County Comprehensive Plan, particularly the sections related to Economy, Industrial Development, Resource Industrial Development.

Analysis of Issues Raised Related to Consistency of Proposed Facility with Lake County Comprehensive Plan Goals and Policies

Comments on the record of the DPO raised issues asserting that the proposed facility would not be consistent with several goals and policies of the Lake County Comprehensive Plan and therefore cannot be authorized for construction and operation.⁷⁶ The Department recommends Council find that it is not appropriate to evaluate consistency with comprehensive plan goals and policies in isolation, or without regard to, the applicable zoning provisions. As described above, and consistent with ORS 197.175(2)(b), a county must “enact land use regulations to implement their comprehensive plans.” ORS 197.015(11) further defines a “land use regulation” as any local government zoning ordinance, land division ordinance adopted under ORS 92.044 or 92.046 or similar general ordinance establishing standards for implementing a comprehensive plan.” In the alternative, if Council were to apply the goals and policies directly, the Department presents an evaluation of those in question below.⁷⁷

- LCCP, Goal 1, Policy 2. “That citizens will have an opportunity to participate in all phases of the planning process.”
- LCCP Goal 1, Policy 3. “That opportunities will be provided for the public to respond to preliminary planning documents prior to their finalization.”
- LCCP Goal 1, Policy 6. “That broad participation in planning activities will be solicited to provide a cross-section of geographical and professional interests.”

The above-referenced Goal 1 policies all pertain to public involvement and opportunity to provide input into the planning process. Related to consistency with these goals, issues were raised regarding the Department’s authority to conduct an in-person DPO public hearing on July 20, 2020 during the COVID-19 pandemic, given Governor issued guidance and Executive Orders, and asserted that the in-person component of the hearing unfairly restricted participation because high risk individuals would not reasonably be able to safely attend.

To the extent that Governor issued guidance and Executive Order 20-16 restricted in-person meetings, neither directly established a restriction on statutorily required public hearings. First, the July 13 guidance did not apply to government meetings, which continued to be regulated by EO 20-16. Second, EO 20-16 remained in full force and effect and provided the Department with the legal authority to conduct the July 20 DPO public hearing. In EO 20-30, Governor Brown expressed her intention to periodically review the standing executive orders to determine whether they need to be modified or rescinded. See EO 20-30 § 2.a. As a result, EO 20-16 – which has already been the subject of extensive analysis in these proceedings, expressly provided the Department with legal authority to conduct the July 20 public hearing. To summarize, nothing contained in Governor Brown’s Executive Orders or related guidance impacted both the practical and legal basis for conducting the scheduled July 20, 2020 DPO public hearing.

Through the siting process, there has been tremendous opportunity for public input, with a public comment period running for over three months. There have been public meetings, two

⁷⁶ OSCAPDoc4-24. DPO Public Comment Reeder and Fort Rock Neighbors 2020-07-20.

⁷⁷ OSCAPDoc4-6.5 DPO Comments Applicant Responses to DPO Comments 2020-07-22.

1 in person public information sessions in the vicinity of the project, and ODOE and applicant
2 have readily responded to requests for information. In addition, the July 20, 2020 DPO public
3 hearing was conducted with opportunities for remote and in-person participation, including
4 opportunities to call in or login to a Webex feature. Based on the above analysis, if the Council
5 were to apply the goals and policies directly to the proposed facility, the Department
6 recommends Council find that the proposed facility would be consistent with the Goal 1
7 policies.

- 8
- 9 • LCCP Goal 2, Policy 10. "That the area designated on the Land Use Plan map as "Fort
10 Rock Planning Area," will be subject to those policy provisions specifically applicable to
11 Fort Rock."
- 12 • LCCP Goal 2, Policy 11. "That additional development in Fort Rock be limited to a depth
13 of 600 feet from the existing road system."
- 14

15 The above-referenced Goal 2 Policy 10 applies to the Fort Rock Planning Area. There is no
16 reference to Fort Rock Planning Area in the LCZO and no other policies specifically applicable to
17 Fort Rock except for Fort Rock, the Rural Center in the LCCP. There is no section in either the
18 LCCP or the LCZO addressing what the mapped area is supposed to represent or what planning
19 is supposed to occur within it. In general, comprehensive plan goals and policies are
20 implemented in zoning ordinances in the form of specific use limitations or development
21 standards. Therefore, if there was specific planning undertaken for the Fort Rock Planning Area,
22 it would be embodied in an overlay zone or supplemental provision governing development
23 standards in the planning area to impose the setback requirement. The LCZO contains neither.

24

25 Goal 2 Policy 11, appropriately evaluated separately from Policy 10, applies to Fort Rock, the
26 Rural Center, and is intended to require that new development occur along the frontages of
27 County Roads 5-10 and 5-13. This reading is supported by a plain language reading of Policy 11
28 – the policy does not reference the "Fort Rock Planning Area" but rather says "in Fort Rock,"
29 which is defined in the LCCP on page 130 as being located at the intersection of County Roads
30 5-10 and 5-13. Further, Policy 11 says that additional development "be limited to" a depth of
31 600 feet from the roads. The language "limited to" implies that the development is supposed to
32 be within 600 feet from the road system. This requirement makes sense when planning future
33 development in a rural center – development along the frontages of the rural center is
34 desirable.

35

36 While not directly implemented in LCZO Article 4, the standards do minimize frontage setbacks
37 and setbacks from county, state and federal highways (see LCZO 4.05). Lake County has never
38 applied Goal 2, Policy 10 and Policy 11. Accordingly, the Department recommends that Council
39 find that these policies are not applicable to the proposed facility.

- 40
- 41 • LCCP Goal 6, Policy 16 "Land use decision by the County shall avoid creating
42 additional conflicts over inadequate supplies of water from all resources, and shall,
43 wherever possible, ensure the perpetual availability of water resources by protecting the
44 resource from the demands of future uses where necessary."

1
2 Goal 6 Policy 16 relates to water supply and ensuring that land use decisions maintain sufficient
3 water supply for existing uses. As evaluated in Section IV.M. *Public Services* of this order, the
4 applicant proposes to meet its water needs by purchasing water and using on-site exempt
5 groundwater wells. The only new water use not currently accounted for in existing water rights
6 for the area is the well usage limited to 5,000 gallons a day. This type of use is exempt from
7 permit requirements under ORS 537.545(1)(f) as not significant enough to require a permit.
8 Additionally, to the extent necessary, the applicant commits to installing a water meter on any
9 well located within the facility to ensure the water usage does not exceed the applicable limit.
10 The operational water needs of the proposed facility would be significantly less than the
11 quantity needed during construction. Therefore, if the Council were to apply this goal and
12 policy directly to the proposed facility, based on the applicant's proposed water usage and
13 availability of water through supply sources, the Department recommends Council find that
14 the proposed facility would not create any conflict over water supplies or affect the availability
15 of water resources in the area.

- 16
17
 - LCCP Goal 6, Policy 15. "County planning programs shall function in such a manner as
18 to encourage the involvement of county residents in decisions affecting water resources
19 in the area."

20
21 Goal 6 Policy 15 is directed at how Lake County implements the LCCP through the LCZO and is
22 not a policy applicable to individual land use applications. Regardless, to the extent Council
23 finds it applicable and appropriate to apply directly to the proposed facility, the Department
24 recommends Council find that it has been met by the public review process of the application.

- 25
26
 - LCCP Goal 13, Policy 13 "Environmental Protection. In all cases the County's support for
27 renewable energy development shall be condition upon satisfactory evidence that
28 sufficient environmental safeguards are provided, Environment concerns of the County
29 shall include, but not be limited to: . . . water consumption . . . "
 - LCCP Goal 13, Policy 14 "In addition to Policy 13, in all cases the County's support for
30 renewable energy development shall also be conditioned upon a lack of adverse impacts
31 to public facilities or services. In this regard, the County's concerns shall include, but not
32 be limited to: . . . water supply."

33
34
35
36 Goal 13, Policy 13 and Policy 14 can be addressed together as they both relate again to
37 concerns regarding water supplies and water conservation. Applicant asserts that the policies
38 do not establish a requirement for evaluating water conservation alternatives to facility design
39 such as waterless solar panel cleaning technology, graveling, paving, or planting a monocrop,
40 which are described as inviable design alternatives. As previously described, the applicant
41 proposes to obtain water from a combination of de minimis groundwater resources and
42 purchase of an appropriately licensed supplier. The only water use added to the area could be
43 from the exempt groundwater wells, which are limited by state law. Applicant has analyzed the
44 facility's anticipated water needs in ASC Exhibit O and would not require any additional water

rights, thus the Department recommends Council find that there would be very little to no impact on existing water resources. Therefore, if the Council were to apply this goal and policy directly to the proposed facility, based on the applicant's proposed water usage and availability of water through supply sources, the Department recommends Council find that the proposed facility would be consistent with Goal 13, Policies 13 and 14.

IV.E.2 Directly Applicable State Statutes and Administrative Rules

Oregon Revised Statutes

ORS 215.275 – Utility Facilities Necessary for Public Service

The proposed facility includes a 115 kV transmission line and 115/500 kV substation, where the proposed transmission line would extend approximately 2 miles west of the site boundary of the solar energy generation facility components. The Department recommends that the proposed 115 kV transmission line and 115/500 kV step-up substation be evaluated as “utility facilities necessary for public service” under ORS 215.275, rather than ORS 215.274. Utility facilities necessary for public service, under ORS 215.274, must meet the definition under ORS 469.300(2) of an “associated transmission line,” defined as “new transmission lines constructed to connect an energy facility to the first point of junction of such transmission line or lines with either a power distribution system or an interconnected primary transmission system or both or to the Northwest Power Grid.” As presented, ORS 215.274 specifically refers to transmission lines, extending to but not inclusive of the first point of junction, whereas ORS 215.275 refers to utility facilities necessary for public service, omitting specific definition. Based on the size and operating function, the Department does not consider the proposed 115/500 kV substation to be an accessory use, incidental and subordinate, to the proposed 115 kV transmission line, rather it considers the component to be a utility facility.

ORS 215.275 Utility facilities necessary for public service; criteria; rules; mitigating impact of facility.

(1) A utility facility established under ORS 215.213 (1)(c)(A) or 215.283 (1)(c)(A) is necessary for public service if the facility must be sited in an exclusive farm use zone in order to provide the service.

(2) To demonstrate that a utility facility is necessary, an applicant for approval under ORS 215.213 (1)(c)(A) or 215.283 (1)(c)(A) must show that reasonable alternatives have been considered and that the facility must be sited in an exclusive farm use zone due to one or more of the following factors:

(a) Technical and engineering feasibility;

(b) The proposed facility is locationally dependent. A utility facility is locationally dependent if it must cross land in one or more areas zoned for exclusive farm use in order to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands;

(c) Lack of available urban and nonresource lands;

(d) Availability of existing rights of way;

- 1 (e) *Public health and safety; and*
2 (f) *Other requirements of state or federal agencies.*

3
4 In ASC Exhibit K, the applicant addresses the factors under ORS 215.274, which differ from the
5 factors listed above under ORS 215.275. Therefore, based on the information contained in the
6 ASC, the Department presents its assessment of the applicant's ability to satisfy ORS 215.275.

- 7
8 **1. Technical and engineering feasibility:** The proposed 115 kV transmission line is
9 required to interconnect proposed solar energy generation facility to PGE's existing
10 500 kV line, which would in the same location as the proposed 115/500 kV step-up
11 substation. Based on the extent of A-2 zoned land within the area, there is not a
12 feasible alternative, on non A-2 zoned land, that would allow the energy generation
13 facility to interconnect to PGE's existing 500 kV transmission line.
14 **2. The proposed facility is locationally dependent:** A utility facility is locationally
15 dependent if it must cross land in one or more areas A-2 zoned areas in order to
16 achieve a reasonably direct route or to meet a unique geographical need that cannot
17 be satisfied on other lands. Based on the extent of A-2 zoned land within the area,
18 there is no route between the proposed facility and interconnection point (at future
19 PGE substation to be co-located with the proposed 115/500 kV step-up substation)
20 that would achieve a reasonably direct route while not impacting A-2 zoned land. Any
21 alternative routing would be circuitous and cost-prohibitive.
22 **3. Lack of available urban or nonresource lands:** Based on the extent of A-2 zoned
23 land within the area, there are no available urban and non-resource lands that
24 would provide for a reasonably direct route for the transmission line while
25 connecting the proposed facility to PGE's existing 500 kV transmission line.
26 **4. Availability of existing rights-of-way:** The proposed 115 kV transmission line would
27 be located within existing county road rights-of-way for approximately 1.5 miles and
28 a landowner easement, a form of right-of-way, for the remaining 0.5 mile.
29 Therefore, the Department recommends Council find that the proposed
30 transmission line must be located on A-2 land in order to use available rights-of-way.

31
32 As presented in ASC Exhibit B, the applicant considered multiple alternative transmission line
33 routes and grid interconnection alternatives. Under ORS 215.275, reasonable alternatives must
34 be considered that support a finding that the proposed facility must be sited on EFU zoned land
35 in order to provide the service, which in this case is transmission service between the proposed
36 facility to PGE's existing 500 kV transmission, to serve the regional grid. As presented in Exhibit
37 K, non-A-2 zoned locations are not available for the proposed use. It is not possible to transfer
38 the generated electricity via transmission line from the energy generation facility to the grid
39 without crossing A-2-zoned land. Fundamentally, the proposed transmission is locationally
40 dependent because "it must cross land in one or more areas zoned for exclusive farm use in
41 order to achieve a reasonable direct route."

42
43 Because of the necessity to cross EFU zoned land, in addition to the analysis provided for the
44 other factors which provide additional support and justification for the proposed transmission

1 route, the Department recommends that the Council find that the proposed transmission line is
2 necessary for public service pursuant to the factors set forth in ORS 215.275(2).

3
4 *(3) Costs associated with any of the factors listed in subsection (2) of this section may be*
5 *considered, but cost alone may not be the only consideration in determining that a utility*
6 *facility is necessary for public service. Land costs shall not be included when considering*
7 *alternative locations for substantially similar utility facilities. The Land Conservation and*
8 *Development Commission shall determine by rule how land costs may be considered*
9 *when evaluating the siting of utility facilities that are not substantially similar.*

10
11 As provided above, the proposed intraconnection transmission line is locationally dependent
12 because it must cross EFU zoned land in order to connect the proposed facility to the 115/500
13 kV substation and the interconnection location. Therefore, the department recommends that
14 the Council find that cost alone is not the only, or even primary, consideration in determining
15 that the proposed intraconnection line is necessary for public service under ORS 215.275(3).

16
17 *(4) The owner of a utility facility approved under ORS 215.213 (1)(c)(A) or 215.283*
18 *(1)(c)(A) shall be responsible for restoring, as nearly as possible, to its former condition*
19 *any agricultural land and associated improvements that are damaged or otherwise*
20 *disturbed by the siting, maintenance, repair or reconstruction of the facility. Nothing in*
21 *this section shall prevent the owner of the utility facility from requiring a bond or other*
22 *security from a contractor or otherwise imposing on a contractor the responsibility for*
23 *restoration.*

24
25 The applicant would be responsible for all areas temporarily disturbed during construction,
26 maintenance or repair of the proposed facility, including the transmission line(s). The applicant
27 has submitted a draft Revegetation and Noxious Weed Control Plan, provided as Attachment P-
28 3 of this order. Pursuant to recommended Fish and Wildlife Condition 1, the applicant would be
29 required to receive final approval of the Revegetation Plan from the Department, in
30 consultation with ODFW and Lake County, before beginning construction. The applicant would
31 also be required to implement the approved plan during facility construction and operation.

32
33 Based upon the evaluation provided above, and subject to compliance with the referenced
34 conditions, the Department recommends that the Council find that the proposed facility would
35 satisfy the restoration requirements of ORS 215.275(4).

36
37 *(5) The governing body of the county or its designee shall impose clear and objective*
38 *conditions on an application for utility facility siting under ORS 215.213 (1)(c)(A) or*
39 *215.283 (1)(c)(A) to mitigate and minimize the impacts of the proposed facility, if any, on*
40 *surrounding lands devoted to farm use in order to prevent a significant change in*
41 *accepted farm practices or a significant increase in the cost of farm practices on the*
42 *surrounding farmlands.*

In ASC Exhibit K, the applicant identifies that accepted farming practices on surrounding lands include irrigated agriculture and grazing/ranching activities. Based on these practices, the applicant ~~defines-identifies potential adverse significant~~ impacts to accepted farm practices as ~~impacts to the source availability~~ of irrigation water, increased traffic, increased dust, and spread of invasive weed species. The applicant then evaluates whether the potential adverse impacts would result in serious impacts resulting in a significant change to, or significant increase in the cost of, the identified farming practices. The proposed facility ~~does not include a request for a~~ has not requested a new limited water use license or water use permit from WRD; therefore, the proposed facility would not be expected to result in significant changes to impacts to availability of irrigation water. Any potential traffic impacts would be limited to the duration of construction, which the applicant proposes to minimize through implementation of best management practices covered under a Construction Traffic Management Plan (Attachment U-2 of this order). The applicant proposes to implement dust abatement through daily watering via water trucks; and, to control weeds through implementation of a Revegetation and Noxious Weed Control Plan (Attachment P-3 of this order). Based on compliance with recommended conditions presented in this order and mitigation plans attached to this order, the Department recommends Council find that the proposed facility would not result in significant changes, or significantly increase the cost of, the identified accepted farming practices on ~~adjacent-surrounding~~ lands devoted to farm use and would therefore satisfy the requirements of ORS 215.275(5).

Oregon Administrative Rules

OAR 660-033-0130(38) – Standards for Approval for Photovoltaic Solar Power Generation Facility in Exclusive Farm Use Zones

(j) For nonarable lands, a photovoltaic solar power generation facility shall not use, occupy, or cover more than 320 acres. The governing body or its designate must find that the following criteria are satisfied in order to approve a photovoltaic solar power generation facility on nonarable land:

OAR 660-033-0130(38)(~~h~~j) restricts a photovoltaic solar power generation facility from using, occupying, or covering more than 320 acres of nonarable land. The proposed facility would use, occupy or cover approximately 3,921 acres of nonarable land and therefore would not comply with the acreage threshold. OAR 660-033-0130(38)(k) provides that an exception of the acreage threshold may be taken pursuant to ORS 197.732 and OAR Chapter 660 Division 4. As presented in ASC Exhibit K, and evaluated in Section IV.E.3 *Goal 3 Exception* of this order, the applicant requests that Council take an exception to the acreage threshold based on a “reasons” exception. The Department recommends Council find that the proposed facility would not comply with the nonarable acreage threshold established in OAR 660-033-0130(38)(~~h~~j) and

1 based on the analysis presented in Section IV.E.3 *Goal 3 Exception* of this order, take an
2 exception pursuant to OAR 660-033-0130(38)(k).

3
4 *(A) Except for electrical cable collection systems connecting the photovoltaic solar*
5 *generation facility to a transmission line, the project is not located on those high-value*
6 *farmland soils listed in OAR 660-033-0020(8)(a);*
7

8 OAR 660-033-0130(38)(h)(A) applies to photovoltaic solar power generation facilities located on
9 nonarable lands and prohibits facility components from being located on high value farmland
10 soils, as defined in OAR 660-033-0020(8)(a) (NCRS Class I or II). Based on NRCS soil classification
11 as presented in ASC Exhibit I, the proposed facility site is comprised of Class VI and VIII soils,
12 which are nonarable soils. Therefore, the Department recommends Council find that the
13 proposed facility would not be located on any high-value farmland soils and therefore would
14 comply with OAR 660-033-0130(38)(h)(A).
15

16 *(B) The project is not located on those high-value farmland soils listed in OAR 660-033-*
17 *0020(8)(b)-(e) or arable soils unless it can be demonstrated that:*

18 *(i) Siting the project on nonarable soils present on the subject tract would significantly*
19 *reduce the project's ability to operate successfully; or*

20 *(ii) The proposed site is better suited to allow continuation of an existing commercial*
21 *farm or ranching operation on the subject tract as compared to other possible sites*
22 *also located on the subject tract, including sites that are comprised of nonarable*
23 *soils;*
24

25 OAR 660-033-0130(38)(h)(B) applies to photovoltaic solar power generation facilities located on
26 nonarable lands and prohibits facility components from being located on high value farmland
27 soils or arable soils unless certain criteria can be met. As previously described throughout this
28 section, the proposed facility site is comprised of Class VI and VIII soils, which are nonarable
29 soils and does not contain high value farmland or arable soils. Therefore, the Department
30 recommends Council find that the proposed facility would comply with OAR 660-033-
31 0130(38)(h)(B).
32

33 *(C) No more than 12 acres of the project will be sited on high-value farmland soils described*
34 *at ORS 195.300(10);*

35 *(D) No more than 20 acres of the project will be sited on arable soils;*
36

37 OAR 660-033-0130(38)(h)(C)-(D) applies to photovoltaic solar power generation facilities
38 located on nonarable lands and prohibits facility components from occupying more than 12
39 acres of high value farmland soils as defined in ORS 195.300(10) or 20 acres of arable soils. As
40 previously described throughout this section, the proposed facility site is comprised of Class VI
41 and VIII soils, which are nonarable soils and does not contain high value farmland soils, as

1 defined in ORS 195.300(10) or arable soils. Therefore, the Department recommends Council
2 find that the proposed facility would comply with OAR 660-033-0130(38)(h)(C) and (D).

3
4 *(E) The requirements of OAR 660-033-0130(38)(h)(D) are satisfied;*

5
6 OAR 660-033-0130(38)(h)(E) applies to photovoltaic solar power generation facilities located on
7 nonarable lands and requires compliance with OAR 660-033-0130(38)(h)(D). As presented
8 above, the Department recommends Council find that the proposed facility would satisfy OAR
9 660-033-0130(38)(h)(D) and therefore would also comply with OAR 660-033-0130(38)(h)(E).

10
11 *(F) If a photovoltaic solar power generation facility is proposed to be developed on lands*
12 *that contain a Goal 5 resource protected under the county's comprehensive plan, and*
13 *the plan does not address conflicts between energy facility development and the*
14 *resource, the applicant and the county, together with any state or federal agency*
15 *responsible for protecting the resource or habitat supporting the resource, will*
16 *cooperatively develop a specific resource management plan to mitigate potential*
17 *development conflicts. If there is no program present to protect the listed Goal 5*
18 *resource(s) present in the local comprehensive plan or implementing ordinances and the*
19 *applicant and the appropriate resource management agency(ies) cannot successfully*
20 *agree on a cooperative resource management plan, the county is responsible for*
21 *determining appropriate mitigation measures; and*

22
23 OAR 660-033-0130(38)(h)(E) applies to photovoltaic solar power generation facilities located on
24 nonarable lands and requires development and implementation of a mitigation plan for Goal 5
25 resources identified in the county's comprehensive plan that would be impacted by the
26 proposed facility. The Department consulted with Lake County Planning Department and
27 obtained Goal 5 Big Game Winter Range mapped habitat, overlain with the proposed facility
28 site boundary. Based on this review, approximately 269 of 3,921 acres of the proposed facility
29 site would be located within the county's mapped Goal 5 Big Game Winter Range habitat. As
30 presented in ASC Exhibit P and evaluated in Section IV.H., *Fish and Wildlife Habitat* of this order,
31 the applicant proposes to implement a Habitat Mitigation Plan (HMP), which has been
32 reviewed by the Department in consultation with ODFW. Based on compliance and conditions
33 recommended under the Council's Fish and Wildlife Habitat standard, the Department
34 recommends Council find that OAR 660-033-0130(38)(h)(E) would be satisfied.

35
36 *(G) If a proposed photovoltaic solar power generation facility is located on lands where,*
37 *after site specific consultation with an Oregon Department of Fish and Wildlife biologist,*
38 *it is determined that the potential exists for adverse effects to state or federal special*
39 *status species (threatened, endangered, candidate, or sensitive) or habitat or to big*
40 *game winter range or migration corridors, golden eagle or prairie falcon nest sites or*
41 *pigeon springs, the applicant shall conduct a site-specific assessment of the subject*
42 *property in consultation with all appropriate state, federal, and tribal wildlife*
43 *management agencies. A professional biologist shall conduct the site-specific*
44 *assessment by using methodologies accepted by the appropriate wildlife management*

agency and shall determine whether adverse effects to special status species or wildlife habitats 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 habitats 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.

OAR 660-033-0130(38)(h)(G) applies to photovoltaic solar power generation facilities located on nonarable lands and requires development and implementation of a mitigation plan for impacts to big game winter range. The applicant, Department and ODFW coordinated throughout the ASC review and process to identify and establish appropriate components of the HMP, which is further evaluated in Section IV.H, *Fish and Wildlife Habitat* of this order. Based on compliance and conditions recommended under the Council's Fish and Wildlife Habitat standard, the Department recommends Council find that OAR 660-033-0130(38)(h)(G) would be satisfied.

(k) An exception to the acreage and soil thresholds in subsections (g), (h), (i), and (j) of this section may be taken pursuant to ORS 197.732 and OAR chapter 660, division 4.

OAR 660-033-0130(38)(k) establishes that, for projects that would be sited on 320 acres or more of nonarable land, an exception is required pursuant to ORS 197.732 and OAR Chapter 660, division 4. The proposed solar facility would use, occupy or cover more than 320 acres of nonarable land. The Department's assessment of the applicant's Goal 3 exception request is evaluated in Section III.E.3, *Goal 3 Exception* of this order below and recommends that the Council find that an exception to Goal 3 is justified.

(l) 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).

OAR 660-033-0130(38)(l) requires the governing body to impose a condition that the applicant sign and record in the deed records for the County a document binding the applicant and the applicant owner's successors in interest, prohibiting them from pursuing a claim for relief or

1 cause of action alleging injury from farming. The Department recommends Council impose the
2 following condition to ensure compliance with this requirement:

3
4 **Recommended Land Use Condition 6:** Prior to construction of the facility, the certificate
5 holder shall sign and record in the county deed records a document binding the certificate
6 holder owner, and any certificate holder owner successors in interest, prohibiting them
7 from pursuing a claim for relief of cause of action alleging injury from farming or forest
8 practices as defined in ORS 30.930(2) and (4).
9 [PRE-LU-04]

10
11 Based on compliance with the above-recommended Land Use Condition 6, the Department
12 recommends that Council conclude the requirements under OAR 660-033-0130(38)(l) would be
13 satisfied.

14
15 *(m) Nothing in this section shall prevent a county from requiring a bond or other security*
16 *from a developer or otherwise imposing on a developer the responsibility for retiring the*
17 *photovoltaic solar power generation facility.*

18
19 OAR 660-033-0130(38)(m) allows for the governing body to require a bond or other security
20 for the amount necessary to retire the facility during decommissioning. Recommended
21 Retirement and Financial Assurance Conditions 4 and 5 would require the applicant to obtain a
22 bond or letter of credit, before beginning construction. Therefore, based upon compliance
23 with these recommended conditions, the Department recommends that Council conclude that
24 the requirements under OAR 660-033-0130(38)(m) would be satisfied.

25
26 IV.E.3 Goal 3 Exception

27
28 The proposed facility would use, occupy or cover more than 320 acres of nonarable land.
29 Therefore, the proposed facility would not comply with OAR 660-033-0130(38)(j). Pursuant to
30 OAR 345-022-0030(2)(b)(B), if a proposed facility does not comply with an applicable
31 substantive criteria, the facility must otherwise comply with the applicable statewide planning
32 goal (Goal 3 Agricultural Lands) or seek an exception to the statewide planning goal. Pursuant
33 to ORS 469.504(1)(b)(B), non-compliance with a statewide planning goal requires a
34 determination by the Council that an exception to Goal 3 is warranted under ORS 469.504(2)
35 and the implementing rule at OAR 345-022-0030(4).

36
37 Goal 2, under OAR 660-004-0020(2)(a), permits an “exception” to the requirement of a goal for
38 “specific properties or situations.” The text of Goal 2, part II, pertaining to exceptions is codified
39 in ORS 197.732; however, for EFSC-jurisdictional facilities, ORS 469.504(2) establishes the
40 requirements that must be met for the Council to take an exception to a land use planning goal,
41 not the LCDC rule or statute. The Council’s Land Use standard at OAR 345-022-0030(4), mirrors
42 the language of ORS 469.504(2), stating:

(4) The Council may find goal compliance for a proposed facility that does not otherwise comply with one or more statewide planning goals by taking an exception to the applicable goal. Notwithstanding the requirements of ORS 197.732, the statewide planning goal pertaining to the exception process or any rules of the Land Conservation and Development Commission pertaining to the exception process goal, the Council may take an exception to a goal if the Council finds:

(a) The land subject to the exception is physically developed to the extent that the land is no longer available for uses allowed by the applicable goal;

(b) The land subject to the exception is irrevocably committed as described by the rules of the Land Conservation and Development Commission to uses not allowed by the applicable goal because existing adjacent uses and other relevant factors make uses allowed by the applicable goal impracticable; or

(c) The following standards are met:

(A) Reasons justify why the state policy embodied in the applicable goal should not apply;

(B) The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the Council applicable to the siting of the proposed facility; and

(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.

The provisions of OAR 345-022-0030(4)(a) and (b) are not applicable to the proposed facility. In ASC Exhibit K, the applicant provides an assessment as to why a goal exception, under OAR 345-022-0030(4)(c), for the proposed facility that would use, occupy or cover more than 320 acres of nonarable land is appropriate. Based on the evaluation presented below, the Department agrees and recommends Council find that a goal exception under OAR 345-022-0030(4)(c) is appropriate.

Reasons Supporting an Exception

Under OAR 345-022-0030(4)(c)(A) (and ORS 469.504(2)(c)(A)), in order for the Council to determine whether to grant an exception to a statewide planning goal, the applicant must provide reasons justifying why the state policy embodied in the applicable goal should not apply. The state policy embodied in Goal 3 is the preservation and maintenance of agricultural land for farm use. The applicant's arguments relating to "reasons supporting an exception" are discussed below.

1 *Minimal Impacts to Agriculture*

2
3 The applicant requests that Council consider the proposed facility's minimal impacts to
4 agriculture as a reason for granting an exception to the state policy embodied in Goal 3. As
5 noted throughout this order, the applicant seeks Council approval for use of up to 3,921 acres
6 of nonarable lands for proposed facility.

7
8 The proposed facility site is comprised of NRCS Class VI and VIII soils, which are soils considered
9 not suitable for cultivation ("nonarable soils"). The site contains no water rights and is in an
10 area that has been under a WRD moratorium preventing issuance of new groundwater rights
11 for irrigation since the mid-1980s. Additionally, the applicant provides an August 2, 2019 letter
12 from one of the underlying landowners – Mr. Richard Morehouse – affirming that while the
13 land has been historically grazed, the land and soil conditions are inadequate to support a
14 viable commercial grazing operation.⁷⁸ Based on historic use of the land, confirmation from local
15 landowner, the Department agrees that the area within the proposed site boundary provides
16 limited ability for landowners to make a profit on the land from agriculture use, including
17 grazing, and therefore use by a solar facility would have minimal agricultural related impacts.

18
19 The Department agrees with the applicant's reasoning as presented in this section. The land is
20 not viable for productive crop cultivation or cattle grazing due to low quality soils and no water
21 source. The Department recommends that Council conclude that due to the proposed facility's
22 minimal impacts to agriculture, this "reason" in addition to the subsequent analysis justifies a
23 Goal 3 exception.

24
25 *Local Economic Benefits*

26
27 The applicant requests that Council consider the local economic benefits from construction and
28 operation of the proposed facility as a reason for granting an exception to the state policy
29 embodied in Goal 3.

30
31 As identified by the applicant, local economic benefits from proposed facility construction and
32 operation would likely include lease payments to underlying landowners, creation of up to 150
33 construction jobs, and community service fees paid to Lake County through a Strategic
34 Investment Program (SIP) agreement. Under the SIP Agreement, the applicant affirms that the
35 certificate holder would pay \$2,000 per MWac of nameplate installed capacity to the County,
36 annually for 15 years. The applicant also commits to remitting payment of \$10,000 per MWac
37 to the North Lake County School District Foundation, totaling up to \$4 million. Executive
38 Director for the North Lake Education Foundation, a 501(c)(3) organization, provided written
39 confirmation that the applicant had committed to donating up to \$4 million dollars to the
40 foundation, for education enhancement and enrichment activities. The Executive Director also
41 relayed that the proposed facility would benefit the NLEF by reducing its bond tax rate, for a
42 2019 bond issues for a construction project, from \$1.09 to \$0.92 per thousand dollars,

⁷⁸ OSCAPDoc4-35 DPO Public Comment Moorehouse 2020-07-20.

1 representing a nearly 15 percent reduction in taxes owed. Because the Department and Council
2 strongly support the local economic benefit as a reason for the Goal 3 exception, and based on
3 the applicant's representations supported by written confirmation from NLEF, the Department
4 recommends Council impose the following condition to allow the Department the opportunity
5 to verify completion of the commitments:⁷⁹

6
7 **Recommended Land Use Condition 7:** Prior to operation of the facility, the certificate
8 holder shall:

- 9 a. Provide a copy to the Department of the Strategic Investment Program Agreement as
10 executed by Lake County and certificate holder. The SIP agreement shall demonstrate,
11 at a minimum, annual Community Service Fees of \$2,000 per megawatt alternating
12 current (MWac), based on nameplate installed capacity.
13 b. Provide a one-time contribution to the North Lake County School District Foundation
14 based on \$10,000 per MWac capacity, based on final design of the facility constructed
15 by the construction completion deadline defined in General Standard Condition 1.

16 [PRO-LU-01]
17

18 The Department agrees that proposed facility construction and operation would benefit the
19 local economy as presented in the findings here. The Department recommends the Council
20 conclude that this argument is a relevant "reason" justifying a Goal 3 exception.

21
22 *Reasons Recommended Not be Considered by Council for a Goal 3 Exception*
23

24 In addition to the reasons described above, the applicant requests Council consideration of
25 reasons which the Department recommends not be considered, as further described below.
26 The applicant asserts that it does not seek to permanently remove land from agricultural
27 production, and that the land, which per lease terms, would be returned to agricultural
28 purposes following retirement and restoration. The Department agrees that the site could be
29 returned to agricultural purposes after facility retirement; however, the Department does not
30 consider this argument relevant to "reasons supporting an exception." The site, as requested,
31 would preclude agricultural use for 40+ years, at least. While effects of the land removal may
32 not "permanent" in a long time scale, such effects nonetheless sufficiently disturb land for an
33 extended period of time. The Department therefore recommends that the Council conclude
34 that the mere fact that the land may be returned for agricultural use, after its projected
35 retirement after 40 years or more, is not a sufficient "reason" justifying a Goal 3 exception for
36 the proposed facility.
37

38 The applicant also asserts that the availability of reliable renewable energy relates to the ability
39 to recruit and retain energy-dependent businesses, which may maintain renewable energy
40 procurement policies. The applicant has not provided evidence of any specific companies that
41 are considering to expand, or move business, because of renewable energy procurement
42 policies. Therefore, the Department considers this argument to be attenuated and lacking

⁷⁹ OSCAPPDoc4-27 DPO Public Comment Kerr NLEF 2020-07-20.

1 specifics and recommends Council conclude that this argument is not a sufficient reason
2 justifying a Goal 3 exception.

3
4 The applicant asserts that the proposed facility would further public and private policies,
5 including but not limited to Oregon's Renewable Portfolio Standard (RPS), which requires
6 utilities to provide 50 percent of its electricity from renewable sources by 2040. The
7 Department agrees that energy generated by the proposed facility could apply towards the
8 State's RPS requirements if Renewable Energy Credits are generated and purchased by in-state
9 utilities. However, because there is no requirement in the state RPS requirements that
10 renewable energy be procured from Oregon-based resources, nor direct facility development
11 on agricultural lands, the Department does not consider abstract consistency with the State's
12 RPS standard to be a sufficient "reason" justifying a Goal 3 exception, specifically. Additionally,
13 the applicant has not provided a power purchase agreement or other documentation that
14 would demonstrate that the proposed facility would provide power to an Oregon utility in
15 support of its RPS requirements. Therefore, the Department recommends that Council
16 conclude that although the development of the proposed facility as a renewable energy source
17 would further and advance the State's renewable energy resources policy, this is not
18 considered a sufficient reason supporting or justifying a Goal 3 exception for the proposed
19 facility.

20 21 Significant Environmental, Economic, Social and Energy Consequences

22
23 Under OAR 345-022-0030(4)(c)(B) and ORS 469.504(2)(c)(B), in order for the Council to
24 determine whether to grant an exception to a statewide planning goal, the applicant must
25 show that "the significant environmental, economic, social and energy consequences" of the
26 proposed facility have been identified and mitigated in accordance with Council standards.

27 28 *Environmental Consequences*

29
30 The proposed facility must satisfy the requirements of all applicable EFSC standards, rules and
31 statutes. Applicable environmental EFSC standards include: General Standard of Review; Soil
32 Protection standard; Protected Areas standard; Recreation Standard; Scenic Resources
33 standard; Fish and Wildlife Habitat standard; and the Threatened and Endangered Species
34 standard. As presented in this order, the Department recommends that the Council find that
35 the proposed facility has been designed to avoid and where necessary, to mitigate impacts to
36 soils, wetlands, fish and wildlife habitats, and threatened and endangered species through
37 recommended conditions of approval.

38
39 Based on the recommended findings of fact, conclusions of law, and conditions of approval
40 presented within this order, the Department recommends that Council find that the proposed
41 facility, including mitigation, would not cause significant adverse environmental consequences
42 or impacts.

1 *Economic Consequences*

2
3 Economic consequences of a proposed facility could include potential impacts to providers of
4 public services, as well as benefits from local job creation, increased tax revenue from
5 property taxes received from the proposed facility site and from consumption of local goods
6 and services from new or temporary residents associated with the proposed facility, and
7 supplemental income to property owners through lease payments. As presented in ASC
8 Exhibit U and evaluated in Section IV.M. *Public Services* of this order, based upon compliance
9 with recommended conditions, the Department recommends Council find that the proposed
10 facility would not have a significant impact on providers of public or private services. As
11 evaluated above, under the *Local Economic Benefits* reason, construction and operation of
12 the proposed facility would provide economic benefits through multiple sources. Based on
13 these factors as evaluated under the applicant's public services impact assessment,
14 recommended conditions of approval, and local economic benefits realized from proposed
15 facility construction and operation, the Department recommends that the Council conclude
16 that the proposed facility represents a net benefit compared to the proposed site's existing
17 uses and economic consequences.

18
19 *Social Consequences*

20
21 Social consequences of a proposed facility could include impacts from proposed facility
22 visibility, noise, traffic or demand on providers of public services (health care, education,
23 housing, water supply, waste disposal, transportation, fire and safety). As demonstrated in the
24 applicable sections of this order, the Department recommends Council find that impacts to
25 important or significant scenic resources, protected areas, and recreational opportunities
26 would not result in significant adverse impacts and would comply with the appropriate Council
27 standards. The Department addresses potential adverse impacts to public services in Section
28 IV.M, *Public Services*, and impacts to cultural resources in Section IV.K., *Historic, Cultural and*
29 *Archaeological Resources*. Based on the Department's recommended findings of fact and
30 conclusions of law, and recommended conditions of compliance, as presented in the proposed
31 order under the Council's Scenic Resources standard; Historic, Cultural and Archeological
32 standard; Public Services standard; and Recreation standard, the Department recommends
33 Council conclude that the proposed facility would not cause significant adverse social
34 consequences.

35
36 *Energy Consequences*

37
38 Energy consequences of a proposed facility could include the amount of energy a proposed
39 facility would require, the source of energy, and whether the proposed facility is consistent
40 with state and local energy policies. The proposed facility would provide a renewable source
41 of energy for sale to the public. As a renewable energy source, the proposed facility would not
42 rely upon other energy generation sources, and with 50 MW of proposed battery storage,
43 would provide a net benefit in renewable energy sources. Based upon the above analysis, the

1 Department recommends the Council find that the proposed facility would have beneficial
2 energy consequences.

3
4 *Compatibility of Adjacent Uses*
5

6 Under OAR 345-022-0030(4)(c)(C) (and ORS 469.504(2)(c)(C)), in order for the Council to
7 determine whether to grant an exception to a statewide planning goal, the applicant must
8 show that the proposed facility is compatible with other adjacent land uses or will be made
9 compatible through mitigation measures. As explained in ASC Exhibit K, adjacent land uses
10 include irrigated crop cultivation. Adjacent land use zones within the 0.5-mile analysis area are
11 exclusively A-2-zoned land.

12
13 For adjacent and nearby farmland, as described above [under the ORS 215.275 analysis], the
14 Department recommends that the Council conclude that the proposed facility would not cause
15 a significant change to accepted farm practices nor significantly increase the cost of accepted
16 farm practices within the surrounding area. Moreover, the economic benefits of the proposed
17 facility would more than offset any potential impacts to nonarable land. Potential impacts to
18 adjacent farm practices would be limited to short-term, temporary construction impacts
19 associated with dust, construction-related traffic, and temporary increases in local population
20 and resource demand, which would be minimized through compliance with recommended
21 conditions. Therefore, the Department recommends that Council conclude that the proposed
22 facility would be compatible with other adjacent land uses and land use zones and that the
23 proposed facility would meet the standard under OAR 345-022-0030(4)(c)(C).

24
25 *Goal 3 Conclusion of Law*
26

27 Based on the foregoing findings and evidence in the record, the Department recommends that
28 Council take a Goal 3 exception for the 3,921 acres of nonarable land that could be occupied by
29 proposed facility components, subject to compliance with the recommended site certificate
30 conditions. The Department also recommends Council find that the Goal 3 exception taken for
31 this proposed facility would expire and terminated at time of site certificate termination.

32
33 **Conclusions of Law**
34

35 Based on the foregoing recommended findings and the evidence in the record, and subject to
36 compliance with the recommended site certificate conditions, the Department recommends
37 the Council finds an exception to Goal 3 is justified under OAR 345-022-0030(4)(c) and ORS
38 469.504(2)(c); and that therefore the Department recommends the Council find that the
39 proposed facility would comply with the applicable statewide planning goal (Goal 3). As such,
40 subject to the recommended conditions, the Department recommends Council find that the
41 proposed facility would comply with the Council's Land Use standard.

IV.F. Protected Areas: OAR 345-022-0040

(1) Except as provided in sections (2) and (3), the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below. References in this rule to protected areas designated under federal or state statutes or regulations are to the designations in effect as of May 11, 2007:

(a) National parks, including but not limited to Crater Lake National Park and Fort Clatsop National Memorial;

(b) National monuments, including but not limited to John Day Fossil Bed National Monument, Newberry National Volcanic Monument and Oregon Caves National Monument;

(c) Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C. 1131 et seq. and areas recommended for designation as wilderness areas pursuant to 43 U.S.C. 1782;

(d) National and state wildlife refuges, including but not limited to Ankeny, Bandon Marsh, Baskett Slough, Bear Valley, Cape Meares, Cold Springs, Deer Flat, Hart Mountain, Julia Butler Hansen, Klamath Forest, Lewis and Clark, Lower Klamath, Malheur, McKay Creek, Oregon Islands, Sheldon, Three Arch Rocks, Umatilla, Upper Klamath, and William L. Finley;

(e) National coordination areas, including but not limited to Government Island, Ochoco and Summer Lake;

(f) National and state fish hatcheries, including but not limited to Eagle Creek and Warm Springs;

(g) National recreation and scenic areas, including but not limited to Oregon Dunes National Recreation Area, Hell's Canyon National Recreation Area, and the Oregon Cascades Recreation Area, and Columbia River Gorge National Scenic Area;

(h) State parks and waysides as listed by the Oregon Department of Parks and Recreation and the Willamette River Greenway;

(i) State natural heritage areas listed in the Oregon Register of Natural Heritage Areas pursuant to ORS 273.581;

1 (j) State estuarine sanctuaries, including but not limited to South Slough Estuarine
2 Sanctuary, OAR Chapter 142;

3
4 (k) Scenic waterways designated pursuant to ORS 390.826, wild or scenic rivers
5 designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and rivers listed
6 as potentials for designation;

7
8 (l) Experimental areas established by the Rangeland Resources Program, College of
9 Agriculture, Oregon State University: the Prineville site, the Burns (Squaw Butte) site,
10 the Starkey site and the Union site;

11
12 (m) Agricultural experimental stations established by the College of Agriculture,
13 Oregon State University, including but not limited to: Coastal Oregon Marine
14 Experiment Station, Astoria Mid-Columbia Agriculture Research and Extension
15 Center, Hood River Agriculture Research and Extension Center, Hermiston Columbia
16 Basin Agriculture Research Center, Pendleton Columbia Basin Agriculture Research
17 Center, Moro North Willamette Research and Extension Center, Aurora East Oregon
18 Agriculture Research Center, Union Malheur Experiment Station, Ontario Eastern
19 Oregon Agriculture Research Center, Burns Eastern Oregon Agriculture Research
20 Center, Squaw Butte Central Oregon Experiment Station, Madras Central Oregon
21 Experiment Station, Powell Butte Central Oregon Experiment Station, Redmond
22 Central Station, Corvallis Coastal Oregon Marine Experiment Station, Newport
23 Southern Oregon Experiment Station, Medford Klamath Experiment Station, Klamath
24 Falls;

25
26 (n) Research forests established by the College of Forestry, Oregon State University,
27 including but not limited to McDonald Forest, Paul M. Dunn Forest, the Blodgett
28 Tract in Columbia County, the Spaulding Tract in the Mary's Peak area and the
29 Marchel Tract;

30
31 (o) Bureau of Land Management areas of critical environmental concern,
32 outstanding natural areas and research natural areas;

33
34 (p) State wildlife areas and management areas identified in OAR chapter 635,
35 Division 8.

36 ***

37 (3) The provisions of section (1) do not apply to transmission lines or natural gas
38 pipelines routed within 500 feet of an existing utility right-of-way containing at least one
39 transmission line with a voltage rating of 115 kilovolts or higher or containing at least
40 one natural gas pipeline of 8 inches or greater diameter that is operated at a pressure of
41 125 psig.

Findings of Fact

The Protected Areas standard requires the Council to find that, taking into account mitigation, the design, construction and operation of a proposed facility are not likely to result in significant adverse impacts to any protected area as defined by OAR 345-022-0040.⁸⁰ As required under OAR 345-021-0010(L), the applicant identifies the protected areas within the analysis area and evaluates the following potential impacts during proposed facility construction and operation: excessive noise, increased traffic, water use, wastewater disposal, visual impacts of facility structures.⁸¹

The analysis area for protected areas is the area within and extending 20 miles from the proposed site boundary. The applicant addresses protected areas in ASC Exhibit L. The applicant's assessment of impacts to protected areas also relies on information presented in ASC Exhibit R (Scenic Resources) and ASC Exhibit X (Noise). ASC Exhibit L, Figure L-1 is a map of the protected areas within the analysis area.

As presented in Table 3: *Protected Areas within the Analysis Area*, seven protected areas were identified by the applicant within the 20-mile analysis area, with the nearest protected area approximately four miles north of the proposed facility.

Table 3: Protected Areas within the Analysis Area

Protected Area and Rule Reference	Distance and Direction from Proposed Facility
Devil's Garden Lava Bed, BLM Area of Critical Environmental Concern (ACEC) OAR 345-022-0040(o)	4 miles, north
Connley Hills BLM ACEC and Research Natural Area (RNA) OAR 345-022-0040(o)	5.3 miles, southwest
Table Rock BLM ACEC and RNA OAR 345-022-0040(o)	6.9 miles, south
Fort Rock State Natural Area OAR 345-022-0040(i)	9.2 miles, northwest
Black Hills BLM ACEC/RNA OAR 345-022-0040(o)	9.7 miles, southeast

⁸⁰ OAR 345-001-0010(53) defines "Significant" as "...having an important consequence, either alone or in combination with other factors, based upon the magnitude and likelihood of the impact on the affected human population or natural resources, or on the importance of the natural resource affected, considering the context of the action or impact, its intensity and the degree to which possible impacts are caused by the proposed action. Nothing in this definition is intended to require a statistical analysis of the magnitude or likelihood of a particular impact."

⁸¹ The proposed facility would not generate any emission plumes and therefore would not result in visual impacts from air emissions. Therefore, visual impacts from air emissions resulting from proposed facility construction or operation, including but not limited to impacts on Class I Areas as described in OAR 340-204-0050, is not applicable and therefore not addressed in this order.

Table 3: Protected Areas within the Analysis Area

Protected Area and Rule Reference	Distance and Direction from Proposed Facility
Lost Forest/Sand Dunes/Fossil Lake BLM ACEC OAR 345-022-0040(o)	14.4 miles, east
Summer Lake Wildlife Area OAR 345-022-0040(p)	19 miles, south

The nearest protected area to the proposed site boundary is approximately four miles from the site boundary, Devil's Garden Lava Bed, a Bureau of Land Management (BLM) designated Area of Critical Environmental Concern (ACEC). ASC Exhibit L describes The Devil's Garden Lava Bed as a historic basaltic lava field of the Newberry volcano, known for its caves including lava tube caves, diverse vegetation, and rugged topography.⁸² One of the main and largest attractions at Devil's Garden Lava Bed is Derrick Cave, which is in the northeast corner of the protected areas boundary and the farthest away from the proposed facility.

The Connley Hills ACEC/ Research Natural Area (RNA) is accessible for day use by the public, and located approximately 5.3 miles southwest from the proposed facility site boundary. The BLM established this ACEC/RNA due to its outstanding archaeological value, and important botanical and ecological values, specifically, as an important representation of four distinct native ecosystems, including plant communities dominated by mixtures of western juniper, big sagebrush, bluebunch wheatgrass, and Idaho fescue.⁸³

The Table Rock protected area was designated as an ACEC by the BLM due to its cultural, botanical, and scenic values. It is located 6.9 miles to the south of the site boundary, with an elevation change of approximately 1,500 feet to the top of the summit. Given its elevation above the surrounding area, the summit of Table Rock is a dominant feature that is visible from most parts of the Christmas Valley area.⁸⁴

The Fort Rock State Natural Area is located 9.2 miles northwest from the proposed facility site boundary and is primarily visited for views of the volcanic tuff ring, for short hiking trails to the rim of the tuff ring, which offers views of the region, and to the bottom of the volcanic tuff ring. It includes a parking lots, kiosk, restroom, and picnicking areas. The site boundary location for the main substation (Area D) and the gen-tie transmission line will be 9.2 miles southeast of this protected area, and the solar array and potential battery storage enclosures will be almost 12 miles away (Area A).⁸⁵

The Black Hills ACEC/RNA is located approximately 9.7 miles from the site boundary. The protected area was designated by BLM as an ACEC based on its botanical values, ecologically

⁸² OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.1.

⁸³ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.2.

⁸⁴ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.3.

⁸⁵ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.4.

diverse western juniper community, presence of ash plant communities, and the presence of two BLM-designated sensitive plants within the ACEC. The area is most well-known and visited for day use hiking the low-lying hills and wildlife viewing.

See ASC Exhibit L for descriptions of Lost Forest/Sand Dunes/Fossil Lake ACEC and the Summer Lake Wildlife Area. The applicant's assessment in ASC Exhibit L describes that based upon a visual impact assessment, proposed facility components would be visible or partially visible from three of the identified protected areas, however the applicant explains that the components are so distant as to not be visually distinct on the landscape. Based upon the applicant's noise analysis, audibility of proposed facility operations would be low or negligible at all protected areas. Potential impacts from the proposed facility at protected area within the analysis area are evaluated below.

Potential Noise Impacts

The significance of potential noise impacts to identified protected areas is based on the magnitude and likelihood of the impact on the affected human population or natural resources that uses the protected area.

Construction

In the ASC, the applicant explains that construction of the proposed facility would take approximately two years, as recommended in Section IV.A., *General Standard of Review*, construction may occur up to three years after beginning. The applicant explains that construction staging would likely limit any particular construction area to approximately 60-acres at a time. As such, potential noise impacts at any protected area, if audible, would not last longer than the construction period within the vicinity of that area. In ASC Exhibit X Appendix X-1, the applicant provides a noise analysis that includes these operational-construction sources and sound power levels. The noise analysis was produced by Michael Minor & Associates, a consultant who conducts noise, vibration, and air environmental analysis.

The noise analysis included an assessment of construction (and operational, see below) noise at the nearest protected area, the BLM Devil's Garden Lava Bed ACEC. Section 8.3 of the noise analysis, and in Section IV.Q.1., *Noise Control Regulations*, of this order, includes a discussion of construction noise levels, and an analysis of the noise levels at varying distances from the facility site boundary. Figure 8 in the analysis demonstrates the attenuation of estimated sound levels at distances from the facility site boundary. According to this Section, it is estimated that during construction, the loudest potential sound at the nearest protected area, Devil's Garden Lava Bed BLM ACEC (approximately four miles from the site boundary), could be up to 48 dBA during intermittent pneumatic pile driver use (loudest equipment used), but general construction equipment would be anticipated at 35 dBA or less, and typical construction may be 20 dBA or less, which is essentially inaudible. Section IV.Q.1, *Noise Control Regulations*, of this order contains additional information regarding anticipated construction noise.

Based on review of the applicant's construction-related noise impact assessment, as described above, the Department recommends that Council find that proposed facility construction would not result in significant adverse noise impacts at Devil's Garden Lava Bed BLM ACEC; and, because the other protected areas within the analysis area are located at greater distances from the proposed site boundary, the Department recommends that Council find that there would be no impacts from proposed facility construction noise at the other protected areas.

Operation

Proposed facility components that would generate noise during operations include: transformers and inverters associated with the solar arrays, inverters and cooling systems associated with battery storage systems; the collector and step-up substations, and corona discharge noise (buzz or crackling during wet conditions) from the 115-kV transmission line. In ASC Exhibit X, the applicant provides a noise analysis inclusive of the operational sources and sound power levels (in A-weighted decibels) for proposed facility components. Section IV.Q.1, *Noise Control Regulations*, of this order summarizes the statistical noise modeling methodologies and results. The results of the modeling indicate that maximum operational noise levels of the proposed facility would be inaudible beyond 1 mile, see Section 6.3 of Attachment X-1. Therefore, because the nearest protected area to the proposed facility would be four miles, the Department recommends Council find that operational noise from the proposed facility would not impact any protected areas within the analysis area.

Traffic Impacts (Construction and Operation)

Potential traffic impacts to protected areas is described in ASC Exhibit L. As discussed in Section IV.M, *Public Services* of this order, peak construction/worst case scenario could result in up to approximately 120 one-way (or 240 round trip) construction worker commuter trips, plus the addition of up to 160 delivery (round trip) truck trips per day for material delivery.⁸⁶ ASC Exhibit L Section L.4.2 describes that the anticipated commuter routes to the site during construction would primarily be from the west of the facility, using US-97 and SR-31, and a network of county roads including Fort Rock Road (County Road 5-10), Christmas Valley Road (County Highway 5-14) and County Road 5-12. See Section IV.M, *Public Services*, for a discussion of these roads and highways including a description of road conditions.

As described in ASC Exhibit L, visitors to most protected areas in the analysis area would likely use the same highway network as construction vehicles to the facility site, particularly US-97 and SR-31, and the county road network. The ASC notes that the Fort Rock State Natural Area is the closest protected area within the analysis area to an anticipated facility access routes; approximately one mile north of Fort Rock Road.⁸⁷ The Department clarifies that the existing access roads and highways proposed to be used by the applicant for worker commuting and material delivery, are not new or modified roads and therefore not included as part of the site

⁸⁶ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, Appendix U-1, p. 4.

⁸⁷ Fort Rock State Natural Area is 9.2 miles northwest of the site boundary of the proposed facility.

boundary. The applicant's evaluation in ASC Exhibit L, of the proximity of access roads to protected areas is within the discussion of traffic impacts on exterior roads.

Devil's Garden Lava Bed ACEC is the second closest protected area to an access route identified by the applicant, at 1.7 miles north of County Road 5-12 (one of the access routes to Area A).⁸⁸ Visitors to this protected area and personnel will use SR- 31, Fort Rock Road, and County Road 5-12. As stated above, the expected increases in traffic are well within the operating capacities of these roads. Therefore, significant adverse impacts on visitor access to this protected area are not likely.

Other protected areas identified in the ASC and listed in Table 3 *Protected Areas within the Analysis Area*, are farther from anticipated facility access routes. While it is possible that users of the protected areas would notice increased traffic on the access routes during peak construction period, as well as notice the visibility or noise from vehicles, traffic impacts during construction are both intermittent and temporary, and as described in Section IV.M, *Public Services*, traffic is well within the acceptable range of level of service on those larger roads. Additionally, recommended Public Services Condition 31 would require the applicant to finalize and implement a construction traffic management plan, which would reduce potential impacts of construction traffic.

During operations, the proposed facility would generate an additional 6 to 10 daily two-way trips on existing local roads for workers, with additional, occasional material delivery trucks. Based on the minimal number of operational trips, there is unlikely to be any impact on protected areas, including access points to protected areas.⁸⁹

Based on the analysis presented here, the Department recommends Council find that potential traffic-related impacts during construction and operation of the proposed facility would not likely result in significant adverse impacts to any protected areas within the analysis area.

Water Use and Wastewater Disposal (Construction and Operation)

The applicant discusses the proposed facility's water use in ASC Exhibit O. Generation and management of wastewater during construction and operation are evaluated in Exhibit V and discussed in Section IV.N, *Waste Minimization* of this order.

Proposed facility construction would use, under high temperatures, dry climactic conditions (i.e. "worst-case conditions") up to 34 million gallons of water for dust suppression, road compaction, concrete foundations, on-site worker drinking and sanitation use. Proposed facility operation may use up to approximately 1.28 million gallons of water per year to support O&M building drinking water use and solar panel washing. In ASC Exhibit O and Section IV.M, *Public Services* of this order, the applicant describes that construction-related water would be

⁸⁸ Devil's Garden Lava Bed ACEC is 4 miles north of the site boundary of the proposed facility.

⁸⁹ See Section IV.M, *Public Services* of this order for further discussion of traffic impacts.

1 obtained from local municipal or other private sources, plus water from exempt ground-water
2 wells. Operational water would be obtained from the onsite wells, and if additional water is
3 necessary, from the same municipal or other private sources. As such, the facility's water use is
4 not anticipated to impact any protected area during construction or operation of the proposed
5 facility.

6
7 As explained in ASC Exhibit L, no industrial wastewater would be produced during construction
8 or operation of the proposed facility. Stormwater runoff, which is not considered wastewater
9 but discussed nonetheless, would be managed on site according to the best management
10 practices (BMPs) as described in the NPDES 1200-C / Erosion and Sediment Control Plan (ESCP),
11 such that no stormwater would be anticipated to leave the site boundary.⁹⁰ The ESCP, and
12 recommended condition language is discussed further in Section IV.D., *Soil Protection*, of this
13 order. During construction, sanitary wastewater would be contained in portable toilets, which
14 the applicant explains would be provided and maintained by a licensed contractor. During
15 operations, sanitary wastes from the O&M buildings would be discharged to a permitted onsite
16 septic system or to portable toilets. The primary use of water during construction would be for
17 dust control, and during operation, for potential solar panel washing. Neither activity would
18 impact a protected area.

19
20 Based on the analysis presented here, the Department recommends Council find that water use
21 and wastewater disposal during construction and operation of the proposed facility would not
22 result in a significant adverse impact, or any impact, to any protected area within the analysis
23 area.

24 25 *Methodologies for Visual Impact Assessment*

26
27 A discussion of the applicant's visual impact analysis is provided in ASC Exhibits L and R. The
28 dimensions of major proposed facility components considered for potential evaluation in the
29 visual analysis include the following:

- 30 • Up to 1.7 million solar PV modules, 7 feet tall at full tilt on the tracking axes. Modules
- 31 will be installed in 250-foot-long rows.
- 32 • Up to 180 inverters, 8 feet wide by 30 feet long by 5 feet tall.
- 33 • One 115/500-kV step-up substation about 3 acres in size in Area D.⁹¹ Up to four
- 34 collector substations, each up to 1 acre in size in Area A. The step-up and collector

⁹⁰ OSCAPDoc4 ASC 09 OSC ASC Exhibit I 2019-10-17, I.5.

⁹¹ The structural components receiving power from the 115-kV gen-tie transmission line will likely be about 65 feet in height (referred to as the "Incoming Line Mast") and the structural components sending the stepped-up power to the future, adjacent, PGE POI will likely be up to 100 feet (referred to as the "Outgoing Line Mast"). The substation components will be located closer than the 115-kV transmission line monopoles to the existing 500-kV transmission towers and lines and will be visually subordinate or subsumed in the existing visual landscape. Therefore, the step-up substation structural components were not included in the viewshed analysis. OSCAPDoc20 ASC Applicant Responses to Additional RAIs_Combined 2020-02-24 to 2020-03-09.

substations will be approximately 10 feet tall, although rods for lightning protection may be up to 40 feet tall.

- Up to 134 battery storage enclosures, depending on final design, consisting of steel-framed structures that are 50 feet wide by 67 feet long, and up to 30 feet tall.
- One 115-kV generation-tie transmission line, up to 2 miles long and utilizing 70-foot-tall steel monopoles spaced approximately 300 feet apart (not included in the visual impact analysis).⁹²

The viewsheds were calculated using the Esri ArcDesktop 10.5.1 geoprocessing 'Visibility' tool. The Visibility tool uses a digital elevation scanner to determine the surface locations that are potentially visible from an aggregated set of "observer points" placed in key parts of a project. The applicant determined that the solar modules (7 feet tall) and battery storage structures (30 feet tall) in Area A will have the most potential to be observed from distances of several miles or more, due to their forms and abundance within the site boundary. Area D will contain a substation (approximately 10-foot tall structures, with thin 40-foot tall lightning protection rods) however, to be conservative, the applicant utilized the larger footprint dimensions associated with the solar panels in Area A for the evaluation of the substation in Area D. Observer points were placed on all corners/vertices of the site boundary, as well as at the highest point near the center of Area A and Area D. As a result, 23 observer points were placed in Area A and 4 in Area C. The input elevation raster was a 10-meter resolution digital elevation model.

The viewshed analysis does not take into account the visibility effects of existing vegetation or structures, which in practice would block or screen views in some places. In addition, the model does not account for distance, lighting and atmospheric factors (such as weather) that can diminish visibility under actual field conditions. In other words, the results of the viewshed analysis, which present potential lines of sight of proposed facility components, is conservative in identifying potential visibility impacts. The applicant classified the level of visual impacts as high (components dominant or readily apparent from viewing locations), medium (components co-dominant with existing landscape features and moderately apparent from viewing locations), and low (components subordinate in the landscape and not readily apparent from viewing locations).⁹³

Potential Visual Impacts of Proposed Facility Structures

The results of the viewshed analysis for protected areas is provided in ASC Exhibit L Section L.4.5 and are represented in Figure L-2. The results indicate that some portion of facility components would be visible or partially visible from 5 of the 7 protected areas within the

⁹² The applicant explains in Exhibit R and L, that it is unlikely that the proposed 115-kV transmission line will attract the attention of casual observers away from any of the protected areas, which are a minimum of 4 miles away, and it will be subordinate in appearance compared to the existing 500-kV transmission lines. Therefore, the transmission line was not included in the viewshed analysis.

⁹³ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.

1 analysis area, with the two most distant protected areas not having visibility to the proposed
2 facility.

3
4 *Devil's Garden Lava Bed ACEC (including Derrick Cave)*
5

6 Only about 10 percent of the proposed facility structures will be in the line-of-sight of the
7 Devil's Garden Lava Bed ACEC, due to the varying topography which will, for the most part,
8 shield the casual observer from views of the proposed facility, except for areas in the southern
9 portion of the ACEC, or from higher elevation points within the ACEC. However, at these
10 locations because the proposed facility would be located 4 miles or greater, the facility will
11 likely only appear as a dark line on the horizon. As noted in this section, Derrick Cave is the
12 primary feature visited within the protected area, and it is located over 12 miles from the
13 proposed facility, and it is not in the line-of sight of the proposed facility. Therefore, the
14 proposed facility is not likely to result in significant adverse impact to the Devil's Garden Lava
15 Bed ACEC.

16
17 *Connley Hills ACEC/RNA*
18

19 The applicant's viewshed analysis demonstrates that some northern and eastern part of the
20 ACEC/RNA are in the line-of-sight of the proposed facility due to the slight increase in elevation
21 and the lack of intervening topography. According to ASC Exhibit L reference to the BLM
22 management document, Connley Hills ACEC/RNA not contain significant scenic value because
23 there are visually similar mountain ranges in the area. The main substation (Area D) and the
24 gen-tie transmission line are 5.3 miles from this ACEC/RNA, the solar arrays and potential
25 battery enclosures of Area A will be 7.2 miles away.⁹⁴ Views toward the direction of the
26 proposed facility from Connley Hills ACEC/RNA (i.e., to the northeast) include crop circles and
27 scattered farm residences in the direct vicinity of the site boundary, and the developments of
28 the town of Christmas Valley farther to the east. Visual impacts on the Connley Hills ACEC/RNA
29 should be medium-low because, although structures will be co-dominant with the existing
30 landscape features, they will not be very apparent from this protected area considering its
31 distance from the proposed facility. Therefore, the proposed facility is not likely to result in
32 significant adverse impact to the Connley Hills ACEC/RNA.

33
34 *Table Rock Area ACEC/RNA*
35

36 Based on the applicant's viewshed analysis, proposed facility components would be in the line-
37 of-sight of areas in the northern and eastern portions of the Table Rock ACEC/RNA, including
38 from the summit of Table Rock, however the protected area is approximately 6.9 miles away
39 south/southwest. According to reference to the BLM management document, Table Rock
40 possesses regional important scenic value due to its location and visibility from the adjacent
41 portions of the Christmas Valley National Backcountry Byway and the Oregon Outback National

⁹⁴ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.2.

Scenic Byway, which pass to the southeast and south of the ACEC/RNA, respectively.⁹⁵ See Section IV.J., *Scenic Resources*, of this order for more discussion of scenic byways. Table Rock is also designated as a traditional cultural place, and the proposed facility could potentially have visual impacts on some culturally sensitive locations within the ACEC/RNA. To assess these potential impacts, the applicant utilized the BLM's Visual Resource Management (VRM) system, which includes contrast and distance as key considerations in analyzing the visual impacts of proposed projects. The solar arrays could be perceived from these areas as a large rectilinear form punctuated by numerous rectilinear battery storage units that would contrast somewhat in form, line, color, and texture with the surrounding agricultural (e.g., active irrigation circles) and natural landscape. Because the proposed facility would be located within the background distance zone, according to the BLM VRM system, it would appear co dominant with or subordinate within the broader landscape, and its contrast would result in medium-low to low visual impacts. In addition, the gen-tie transmission line would be subordinate in appearance to the three existing, taller, collocated 500-kV transmission lines that cross the valley. Therefore, the proposed facility is not likely to result in significant adverse impact to the Table Rock Area ACEC/RNA.

Black Hills ACEC/RNA

Based on the applicant's visual impact analysis represented in ASC Exhibit L, at this protected area, proposed facility components would be in the line-of-site at approximately 50 percent of the ACEC/RNA. However, the applicant explains that it is unlikely to be dominant or apparent in the view of the landscape due to the distance of 9.7 miles. At this distance, proposed facility components will likely be co-dominant with existing landscape features, including scattered ranches and the developments in the town of Christmas Valley, and will be moderately apparent. The proposed facility will likely appear as a dark thick line near the horizon and will likely not be noticeable, therefore, visual impacts on this protected area will be medium-low. Further, the BLM did not designate this area as protected based on scenic value but rather because of its botanical value.⁹⁶ For these reasons, the proposed facility is not likely to result in significant adverse impact to the Black Hills ACEC/RNA.

Based on the applicant's visual assessment provided in ASC Exhibit L, proposed facility structures will not be in the line-of-sight from Lost Forest/Sand Dunes/Fossil Lake ACEC and Summer Lake Wildlife Area, therefore, there will be no visual impacts on these protected area from proposed facility structures or plumes.

Based on review of the applicant's viewshed analysis and the assessment presented here, the Department recommends Council find that the proposed facility would not cause a significant, adverse visual impact to any protected area in the analysis area. However, in ASC Exhibit R, the applicant describes measures that would minimize general visual impacts caused by the proposed facility. These include using earth-toned colors on the battery storage enclosures and

⁹⁵ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.3.

⁹⁶ OSCAPPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5.5.

other buildings, using shielded lighting directed downward, and managing fugitive dust during facility construction. These measures are considered applicant representations and imposed via Recommended Scenic Resources Condition 1 in Section IV.J., *Scenic Resources*, of this order.

Conclusions of Law

Based on the foregoing recommended findings, the Department recommends the Council conclude that, taking into account mitigation, the design, construction and operation of the proposed facility would not be likely to result in significant adverse impacts to any protected areas, in compliance with the Council's Protected Area standard.

IV.G. Retirement and Financial Assurance: OAR 345-022-0050

To issue a site certificate, the Council must find that:

(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.

Findings of Fact

The Retirement and Financial Assurance standard requires a finding that the proposed facility site can be restored to a useful, non-hazardous condition at the end of the facility's useful life, should either the applicant (certificate holder) stop construction or should the facility cease to operate. In addition, it requires a demonstration that the applicant can obtain a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.

As discussed in Section II.C., *Application for Site Certificate*, of this order, the applicant modified its proposal for retirement of the proposed facility after the ASC was deemed complete and submitted documentation on March 9, 2020 (ASC Exhibit W Supplement). This information is available on the Department's project webpage.⁹⁷ In the ASC Exhibit W Supplement, the applicant requests Council consideration of a phased approach to providing the retirement financial surety, as well as consideration of salvage value of facility materials, and different contingency markups than what are typically used by the Department and Council. These requests are addressed in this section of the order.

⁹⁷ OSCAPDoc20 ASC Applicant Responses to Additional RAIs_Combined 2020-02-24 to 2020-03-09.

Restoration of the Site Following Cessation of Construction or Operation

OAR 345-022-0050(1) requires the Council to find that the proposed facility site can be restored to a useful non-hazardous condition at the end of the proposed facility's useful life, or if construction of the proposed facility were to be halted prior to completion. The proposed facility is located entirely within Agricultural Use (A-2) zoned land, a zone intended for grazing and other agricultural uses, and is within ODFW's mapped big-game winter range habitat, which is considered by ODFW as habitat Category 2. The Department notes that at the time of facility retirement, 30+ years in the future, under recommended Retirement and Financial Assurance Condition 2 (Mandatory Condition OAR 345-025-0006(9)) below, a retirement and decommissioning plan would have to be reviewed and approved by Council. That plan would finalize the retirement and restoration requirements, including establishing the conditions that constitute compliance with the retirement standard. Therefore, to satisfy the Retirement and Financial Assurance standard, the site restoration tasks and actions must be based on site restoration suitable for cattle grazing and big game foraging.⁹⁸ The applicant estimates the proposed facility's useful life as 30 years, although describes that the proposed facility would likely be upgraded with more efficient equipment over time extending the useful life much longer than 30+ years.⁹⁹

As described in ASC Exhibit W, restoring the site to a useful, non-hazardous condition upon cessation of construction or operation (or upon facility retirement) would involve site mobilization, electric disconnect/dismantling work, aboveground structure removal, foundation removal, road and site restoration, and on and offsite hauling and disposal. More specifically, equipment necessary for decommissioning would be mobilized onsite; electrical components would be disconnected (combiner boxes, battery systems); aboveground equipment and associated foundations would be dismantled (racking, posts, inverters/transformer units, O&M buildings, transmission and overhead collector lines, collector and step-up substations, fencing, gates) and removed and hauled offsite for disposal. Transformers and other collector/step-up substation equipment would be removed to be reused elsewhere or recycled as scrap metal. Underground cable and electrical collection lines would be removed up to 3 feet below ground. Transmission structure foundations would be removed up to 5 feet below ground, or as otherwise requested by the County. Internal and perimeter facility roads would be restored, including removal of gravel-surface material, decompaction and revegetation. Groundwater wells would be abandoned in accordance with applicable Oregon laws and regulations. Site revegetation activities would include re-seeding of the areas impacted by permanent facility components and temporarily impacted during decommissioning activities.

The Council's rules include several mandatory site certificate conditions relating to the obligation of an applicant (certificate holder) to prevent the development of conditions on the

⁹⁸ ~~While this demonstration is necessary for Council findings, site restoration at the time of facility retirement may differ from current land uses and designations based on current zoning, habitat designations, and accepted land use practices within the surrounding area at the time of proposed facility retirement, with those differences to be established in the applicants' final retirement plan, as discussed below.~~

⁹⁹ OSCAPDoc4-6 DPO Comments Applicant 2020-04-28.

1 site that would preclude restoration of the site and requiring the applicant (certificate holder)
2 to obtain Council approval of a retirement plan in the event that the facility ceases construction
3 or operation, which are as follows:

4
5 **Recommended Retirement and Financial Assurance Condition 1:** The certificate holder
6 shall prevent the development of any conditions on the site that would preclude restoration
7 of the site to a useful, non-hazardous condition to the extent that prevention of such site
8 conditions is within the control of the certificate holder.

9 [Mandatory Condition OAR 345-025-0006(7); GEN-RF-01]

10
11 **Recommended Retirement and Financial Assurance Condition 2:** The certificate holder
12 shall retire the facility if the certificate holder permanently ceases construction or operation
13 of the facility. The certificate holder shall retire the facility according to a final retirement
14 plan approved by the Council, as described in OAR 345-027-0110. The certificate holder
15 shall pay the actual cost to restore the site to a useful, nonhazardous condition at the time
16 of retirement, notwithstanding the Council's approval in the site certificate of an estimated
17 amount required to restore the site.

18 [Mandatory Condition OAR 345-025-0006(9); RET-RF-01]

19
20 **Recommended Retirement and Financial Assurance Condition 3:** If the Council finds that
21 the certificate holder has permanently ceased construction or operation of the facility
22 without retiring the facility according to a final retirement plan approved by the Council, as
23 described in OAR 345-027-0110, the Council shall notify the certificate holder and request
24 that the certificate holder submit a proposed final retirement plan to the Department
25 within a reasonable time not to exceed 90 days. If the certificate holder does not submit a
26 proposed final retirement plan by the specified date, the Council may direct the
27 Department to prepare a proposed final retirement plan for the Council's approval.

28
29 Upon the Council's approval of the final retirement plan, the Council may draw on the bond
30 or letter of credit described in OAR 345-025-0006(8) to restore the site to a useful,
31 nonhazardous condition according to the final retirement plan, in addition to any penalties
32 the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or
33 letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall
34 pay any additional cost necessary to restore the site to a useful, nonhazardous condition.
35 After completion of site restoration, the Council shall issue an order to terminate the site
36 certificate if the Council finds that the facility has been retired according to the approved
37 final retirement plan.

38 [Mandatory Condition OAR 345-025-0006(16); RET-RF-02]

39
40 In Section IV.B, *Organizational Expertise* of this order, the Department recommends that the
41 Council find that the applicant has the organizational expertise to construct, operate, and retire
42 the proposed facility in compliance with that Council standard. In addition, the Department
43 recommends that the Council find that the applicant meets the Council's Soil Protection, Fish
44 and Wildlife Habitat, and Waste Minimization standards (Sections IV.D, IV.H, and IV.N of this

order, respectively). Each of those sections imposes conditions on the applicant that are designed to ensure that construction and operation of the proposed facility would not have adverse impacts on the surrounding land.

Based on compliance with the above-referenced mandatory conditions, and the applicant's assessment of decommissioning tasks and actions, the Department recommends the Council find that the site of the proposed facility could be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation.

Estimated Cost of Site Restoration

OAR 345-022-0050(2) requires the Council to find that the applicant has demonstrated a reasonable likelihood of obtaining a bond or letter of credit in a form and amount necessary to restore the site of the proposed facility to a useful non-hazardous condition. A bond or letter of credit in a form and amount satisfactory to Council provides a site restoration remedy to protect the state of Oregon and its citizens if the applicant (certificate holder) fails to perform its obligation to restore the site. The bond or letter of credit must remain in force until the applicant (certificate holder) has fully restored the site. OAR 345-025-0006(8) establishes a mandatory condition, included as recommended Retirement and Financial Assurance Condition 4, which ensures compliance with this requirement.

In ASC Exhibit W Supplement, the applicant provides a site restoration cost estimate of \$23,955,377 (Q3 2018 dollars). The site restoration cost estimate was prepared based on a decommissioning bid and technical costing input from Swinerton Renewable Energy (SRE), a division of Swinerton Builders. As explained in ASC Exhibit D, SRE has experience in construction, operation and maintenance for over 100 solar PV facilities totaling over 3 gigawatts, which includes more than 18 projects in Oregon. The applicant represents that based on experience, SRE has an understanding of labor costs, supply chain and material values, safety issues, and required time and expense for installation, retirement and repurposing of renewable energy facilities.

Based on the above-described experience, the Department recommends Council conclude that the applicant's consultant, SRE, and engineering staff have the experience necessary to adequately and accurately prepare a cost estimate for decommissioning and restoration of the site of the proposed facility.

ASC Exhibit W Supplement presents the applicant's decommissioning estimate, which is represented in Table 4: *Proposed Facility Decommissioning Cost Estimate and Unit Costs*.

Table 4: Proposed Facility Decommissioning Cost Estimate and Unit Costs

Task or Action	Quantity	Unit	Per Unit Cost	Total Cost
Stormwater Pollution Prevention and Dust Control Measures				
Stabilized Construction Entrances	1	Each	\$3,287	\$3,287
Perimeter Silt Fencing	95,040	Linear Ft	\$0.74	\$70,330

Table 4: Proposed Facility Decommissioning Cost Estimate and Unit Costs

Task or Action	Quantity	Unit	Per Unit Cost	Total Cost
Spill Kits (Emergency Equipment Cleanup)	2	Each	\$324	\$648
Dust Control Watering (Water Truck)	250	Day	\$787	\$196,750
Subtotal =				\$271,015
500 kV Step-Up Substation and Transmission Line				
Substation Step-up Transformer Removal	2	Each	\$40,205	\$80,410
Haul and Recycle/Dispose of Transformer Oil	2	Each	\$48,207	\$96,414
Substation Circuit Breaker Removal	2	Each	\$40,205	\$80,410
Remove and Recycle/Dispose of Fencing	1,200	Linear Ft	\$2.50	\$3,000
Remove and Recycle Gate	28	Linear Ft	\$6.75	\$189
Remove and Recycle Access and Maintenance Lighting	1	Day	\$1,051	\$1,051
Remove and Recycle Control Building Structure	1	Each	\$2,432	\$2,432
Remove and Recycle Control/Communications Equipment	1	Each	\$1,051	\$1,051
Remove and Recycle HV Above Ground Transmission Line	10,560	Feet	\$36.61	\$386,602
Remove Gen-tie Foundations to Subgrade	37	Each	\$15,333	\$567,321
Subtotal =				\$1,218,880
Four Collector Substations				
Remove and Recycle Collector Cables	60	Days	\$4,000	\$240,000
Remove Step up Transformers and Oil	4	Each	\$172,250	\$689,000
Haul and Recycle/Dispose of Transformer Oil	20	Trips	\$1,000	\$20,000
Remove Foundations to Subgrade	4	Each	\$25,000	\$100,000
Remove Substation Junction Boxes and Foundations	4	Each	\$212,500	\$212,500
Subtotal =				\$1,261,500
Solar Array				
Remove and Recycle Photovoltaic Modules	1,742,572	Panels	\$3.98	\$6,935,437
Hauling and Disposal of Modules	34,851	Ton	\$30	\$1,045,543
Remove Racking	22,689	Each	\$47	\$1,072,055
Hauling and Disposal of Racking	22,689	Ton	\$58	\$1,310,290
Remove Posts	246,444	Each	\$4.50	\$1,108,998
Hauling and Disposal of Posts	246,444	Each	\$6	\$1,355,442
Remove and Recycle Inverters and Transformers	160	Each	\$1,200	\$192,000
Dispose of Inverters and Transformers	3,040	Ton	\$30	\$91,200
Disconnect and Remove Combiner Boxes and Switches	2,240	Each	\$1,100	\$2,464,000
Remove SCADA and Met Stations	1	Each	\$1,051	\$1,051
Remove Fences/Gates	95,040	Linear Ft	\$2.50	\$237,600

Table 4: Proposed Facility Decommissioning Cost Estimate and Unit Costs

Task or Action	Quantity	Unit	Per Unit Cost	Total Cost
Restore Site (Primarily Re-Seeding Disturbed Areas)	1,300	Acres	\$200	\$260,000
Subtotal =				\$16,073,616
O&M Facilities				
Remove O&M facility (per building)	2	Each	\$40,000	\$80,000
Subtotal =				\$80,000
Battery System				
Disconnect battery and prepare for removal	134	Each	\$4,000	\$536,000
Remove Buildings and Foundations (Demolition and Hauling)	134	Each	\$1,000	\$134,000
Haul Batteries Containing Electrolyte Fluid	67	Trips	\$1,000	\$67,000
Dispose of Electrolyte Fluid	50	MW	\$100	\$5,000
Disposal of Battery System Inverters and Switchyard	70	Each	\$4,100	\$287,000
Disposal of Battery System Switchyard	1	Each	\$9,100	\$9,100
Restore Battery Building Site	25	Acres	\$2,600	\$65,000
Hauling and Disposal	67	Trips	\$1,000	\$67,000
Subtotal =				\$1,170,100
Road Restoration				
Remove Service Roads	3,696,000	Sq feet	\$0.08	\$295,680
Subtotal =				\$295,680
Restore Additional Areas Distributed by Facility Removal				
Restore and seed temporary disturbance areas	25	Acres	\$2,600	\$65,000
Subtotal =				\$65,000
General Costs				
Haul charges and disposal fees (per load)	250	Trips	\$1,000	\$250,000
Permits, Inspections and Fees				\$10,000
Subtotal =				\$260,000
Subtotal, All Tasks or Actions =				\$20,695,790
Mobilization and Supervisory				\$206,958
Subcontractor Bonding/Liability Insurance - 1.5%				\$310,437
General Conditions - 1.25%				\$258,697
Performance Bond - 1%				\$206,958
Subcontractor Administration and Project Management - 3%*				\$620,874
Subcontractor General Overhead and Profit - 5%*				\$1,034,789
Subcontractor Future Development Contingency - 3%*				\$620,874
Subtotal, Subcontractor Contingencies =				\$3,259,587
Total Site Restoration Cost (Q3 2018 dollars)				\$23,955,377
Department Recommended Markups				

Table 4: Proposed Facility Decommissioning Cost Estimate and Unit Costs

Task or Action	Quantity	Unit	Per Unit Cost	Total Cost
Department Project Management (PM) – 10%				\$2,395,538
Future Development Contingencies - 10% (solar facility components); 20% (battery)				\$2,512,547
Total Site Restoration Cost with Department Adjusted Contingencies (Q3 2018 dollars)				\$28,863,462
Notes: *Revised Table W-1 dated 2020-03-09 included additional line items for ODOE Project Management and Administration and ODOE Future Development Contingency, both at 3%, which were separate from the Project Management and Future Development Contingency line items under the Subcontractor subheading. Therefore, the Department interprets the Subcontractor and ODOE line items to be separate and recommends Council not consider the applicant's proposed contingencies for ODOE to be sufficient. 1. A 10% future development contingency is applied to all tasks (with the exception of the proposed battery storage system) (\$22,785,527 x 10% = \$2,512,547) A 20% future development contingency is applied to the proposed battery storage system (\$1,170,100 X 20% = 1,404,120).				

Assumptions and Methods

As presented in ASC Exhibit W, the applicant evaluates costs for each of the tasks and actions identified for site restoration based on the following methods and assumptions:

- Total decommissioning duration – six months with a 25-person crew;
- Total weather delay contingency – seven days;
- Fort Rock, Oregon for zip-to-zip tracking mileage and weather conditions;
- International Brotherhood of Electrical Workers union for electrical scope of work;
- Non-union and no prevailing wage for all other scopes of work; and,
- No scrap or recycling value to the project and the site is left vacant

Based on the applicant's methodology and assumptions, the Department recommends Council consider that \$23.9 million (Q3 2018 dollars) is a reasonable estimate of an amount satisfactory to restore the site of proposed facility components to a useful, non-hazardous condition.

ODOE Applied Contingencies

In the event that the applicant (certificate holder) were to become unable to fulfill its obligation to complete facility decommissioning, the Department would require staff time related to the preparation and approval of a final retirement plan, obtaining legal permission to proceed with demolition of the facility, legal expenses for protecting the State's interest, preparing specification bid documents and contracts for demolition work, managing the bidding process, negotiations of contracts, and other tasks. In ASC Exhibit W Supplement, the applicant estimates administration and project management costs to be \$620,874, which is three percent of its \$20,695,790 sub-total estimate for retirement costs, not including the costs of mobilization and supervision, nor the cost of insurance. ASC Exhibit W Supplement also adds an additional three percent markup, \$718,661, for ODOE Project Management and Administration costs, should the Department and Council be required to manage facility decommissioning.

1 Typically, Council has imposed a ten percent markup to account for potential ODOE Project
2 Management and Administration costs to a facility retirement estimate, not three percent. The
3 Applicant, in ASC Exhibit W Supplement, argues that its cost estimate already includes a three
4 percent markup to account for the actual decommissioning contractor markup, and “there is no
5 evidence that ODOE will incur more costs for managing decommissioning than will the
6 contractor actually overseeing the work.” Additionally, ASC Exhibit W Supplement argues that
7 “there is no evidence that EFSC has ever needed or used that financial cushion...in fact, there is
8 no evidence of an EFSC project being abandoned in the history of EFSC projects.”¹⁰⁰

9
10 While it is true that no EFSC project has ever been abandoned and EFSC has never needed to
11 call in the retirement bond/letter of credit and decommission a facility, if this were to be
12 necessary in the future, the Department and Council would require money to administer and
13 manage the process. The intention of the EFSC Retirement and Financial Assurance standard is
14 as a “backstop” of last resort, and simply because it has never been utilized, does not mean the
15 bond amount should be reduced or the standard relaxed without a policy change based on a
16 reason to do so. The Department recommends that Council continue to apply a 10 percent
17 project management and administration mark-up for the following reasons. The Council has
18 imposed the 10 percent project management and administration mark-up to retirement bond
19 cost estimates for all EFSC facilities, and while the Department does not support utilization of
20 the 2005 Facility Retirement Cost Estimating Guide for cost-estimating purposes, that guide
21 does include the recommendation of utilizing a 10 percent mark-up for administration and
22 project management.

23
24 In addition to the project management and administration mark-up described above, the
25 Council has historically applied a future development contingency of 10 to 20 percent to an
26 applicant’s decommissioning cost estimate based on uncertainty in the decommissioning
27 estimate. If site restoration becomes necessary, it might be many years in the future where
28 there is uncertainty of continued adequacy of the retirement cost estimate. Uncertainty factors
29 include different environmental standards or other legal requirements; and, changes in cost of
30 labor and equipment that increase at a rate exceeding the standard inflation adjustment. The
31 applicant seeks Council approval of a three percent future development contingency added to
32 its contractor retirement cost estimate, and an additional three percent future development
33 contingency for ODOE specific contingencies.

34
35 Historically, Council has applied a 10 percent future development contingency for wind energy
36 facilities, and in recent years, has applied 10 or 20 percent for solar facilities. Council has also
37 imposed varying future development contingencies based on specific facility components,
38 bifurcating the future development contingency of battery storage systems from the rest of the
39 proposed facility. When Council has differentiated the future development contingency applied
40 to battery storage components from the rest of a proposed facility, Council has traditionally
41 applied a 20 percent contingency to the battery storage components due to its potentially
42 hazardous subsurface impacts and uncertainty of regulatory requirements for hazardous

¹⁰⁰ OSCAPPDoc20 ASC Applicant Responses to Additional RAIs_Combined 2020-02-24 to 2020-03-09, page 83.

materials and cleanup costs. ~~Because Council has historically applied a 10 percent contingency for future development of wind facilities based on several decades of operational and retirement data, which the Department considers applicable to solar facility components, with the exception of the relatively new battery storage technology. a solar facility, like a wind facility, has limited, if any, potential for subsurface hazardous impacts, the Department recommends Council apply a future development contingency of 10 percent to all facility components, with the exception of the proposed battery storage system, which the Department recommends.~~ The Department recommends Council apply a 10 percent future development contingency for solar facility components, based on availability of historic decommissioning data and institutional knowledge of solar facilities, and that Council apply a 20 percent contingency for the battery storage system due to uncertainty of environmental regulations (currently limited to federal transport and handling requirements), disposal site availability and other escalation factors.¹⁰¹

If Council finds that contingencies should be applied to the applicant's decommissioning cost for potential Department project management and future development uncertainties, the total decommissioning amount, based on the tasks, actions and unit costs would be \$28.8 million (Q3 2018 dollars).

Ability of the Applicant to Obtain a Bond or Letter of Credit

OAR 345-022-0050(2) requires the Council to find that the applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to Council to restore the proposed facility site to a useful non-hazardous condition. A bond or letter of credit provides a site restoration remedy to protect the state of Oregon and its citizens if the applicant (certificate holder) fails to perform its obligation to restore the site. The bond or letter of credit must remain in force until the applicant (certificate holder) has fully restored the site. OAR 345-025-0006(8) establishes a mandatory condition which ensures compliance with this requirement, as recommended for inclusion in the site certificate and referenced below:

Recommended Retirement and Financial Assurance Condition 4: Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the facility has been retired.

¹⁰¹ Applicant requests that Council apply a 10 percent future development contingency to battery storage components because flow-battery technology is safe with limited hazards, differing from lithium-ion batteries. OSCAPPDoc4-6 DPO Comments Applicant 2020-04-28. The Department maintains that the technology is relatively new and therefore the future of environmental regulations or other factors applicable to battery storage technology necessitates a higher uncertainty factor, consistent with Council decisions on battery storage technology to date (2018-2020)..

1 The Council may specify different amounts for the bond or letter of credit during
2 construction and during operation of the facility.

3 [Mandatory Condition OAR 345-025-0006(8); PRE-RF-01]
4

5 Based on the estimate shown in Table 4 *Proposed Facility Decommissioning Cost Estimate and*
6 *Unit Costs* and, adjusted with ODOE applied contingencies, would be approximately \$28.8
7 million (Q3 2018 dollars), adjusted annually as described in the recommended condition below.
8

9 The applicant provides information about its financial capability in ASC Exhibit M. The applicant
10 proposes to provide a financial assurance bond or letter of credit in a form approved by the
11 Council before beginning construction. To demonstrate its ability to receive an adequate bond
12 or letter of credit, the applicant provides a September 20, 2018 letter from Heffernan Insurance
13 Brokers, which is not a financial institution pre-approved by Council or that ODOE is familiar,
14 but which states that they “are confident that [Obsidian] will be able to obtain said
15 decommissioning bond.”
16

17 The applicant proposes to provide financial security as follows:
18

- 19 • At the start of construction, post the full amount of \$25,393,000;
20
- 21 • At commercial operation date (“COD”, or in service date), reduce the posted financial
22 assurance to \$1;
23
- 24 • During the fourth year before the expiration Power Purchase Agreement (“PAA”) update
25 the decommissioning estimates reflected in Table W-1 based on current
26 data and information and use that revised amount, with the approval of ODOE, in a
27 bond or letter of credit.
28
- 29 • At the time of recalculation and adjustment 4 years prior to the end of the
30 PPA term, the Council permit inclusion of projected scrap value in the decommissioning
31 estimate (i.e., reduce the amount of the financial assurance by the projected scrap
32 value)
33
- 34 • Enter into a security interest agreement with EFSC and ODOE prior to construction
35 granting EFSC/ODOE a priority security interest in the scrap value to ensure “first in line”
36 prior ahead of other creditor.
37

38 *Phased Approach* 39

40 Applicant asserts that any risk in delaying the full posting of the decommissioning security until
41 four years prior to the expiration of the PPA is low because “[w]hile there is a PPA in place for
42 the facility, the facility will not be decommissioned.” Applicant provides examples of PPAs to
43 illustrate the terms, conditions, contingencies, and obligations of a typical PPA, which applicant
44 contends ensure that the facility will remain in operation during the term of the PPA.

1 For example, per the applicant, PPAs typically include a development security, to allow the
2 power purchaser to recover costs if the facility is not built or COD is delayed, as well as an
3 operation security, which allows the power purchaser to purchase energy elsewhere if the
4 project fails to deliver it.

5
6 Applicant has not provided a draft of the PPA that it would enter into for the power to be
7 produced and sold at its facility. Rather, it has provided boilerplate PPAs or PPAs from other
8 transactions to support these arguments.

9
10 Applicant provides these documents as evidence that “both the offtaker and the project owner
11 are highly incentivized to keep the project viable and operating, and to ensure that the
12 operator of the project is financially stable.” Applicant further contends that if the certificate
13 holder were to become unable to fulfill its future obligation to complete facility
14 decommissioning and it became apparent while the PPA was still in place, the counterparty to
15 the PPA or another third party would take over ownership of the facility from the certificate
16 holder and the obligations of the certificate holder under the site certificate would be
17 transferred to a financially stable party.

18
19 The Department points to the mandatory condition in OAR 345-025-0006(8) which requires the
20 certificate holder to maintain a bond or letter of credit in a form and amount satisfactory to the
21 Council in effect at all times until the facility has been retired. While the Department
22 acknowledges that, in general, there may be a low level of risk that a facility operating under
23 the PPA terms as described by the applicant would be abandoned or retired during the PPA
24 period, the Department does not believe the applicant has provided substantial evidence that
25 there would be such minimal risk under the terms of the PPA that it would enter. Further, even
26 assuming a low level of risk, the Department does not believe applicant has provided
27 substantial evidence that accepting a \$1 security for approximately the first 16 years of the
28 facility operation is an “amount satisfactory to Council to restore the proposed facility site to a
29 useful non-hazardous condition.” If, in spite of there being only a low risk, the facility were
30 abandoned, the State would be left with no options for recourse against the certificate holder
31 and no means for covering the costs of decommissioning and site restoration. (This is
32 unlike, for example, a utility that would still have a mechanism available to it to seek to recover
33 such costs from ratepayers).

34
35 Accordingly, to address the applicant’s financial assurance obligations and ensure the adequacy
36 of the bond or letter of credit, the Department recommends Council adopt the following
37 condition:

38
39 **Recommended Retirement and Financial Assurance Condition 5:** Before beginning
40 construction of the facility, the certificate holder shall submit to the State of Oregon,
41 through the Council, a bond or letter of credit naming the State of Oregon, acting by and
42 through the Council, as beneficiary or payee. The total bond or letter of credit amount for
43 the facility is \$28.8 million dollars (Q3 2018 dollars), to be adjusted to the date of issuance,

1 and adjusted on an annual basis thereafter, as described in sub-paragraph (b) of this
2 condition:

- 3 a. The certificate holder may adjust the amount of the bond or letter of credit based on
4 the design configuration of the facility by applying the unit costs, general costs and
5 ODOE applied contingencies as illustrated in Table 3 of the Final Order on the ASC. Any
6 revision to the restoration costs should be adjusted to the date of issuance as described
7 in (b) and subject to review and approval by the Council.
- 8 b. The certificate holder shall adjust the amount of the bond or letter of credit using the
9 following calculation:
 - 10 i. Adjust the amount of the bond or letter of credit (expressed in Q3 2018 dollars) to
11 present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-
12 Weight, as published in the Oregon Department of Administrative Services' "Oregon
13 Economic and Revenue Forecast" or by any successor agency and using the third
14 quarter 2018 index value and the quarterly index value for the date of issuance of the
15 new bond or letter of credit. If at any time the index is no longer published, the
16 Council shall select a comparable calculation to adjust third quarter 2018 dollars to
17 present value.
 - 18 ii. Round the result total to the nearest \$1,000 to determine the financial assurance
19 amount.
- 20 c. The certificate holder shall use an issuer of the bond or letter of credit approved by the
21 Council, based on the Council's pre-approved financial institution list.
- 22 d. The certificate holder shall use a form of bond or letter of credit approved by the
23 Council. The certificate holder shall describe the status of the bond or letter of credit in
24 the annual report submitted to the Council under OAR 345-026-0080. The bond or letter
25 of credit shall not be subject to revocation or reduction before retirement of the facility
26 site.
27 [PRE-RF-02]

28 29 *Scrap Value*

30
31 In ASC Exhibit W, the applicant also requests the decommissioning surety be reduced by
32 as much as 35% in recognition of the value of salvage and scrap. Applicant asks that ODOE take
33 note of the evidence submitted by Avangrid pertaining to the Bakeoven Solar Project, in
34 support of its similar request that the decommissioning surety be reduced by the project's
35 estimated salvage value, and consider that evidence in Council's evaluation of the applicant's
36 request for this project. Applicant states that it will also submit independent evidence of
37 salvage and scrap value at a later date to be considered with a request to amend the bond
38 amount.

39
40 In the past, Council has reviewed requests for consideration of scrap metal value. In the early
41 2000s, Council allowed retirement bonds to be reduced to account for the value of salvage or
42 scrap metals. In 2006 and 2007, the Department recommended and Council agreed to
43 implement a policy limiting use of scrap value in decommissioning estimates and bond amounts
44 based on concerns of risk related to fluctuating market value, and perhaps more importantly,

1 that third party creditors or other parties could assert a claim against the scrap or salvage value
2 that might result in that value being unavailable to the State to offset site restoration costs, or
3 require a potentially costly and lengthy legal challenge by the State in a bankruptcy court to
4 access the value of the salvaged materials. Council has not authorized use of the value of scrap
5 metal to lower a decommissioning estimate since that time.

6
7 In addition to reviewing historic Council decisions and policy on use of scrap metal in
8 decommissioning estimates and bond amounts, in the Bakeoven Solar Project application
9 review, the Department contracted with a technical expert, Golder Associates, Inc. (Golder), to
10 review regulatory requirements applicable to industrial facility decommissioning in California,
11 Washington, Alaska, and British Columbia Canada, to determine whether scrap metal value is
12 considered under similar regulatory requirements. Based on this review, Golder found that no
13 state or provincial-level programs support use of the value of scrap metal to reduce a
14 decommissioning bond requirement for the state or provincial level permitting programs for
15 mining and waste disposal landfill sites. Cited reasons under these other similar regulatory
16 programs for not considering the value of scrap metal included difficulty in tracking the total
17 value over a facility's operational lifetime, uncertainty as to the actual value, difficulty ensuring
18 that the assets remain onsite, and potential problems associated with creditor's rights.

19
20 In assessing the Bakeoven proposal, Golder also reviewed the applicant's steel market value
21 information source, SteelBenchmarker.com, and based on the value of "#1 heavy melting
22 scrap," the metal type used by the applicant, Golder found the fluctuation in value to be
23 between \$200 and \$400/ton over the last ten years.

24
25 Based on the above-summarized review by Golder, the Department has determined that the
26 underlying risk to the State of accepting salvage material value to reduce the retirement bond
27 amount has not changed since the 2007 Council review and policy decision. While the questions
28 related to the fluctuating value of scrap steel can potentially be addressed via a condition of
29 approval requiring a regular update to the scrap steel valuation and corresponding adjustment
30 of the retirement bond, the issue related to the risk that the Council and State may not have
31 access to the scrap value due to claims by third-party facility creditors or other interested
32 parties is more difficult to address. The applicant has proposed to enter into an agreement with
33 the Department (on behalf of the Council) to grant the Department a security interest in facility
34 equipment salvage. The Council has never taken on this type of arrangement, and even if such
35 an agreement was agreed upon by Council, and vetted by Oregon Department of Justice, it is
36 likely that risk still exists that would either limit the availability of salvage value to the State or
37 make accessing that value challenging, costly, and lengthy. For example, it is uncertain if a
38 future bankruptcy court would honor such an agreement, or if a third-party creditor of the
39 facility would accept such an agreement and waive a claim to access salvage value of facility
40 materials. Ultimately, accepting such a proposed agreement would have the effect of putting
41 extra risk upon the Department, the Council, and the State, with unclear value in return to the
42 Department, Council, and State for accepting that risk.

Based on the findings presented here, the Department recommends Council not change its policy on use of scrap metal value in lowering a bond or letter of credit obligation as there has been no change in the risks previously identified by Council as the reasons to limit use of scrap metal value.

Conclusion

Subject to compliance with Retirement and Financial Assurance Conditions 1, 2 and 3, the Department recommends the Council find that the proposed facility can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the proposed facility. Subject to compliance with Retirement and Financial Assurance Conditions 4 and 5, the Department recommends that the Council find that the applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.

Conclusions of Law

Based on the foregoing recommended findings of fact, and subject to compliance with Retirement and Financial Assurance Conditions 1, 2 and 3, the Department recommends the Council find that the proposed facility can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the proposed facility. Subject to compliance with Retirement and Financial Assurance Conditions 4 and 5, the Department recommends that the Council find that the applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition and comply with the Council's Retirement and Financial Assurance standard.

IV.H. Fish and Wildlife Habitat: OAR 345-022-0060

To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with:

*(1) The general fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025(1) through (6) in effect as of February 24, 2017****

Findings of Fact

The EFSC Fish and Wildlife Habitat standard requires the Council to find that the design, construction and operation of a facility is consistent with the Oregon Department of Fish and Wildlife's (ODFW) habitat mitigation goals and standards, as set forth in OAR 635-415-0025. This rule creates requirements to mitigate impacts to fish and wildlife habitat, based on the quantity and quality of the habitat as well as the nature, extent, and duration of the potential impacts to the habitat. The rule also establishes a habitat classification system based on value

1 the habitat would provide to a species or group of species. There are six habitat categories;
2 Category 1 being the most valuable and Category 6 the least valuable.

3
4 The analysis area for potential impacts to fish and wildlife habitat, as defined in the project
5 order, is the area within and extending one-half mile from the site boundary. To inform the
6 evaluation of impacts under the Council's Fish and Wildlife Standard, the applicant completed a
7 literature review, field-based habitat assessment, wetland and waterbody delineation survey,
8 ground-based raptor nest survey, and State-sensitive species survey for pygmy rabbits, as
9 further described below.

10 11 *Methodology*

12
13 To inform ASC Exhibit P, the applicant consulted with ODFW to identify the appropriate Special-
14 status species surveys to be conducted at the site, based on suitability of habitat and previously
15 documented species occurring within the analysis area. The applicant also consulted with
16 ODFW on the development of the Habitat Mitigation Plan, as provided in Attachment P-1 of this
17 order. Based on ODFW consultation, multiple recommendations were provided related to
18 minimizing potential impacts to big game, big game winter range, ground nesting birds and
19 raptor nests, which were incorporated as mitigation by the applicant and recommended by the
20 Department for Council's inclusion as site certificate conditions.

21
22 As explained in ASC Exhibit P, the applicant conducted a literature review to establish a
23 preliminary habitat assessment, prior to field-based habitat mapping, and to identify
24 documented occurrences of Special-status species within the analysis area. Sources evaluated
25 include a 2011 National Land Cover Database published in a 2015 version of the scientific
26 journal, *Photogrammetric Engineering and Remote Sensing*; and, ODFW's 2016 online data and
27 planning tool – Compass – and Oregon Conservation Strategy Reporting Tool. The results of the
28 literature review were then used to inform the field-based surveys, which were conducted from
29 March 18-22, 2018 for habitat, ground birds, raptor nests and wetlands/water bodies; and,
30 June 18-20, 2018 for pygmy rabbits and wetlands/water bodies. The applicant also explains that
31 during these surveys, incidental observations of wildlife or wildlife signs were documented, as
32 well as presence of noxious weeds.

33
34 The applicant's consultant, Ecology and Environment (E&E), conducted the field based surveys,
35 the methods and survey results are presented in ASC Exhibit P Attachment P-1. The habitat
36 assessment and raptor nest surveys were conducted concurrently by two E&E ecologists from
37 March 18-22, 2018 and included observation by foot and 4x4 vehicle throughout the analysis
38 area. Habitat boundaries were delineated using the preliminary habitat assessment mapping,
39 adjusted based on field observations using Geographic Information System software (Esri
40 Collector) and the consultant's proposed dichotomous key based on predominant vegetation
41 characteristics. For raptor nest surveys, E&E observed all potential nest structures including
42 trees, transmission poles and towers, and other manmade structures. At each observed raptor
43 nest, E&E recorded a global positioning system (GPS) reference point; activity status (i.e., active
44 or inactive); nesting species; and nest site conditions.

E&E conducted species-specific pygmy rabbit surveys within the site boundary from June 18-20, 2018. Pygmy rabbit surveys were conducted in accordance with methods used by the Bureau of Land Management, inclusive of 660-foot transects in suitable habitat (sagebrush shrublands).

Results of the habitat and State-sensitive species surveys are described below, under the *State Sensitive Species* subheading.

Habitat Types and Categories in the Analysis Area

Habitat types and categories within the analysis area, based on the applicant's literature and field surveys described above, include ODFW's designated big-game winter range Category 2 habitat and Category 6 developed/agricultural lands. The identified habitat types within Category 2 and 6 habitat identified within the analysis area include the following:

Category 2 Big Game Winter Range

Varying habitat types within ODFW's designated Category 2 Big Game Winter Range habitat within the proposed site boundary are summarized below:

- Playa (playa lake or dry lake) - a flat-floored bottom of an undrained desert basin that is periodically inundated with water, providing important habitat function to migratory birds through seasonal standing water in a limited water resource region
- Sagebrush Shrubland – a mosaic (sagebrush, rabbitbrush, herbaceous plants, and bare earth) of stand cover ranging from 15 to 30 percent, plant heights up to 6 feet tall, and varying levels of cattle grazing disturbance
- Non-sagebrush shrubland – shrub-dominated (rabbitbrush) areas without a dominate sagebrush component
- Sand Dunes – areas with saltgrass but otherwise less than 10 percent herbaceous vegetation and less than 5 percent shrubs
- Non-native Forbs – moderately disturbed areas containing Tall tumbled mustard (*Sysimbrium altissimum*) (70 percent cover), Rubber rabbitbrush (*Ericameria nauseosa*), green rabbitbrush, Russian thistle (*Salsola kali*), and cheatgrass.
- Agricultural Lands/Developed – includes spigot irrigated crop circles

Sagebrush Habitat

Greater sage-grouse habitat includes sagebrush habitat, the predominant habitat type within the site boundary. However, identification of sage-grouse habitat relies upon ODFW's designated core and low density habitat areas. In ASC Exhibit P, the applicant confirms that the proposed facility is not within a mapped core or low density area and confirms that the nearest core area habitat is about 10 miles south of the site boundary (nearest Area A) and the nearest low density area is about 7.5 miles north of the site boundary (nearest Area D), as presented in

ASC Exhibit P Figure P-4. The proposed facility would therefore not impact greater-sage grouse habitat.

Potential Impacts to Fish and Wildlife Habitat

Construction and operation of the proposed facility would result in temporary and permanent habitat impacts to Category 2 habitat. Impacts to Category 6 habitat do not require compensatory mitigation under the Council's Fish and Wildlife Habitat standard. Temporary habitat impacts are those that would last for less than the operational lifetime of the proposed facility and would result during construction and installation of proposed facility components. The duration of temporary impacts to habitat is variable, based on vegetation type and extent. Permanent impacts are defined as impacts that would exist for the operational life of the proposed facility and would result from placement of permanent facility structures.

As presented in Table 5: *Summary of Habitat Types within Site Boundary and Estimated Permanent and Temporary Habitat Impacts from Proposed Facility*, the proposed facility would temporarily disturb approximately 0.23 acres of Category 2 habitat. The proposed facility would permanently disturb approximately 3,588 acres of Category 2 habitat.

Table 5: Summary of Habitat Types within Site Boundary and Estimated Permanent and Temporary Habitat Impacts from Proposed Facility

Habitat Type	Perm.	Temp.
	Acres	
Category 2		
Sagebrush Shrubland	3,419.21	0.00
Playa	16.91	0.00
Sand Dune	108.78	0.03
Non-sagebrush Shrubland	0.00	0.15
Non-native Forb	42.77	0.05
Category 6		
Agricultural Lands	1.00	0.56
Developed	0.00	0.21
Habitat Impact Summary		
Estimated Category 2 Impacts =	3,587.67	0.23
Estimated Category 6 Impacts =	1.0	0.77
Notes: Perm. = Permanent; Temp. = Temporary		

Proposed Habitat Mitigation

The proposed facility would be located within Category 2 habitat, primarily composed of sagebrush shrubland. Pursuant to OAR 635-415-0025(2), Category 2 habitat is defined as 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. The mitigation goal if impacts are unavoidable, is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality. To meet the Category 2 habitat mitigation goal, pursuant to OAR 635-415-0025(2), mitigation shall be “reliable, in-kind and in-proximity,” as defined below:

“Reliable” means a mitigation method that has been tested in areas with site factors similar to those affected by a development action and the area in which the mitigation action is proposed and that has been found (e.g., through field trials, demonstration projects or scientific studies) to produce the habitat effects required to meet the mitigation goal for this action.

“In-kind” mitigation means habitat mitigation measures which would recreate similar habitat structure and function to that existing prior to the development action.

“In-proximity” mitigation means within the same home range of the wildlife population directly affected by the development.

“Habitat Quality” means the relative importance of a habitat with regard to its ability to influence species presence and support the life-cycle requirements of the wildlife species that use it.

As presented in the draft Revegetation and Noxious Weed Control Plan, provided as Attachment P-3 of this order, the applicant proposes to mitigate temporary habitat impacts through revegetation and noxious weed control. Of note, the applicant also voluntarily proposes to revegetate the areas within the proposed site boundary following construction even though the areas, which are considered a permanent disturbance impact resulting from the placement of facility components and the perimeter fencing excluding use by wildlife species (big game) of the impacted area, in accordance with prescribed success criteria. Revegetation within the perimeter fencing would minimize the potential for offsite noxious weed invasion due to weed control measures proposed in conjunction with the revegetation activities.

As presented in the draft Revegetation Plan and Noxious Weed Control Plan, prior to construction, the applicant proposes to identify monitoring sites, including both a reference and monitoring site, for each habitat type to be temporarily impacted by the proposed facility. During revegetation monitoring surveys, monitors would collect the information listed below from representative monitoring locations, including along main access roads and areas of especially heavy disturbance, as well as at sample plots across the facility site (one sample plot per quarter-section, or 160 acres). One sample plot would be randomly selected from a grid of 10 square 16-acre (approximately 0.025 square miles) plots within each quarter-section. The sample plots would be compared with reference sample plots in undisturbed areas of the same habitat type within the site boundary (i.e., avoidance areas). The final number of monitoring sites necessary for the evaluation of revegetation success of temporarily impacted habitat types would be based on the extent and diversity of vegetation within each habitat type, with an

~~anticipated average of two to five paired monitoring sites per habitat type, to be reviewed and approved by the Department in consultation with ODFW.~~ The applicant would then be obligated to monitor and report on the success of revegetation at the identified monitoring sites; success would be measured, as specified in Section 4.2 of the draft plan: the vegetation percent cover (both seeded and naturally recruited) is approximately 70 percent or more, or not substantially less than the percent vegetation cover of surrounding undisturbed areas; State- or County-listed noxious weeds are absent or constitute only a very small percentage (e.g., less than 1%) of vegetation otherwise dominated by native or desirable non-native species, unless the noxious weeds present are similar to pre-construction conditions or adjacent undisturbed areas; and, the percentage of bare soil in the sample plot is not substantially greater than the percentage of bare soil in surrounding undisturbed areas. ~~based on percentage of vegetation cover (70 percent), vegetation density and weed cover.~~ The applicant proposes to ~~conduct monitoring of~~evaluate monitoring sites at year 1 and year 5 following construction.¹⁰²

The Department recommends Council impose the following condition to ensure that the plan is finalized as specified, prior to construction, and implemented during construction and operation including identification of appropriate revegetation seed mix, establishment of appropriate and adequate monitoring sites, and confirmation of adequate monitoring and treatment frequency.

Recommended Fish and Wildlife Habitat Condition 1: The certificate holder shall:

- a. Prior to construction of the facility, the certificate holder shall finalize and submit the Revegetation and Noxious Weed Control Plan, based upon the draft plan provided in Attachment P-3 of the Final Order on the ASC, for review and approval by the Department, in consultation with ODFW and Lake County Weed Control Supervisor. The scope of finalizing the plan shall, at a minimum, include the following:
 1. Final assessment of temporary habitat impacts (in acres), based on habitat quality of habitat subtype, and final facility design, presented in tabular format.
 2. Survey and sampling protocol for evaluating the success criteria against paired monitoring and reference sites determined to represent a statistically significant number of sites based on pre-disturbance habitat quality and diversity of habitat temporarily impacted.
 3. Approval of appropriate revegetation seed mix from ODFW.
 4. Confirmation of revegetation and noxious weed monitoring frequency, to occur annually for the first 5-years following construction, unless otherwise agreed to by the Department in consultation with ODFW, Lake County or the Cooperative Weed Management Area
 5. Assurance that the success criteria for vegetation cover is based upon desirable, native vegetation.

¹⁰² On the record of the DPO, applicant recommends revisions to the discussion of the revegetation monitoring and success criteria. The revisions were incorporated into the above-analysis, consistent with the information previously included in the draft Revegetation and Noxious Weed Control Plan. OSCAPPDoc4-6 DPO Comments Applicant 2020-04-28.

b. During construction and operation of the facility, the certificate holder shall implement the requirements of the plan; monitor and report results of revegetation activities to the Department, as required by the plan.

[GEN-FW-01]

In ASC Exhibit P and in the proposed Habitat Mitigation Plan (HMP), Attachment P-1 to this order, the applicant proposes three compensatory mitigation options to mitigate permanent habitat impacts, one of which (Option 3) provides sufficient information for Council to evaluate against the standard. More specifically, Option 1 is an ODFW Payment to Provide measure that is not available because ODFW has not adopted or implemented such program. Option 2 is a Third Party Fee-in-Lieu Program option where the applicant would partner with EFM, Inc., an affiliate of EcoTrust and design a mitigation plan designed to protect and restore habitat within the Big Game Winter Range on a portion of the about 22,000 contiguous acres west of Fort Rock currently owned and being managed by EFM. Option 1 is included for discussion purposes but was not evaluated by the applicant, ODFW or the Department. ~~but the applicant previously identified that the lands identified would not meet the "in-kind" requirement under the Category 2 habitat mitigation goal.~~ Therefore, the option is ~~not considered acceptable and~~ not evaluated further.

Option 3 includes the implementation of a western juniper (*Juniperus occidentalis*) treatment and management program on working rangeland. Over time, juniper removal would improve previously unused or under-performing habitat by redistributing water budget components in the rangeland due to lack of tree canopy interception, in turn influencing soil moisture and vegetation.¹⁰³ The specific methodologies for juniper removal and treatment, including monitoring, and success criteria to evaluate the performance of the program are described in the Juniper Treatment Plan (included in the HMP as Appendix 2).¹⁰⁴ The treatment includes controlling encroaching junipers by chipping or cutting for firewood, while maintaining pre-settlement juniper stands and juniper trees with old-age characteristics, which are important nesting habitat for birds and other wildlife. The juniper removal also can improve the quality and quantity of sagebrush shrubland which is used as forage for Elk. The Juniper Treatment Plan identifies methods common for Juniper treatments and removal including pulling, cutting, piling, removing, and burning methods. Methods to control weeds include best management practices such as cleaning equipment, reseeding areas where burring occurs, and monitoring areas for three years after reseeding. Reseeding and noxious weed control would be consistent with the applicant's proposed Revegetation and Noxious Weed Control Plan, included as

¹⁰³ OSCAPDoc4-6.4 DPO Comments Applicant Responses to ODFW 2020-07-20.

¹⁰⁴ During the extended DPO comment period discussed in Section II.D., *Council Review Process*, applicant submitted several iterations to the Department and to ODFW for review and comment. In its June 16, 2020 comments on the DPO, ODFW concurs with the treatment design, layout, methodology, and weed management as described in the Plan. In the same comment letter ODFW requested additional clarification for the applicant's proposed monitoring program and specific success criteria. OSCAPDoc4-9.1 DPO Agency Comment ODFW Reif 2020-06-11. In its responses to DPO comments on July 16, 2020, the applicant provided a revised Juniper Treatment Plan in response to ODFW which included the items that ODFW requested. This version of the Plan in included as Appendix 2 in Attachment 1 (HMP) to this order. OSCAPDoc4-6.3 DPO Comments Applicant Responses to DPO Comments 2020-07-16

Attachment P-3 to this order. For those areas that have been seeded following disturbance, monitoring would include confirmation of reseeded areas, estimates of ground cover, presence of any noxious weeds, and erosion problems.¹⁰⁵ A juniper treatment will be considered successful if encroachment does not exceed 10 stems per acre over a majority of the treatment area as determined by the monitoring described in the Juniper Treatment Plan.

The Juniper treatments described above and in the Juniper Treatment Plan under Option 3 proposed in the HMP include an applicant-proposed Working Lands Improvement Program (WLIP) concept, where which the applicant identifies would secure privately-owned landowner as mitigation sites ranging up to 20 miles from proximate to the proposed facility site, within ODFW's designated Category 2 Big Game Winter Range. The purpose of the WLIP is to ensure that there is no net loss in quantity or quality of habitat for the life of the proposed facility and there is a net benefit of habitat quality for the life of the proposed facility. The WLIP mitigation sites would be secured with a legally binding WLIP Agreement which is included in Attachment P-1 Habitat Mitigation Plan (HMP) Appendix 1 of this order. The applicant represents that the sites would be secured for mitigation through a WLIP landowner agreement(s), would be executed between the landowner and the applicant and would include restrictions and allows uses that would be consistent with the habitat mitigation goals within the HMP. Key provisions within the WLIP Agreement include: with deed restrictions, which would be similarly binding as a conservation easement.

- The term of the agreement would be for the life of the facility;
- The terms of the agreement would be binding upon the landowner, heirs, or successors and would run with the land if property is sold;
- Permitted activities at the property include, but are not limited to, hunting, fishing, hiking, or passive recreation; fencing; building or remodeling a primary residence, agricultural building, or similar structure to serve ongoing agricultural operations so long as the total such use does not exceed five (5) acres; and using land under existing grazing management plans;
- Prohibited activities include, but are not limited to, increase grazing above levels approved under existing grazing management plans unless otherwise approved in writing by ODFW; all nonagricultural uses unless otherwise specified in Section 5(a) of the WLIP Agreement; grading, mowing, blading, or expansion of impervious surfaces or access road networks; and divisions of the property;
- Completion of baseline inventory showing existing development on property;
- Limited access rights to ODFW and the Department to access the property upon prior written notice to Property Owner and applicant for the purposes of inspecting the mitigation work and ensuring compliance with the HMP;
- The final HMP would be attached to the WLIP Agreement.

The Appendix 3 of the HMP includes applicant provides a desktop habitat assessment of the proposed WLIP sites, including their location, which preliminarily confirm that the WLIP sites

¹⁰⁵ P-1 Appendix 2 WLIP Juniper Treatment Plan Final 05192020 revised 07142020.

contain habitat with similar structure and function as the habitat with the proposed site boundary. ~~The location of the proposed WLIP sites are provided in the draft Habitat Mitigation Plan (HMP), Attachment P-1 of this order. Appendix 4 of the HMP includes a Desktop Habitat Mapping Assessment of the mitigation sites which further assess the existing habitat conditions of the mitigation sites.~~ The WLIP mitigation sites are recognized by ODFW as suitable mitigation sites; however, pre-construction habitat assessments of the WLIP sites are necessary to inform the extent of enhancement actions to achieve the Category 2 habitat mitigation goal of no net loss and a net benefit in habitat quality.

As described above, pursuant to ODFW's Fish and Wildlife Mitigation Policy under OAR 635-415-0025(2), incorporated under Council's Fish and Wildlife Habitat standard, the mitigation goal for impacts to Category 2 habitat includes four components, if impacts are unavoidable, 1) no net loss of habitat quantity; 2) no net loss of habitat quality; 3) net benefit of habitat quantity; and 4) net benefit of habitat quality. While ODFW does not have a formal policy or guidance about how to interpret and meet these four components, at a minimum, it is commonly understood that in order to meet "no net loss in habitat quantity" mitigation acreage should be, at a minimum, equal to that being impacted. It is standard practice in the EFSC process for energy developers to propose a "ratio" methodology for meeting the Category 2 habitat mitigation goals. The ratio methodology provides a ratio to calculate the quantity, in acres, of area required for the habitat mitigation site(s) or area that represents a greater number of acres than acres impacted (e.g. >1 acre for every 1 acre permanently impacted). The sufficiency of the mitigation ratio should be evaluated simultaneously with the habitat quality of the mitigation site(s) in order to assess whether the mitigation sites have the ability to meet the Category 2 habitat quality goals of no net loss and net benefit.

In many historic EFSC decisions for wind facilities, certificate holders represented a ratio of 2:1 to meet the Category 2 mitigation goal, and therefore a 2:1 ratio for Category 2 habitat mitigation has become precedential for wind facilities. However, the numbers of acres impacted, and therefore the number of acres mitigated at a 2:1 ratio for wind facilities are relatively small due to the dispersed nature of that type of project. By comparison, solar facilities occupy large areas of land and a 2:1 mitigation ratio must be evaluated for its appropriateness to these solar facilities as well as the specific circumstances of each individual project. There are many reasons supporting consideration of a higher ratio, such as 2:1, for Category 2 habitat impacts including providing a sufficient acreage to increase the carrying capacity of the land; to provide a sufficient buffer to accommodate for mixed performance in habitat improvements and risk of noxious weed invasion; and, to minimize monitoring burden and costs.^{106, 107}

The applicant proposes a mitigation ratio of 1.2:1, equating to mitigation acreage totaling 4,304 acres for approximately 3,587 acreage impacted (or 717 additional acres to meet the net

¹⁰⁶ OSCAPPDoc4-5 DPO Agency Comment ODFW Reif 2020-04-24.

¹⁰⁷ In comments on the record of the DPO, members of the public provide arguments in support of Council requiring that the habitat mitigation be based on a 2:1 ratio. For the reasons described in the above-section, the

benefit in quantity mitigation goal component). The applicant represents that the acreage selected has good habitat value, no weeds of concern, and offers enhancement opportunities with the juniper removal and weed management measures.¹⁰⁸ Sites secured for habitat mitigation containing high quality habitat, as referenced by the applicant for its mitigation sites, have fewer opportunities for habitat uplift and enhancement to meet the Category 2 habitat quality mitigation goals. ODFW explains that habitat quality goals should be evaluated based on the carrying capacity of the lands.¹⁰⁹ In other words, mitigation sites with higher quality habitat should appropriately be evaluated differently than mitigation sites with lower quality habitat, as a lower quality habitat site, where at initiation may not provide much habitat value, once improved, would increase the carrying capacity of an underused area providing for the habitat loss from proposed facility development; this is compared to higher quality habitat mitigation sites, where fewer enhancement options are available, resulting in limited opportunities for habitat quality improvements (lowering demonstrable achievement of the Category 2 mitigation goals for habitat quality).

The applicant's HMP, Attachment P-1 Appendices 2 and 3 of this order, includes a Juniper Treatment Plan and Juniper Phase Mapping Technical memo, providing details about the mitigation sites and areas identified for potential juniper treatment (enhancement action). In addition, to support Council's review of the reliability and likely success of the juniper treatment as an enhancement action, the certificate holder provided a 2019 study conducted by the United States Department of Agriculture which evaluates juniper expansion and treatment effects on ecosystem function.¹¹⁰ Based on the provided study and as acknowledged by ODFW, juniper treatment is a recognized habitat enhancement with proven success with the ecoregion of the proposed facility.

The HMP also includes details on long-term weed management at the WLIP sites, to be implemented by Lake County Cooperative Weed Area (LCCWA). LCCWA confirmed its commitment to working with the applicant on its weed treatment and monitoring requirements. LCCWA describes its multi-pronged approach to weed treatment and monitoring including evaluation of Oregon State and County Noxious Weed lists; consultation with local, state and federal partners on treatment strategies and priorities for the year; treatment selection; effectiveness monitoring following treatment using photos and acreage metrics.¹¹¹ Based on review by ODFW, the Department recommends Council find that the mitigation sites contain a sufficient amount of area for potential juniper treatment and long-term weed control to meet the Category habitat quality goals. Based on the complexity of the HMP, including scope and scale, the Department recommends Council establish in the HMP an ongoing agency

Department recommends Council find that requiring a specific ratio to demonstrate consistency with ODFW's Fish and Wildlife Habitat Policy, as required under Council's Fish and Wildlife Habitat standard, is beyond the scope of Council's jurisdiction. OSCAPDoc4-35 DPO Public Comment Meiering WWLLC 2020-07-20. OSCAPDoc4-20 DPO Public Comment Richardson RMEF 2020-07-16.

¹⁰⁸ OSCAPDoc4-6.1 DPO Comments Applicant Responses to ODFW 2020-05-22.

¹⁰⁹ OSCAPDoc4-5 DPO Agency Comment ODFW Reif 2020-04-24.

¹¹⁰ OSCAPDoc4-6.5 DPO Comments Applicant Responses to DPO Comments Attachment 6 2020-07-22.

¹¹¹ OSCAPDoc4-26 DPO Public Comment Jaeger Lake Co CWMA 2020-07-20.

consultation process consistent with OAR 345-025-0016. The recommended agency consultation process includes pre-construction consultation to inform the Department and ODFW of the schedule and activities to be completed within upcoming years; and regular consultation prior to the season treatment or monitoring occurs, and prior to any report submittal to review and discuss results.

Based on the Department's review of the applicant's draft HMP, in coordination with ODFW, the Department recommends Council find that the proposed mitigation, with established agency consultation process, would satisfy the Council's Fish and Wildlife Habitat standard, and recommends Council impose the following condition:

Recommended Fish and Wildlife Habitat Condition 2: The certificate holder shall:

- a. Prior to construction of the facility, the certificate holder shall finalize and submit a Habitat Mitigation Plan, based upon Option 3 of the draft plan provided in Attachment P-1 of the Final Order on the ASC, for review and approval by the Department, in consultation with ODFW.

HMP Option 3 is the only mitigation that may be utilized without amendment of the HMP due to insufficient evidence available to demonstrate that Options 1 and 2 meet the requirements of OAR 345-022-0060.

In the finalization of the plan, the Department may request reporting requirements including specific information, frequency and format. Components of the plan to be finalized shall include, at a minimum, a final assessment of permanent habitat impacts (in acres) based on habitat quality of habitat subtype, and final facility design, presented in tabular format.

- b. During construction and operation of the facility, the certificate holder shall implement the requirements of the plan as approved under sub(a) of this condition.

[GEN-FW-02]

State Sensitive Species within the Analysis Area and Proposed Facility Potential Impacts

As presented in ASC Exhibit P, the following sensitive species were either observed during the applicant's 2018 field surveys or identified as having the potential to occur within the analysis area and therefore could be impacted by proposed facility construction and operation. Potential facility related impacts could include introduction of noxious weeds and other non-native invasive species, potential nesting and breeding disturbance, electrocution, powerline collision, structure collision, vehicular collision, disturbance related to artificial lighting, entrapment within open vertical pipes, disturbance to wintering big game, and entrapment within fenced area.

The following State-sensitive species were observed during the applicant's 2018 surveys, along with an assessment of potential impacts to the affected species. Conditions are recommended

below, consistent the applicant's representation in ASC Exhibit P, to minimize potential impact to State-sensitive species.

- Swainson's hawk (*Buteo swainsoni*) is a State-sensitive raptor observed within the proposed site boundary during 2018 raptor nest surveys, relying on open habitat with few trees, bunchgrass prairie and irrigated farmland. Potential impacts include vehicle collision, power line electrocution, and loss of foraging habitat.
- Ferruginous hawk (*Buteo regalis*) is a State-sensitive raptor observed within the proposed site boundary during 2018 raptor nest surveys, relying on sagebrush plains and grasslands with low tree density. Potential impacts include vehicle collision, power line electrocution, and loss of foraging habitat.
- Pygmy Rabbit (*Brachylagus idahoensis*) is a State-sensitive mammal, with three complexes observed within the proposed site boundary during 2018 pygmy rabbit surveys, relying on sagebrush habitat. Potential impacts include vehicle collision and take, which would be minimized through the proposed facility design – which includes disturbance avoidance for the previously identified complexes – and adherence to an onsite speed limit of 15 miles per hour.

Based upon potential impacts of the proposed facility to the above-described sensitive species, the applicant proposes a suite of best management practices and minimization measures which are represented as recommended conditions below:

Recommended Fish and Wildlife Habitat Condition 3: Prior to and during construction of the facility, the applicant shall provide, and keep records documenting completion of, environmental awareness training for all facility personnel and on-site contractors. The training program shall discuss State Sensitive Species and all other environmental issues related to the facility, including information about pygmy rabbit identification information and reporting procedures.

[GEN-FW-03]

Recommended Fish and Wildlife Habitat Condition 4: During construction, operation, and retirement of the facility, the certificate holder shall impose and enforce a speed limit of 15 miles per hour within the site boundary.

[GEN-FW-04]

Recommended Fish and Wildlife Habitat Condition 5: During trenching and backfilling activities necessary for construction or operation of the facility, the certificate holder shall ensure that contractors or facility personnel responsible for the work avoid leaving trenches open overnight, as practicable. Where trenches remain open overnight, the trenches shall include wildlife escape ramps approximately every 90 meters with slopes of less than 45 degrees. Trenches shall be inspected, and any wildlife found removed prior to backfilling.

[GEN-FW-05]

Recommended Fish and Wildlife Habitat Condition 6: The certificate holder shall:

- a. Prior to construction or any subsequent year of construction of the facility, the certificate holder shall hire a qualified biologist to conduct a ground survey for non-raptor migratory bird nests, based on a protocol to be submitted to the Department for review and approval in consultation with ODFW. Nest surveys for non-raptor species shall be conducted within 50 feet of all disturbance areas, including the transmission line and access roads.
- b. During construction of the facility, if the biologist detects active migratory bird nests during bird nest surveys, the certificate holder shall ensure that construction activities adhere to 30-foot disturbance buffers around the nests until the nest has been abandoned/depredated or the eggs hatch and young have fledged.

[GEN-FW-06]

Recommended Fish and Wildlife Habitat Condition 7: The certificate holder shall:

- a. Prior to any year of construction of the facility, the certificate holder shall hire a qualified biologist to conduct a pre-construction survey for raptor nests, based on a protocol to be submitted to the Department for review and approval in consultation with ODFW. Pre-construction raptor nest surveys shall extend 0.5 miles of proposed disturbance areas, to the extent the certificate holder has legal access. Raptor nest surveys shall be conducted no more than two weeks prior to the start of construction activities. If the biologist detects active raptor nests, the certificate holder shall implement and maintain disturbance buffers around the nests in which construction activities are prohibited until the nest has been abandoned/depredated or the eggs hatch and young have fledged.
- b. Prior to construction, the certificate holder shall develop a construction plan that demonstrates construction activities within 0.25 of a mile from previously identified active nest sites, except for golden eagle nest sites which should apply a 0.50-mile buffer distance, are scheduled to avoid the sensitive nesting and breeding season. Previously identified nest sites are those identified during surveys per sub(a) of this condition.
- c. During construction of the facility, the certificate holder shall ensure that construction work maintains a 0.25-mile buffer distance from all raptor nests, except for golden eagle (*Aquila chrysaetos*) 0.5 miles) and red-tailed hawk (300 to 500 feet) during the sensitive nesting and breeding season presented in the table below. In cases where smaller buffers or restricted work authorizations might be appropriate, the certificate holder shall coordinate with the Department and ODFW or the USFWS to decrease buffer sizes and/or to allow restricted construction activities. Facility vehicles shall be permitted within buffers on paved public roads. Most light traffic by rubber-tired vehicles shall be permitted to pass through the buffer on existing unpaved access roads, if needed, and as determined by the on-site environmental monitor.

Status Sensitive/Raptor Species	Buffer Size (Radius Around Nest Site):	Sensitive Nesting and Breeding Season
Western burrowing owl	0.25 mile	April 1 to August 15
Ferruginous hawk	0.25 mile	March 15 to August 15
Swainsons hawk	0.25 mile	April 1 to August 15
Red-tailed hawk	500 feet	March 1 to August 31
Golden eagle	0.25-50 mile	Feb 1 – August 31

[GEN-FW-07]

Recommended Fish and Wildlife Habitat Condition 8: During design and construction of the facility, the certificate holder shall ensure that aboveground transmission line and aboveground portions of the electrical collection system adhere to the current APLIC guidelines for minimizing avian electrocution risks.

[GEN-FW-08]

In ASC Exhibit P, the applicant proposed pre-construction pygmy rabbit surveys; and, development of an incidental wildlife mitigation plan for pygmy rabbits, burrowing owls and white-tailed jackrabbits potentially impacted by construction of the proposed facility. ODFW concurs with the condition requiring a pre-construction pygmy rabbit survey, supported by their standard survey recommendations for burrowing mammals identified at a proposed site and the potential for fluctuation in annual movement. In lieu of the incidental wildlife mitigation plan provision, the applicant proposes and ODFW concurs that the applicant implement a temporary 3-meter avoidance buffer around any active burrows or complexes identified incidentally during construction.¹¹² To minimize potential impacts from construction of the proposed facility to burrowing mammals, and based off of consultation with ODFW and applicant-representations, the Department recommends Council impose the following condition:

Recommended Fish and Wildlife Habitat Condition 9: The certificate holder shall:

- a. No more than 3-years prior to construction of the facility, conduct pygmy rabbit (*Brachylagus idahoensis*) surveys within the portion of the site boundary inside the perimeter fence, based on the final design of the facility, using the same, ~~based on a survey area appropriate for the location of facility components and a~~ protocol approved for the pygmy rabbit surveys conducted as part of ASC Exhibit P (Attachment P-1 Section 2.3) by the Department in consultation with ODFW. Pygmy rabbit surveys shall also document presence of ~~burrowing owls (*Athene cunicularia hypugaea*) and~~ white-tailed jack rabbits (*Lepus townsendii*). Pygmy rabbit survey reports shall be submitted to the Department for review, in consultation with ODFW.
- b. From January 15 through June 15 (pygmy rabbit breeding period), implement a 3-meter (10 foot) buffer area using flagging or constraint maps around burrow complexes

¹¹² OSCAPDoc4-5 DPO Agency Comment ODFW Reif 2020-04-24; OSCAPDoc4-6.1 DPO Comments Applicant Responses to ODFW 2020-05-22.

~~identified during preconstruction surveys per subpart(a) of this condition or identified incidentally during construction, unless otherwise approved. Prior to construction, the certificate holder shall submit an incidental wildlife mitigation plan (plan) to the Department for review and approval in consultation with ODFW. The plan shall include appropriate minimization and/or mitigation measures that may be implemented if burrow or burrow complexes are identified for pygmy rabbits, burrowing owls, or white-tailed jack rabbits during construction within the survey area. In the event of an incidental wildlife observation of a State-sensitive species occurs during construction, the certificate holder shall notify the Department and ODFW within 24 hours. Construction activities shall halt in the immediate area of the identified complex or burrow site until an appropriate minimization and/or mitigation approach, as established in the plan, is determined by the Department in consultation with ODFW.~~

c. ~~Avoid impacts to complexes shown on ASC Exhibit P Figure P-1 and identified during preconstruction surveys and identify the avoidance areas on pre-construction constraint maps. During design and prior to construction of the facility, the certificate holder shall develop constraint maps clearing delineating avoidance areas for any previously identified complex (ASC Exhibit P Figure P-1 and pre-construction survey maps) within or in close proximity to the site boundary. Disturbance and facility components shall not occur or be located within identified complexes.~~

[GEN-FW-9]

Recommended Fish and Wildlife Habitat Condition 10: Prior to any year of construction where vegetation clearing activities would occur, the certificate holder shall implement the following measures to minimize use at the site by, and impacts to, ground nesting birds:

- a. Schedule vegetation clearing activities, including removal of trees, shrubs, and tall grasses to stubs, to occur between September 1 and March 31 for shrubs and trees shorter than 15 feet, and September 1 to January 15 for trees over 15 feet tall, to the extent practicable.
- b. The certificate holder shall remove vegetation slash material offsite to an approved location or chipping slash in place prior to March 31 to the extent practicable.

[GEN-FW-10]

Recommended Fish and Wildlife Habitat Condition 11: During operation, the certificate holder shall implement the post-construction bird and bat mortality monitoring as established in the Wildlife Monitoring Plan provided in Attachment P-2 of the Final Order on the ASC.

[OPR-FW-01]

Big Game Species within Analysis Area and Proposed Facility Potential Impacts

The proposed facility would be located within a wintering area that provides habitat to more wintering deer and elk than all but one other winter range in the state of Oregon (John Day River canyon). The site is comprised of a mosaic of sagebrush dominated shrublands, salt scrub shrublands, grasslands, and barren ground. Natural precipitation conditions in the area limit the

diversity of plant life to those endemic and introduced species that are both arid climate adapted and drought tolerant. Previous land use within the last 50 years on the proposed site has resulted in some areas of disturbance, though from a big game habitat perspective the project area is currently functionally intact and is connected to other open space and travel corridors on all sides (i.e. no existing developments currently inhibit the movements of or space use by native wildlife). Rocky Mountain elk and mule deer are known to have used the site in recent years (as evidenced by both the presence of big game scat noted during wildlife survey efforts as well as local area accounts), and especially when winter conditions are particularly harsh or human activity has driven, particularly elk, away from other winter range areas.

Populations of deer and elk(big game) in eastern Oregon rely upon large, intact landscapes to facilitate their seasonal migration and because of the significant forage resources necessary for large-bodied, wide-ranging animals to survive. As Oregon continues to develop and natural landscapes become increasingly fragmented, the amount of available winter range continues to decline. Habitat loss is one of the most limiting factors for elk and deer populations (Saunders et al. 1991).¹¹³ Potential impacts of the proposed facility to big game is habitat loss, which as evaluated in this section is proposed to be mitigated through a Habitat Mitigation Plan that would secure and enhance mitigation sites to meet ODFW's Category 2 habitat mitigation goal (no net loss in habitat quantity or quality and net benefit in habitat quantity or quality). In addition, as a result of habitat loss, a potential indirect impacts is big game displacement, where landowners and members of the public expressed concern of potential impacts to adjacent agriculture and infrastructure from increased herbivory and increased migration of big game.¹¹⁴ Potential impacts to agricultural practices from big game displacement are evaluated further in Section IV.E. *Land Use* of this order.

Conclusions of Law

Based on the foregoing findings of fact and conclusions, and subject to compliance with the recommended site certificate conditions, the Department recommends the Council find that proposed facility would comply with the Council's Fish and Wildlife Habitat standard.

IV.I. Threatened and Endangered Species: OAR 345-022-0070

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:

¹¹³ OSCAPDoc4-5 DPO Agency Comment ODFW Reif 2020-04-24.

¹¹⁴ OSCAPDoc4-35 DPO Public Comment Meriering WWLLC 2020-07-20.

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and

(2) For wildlife species that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction and operation of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.

Findings of Fact

The Threatened and Endangered Species standard requires the Council to find that the design, construction, and operation of the proposed facility are not likely to cause a significant reduction in the likelihood of survival or recovery of a fish, wildlife, or plant species listed as threatened or endangered by Oregon Department of Fish and Wildlife (ODFW) or Oregon Department of Agriculture (ODA). For threatened and endangered plant species, the Council must also find that the proposed facility is consistent with an adopted protection and conservation program from ODA. Threatened and endangered species are those listed under ORS 564.105(2) for plant species and ORS 496.172(2) for fish and wildlife species. For the purposes of this standard, threatened and endangered species are those identified as such by either the Oregon Department of Agriculture or the Oregon Fish and Wildlife Commission.¹¹⁵

The analysis area for threatened or endangered plant and wildlife species, as defined in the project order, is the area within and extending 5-miles from the site boundary.

Methodology – Literature Review

ASC Exhibit Q is the applicant's assessment of compliance with the Council's Threatened and Endangered Species standard. In order to identify threatened or endangered species that might occur within the analysis area, the applicant consulted with the Oregon Department of Fish and Wildlife (ODFW) and reviewed multiple databases and literature sources. Sources included:

- ODFW's 2016 Compass Online Tool, which includes information related to the Oregon Conservation Strategy
- Oregon Department Agriculture's Oregon Listed Plants by County
- ODFW's Threatened, endangered and candidate fish and wildlife species list

¹¹⁵ Although the Council's standard does not address federally-listed threatened or endangered species, certificate holders must comply with all applicable federal laws, including laws protecting those species, independent of the site certificate.

- Oregon Biodiversity Information Center's Rare, Threatened and Endangered Species of Oregon
- US Fish and Wildlife Services Information for Planning and Consultation

As described below, based on the results of the literature review, a field survey was determined unnecessary given the lack of suitable habitat for any State-listed T&E species.

Literature Review Results

Based on the applicant's literature review, as confirmed by ODFW, suitable habitat for state-listed threatened or endangered fish or wildlife species was not identified within the analysis area. The Oregon Department of Agriculture, Native Plant program, lists five threatened or endangered plant species as potentially occurring in Lake County. There are no previously recorded occurrences of any species in the analysis area. The applicant's assessment, presented in ASC Exhibit Q, determined that there is no suitable habitat in the analysis area for four of the five threatened or endangered plant species. The analysis area potentially includes suitable habitat for the fifth species, the Bogg's Lake hedge hyssop, however the closest known occurrence of the species is near the California border, approximately 135 miles from the site boundary. The Department consulted with the Oregon Department of Agriculture, Native Plant program representative, who confirmed that the species is unlikely to occur so far north from its known range, and furthermore, the representative questioned if the analysis area in fact contains suitable habitat for the species.¹¹⁶

Based on the above analysis, the Department recommends Council find that there are no state-listed threatened or endangered species that are likely to occur in the analysis area, and as such, the proposed facility would not result in impacts to the likelihood or survival of any T&E species.

Conclusions of Law

Based on the foregoing recommended findings of fact and conclusions, the Department recommends that the Council find that the proposed facility would comply with the Council's Threatened and Endangered Species standard.

IV.J. Scenic Resources: OAR 345-022-0080

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic resources and values identified as significant or important in local land use plans, tribal land management plans and federal land management plans for any lands located within the analysis area described in the project order.

¹¹⁶ OSCAPDoc16 ASC Reviewing Agency Comment Letter ODA_Brown 2020-01-28.

***¹¹⁷

Findings of Fact

The Scenic Resources standard requires the Council to find that visibility of proposed facility structures, plumes, vegetation loss and landscape alterations would not cause a significant adverse impact to identified scenic resources and values. To be considered under the standard, scenic resources and values must be identified as significant or important in local land use plans, tribal land management plans, and/or federal land management plans.¹¹⁸

The analysis area for the Scenic Resources standard is the area within and extending 10-miles from the proposed site boundary, as presented in ASC Exhibit R Figure R-1: *Analysis Area for Scenic Resources*.

Applicable Land Use and Management Plans

The applicant evaluated multiple land use, and land management plans to determine whether scenic resources were identified as significant or important within the analysis area, which are

¹¹⁷ The proposed facility is not a special criteria facility under OAR 345-015-0310; therefore OAR 345-022-0080(2) is not applicable.

¹¹⁸ State management plans are not included in the language of OAR 345-022-0080 or the application requirements identified in OAR 345-021-0010(1)(r), however, the applicant identified potential scenic resources in the Oregon Highway Plan managed by the Oregon Department of Transportation in ASC Exhibit R, therefore, an evaluation is provided in this order.

presented in Table 6: *Local, State, Tribal, and Federal Land Use Management Plans that Address Lands within the Analysis Area* below.

Table 6: Local, State, Tribal, and Federal Land Use Management Plans that Address Lands within the Analysis Area

Jurisdiction	Plan
Lake County	Lake County Comprehensive Plan (Lake County Planning Commission, 1980)
Oregon Department of Transportation	1999 Oregon Highway Plan: Including Amendments November 1999 through May 2015 (ODOT 1999)
Bureau of Land Management, Lakeview Resource Management Area	Lakeview Resource Management Plan and Record of Decision (BLM 2003)
Bureau of Land Management	Areas of Critical Environmental Concern Nomination Analysis Report for the Lakeview Resource Area Resource Management Plan (BLM 2000)
Bureau of Land Management	BLM Handbook 8357-1 Byways (BLM 1993)
ASC Exhibit R	

Significant or Important Scenic Resources

Based on the review of the land use, and land management plans listed in Table 6: *Local, State, Tribal, and Federal Land Use Management Plans that Address Lands within the Analysis Area*, the applicant identified three scenic resources as significant or important in the analysis area. The Department reviewed the management plans to confirm that the applicant-identified scenic resources are identified as significant or important. A summary of each important or significant scenic resource is presented below:

1. Table Rock Bureau of Land Management (BLM) Area of Critical Environmental Concern (ACEC), approximately 6.9 miles from the site boundary.¹¹⁹ The BLM has designated Table Rock as an ACEC due to its cultural, botanical, and scenic values. ASC Exhibit R, Section 4.4.1 references the BLM in noting that Table Rock possesses regional important scenic value due to its location and visibility adjacent to the Christmas Valley National Backcountry Byway and the Oregon Outback National Scenic Byway. Applicable sections of the BLM management plan are included in the ASC as Appendix R-2.
2. Christmas Valley National Backcountry Byway, designated by the BLM. Nearest portion of the byway is approximately 2.3 miles from the site boundary, on County Road 5-12.

¹¹⁹ ASC Exhibit R, Section R.4.4.1 states that Table Rock is 6.82 miles from the facility site boundary, Section R.5 states that it is 9 miles from the facility, and ASC Exhibit L (Protected Areas) lists Table Rock as 6.9 miles from the site boundary. It is unclear which is accurate, the Department relies on the 6.9-mile distance evaluated under the Protected Areas standard in this order and in ASC Exhibit L, for consistency.

ASC Exhibit R notes that the BLM designates selected routes as “backcountry byways” that offer “off the beaten path” routes. The byway passes both natural landscapes and agricultural landscapes in the region. Applicable sections of the BLM management plan are included in the ASC as Appendix R-2, which describes that the primary focus of the program was the designation of “back country byways” includes a system of low standard roads and trails that pass through areas of public lands that have high scenic or public interest value.

3. Oregon Outback National Scenic Byway, designated by the Oregon Department of Transportation (ODOT). Nearest portion of the byway is approximately 8.3 miles from the site boundary, on County Road 5-10. This byway is approximately 170 miles length in total in Deschutes and Lake Counties, and as noted in ASC Exhibit R, is compared to the Australian Outback for its ruggedness, wide open spaces, and expansive views. Applicable sections of the ODOE Highway Plan are included in the ASC as Appendix R-2 and explains that to protect the scenic assets of its Scenic Byways, ODOT will develop guidelines for aesthetic and design elements within the public right-of-way that are appropriate to Scenic Byways.¹²⁰

Analysis

Under the Scenic Resources standard, consistent with the information requirement under OAR 345-021-0010(r)(C), potential visual impacts from loss of vegetation, alteration of landscape, facility structures and plumes during proposed facility-related construction and operations are evaluated. The proposed facility would not result in plumes and therefore plume-related visual impacts would not occur.

A detailed discussion of the methodologies and assumptions the applicant considered in its visual impact assessment is included in Section IV.F., *Protected Areas*, of this order, and in ASC Exhibits L and R. This includes the dimensions of major proposed facility components considered for evaluation in the visual analysis. Conversely, the applicant did not include the two-mile 115-kV transmission line and some substation components in the visual assessment included in Exhibit L Figure L-2, because they considered these features to be subordinate on the landscape to the existing 500-kV transmission line and towers located near Area D.¹²¹

Table Rock ACEC

The Table Rock ACEC is at least 6.9 miles distance from the facility site boundary.¹²² As described in ASC Exhibit R, section R.5, the BLM’s Lakeview Resource Management Plan (RMP) describes the scenic value of Table Rock ACEC as being specifically based on views from the two nearby scenic byways, Oregon Outback national Scenic Byway and Christmas Valley National

¹²⁰ OSCAPDoc4 ASC 18 OSC ASC Exhibit R 2019-10-17, Appendix R-2.

¹²¹ OSCAPDoc4 ASC 12 OSC ASC Exhibit L 2019-10-17, L.4.5. And OSCAPDoc20 ASC Applicant Responses to Additional RAIs_Combined 2020-02-24 to 2020-03-09.

¹²² For consistency, the Department uses the distance of 6.9 miles from Table Rock to the site boundary represented in ASC Exhibit L, and under the Protected Areas section in this order.

Backcountry Byway, to the ACEC, as representing the valuable scenic resource. In other words, the scenic value of Table Rock, as designated and described by the BLM in its management plan for the area, is based on the scenic value of Table Rock itself. The proposed facility would not be visible from the two byways to a viewer looking towards Table Rock. Additionally, even if the resource was designated as having scenic value for views from Table Rock ACEC across the surrounding landscape, the proposed facility, at least 6.9 miles distant, would not be very apparent on the landscape.¹²³

Oregon Outback National Scenic Byway

The portion of the Oregon Outback National Scenic Byway within the analysis area is a 1.8-mile-long segment of Fort Rock Road (County Road 5-10) that connects SR 31 through the community of Fort Rock. Based on the applicants viewshed analysis in ASC Exhibit R, the proposed facility will only be in the line-of-sight portions of the byway in the analysis area near the community of Fort Rock. However, this byway segment is located 8.3 miles to the northwest of the closest portion of the proposed facility site Area D, which will house the step-up substation, but which is also crossed by three existing 500-kV transmission towers with lattice steel structures. Proposed facility Area A, which is larger and will house the solar arrays, is over 10 miles east of this segment of the byway. At these distances, alteration of the landscape at the proposed facility site is unlikely to be apparent (ASC Exhibit R contains photos of the existing landscape from the byway, see Photos #3 and #4 in Appendix R-1). In addition, from the portions of the byway west of the community of Fort Rock, views facing in the direction of the proposed facility site (to the east), would be dominated by the developments in the community of Fort Rock.¹²⁴

Christmas Valley National Backcountry Byway

In ASC Exhibit R, the applicant notes that the most likely viewing location toward the proposed facility site from the Christmas Valley National Backcountry Byway is from the portion located approximately 2.3 miles north of the site boundary, which offers views toward the proposed facility to drivers traveling south. It is stated that the views will mostly not be head-on, but rather will be off to one side through the windshield. The applicant contends that viewed from an elevation similar to that of the proposed facility and from distances of at least 2.3 miles or more, the PV modules are likely to appear only as a dark line on the horizon to the casual observer traveling on the byway. It is also noted that three existing 500-kV transmission lines with lattice steel towers will be situated in the foreground of views toward the proposed facility site (See ASC Exhibit R, Appendix R-1 Photos #1 and #2).

Although the areas surrounding the proposed facility primarily include agricultural lands and scattered farm residences and barns, the existing views toward the proposed facility from this portion of the byway already include development features, due to the presence of the three

¹²³ OSCAPPDoc4 ASC 18 OSC ASC Exhibit R 2019-10-17, R.5.

¹²⁴ Id.

existing 500-kV transmission lines. The applicant notes that due to its proposed location, the proposed facility will not substantially obstruct views of the natural landscapes along this byway and contends the potential impacts on the views from this portion of the byway due to alteration of the landscape and facility structures will be viewed quickly from drivers along the byway. Finally, as described below, the applicant proposes mitigation measures to reduce visual impacts, including constructing the battery enclosures to match the landscape (e.g., by painting with low contrast earth tones), the impacts from alteration of the landscape on the views from this portion of the byway, or from more distant portions of the byway, will be reduced to low.

Applicant Proposed Mitigation

In ASC Exhibit R, Section R.6, the applicant proposes to incorporate the following measures into the proposed facility design to minimize general visual effects.¹²⁵ Based on applicant representations, the Department recommends these measures be included as Scenic Resources Condition 1.

Recommended Scenic Resources Condition 1: The certificate holder shall ensure that facility design, construction and operation adheres to the following requirements:

- a. Use earth-tone colors on battery storage enclosures and other buildings to match or complement the predominant colors of surrounding vegetation, or use steel for the enclosure siding that produces a brown rusty patina when weathered.
- b. Facility lighting must be shielded and directed downward and be the minimum necessary for construction, operation, safety, and security. Lighting for operation, safety, and security must be on-demand or motion-activated and/or use timers to minimize light exposure.

[GEN-SR-01]

Based on the findings presented here, the Department recommends Council find that visual impacts from landscape alteration and facility structures associated with proposed facility construction and operation would not result in significant, adverse impacts at important or significant scenic resources and values identified as significant or important in local land use plans, tribal land management plans and federal land management plans for any lands within the analysis area.

Conclusion of Law

Based on the foregoing findings of fact, and based upon compliance with the recommended condition, the Department recommends the Council conclude that the design, construction and operation of the proposed facility is not likely to result in significant adverse impacts to any scenic resources and values identified as significant or important in local land use plans, tribal

¹²⁵ The applicant describes these measures in ASC Exhibit R, in the context of reducing visual impacts to scenic resources, however, the Department notes that these measures would also minimize visual impacts evaluated under the Council's Protected Area and Recreation standards.

land management plans and federal land management plans for any lands, in compliance with Council's Scenic Resources standard.

IV.K. Historic, Cultural, and Archaeological Resources: OAR 345-022-0090

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:

(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;

(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and

(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).

(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

** * **

Findings of Fact

Section (1) of the Historic, Cultural and Archaeological Resources standard generally requires the Council to find that a proposed facility is not likely to result in significant adverse impacts to identified historic, cultural, or archaeological resources.¹²⁶ Under Section (2), the Council may issue a site certificate for a solar power facility without making findings of compliance with this section. However, the Council may impose site certificate conditions based on the requirements of this standard.

The analysis area for the Historic, Cultural and Archaeological Resources standard includes the area within the proposed site boundary; however, the applicant's literature review, as further described below, extended 1-mile beyond the proposed site boundary. The Legislative Commission on Indian Services identified the Confederated Tribes of the Warm Springs Indian Reservation of Oregon (CTWSRO), the Klamath Tribes and the Burns Paiute Tribe as potentially affected by the proposed facility pursuant to OAR 345-001-0010(51)(o).

Pursuant to ORS 358.920(1)(a), a person may not excavate, injure, destroy or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon unless that activity is authorized by a permit issued under ORS 390.235 (SHPO archaeological permit). Because the applicant intends to conduct work within an area of known

¹²⁶ The site boundary includes public and private lands.

archaeological objects and site, the applicant must comply with ORS 390.235, OAR 736-051 0000 through 736-051-0090, and requested that the SHPO archaeological permits be included and governed by the site certificate under the EFSC review process. Under ORS 469.401(3), for permits under EFSC jurisdiction, after issuance of the site certificate, agencies shall, upon submission by the applicant of the proper applications and payment of the proper fees, but without hearings or other proceedings, promptly issue the permits, licenses and certificates addressed in the site certificate subject only to conditions set forth in the site certificate.

Development of Archeological Testing and Excavation Methodologies Plan

In preparation of ASC Exhibit S, containing information on historic cultural and archaeological resources, the applicant engaged one of its consultants, Heritage Research Associates (Heritage), who conducted a literature review and pedestrian surveys in Area A and Area D of the site boundary, which resulted in two confidential technical reports submitted to the Department and reviewing agencies. Confidential materials were submitted under a separate cover and under ORS 192.345(11) they are exempt from public disclosure. Subsurface testing was not conducted to inform the resulting technical reports.~~;-however, t~~ The applicant ~~did~~ coordinated~~d~~ and shared~~d~~ the results of the preliminary pedestrian surveys with the CTWSRO, the Burns Paiute Tribe, and the Klamath Tribes. After the applicant submitted the preliminary application for site certificate (pASC) to the Department, the Department requested comments from reviewing agencies including the tribal governments and the Oregon State Historic Preservation Office (SHPO).

Due to the size and scope of the applicant's proposal for archaeological resources, the Department engaged its consultant, Golder Associates and its subcontractor, Historical Research Associates (HRA), Inc. to assist SHPO with the completeness review of the pASC and associated technical reports. The letter provided from HRA to SHPO and the Department indicated that the methods by which the isolates and sites were identified and delineated by the applicant were inconsistent and generally did not meet SHPO standards because subsurface probing was not conducted to gather information for the eligibility evaluation for the National Register of Historic Places (NRHP).¹²⁷ In SHPO's letter provided to the Department dated June 17, 2019, they reiterate this concern stating; "Oregon SHPO concurs that the process for determining NRHP eligibility is inadequate. No attempt was made to assess the vertical (subsurface) boundary (depth of cultural materials) which are critical to NRHP evaluations.... for an archaeological site to be considered not eligible to the NRHP, they must be evaluated under all four criteria."¹²⁸ The applicant engaged SHPO, the Department, and the affected tribal governments with addressing the concerns identified by SHPO and the Department's consultant, HRA. The applicant coordinated with SHPO, the Department, the Klamath Tribes, and the Burns Paiute Tribe to resolve the issues identified by SHPO. The result of the ongoing coordination was a memorandum of agreement between~~proposal drafted by~~ SHPO and ~~reviewed with~~ the applicant, which is codified in the Archeological Testing and Excavation

¹²⁷ OSCAPDoc26 pASC Draft to SHPO Completeness Review Memo_HRA_Perrin 2019-05-30.

¹²⁸ OSCAPDoc29 pASC Reviewing Agency Comment Letter SHPO Case No._ 18-0246_Pouley 2019-06-17.

1 Methods Plan (Plan) included as Attachment S-1 to this order. The Plan defines archeological
2 testing and excavation methods which provide avoidance, minimization, and monitoring for
3 impacts to archeological sites and mitigation measures to catalog archaeological isolates and
4 artifacts. The Archeological Testing and Excavation Methods Plan (Plan) is included in this order
5 as Attachment S-1 and includes:¹²⁹

- 6 • Delineating Archaeological Site Boundaries
- 7 • Definitions
- 8 • Archaeological Testing at Isolates
- 9 • Trenching within a Recorded Archaeological Site
- 10 • Testing at Project Related (non-archaeological) Excavation
- 11 • Historical and Multicomponent Archaeological Sites
- 12 • Artifact Analysis
- 13 • Reporting
- 14 • Archaeological Permits

15 *Results from Preliminary Pedestrian Surveys*

16 The Department points to the language of the EFSC standard, specifically, "...resources that
17 have been listed on, or would likely be listed on..." the common term used by SHPO and
18 throughout the profession, is eligible or likely/potentially eligible for listing on the NRHP.
19 Therefore, the terms eligible or likely/potentially eligible meet the meaning of likely to be listed
20 on the NRHP in the EFSC standard.

21 The applicant explains in ASC Exhibit S that prehistoric sites were preliminarily evaluated as
22 eligible, potentially eligible, or not eligible for nomination to the NRHP, assessed under NRHP
23 Criterion D. Based on the consultant recommendations in the pedestrian survey report and site
24 visits with Klamath Tribal representatives, the applicant identified seven prehistoric sites
25 treated as eligible, 22 prehistoric sites treated as potentially eligible, and 69 prehistoric sites
26 treated as not eligible for listing on the NRHP. These preliminary recommendations were
27 subsequently replaced to treat all the archaeological sites and isolates as part of an
28 archaeological district.¹³⁰

29 Historical (above-ground) resources identified include five possible homestead locations with
30 structural remains, ~~and~~ six small refuse scatters and a Pioneer Road. The homestead sites likely
31 relate to a short homesteading period in the early twentieth century:

- 32 • The applicant recommends that the homestead sites and one well/corral site are
33 considered potentially NRHP-eligible as some information can be learned about the
34 homestead era in Fort Rock by further documenting and researching the homestead
35 sites.

¹²⁹ Information concerning the potential location of archaeological sites or objects as those terms are defined in ORS 358.905 has been redacted from this and other documents associated with this section. The Department also redacted resource descriptions that may be associated with archaeological locations.

¹³⁰ OSCAPDoc4-6.2 DPO Comments Applicant Responses to SHPO 2020-06-08.

- The applicant recommends that the six isolated refuse scatters, including limited debris from what may have been a small corral site, are recommended not eligible for the NRHP as those locations do not appear to be associated with larger homestead features, nor do they contain previously undocumented or potentially significant information.
- A Pioneer Road extending through the proposed facility site was identified on a Bureau of Land Management General Land Office map, by a member of the public on the record of the DPO. Based on the results of the pedestrian surveys, the applicant describes that there were no intact or observable road components identified.¹³¹

Five sites contained both prehistoric and historical components:

- The applicant recommends that two of the sites appear to contain NRHP-eligible components, and another two sites appear to be potentially NRHP-eligible.
- The applicant recommends that one site contains limited artifacts for both prehistoric and historical components and is likely to be found not eligible for the NRHP due to the likelihood that it does not contain potentially significant information that would contribute to our understanding of either history or prehistory.¹³²

Of the prehistoric archaeological and historic resources, the applicant recommends nine sites as eligible. Seven are prehistoric sites, and two are multicomponent sites. Twenty-nine ~~potentially eligible~~ sites are recommended as potentially eligible, 22 are prehistoric sites, five are historic sites, and two are multicomponent sites. Seventy-six potential sites are recommended as not eligible including 69 prehistoric, six are historic, and one is multicomponent.¹³³ Further, the applicant identified 241 isolated finds.¹³⁴ Aside from the above ground historic resources, the archaeological resources identified are all appears to be prehistoric archaeological Tribal resources representing the ancestors of modern Tribes.

As discussed in the aforementioned section, SHPO and the applicant agreed that the known archaeological sites and isolates would be treated as an eligible district under Criterion A (pattern of events) and D (ability to address important research questions) of the NRHP and the procedures outlined in the Archaeological Testing and Excavation Methods Plan would be followed prior to and during construction, therefore, because the applicant did not adhere to recommended SHPO guidelines, National Register Bulletins, and did not provide evaluations under all four NRHP criteria, SHPO was did not able to concur with the applicant-proposed eligibility recommendations for individual resources.

Evaluation, Avoidance, and Mitigation for Impacts to Historic, Cultural, and Archeological Resources

¹³¹ OSCAPPDoc4-4 DPO Public Comment Carbiener 2020-03-31.

¹³² OSCAPPDoc4 ASC 19 OSC ASC Exhibit S 2019-10-17, S.5.2.

¹³³ OSCAPPDoc4 ASC 19 OSC ASC Exhibit S 2019-10-17, S.5.2.

¹³⁴ In ASC Exhibit S, the applicant states that finds of cultural materials that were not classified as sites were recorded and mapped as isolated finds. OSCAPPDoc4 ASC 19 OSC ASC Exhibit S 2019-10-17, S.5.1.2.

OAR 345-022-0090(1)(a)

The Council's standard, OAR 345-022-0090(1)(a) addresses historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places. As noted, the applicant coordinated with SHPO, the Department, the Klamath Tribes, and the Burns Paiute Tribe to resolve the issues of NRHP criteria evaluation and survey protocols identified by SHPO and HRA, and agreed upon the Archeological Testing and Excavation Methods Plan (Attachment S-1 to this order), ~~and~~ further addressed below in Recommended Historic, Cultural and Archeological Condition 1. ~~SHPO and the applicant has~~ agreed to adhere to the methodologies defined in the Plan when conducting archaeological testing during ground disturbing activities associated with ~~any necessary pre-construction surveys and~~ construction of the proposed facility in order to properly evaluate and catalog isolates and artifacts within archeological sites that are not avoided. SHPO highlighted in its letter ~~s on the ASC and on the DPO to the Department~~ that it is unprecedented that SHPO itself would draft methodologies that adhere to its guidelines and bulletins for a specific project, and it should not happen again. And that any alternate methods from SHPO guidelines proposed by an applicant should consult with SHPO early in the process and prior to conducting survey activities.¹³⁵ To address resources potentially protected under OAR 345-022-0090, as defined in the Plan, methodologies treat the recorded archaeological sites and isolates as a district and focus on ~~P~~project-related impacts, this approach is also consistent with the governance of the SHPO Archaeological Permits included and governed by the site certificate as discussed below. This is reiterated in the comment letter on the ASC from SHPO, which states; "...it was agreed that the known archaeological sites and isolates would be treated as an eligible district under Criterion A of the NRHP and the Archeological Testing and Excavation Methods Plan addresses procedures for addressing Criterion D through targeted archaeological testing in areas of ground disturbance, and through the IDP [incidental discovery plan]." ¹³⁶ The applicant agrees to treat the area as eligible for listing on the NRHP, and therefore protected under the Council's standard. ~~This approach may overestimate the actual impacts from construction and operation of the proposed facility because many of the sites may indeed be not eligible for listing on the NRHP.~~

The site boundary is located within the ceded lands of the Klamath Tribes, Confederated Tribes of Warm Springs, and Burns Paiute Tribe. Predominantly the resources identified in the preliminary pedestrian surveys, in coordination with the Klamath Tribes, are considered prehistoric archaeological sites representing the ancestors of modern Tribes Tribal resources. The applicant contacted, met in-person on site, presented to the Klamath Tribal Council, and maintained communication with the Klamath Tribes and Burns Paiute Tribe. As part of its supplemental application submittal for ASC Exhibit S, the applicant provided a letter from the Klamath Tribes Tribal Council.¹³⁷ The letter from the Tribal Council stated that the Tribes have

¹³⁵ OSCAPPDoc17 ASC Reviewing Agency Comment Letter SHPO Case No._ 18-0246_Pouley 2020-02-26 and OSCAPPDoc4-1 DPO Agency Comment SHPO Pouley 2020-03-13 to 05-15.

¹³⁶ OSCAPPDoc17 ASC Reviewing Agency Comment Letter SHPO Case No._ 18-0246_Pouley 2020-02-26.

¹³⁷ On June 18, 2019, Donald Gentry, the Klamath Tribes Chairman, submitted the same letter to the Department. OSCAPP pASC Reviewing Agency Comment Letter Klamath Tribe_Gentry 2019-06-18.

reached an agreement with the applicant to avoid, minimize, and mitigate impacts to prehistoric archaeological Tribal resources identified by the applicant. The applicant states it will avoid approximately 156 acres within the site boundary ~~identified as~~ containing likely eligible or eligible resources preliminarily identified by the Tribes. These areas were identified as avoidance areas and the applicant by modifying the design of the facility to avoid these sensitive areas. The letter states that the avoided sensitive areas would be further protected because they would be located within the perimeter fence. The letter continues by stating explaining that the areas that may be impacted will be subject to a Monitoring Agreement and Inadvertent Discovery Plan (IDP). At the request of the Burns Paiute Tribe, ~~the Tribes have agreed to include~~ a representative of the Burns Paiute Tribe will also be a monitor during ground disturbing activities, as further discussed in the Cultural Mitigation and Monitoring Plan (CMMP) included as Attachment S-3 to this order for monitoring. Finally, the letter addresses the Council's standard stating that it views that construction and operation of the proposed facility, taking into account mitigation, is not likely to result in significant adverse impacts to eligible and likely eligible resources identified in the application or by the Tribes.

An applicant and Tribal Government may coordinate independently about potential impacts to prehistoric archaeological site and objects representing the ancestors of modern Tribes and may come to an agreement about impacts, avoidance, minimization and any mitigation for impacts to resources. The Department notes that under OAR 345-001-0010(33), the above measures and measures proposed by the applicant meet the Council's definitions of mitigation, however it is unclear if the provisions in the Archeological Testing and Excavation Methods Plan that outline procedures to catalog and curate archaeological isolates and artifacts are considered mitigation under the Council's rules.¹³⁸ As noted, the Archeological Testing and Excavation Methods Plan is a procedure for removing isolates and objects during ground disturbing activities in areas of known archaeological sites, removing the object from the site which impacts the integrity of the site and assessment under NRHP Criterion A (pattern of events) and D (ability to address important research questions), therefore considering this mitigation under the Council's terms is questionable.¹³⁹ The Council may rely on confirmation from Tribal governments about the contents of any such agreement that would satisfy resources potentially protected under OAR 345-022-0090(1)(a), identifying that the construction and operation of the proposed facility, taking into account mitigation, are not

¹³⁸ OAR 345-001-0010 (33) "Mitigation" means taking one or more of the following actions listed in order of priority:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action;
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- (c) Partially or completely rectifying the impact by repairing, rehabilitating or restoring the affected environment;
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action by monitoring and taking appropriate corrective measures;
- (e) Partially or completely compensating for the impact by replacing or providing comparable substitute resources or environments; or
- (f) Implementing other measures approved by the Council.

¹³⁹ SHPO notes in its comment letter, "Completing the archaeological testing and excavation methods, in part, serves as a sort of de facto mitigation. Much of the intent is also to gather information, which is not necessarily mitigation." OSCAPPDoc4-1 DPO Agency Comment SHPO Pouley 2020-03-13 to 05-15.

likely to result in significant adverse impacts to historic, cultural or archaeological resources that have been listed on, or would likely be listed on the NRHP.¹⁴⁰

To address the Tribes comments, and as part of the applicant proposal in ASC Exhibit S and additional information added to the ASC, the applicant proposes avoidance, minimization, mitigation, and monitoring measures ~~and areas as well as a~~ outlined in the proposed draft Cultural Mitigation and Monitoring Plan (CMMP) which ~~is the Department has compiled into included as~~ Attachment S-3 ~~of to~~ this order. The CMMP is comprised of applicant-represented measures to avoid ~~and~~, reduce impacts to prehistoric archaeological resources that are discussed in this order such as revising its facility layout to avoid impacts to sensitive areas. The applicant explains that another measure to avoid and minimize impacts to archaeological resources during construction is to implement the Inadvertent Discovery Plan (IDP), included as Attachment S-2 to this order, which outlines procedures to prevent impacts to human remains or exceptionally important archaeological materials and includes notification requirements to the Department, other interested agencies and Tribes.

The CMMP identifies mitigation measures for impacts to cultural, historical and archaeological resources that include compliance with the mitigation obligations agreed to by the applicant and Klamath Tribes discussed above. ~~Monitoring during~~ construction activities would be conducted by professionally qualified tribal monitor leads who would provide weekly reports describing work activities and any findings. This information will be compiled in a monitoring report to be distributed to the area tribes, the Department, SHPO, and as appropriate the Oregon Department of State Lands (DSL), at the completion of the proposed facility. The Department also recommends the monitoring reports provided by the Tribal monitor be submitted to the Department in its semiannual construction reports under OAR 345-026-0080 which is discussed in Section, IV.A., General Standard of Review, and to include Tribes with the construction and survey activities. The Klamath Tribes and Burns Paiute Tribe also provided comments as conditions to be included with the SHPO Archaeological Permits discussed further below. ~~Their comments relate to monitoring, reviewing materials, and receiving reports generated. The Department includes these conditions within the draft CMMP to be finalized prior to construction of the proposed facility. The Department recommends review and approval of the final CMMP by the Department in coordination with SHPO and the Tribes. As such, the Department recommends this as a component of the below condition. As part of ASC Exhibit S, the applicant also provided an Inadvertent Discovery Plan (IDP) and maintains it will conduct all work within compliance with the IDP.~~

¹⁴⁰ In its comment letter SHPO notes that the agreement between the Klamath tribes and applicant is not mitigation, because SHPO must be part of concurring or not with eligibility recommendations/determinations as well as findings of effect any mitigation (along with appropriate tribes), which is supposed to target the characteristics of a site or district that qualify it for the National Register of Historic Places (NRHP). However, because the applicant assumes the entire site as a NRHP eligible district and has agreed upon avoidance and mitigation measures with the Tribe, this satisfies OAR 345-022-0090. OSCAPDoc4-1 DPO Agency Comment SHPO Pouley 2020-03-13 to 05-15 4

To verify that ~~any surveys that may be conducted~~ construction activities prior to and during construction are conducted consistent with that Archeological Testing and Excavation Methodologies Plan, and that the avoidance measures around sensitive areas are completed, construction activities are conducted in compliance with the Inadvertent Discovery Plan, and that the associated tribal monitoring and reports are submitted consistent with the, resulting information is shared with SHPO, the Tribes, and the Department, as well as the applicant's finalization of the provisions in the Cultural Mitigation and Monitoring Plan ~~and compliance with the Inadvertent Discovery Plan~~, the Department recommends the following site certificate condition:

Recommended Historic, Cultural and Archeological Condition 1: The certificate holder shall:

- a. Prior to and during construction, and operation of the facility implement ~~conduct any necessary surveys and construction activities in compliance with~~ the Archeological Testing and Excavation Methodologies Plan (Attachment S-1 to Final Order on ASC) and the Cultural Mitigation and Monitoring Plan (Attachment S-2 to the Final Order on ASC).
- ~~b. The certificate holder shall submit results of any survey data and technical reports to SHPO in accordance with SHPO's Go Digital requirements and affected Tribal Governments.~~
- ~~c. Under separate confidential cover, at the completion of construction of the facility, the certificate holder shall submit the final report, including SHPO NRHP eligibility recommendations, to the Department.~~
- ~~d. Prior to construction of the facility finalize the Draft Cultural Mitigation and Monitoring Plan, as provided in Attachment S-3 of the Final Order on ASC, and submit to the Department for review and approval, in coordination with SHPO and the affected Tribal Governments. The certificate holder may coordinate with Tribal Governments prior to submitting the finalized Plan to the Department. The Plan shall identify any modifications based on results of any surveys completed following the Archeological Testing and Excavation Methodologies Plan (Attachment S-1 to Final Order on ASC) identified in sub (a) of this condition, or any modifications derived from Tribal or SHPO coordination.~~
- e.b. During construction and operation of the facility, the certificate holder shall implement and adhere to the requirements of the Inadvertent Discovery Plan, as provided in Attachment S-2 of the Final Order on ASC and the Cultural Mitigation and Monitoring Plan, as provided in Attachment S-3 of the Final Order on ASC.
~~During construction and operation of the facility, the certificate holder shall implement and adhere to the requirements of the Cultural Mitigation and Monitoring Plan, as finalized per sub(b) of this condition.~~

[GEN-HC-01]

OAR 345-022-0090(1)(b) and (c)

The evaluation above applies to resources potentially protected under OAR 345-022-0090(1)(a). Under OAR 345-022-0090(1)(b), for a proposed facility located on private land, the Council must

find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to archaeological objects, as defined in ORS 358.905(1)(a)¹⁴¹, or archaeological sites, as defined in 358.905(1)(c). OAR 345-022-0090(1)(c), the Council's Historic, Cultural and Archaeological Resources standard addresses and protects archaeological sites on public lands under OAR 345-022-0090(1)(c) as defined in ORS 358.905(1)(c).¹⁴² Predominantly lands within the site boundary are privately owned lands, however there is a parcel of land owned by the Oregon Department of State Lands (DSL). Therefore, both of the provisions of (b) and (c) of the Council standard apply. The Department notes that resources identified as eligible and likely eligible, as discussed in the preceding section, based from the preliminary pedestrian surveys conducted with Tribal review, ~~are likely to meet the definitions of include~~ archaeological objects ~~or and~~ archaeological ~~objects~~ sites. ~~Further, the Archeological Testing and Excavation Methodologies Plan applicant's assumption to treat~~ the site boundary as a ~~ANRHP~~-eligible district, and outlines measures to minimize and mitigates adverse impacts to the archaeological objects and sites within the district ~~considers the area as an archaeological site~~. The Department points to the ~~agree-upon~~ mitigation agreement between the applicant and the Tribe and recommends s the Council find that construction and operation of the proposed facility ~~the facility~~, taking into account mitigation, are not likely to result in significant adverse impacts on private lands, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in 358.905(1)(c); and on public land, archaeological sites, as defined in ORS 358.905(1)(c).

SHPO Archaeological Permits

Pursuant to ORS 358.920(1)(a) A person may not excavate, injure, destroy or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon unless that activity is authorized by a permit issued under ORS 390.235 (SHPO archaeological permit). Because the applicant intends to conduct work within an area of known archaeological objects and site, the applicant must comply with ORS 390.235, OAR 736-051 0000 through 736-051-0090, and requested that the SHPO archaeological permits be included and governed by the site certificate under the EFSC review process.

Under ORS 469.401(3), for permits under EFSC jurisdiction, after issuance of the site certificate , agencies shall, upon submission by the applicant of the proper applications and payment of the proper fees, but without hearings or other proceedings, promptly issue the permits, licenses

¹⁴¹ 358.905(1)(a) states ""Archaeological object" means an object that: (A) Is at least 75 years old; (B) Is part of the physical record of an indigenous or other culture found in the state or waters of the state; and (C) Is material remains of past human life or activity that are of archaeological significance including, but not limited to, monuments, symbols, tools, facilities, technological by-products and dietary by-products."

¹⁴² ORS 358.905(1)(c) states, (A) "Archaeological site" means a geographic locality in Oregon, including but not limited to submerged and submersible lands and the bed of the sea within the state's jurisdiction, that contains archaeological objects and the contextual associations of the archaeological objects with: (i) Each other; or (ii) Biotic or geological remains or deposits. (B) Examples of archaeological sites described in subparagraph (A) of this paragraph include but are not limited to shipwrecks, lithic quarries, house pit villages, camps, burials, lithic scatters, homesteads and townsites.

1 and certificates addressed in the site certificate subject only to conditions set forth in the site
2 certificate. The effective date of the permits will be a date after ~~the-an~~ EFSC final affirmative
3 decision and issuance of the site certificate. After a Council final affirmative decision, SHPO
4 would promptly issue and date the permits stipulating the timeframe extensions as discussed
5 below.

6
7 The applicant engaged a qualified archaeologist from Archaeological Investigations Northwest,
8 Inc., as defined ORS 390.235 as the applicant for the permits. The SHPO Archaeological Permits
9 apply to each separate landowner, so four applications were submitted. The ~~agreed-up~~
10 Archeological Testing and Excavation Methodologies Plan was included with the permits. SHPO
11 circulated the permits ~~applications~~ for 30-days to commenting parties to receive ~~requests for~~
12 draft conditions to be included in the permits as part of the site certificate. The draft
13 Archeological Permits ~~and permit applications~~ are included as Attachment S-4 to this order. The
14 Department has redacted partial information concerning the location and descriptions of
15 archaeological sites or objects as those terms are defined in ORS 358.905, as public records
16 conditionally exempt from disclosure under ORS 192.345.

17
18 For the parcel of land owned by DSL, DSL made requests to receive GIS information about
19 resources. ~~For the entire site, the Klamath Tribes requested specific diagnostic steps to occur~~
20 ~~when resources are found~~, that a Tribal monitor be onsite during trenching and excavation
21 activities, a 24-hour notification ~~must~~ be given to the Klamath Tribes, Culture and Heritage
22 Department or Tribes Archaeologist prior to initiation of trenching or excavation activities and
23 to receive a copy of the report of findings from the testing phase of the project. The Klamath
24 Tribes also requested a specific procedure for sampling artifacts for hydration analysis and that
25 diagnostic artifacts found on private lands during Tribal monitoring be turned over by the
26 private landowner to the Klamath Tribes for curation (as agreed by the private landowners). The
27 Burns Paiute Tribe requested an on-site Tribal monitor ~~and~~, consistent with its' previous
28 comments, the ability to review and comment on the draft report generated as a result of the
29 archaeological excavations and request an executed copy of the IDP prior to initiation of ground
30 disturbing activities. Other conditions requested by the Tribe are included in the Cultural
31 Mitigation and Monitoring Plan (CMMP), included as Attachment S-3 and the Archeological
32 Permits included as Attachment S-4, ~~the Department also included the Tribe's conditions in the~~
33 ~~draft Cultural Mitigation and Monitoring Plan, to be finalized with coordination with the Tribes~~
34 ~~prior to construction of the proposed facility consistent with Recommended Historic, Cultural~~
35 ~~and Archeological Condition 1 above.~~

36
37 The SHPO guidance for the duration of the SHPO Archaeological Permits is one year, with a one-
38 time option of extending the permit coverage for an additional year, according to its policy
39 Archaeology Bulletin 2 dated October 2019. The Department notes that these permits are
40 under EFSC jurisdiction and are subject to EFSC approval. The duration of the permit
41 governance ~~should would~~ be consistent with the timeframe identified in Recommended
42 General Standard of Review Condition 1, expiring at the end of the construction completion
43 deadline unless the construction completion deadline is amended through a site certificate
44 amendment process ~~to protect and excavation or survey activities conducted prior to~~

1 ~~construction and during construction~~. SHPO ~~has~~ indicated there are procedural-administrative
2 pathways for EFSC energy facilities and Archaeological Permits under EFSC jurisdiction to
3 extend ~~or amend~~ the permit to align with the deadlines in Recommended General Standard of
4 Review Condition 1, to cover activities protected under the permits for the proposed facility.¹⁴³

5
6 The conditions in the SHPO Archaeological Permits are conditions of approval in the site
7 certificate that the applicant must comply with including the general conditions from SHPO, and
8 specific conditions from DSL and the Tribes. Further the applicant shall extend the permit
9 coverage to align with pre-construction and construction activities, as appropriate. Therefore,
10 the Department recommends Recommended Historic, Cultural and Archeological Condition 2
11 below:

12
13 **Recommended Historic, Cultural and Archeological Condition 2:** The certificate holder shall:

- 14 a. Prior to and during construction, and during operation, conduct field testing, excavation
15 and removal of archaeological, historical, prehistoric, and anthropological materials
16 within archaeological sites or objects under ORS 358.920 and ORS 390.235 in
17 compliance with the SHPO Archaeological Permits AP2816, AP2817, AP2818, and
18 AP2819, Attachment S-4 of the Final Order on ASC.
- 19 b. ~~Amend, r~~Administratively renew, or extend SHPO Archaeological Permits with SHPO for
20 any work governed by the permits to be consistent with the construction
21 commencement **DATE** and construction completion **DATE**, as stated in General Standard
22 Condition 1. Provide copies of any renewed or extended SHPO Archaeological Permits to
23 the Department.
24 [GEN-HC-02]

25 26 Conclusions of Law

27
28 Based on the foregoing recommended findings of fact and conclusions of law, and based upon
29 compliance with the recommended conditions, the Department recommends Council find that
30 the proposed facility would comply with the Council's Historic, Cultural, and Archeological
31 Resources standard. Under ORS 469.401(3), upon submission by the applicant of the proper
32 applications and payment of the proper fees, but without hearings or other proceedings, the
33 Oregon State Historic Preservation Office (SHPO) shall issue Archaeological Permits AP2816,
34 AP2817, AP2818, and AP2819, unredacted, subject only to conditions set forth in the Final
35 Order on ASC Attachment S-4.

36
¹⁴³ Applicant DPO comments request removal of this language. The Department reiterates that the SHPO
Archaeological Permits under EFSC jurisdiction must be consistent with the construction duration and deadlines
recommended in this order. However, SHPO existing administrative procedures for the Archaeological Permits
limit the duration of the permits, as such, this language and the requirement in Recommended Historic, Cultural
and Archeological Condition 2 (b), are to allow the applicant to extend the duration of the permits using SHPO
administrative processes, consistent with Recommended General Standard of Review Condition 1.

IV.L. Recreation: OAR 345-022-0100

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of a facility, taking into account mitigation, are not likely to result in a significant adverse impact to important recreational opportunities in the analysis area as described in the project order. The Council shall consider the following factors in judging the importance of a recreational opportunity:

- (a) Any special designation or management of the location;*
- (b) The degree of demand;*
- (c) Outstanding or unusual qualities;*
- (d) Availability or rareness;*
- (e) Irreplaceability or irretrievability of the opportunity.*

***¹⁴⁴

Findings of Fact

The Recreation standard requires the Council to find that the design, construction, and operation of a facility would not likely result in significant adverse impacts to “important” recreational opportunities. Therefore, the Council’s Recreation standard applies only to those recreation areas that the Council finds to be “important,” utilizing the factors listed in the sub-paragraphs of section (1) of the standard. The importance of recreational opportunities is assessed based on five factors outlined in the standard: special designation or management, degree of demand, outstanding or unusual qualities, availability or rareness, and irreplaceability or irretrievability of the recreational opportunity.

The applicant evaluates impacts to important recreational opportunities based on the potential of construction or operation of the proposed facility to result in any of the following: direct or indirect loss of a recreational opportunity, excessive noise, increased traffic, and visual impacts of facility structures or plumes. ASC Exhibit T provides information about recreational opportunities. The analysis area for impacts to recreational opportunities is the area within and extending 5 miles from the site boundary.

To analyze the proposed facility against this standard, the Council must first evaluate whether an identified recreational opportunity is important. The Council must then evaluate whether the design, construction or operation of the facility could adversely impact the identified important recreational opportunity within the analysis area. If the proposed facility could

¹⁴⁴ The proposed facility is not a special criteria facility under OAR 345-0015-0310; therefore, OAR 345-022-0100(2) is not applicable.

adversely impact the resource, then the Council must consider the significance of the possible impact.

Recreational Opportunities within the Analysis Area

In accordance with OAR 345-001-0010(59)(d), and consistent with the study area boundary, the analysis area for recreational opportunities is the area within and extending 5 miles from the proposed site boundary. As presented in ASC Exhibit T, the applicant used the Oregon Parks and Recreation Department website, Bureau of Land Management's Lakeview Resource Management Plan, and Public Lands Interpretive Association website to review and assess the importance of recreational opportunities within the analysis area. Based on this review, the applicant identified two recreational opportunities within the analysis area and assessed their potential for being considered important recreational opportunities, as presented in Table 7 below. As also described in the ASC Exhibit T, the BLM has designated much of its land in north Lake County as a "special recreation management area," (SRMA), approximately 800,000 acres of land. Some of this land is within the analysis area. Both the Devil's Garden Lava Bed ACEC and Connley Hills ACEC are subsets in the larger SRMA. Both of these areas are discussed further in Section IV.F., *Protected Areas*, of this order.

The applicant states in ASC Exhibit T, and the Department agrees, that the entirety of the SRMA should not be considered an important recreation area, particularly because there are subset areas, such as the two ACECs considered here, that focus on specific recreational opportunities. Additionally, the types of recreation generally available on the broader SRMA are such opportunities as hiking, off-highway vehicle (OHV) riding, and mountain biking, which would not be considered "important" by the EFSC criteria for assessing recreational importance as they are not rare, unusual, unique, irreplaceable, or have a high degree of demand.

Only small portions of the Devil's Garden Lava Bed ACEC are within the 5-mile analysis area for the facility, and the entirety of the Connley Hills ACEC is outside the 5-mile analysis area, but only by 0.3 miles. As such, the applicant assessed both resources against the Council's "importance" criteria, as shown in Table 7: *Analysis of Potential Important Recreational Opportunities within the Analysis Area*.

Table 7: Analysis of Potential Important Recreational Opportunities within the Analysis Area

Recreational Opportunity	Distance and Direction from Site Boundary	Special Designation/ Management	Degree of Demand	Outstanding/ Unusual Recreational Quality	Availability/ Rareness	Irreplaceable/ Irretrievable
Devil's Garden Lava Bed	4.0 miles to north	Area of Critical Environmental Concern/ Wilderness Study Area by BLM	Low	Off-highway vehicle use; day use; Derrick Cave lava tube and other lava tubes within the ACEC.	Recreational opportunities are somewhat common in the area.	Relatively irreplaceable

Table 7: Analysis of Potential Important Recreational Opportunities within the Analysis Area

Recreational Opportunity	Distance and Direction from Site Boundary	Special Designation/ Management	Degree of Demand	Outstanding/ Unusual Recreational Quality	Availability/ Rareness	Irreplaceable/ Irretrievable
Connley Hills	5.3 miles to southwest	ACEC / Research Natural Area by BLM	Low	Off-highway vehicle use; day use.	Recreational opportunities are somewhat common in the area.	Replaceable
Source: OSCAPDoc4 ASC 20 OSC ASC Exhibit T 2019-10-17, Table T-1.						

In ASC Exhibit T, the applicant characterizes one recreational opportunity as important (Devil's Garden Lava Bed) and one recreational opportunity (Connley Hills) as not important. Based on the evaluation presented below, the Department agrees with the applicant's conclusions related to these opportunities. The Department's evaluation of the applicant's recreational opportunity "importance" assessment is presented below.

Recreational Opportunity Importance Assessment

Devil's Garden Lava Bed

As presented in ASC Exhibit T, Devil's Garden Lava Bed is a historic basaltic lava field of the Newberry volcano, located approximately four miles to the north of the site boundary. However, only a very small portion of this ACEC/WSA is within the 5-mile analysis area. Per the applicant, this resource is described by the BLM as having extremely rugged terrain due to geologically recent lava flows. There are several lava tubes within Devil's Garden, the largest of which is known as Derrick Cave and is listed on the BLM recreation web map as a day use and hiking area. Derrick Cave is located approximately 12.5 miles north of the site boundary, and therefore 7.5 miles beyond the analysis area.¹⁴⁵ Devil's Garden Lava Bed ACEC/WSA offers off-highway vehicle (OHV) use and general day use, including hiking to and into Derrick Cave. OHV use is permitted on designated roads and trails within the ACEC/WSA. Day use is permitted within the ACEC/WSA, but not overnight camping.

Based on the unique geologic formations (i.e., lava fields and lava tubes; specifically, Derrick Cave) within this recreational resource, this recreational opportunity is deemed relatively irreplaceable; therefore, the applicant has analyzed it as an important recreational opportunity. The Department agrees with the applicant's reasoning and conclusions and recommends Council find this recreational opportunity to be "important" under the Council's standard.

¹⁴⁵ OSCAPDoc4 ASC 20 OSC ASC Exhibit T 2019-10-17, T.2.1.

1 *Connley Hills ACEC/RNA*

2
3 As presented in ASC Exhibit T, Connley Hills ACEC/RNA is located approximately 5.3 miles to the
4 southwest of the site boundary, which is close, but beyond the analysis area. This resource was
5 established as an ACEC/RNA due to its historical and cultural significance and its botanical and
6 ecological values—specifically, as an important representation of four different native plant
7 communities. This ACEC/RNA includes the Connley Hills, a small, low elevation mountain range
8 located southwest of the proposed facility site. According to the Lakeview Resource
9 Management Plan (RMP) as described in ASC Exhibit T, this resource offers OHV use and
10 general day use. Although the Connley Hills provide a change in elevation and vegetation from
11 the surrounding area, there are similar small mountain ranges in the area that offer similar
12 recreational opportunities and, therefore, this recreational opportunity is not considered
13 important and is not further analyzed in the Exhibit.

14
15 The Department agrees with the applicant’s reasoning that the area is not overly unique or
16 irreplaceable and agrees with the applicant conclusions and recommends Council find this
17 recreational opportunity not to be “important” under the Council’s standard.

18
19 *Potential Direct or Indirect Loss of Recreational Opportunity*

20
21 *Direct Loss*

22
23 A direct loss to an important recreational opportunity occurs when construction or operation of
24 the proposed facility would impact a recreational opportunity by directly altering the resource
25 so that it no longer exists in its current state. The applicant states that it would not construct or
26 operate the proposed facility within or near the one identified important recreational
27 opportunity (Devil’s Garden Lava Bed ACEC/WSA). Given the location of the proposed facility,
28 four miles from Devil’s Garden Lava Bed, the proposed facility would not result in direct loss of
29 recreational opportunities within the resource. Therefore, based upon review of the location
30 and proximity of important recreational opportunities to the proposed facility site, the
31 Department recommends the Council find that the proposed facility would not be expected to
32 result in direct impacts to any important recreational opportunities.

33
34 *Indirect Loss*

35
36 Like the assessment of direct loss, indirect loss occurs if construction or operation of the
37 proposed facility would impact a recreational opportunity by indirectly altering the resource or
38 some component of it. To evaluate indirect loss resulting from the construction and operation
39 of the proposed facility, the Department considers potential noise, traffic and visual impacts to
40 the above mentioned important recreational opportunities. The applicant’s assessment is
41 included in ASC Exhibit T, Section T.3, and is summarized below.

1 *Potential Noise Impacts*

2
3 The significance of potential noise impacts to identified protected areas is based on the
4 magnitude and likelihood of the impact on the affected human population or natural resources
5 that uses the important recreational opportunity. The only important recreational opportunity
6 within five miles of the proposed site boundary is Devil's Garden Lava Bed, located
7 approximately four miles from the proposed site boundary. Potential noise impacts from
8 proposed facility construction and operation are evaluated below.

9
10 *Construction*

11
12 In the ASC, the applicant explains that construction of the proposed facility would take
13 approximately two years, as recommended in Section IV.A., *General Standard of Review*,
14 construction may occur up to three years after beginning. The applicant explains that
15 construction staging would likely limit any particular construction area to approximately 60-
16 acres at a time. As such, potential noise impacts at any recreational opportunity or protected
17 area, if audible, would not last longer than the construction period within the vicinity of that
18 area. Section IV.Q.1., *Noise Control Regulations*, of this order and ASC Exhibit X Appendix X-1,
19 the applicant provides a noise analysis that includes these operational sources and sound
20 power levels. The noise analysis was produced by Michael Minor & Associates, a consultant
21 who conducts noise, vibration, and air environmental analysis. The noise analysis included an
22 assessment of construction (and operational, see below) noise at the nearest protected
23 area/recreational opportunity, the BLM Devil's Garden Lava Bed ACEC. The applicant explains
24 the results from the noise analysis, as demonstrated in Figure 8 of Appendix X-1, show that
25 noise attenuates (diminishes) the further from the noise source. According to this Section, it is
26 estimated that during construction, the loudest potential sound at the nearest protected area,
27 Devil's Garden Lava Bed BLM ACEC (approximately four miles from the site boundary), could be
28 up to 48 dBA during intermittent pneumatic pile driver use (loudest equipment used), but
29 general construction equipment would be anticipated at 35 dBA or less, and typical
30 construction may be 20 dBA or less, which is essentially inaudible.

31
32 Based on review of the applicant's construction-related noise impact assessment, as described
33 above, the Department recommends that Council find that proposed facility construction would
34 not result in significant adverse noise impacts at Devil's Garden Lava Bed BLM ACEC.

35
36 *Operation*

37
38 Proposed facility components that would generate noise during operations include:
39 transformers and inverters associated with the solar arrays, inverters and cooling systems
40 associated with battery storage systems; the collector and step-up substations, and corona
41 discharge noise (buzz or crackling during wet conditions) from the 115-kV transmission line. In
42 ASC Exhibit X, the applicant provides a noise analysis inclusive of the operational sources and
43 sound power levels (in A-weighted decibels) for proposed facility components. Section IV.Q.1,
44 *Noise Control Regulations*, of this order summarizes the statistical noise modeling

1 methodologies and results. The results of the modeling indicate that maximum operational
2 noise levels of the proposed facility would be inaudible beyond 1 mile, see Section 6.3 of
3 Attachment X-1. Therefore, because the Devil's Garden Lava Bed CEC is four miles from the
4 proposed facility, the Department recommends Council find that operational noise from the
5 proposed facility would not impact any recreational opportunity within the analysis area.

6 7 *Traffic Impacts (Construction and Operation)*

8
9 Potential traffic impacts to recreational opportunities are described in ASC Exhibit T. As
10 discussed in Section IV.M., *Public Services* of this order, peak construction/worst case scenario
11 could result in up to approximately 120 one-way (or 240 round trip) construction worker
12 commuter trips, plus the addition of up to 160 delivery (round trip) truck trips per day for
13 material delivery.¹⁴⁶ ASC Exhibit L Section L.4.2 describes that the anticipated commuter routes
14 to the site during construction would primarily be from the west of the proposed facility, using
15 US-97 and SR-31, and a network of county roads including Fort Rock Road (County Road 5-10),
16 Christmas Valley Road (County Highway 5-14) and County Road 5-12. See Section IV.M, *Public*
17 *Services*, for a discussion of these roads and highways including a description of road
18 conditions.

19
20 Access to the Devil's Garden Lava Bed ACEC is via County Road 5-12 and visitors to the ACEC
21 would likely also use SR-31, both of which would be used by facility-related traffic. As stated
22 above, the expected increases in traffic are well within the operating capacities of these roads.
23 Therefore, significant adverse impacts on visitor access to this recreational opportunity are not
24 likely.

25
26 During operations, the proposed facility would generate an additional 6 to 10 daily two-way
27 trips on existing local roads for workers, with additional, occasional material delivery trucks.
28 Based on the minimal number of operational trips, there is unlikely to be any impact on
29 recreational opportunities or access roads to recreational opportunities.

30
31 Based on the analysis presented here, the Department recommends Council find that potential
32 traffic-related impacts during construction and operation of the proposed facility would not
33 likely result in significant adverse impacts to any important recreational opportunity within the
34 analysis area.

35 36 *Potential Visual Impacts*

37
38 The applicant conducted a visual impact assessment with a geoprocessing 'Visibility' tool, which
39 is discussed in Section IV.F., *Protected Areas*, of this order. The viewshed analysis does not take
40 into account the visibility effects of existing vegetation or structures, which in practice would
41 block or screen views in some places. In addition, the model does not account for distance,
42 lighting and atmospheric factors (such as weather) that can diminish visibility under actual field

¹⁴⁶ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, Appendix U-1, p. 4.

conditions. In other words, the results of the viewshed analysis, which present potential lines of site of proposed facility components, is conservative in identifying potential visibility impacts.

The Devil's Garden Lava Bed ACEC is located four miles to the north of the site boundary. As discussed above, the main attraction at Devil's Garden Lava Bed ACEC is hiking to and into Derrick Cave, which is approximately 12.5 miles north of the site boundary and 7.5 miles beyond the 5-mile recreation analysis area. The applicant's viewshed analysis discussed in this order and provided in ASC Exhibit L, portions of the proposed facility are in the line of site from about 20 percent of this ACEC. However, at a distance of four miles separation from the southern portion of this recreational opportunity, the proposed facility is likely to appear only as a dark line on the horizon. Further, because the main recreational attraction is Derrick Cave, many visitors to the ACEC would be further distant from the facility, approximately 12.5 miles north of the site boundary (and 7.5 miles beyond the analysis area), where, due to the topography the proposed facility would likely not be visible and visitors would be unlikely to notice the facility or discern it.

Based on the analysis presented here, the Department recommends Council find that the proposed facility would not cause a significant, adverse visual impact to the Devil's Garden Lava Bed ACEC/WSA.

Conclusions of Law

Based on the foregoing recommended findings of fact, the Department recommends that the Council find that the design, construction and operation of the proposed facility are not likely to result in a significant adverse impact to any important recreational opportunities in the analysis area and therefore the proposed facility would comply with the Council's Recreation standard.

IV.M. Public Services: OAR 345-022-0110

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.

(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

***¹⁴⁷

¹⁴⁷ OAR 345-022-0110(3) does not apply to this ASC because the proposed facility would not meet the criteria for a special criteria facility as defined in ORS 469.373(1).

1 **Findings of Fact**

2
3 The Council's Public Services standard requires the Council to find that a proposed facility is not
4 likely to result in significant adverse impacts on the ability of public and private service
5 providers to supply sewer and sewage treatment, water, stormwater drainage, solid waste
6 management, housing, traffic safety, police and fire protection, health care, and schools.
7 Pursuant to OAR 345-022-0110(2), the Council may issue a site certificate for a facility that
8 would produce power from solar energy without making findings regarding the Public Services
9 standard; however, the Council may impose site certificate conditions based upon the
10 requirements of the standard.

11
12 As discussed in Section II.B, *Project Order* of this order, the analysis area for potential impacts
13 to public services from construction and operation of the proposed facility is the area within
14 and extending 15-miles from the site boundary. Information about construction phasing and
15 potential impacts to public and private service providers can be found in ASC Exhibits B and U.

16
17 *Assumptions used in Applicant's Impact Assessment*

18
19 Important assumptions relied upon by the applicant to evaluate potential impacts from
20 proposed facility construction and operation to private and public providers of services include
21 number of workers needed, population shifts and use of transportation routes.

22
23 Construction is anticipated to include approximately 24 months of activities. Construction-
24 related activities would include site preparation and vegetation mowing; access road and
25 foundation construction; substation, inverter/transformer units, and electrical transmission line
26 construction; solar module installation; electrical connection to the grid; materials
27 transportation; and other related construction activities. Based on this activity, peak
28 construction would result in up to 150 daily workers onsite with the majority of workers
29 consisting of non-local skilled electricians. The applicant assumes approximately one-third (50)
30 of construction workers would reside temporarily within the analysis area. The remaining two-
31 thirds (100) of workers would likely travel to the work site from outside the analysis area,
32 including La Pine and Bend. During operation, approximately 6 to 10 permanent maintenance
33 personnel would be hired to work at the proposed facility.

34
35 The applicant describes that local construction workers would be hired from Christmas Valley
36 and Silver Lake, to the extent that qualified workers are available. However, the applicant
37 expects that many construction workers would reside outside of the 15-mile analysis area and
38 would travel to the work site. To the extent possible, operations and maintenance staff would
39 be hired locally. Additionally, specialized outside contractors might be hired for tasks that
40 cannot be completed by onsite personnel. The approximately 6 to 10 full-time or part-time
41 workers employed during proposed facility operation would result in 12 to 20 one-way vehicle
42 trips per workday. Truck deliveries would occur infrequently during operation, on an as-needed
43 basis, for delivery of equipment or materials to the site.

The applicant assumes that approximately 100 construction personnel would travel to the work site from outside the analysis area, including the La Pine and Bend areas, but also potentially the Lakeview area. The applicant also estimates that 50 personnel would be hired and commute to the work site from nearby communities such as Christmas Valley and Silver Lake. The primary transportation and haul routes to the site (Christmas Valley area) would be from areas farther away and to the west of the analysis area, including La Pine, Bend, and Klamath Falls, including US-97 and State Route 31. Possible alternative routes to the Christmas Valley area include US-395 from the east, via US-20 to Bend. As discussed in Section III.A., *Proposed Facility Components*, of this order, there are three areas that make up the site boundary: Areas A, D, and the generation tie transmission line to connect these areas.¹⁴⁸ Access to Area A would primarily occur from Oil Dri Road (County Road 5-14G) on the east side of Area A, via County Road 5-12 to the north or Area A, and Fort Rock Road. Access to Area D would occur from Connley Lane (County Road 5-10C), via Fort Rock Road.¹⁴⁹

Sewers and Sewage Treatment

The proposed facility would not connect to any public or private sewer or sewage treatment facilities. Sewage generated during construction would be managed by onsite portable toilets, managed by a third-party contractor. An average of six portable toilets would be used onsite during construction year-round, and 12 portable toilets would be used during peak construction. Sewage generated during operation would be managed by an onsite septic system, requiring an Onsite Sewage Disposal Construction Installation Permit (sewage disposal permit). Sewage disposal permits are regulated by the Oregon Department of Environmental Quality (DEQ), but have been delegated to Lake County through the Lake County Building Department. As evaluated in Section IV.E. *Land Use* of this order, the Department recommends Council impose Land Use Condition 1, requiring that the certificate holder obtain all necessary local permits, including an onsite septic system permit prior to construction.

No municipal sewer service or septic tank service would be required.¹⁵⁰ However, the applicant may opt to not install a bathroom and sink for operational staff and site visitors to use, in which case applicant would contract with a local service provider for portable toilets and handwashing stations. Because public or private providers of sewage disposal facilities would not be utilized by the proposed facility, the Department recommends that the Council find that significant adverse impacts would not be expected.

Water Supply

Water used during construction would primarily be used for dust control, road construction and maintenance, and for washing of equipment and vehicles (i.e., washing concrete trucks after

¹⁴⁸ ASC Exhibit U contains information about potential impacts to public and serve provides. The ASC Exhibit has information about Area C within the site boundary. However, the applicant removed Areas C and B from consideration in the ASC, so it is not included in the evaluation int his order.

¹⁴⁹ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.6.

¹⁵⁰ OSCAPDoc4 ASC 22 OSC ASC Exhibit V 2019-10-17, Appendix V-1.

1 delivery of concrete). ASC Exhibit O also provides that water would be used for fire suppression
2 and potable water use. The applicant estimates that, under worst-case conditions during dry,
3 summer months; it will use up to 17,150,000 gallons of water annually. This equates to
4 approximately 68,600 gallons per day under worst-case conditions (34,300 gallons of water per
5 construction day under average working conditions). During construction, applicant estimates it
6 will use up to 34,300,000 gallons of water over the assumed two-year construction period
7 under worst-case conditions. See Table 16 in Section IV.Q.3., *Water Rights*, for a summary of
8 annual worst-case water use during construction and operation of the proposed facility. Water
9 for construction will primarily be purchased from municipal sources, which already have the
10 permits and water rights to the sources of water.

11
12 The applicant provided correspondence with the Christmas Valley Domestic Water Supply
13 District, which has agreed to provide water for construction and operation of the proposed
14 facility, as their system demand allows.¹⁵¹ However, the water district maintains its priorities are
15 to serve its water customers and provide water for fire suppression, they strongly advise the
16 applicant maintain a secondary water source in case the district has to discontinue use if there
17 is an issue with their system. The applicant explains in Exhibit O, that it will construct up to two
18 on-site wells, one at each O&M building which would be located on separate tax lots. The
19 applicant also explains it will implement measures to reduce the amount of water needed
20 during construction such as not completely clearing the site of vegetation which is expected to
21 help control dust. Additionally, wood waste will be chipped in the onsite grinder and used
22 (together with other measures, such as straw and silt fencing) for road and landscape
23 stabilization in order to reduce water needs for reduction of dust generation.

24
25 The applicant's proposal for use of groundwater from groundwater wells qualifies for an
26 exemption under ORS 537.545(1)(f).¹⁵² Under ORS 537.745, an onsite well drawing less than
27 5,000 gallons per day does not require a water right permit, therefore no registration,
28 certificate of registration, application for a permit, permit, certificate of completion or ground
29 water right certificate is required. See Section IV.Q., *Other Applicable Regulatory Requirements*
30 *Under Council Jurisdiction: IV.Q.3., Water Rights*, of this order, for additional discussion of the
31 exempt wells. Each O&M building, if on a separate tax lot, and on its own water system (unique
32 well, pump, and piping) would each qualify for its own commercial exemption of 5,000 gallons
33 per day.

34
35 During operation, the applicant expects to use approximately 1,364,000 gallons per year under
36 worst-case conditions, and 1,201,00 gallons of water per year under average conditions.¹⁵³
37 Water will primarily be used for solar panel washing activities, for potable water in the O&M
38 buildings, water use if septic systems are installed. The primary sources of water during
39 operation will be the one to two wells dug on site, which will each provide up to 5,000 gallons

¹⁵¹ OSCAPDoc4 ASC 15 OSC ASC Exhibit O 2019-10-17, Appendix O-1.

¹⁵²ORS 537.545(1)(f) "No registration, certificate of registration, application for a permit, permit, certificate of completion or ground water right certificate under ORS 537.505...is required for the use of ground water for:**
(f)Any single industrial or commercial purpose in an amount not exceeding 5,000 gallons a day..."

¹⁵³ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.2.

1 of water per day. For more information about the on-site wells and compliance with reporting
2 requirements for exempt wells to the Oregon Water Resource Department, see Section IV.Q.3.,
3 *Water Rights*. The applicant continues to explain that if, during operations, more water is
4 needed, they will purchase it from a private or municipal source that has the necessary permits.

5
6 Based upon the applicant's proposed water sources, the Department recommends that the
7 Council find that the construction and operation of the proposed facility are not likely to result
8 in significant adverse impacts to the ability of water service providers to provide water.

9 10 *Stormwater Drainage*

11
12 The proposed facility would be located in rural north Lake County and would not be connected
13 to publicly or privately managed stormwater providers. The applicant explains that the area
14 within the site boundary is relatively flat and stormwater is expected to infiltrate into the
15 ground or evaporate without the need for collection in stormwater swales or retention basins.
16 As described in ASC Exhibits I and U, construction related stormwater would be managed in
17 accordance with the requirements of National Pollution Discharge Elimination System (NPDES)
18 1200-C Construction Stormwater Permit and associated Erosion and Sediment Control Plan,
19 which establishes controls and best management practices (BMPs) to implement to minimize
20 potential for offsite contamination. For an additional discussion of potential impacts and
21 mitigation measures to reduce potential impacts see Section IV .D., *Soil Protection*, of this order
22 and Recommended Soil Protection Condition 1 requiring the submission of the DEQ-issued
23 NPDES 1200-C permit, including final Erosion Sediment Control Plan, and to conduct all
24 construction activities in compliance with the permit.

25
26 Operational stormwater would be minimal and would follow existing drainage patterns, which
27 would not be impacted by the proposed facility. Because the proposed facility would not
28 interconnect nor impact any public or private stormwater drainage systems, the Department
29 recommends Council find that the construction and operation of the proposed facility are not
30 likely to result in significant adverse impacts to the ability of stormwater drainage service
31 providers to provide water.

32 33 *Solid Waste Management*

34
35 Proposed facility construction, operation and decommissioning would result in solid waste
36 generation. The applicant estimates that 10-20 metric tons of solid waste would be generated
37 during construction of the proposed facility, consisting of solid waste, including discarded
38 construction materials, packaging materials, spent erosion control materials, wood form work,
39 scrap metal from damaged pilings or racking equipment, or unused wiring. ASC Exhibit U
40 describes that there will be large volumes of cardboard generated during construction which
41 would be consolidated on site and then recycled. Construction waste would be stored in onsite
42 debris bins, including separate bins for hazardous and non-hazardous materials. Materials

1 suitable for recycle include some packaging materials, metals, glass, paper, wood and concrete,
2 which the applicant commits to recycling to the extent possible.

3
4 To handle transport of solid construction waste and recycling materials generated during
5 construction, the applicant would contract with a local waste management provider, likely
6 Lakeview Sanitation, for solid waste pickup and removal service. The most likely end recipient
7 of non-hazardous solid waste from construction will be the Lake County Landfill in Lakeview,
8 which is outside the analysis area. In ASC Exhibit U, the applicant references verification of this
9 waste disposal service provider as having adequate capacity to assist with disposing waste from
10 the facility construction. Due to the large volumes of corrugated cardboard expected from
11 construction of the proposed facility, cardboard will likely be delivered to Mid Oregon Recycling
12 in Bend, which is also outside the analysis area. Cardboard can also be delivered to the Knott
13 Landfill Recycling and Transfer Station near Bend, but only for disposal in the landfill.¹⁵⁴

14
15 As presented in ASC Exhibit U, the applicant commits to minimizing onsite solid waste through
16 appropriate material estimating and recycling, to the extent feasible. In addition, to ensure
17 onsite waste is minimized to the extent feasible, the Department recommends Council impose
18 Waste Minimization Condition 1 under the Waste Minimization standard (see Section IV.N.,
19 *Waste Minimization*, of this order), which would require the applicant develop and implement a
20 Solid Waste Management Plan during all phases of construction, operation and
21 decommissioning. The applicant also provides confirmation from Lakeview Sanitation (ASC
22 Exhibit V, Appendix V-1) confirming they can handle the waste and sanitation needs for
23 construction and operation of the proposed facility. Therefore, based on the quantity and type
24 of solid waste generated by the proposed facility, and compliance with the recommended
25 waste minimization condition, the Department recommends Council find that the construction
26 and operation of the proposed facility are not likely to result in significant adverse impacts to
27 the ability of solid waste disposal providers to dispose generated waste.

28 29 *Traffic Safety*

30
31 Potential impacts from the proposed facility on the ability of public and private providers of
32 traffic safety are based on the volume and weight of vehicles, including worker vehicles and
33 trucks delivering equipment and materials, and the capacity and existing condition of the
34 transportation routes that would be utilized during construction and operation to support the
35 increase in traffic volume and type of use.

36
37 Traffic in the analysis area will temporarily increase during construction of the proposed facility
38 due to material deliveries and personnel accessing the site. The applicant contracted with
39 Kittelson & Associates, a Transportation Engineering firm, to evaluate the potential traffic
40 impacts associated with the construction and operation of the proposed facility, this evaluation
41 is included in ASC Exhibit U, Appendix U-1 and as Attachment U-1 Kittelson Traffic Impact
42 Assessment, attached to this order. Attachment U-1 provides a traffic evaluation and activities

¹⁵⁴ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.4.4.

proposed by the applicant or its contractors during construction, information is based from the 2016 Lake County Transportation System Plan (TSP), which was also submitted to the Department by Lake County during the NOI phase in January 2018.¹⁵⁵

As discussed at the beginning of this *Public Services* section, the primary transportation routes to the site will be from areas to the west of the analysis area, including La Pine, Bend, and Klamath Falls, using US-97 and State Route 31 to reach the Christmas Valley area. Possible alternative routes to the Christmas Valley area include US-395 from the east, via US-20 to Bend. Construction-related materials will be delivered by haul trucks primarily using US-97 from the Bend and Klamath Falls areas, and State Route 31 from La Pine. The primary and secondary access route descriptions and road conditions described in the Lake County TSP for each area are presented below in Table 8: *Roadway Network Characteristics of Proposed Access Routes*. According to the Lake County TSP, Lake County struggles to maintain roadways to acceptable standards, and cites that ongoing maintenance funding is a challenge for the County.¹⁵⁶

Table 8: Roadway Network Characteristics of Proposed Access Routes

Road	Functional Classification	Access use	Lake County TSP Road Conditions ¹
County Road 5-10 (Fort Rock Road)	Major Collector	Provides main access to the communities of Fort Rock and Christmas Valley to/from OR 31	Good. Fort Rock Rd. between OR 31 and US 395 are not currently designated as freight routes but are often used by freight vehicles.
Country Road 5-12	Minor Collector	Provides access from La Pine/Fort Rock area to Area A	Poor.
County Road 5-12 A	Local Road	Gravel road. Access to Area A	NA
County Road 5-10 C (Connley Lane)	Local Road	Local access road for properties east of Country Road 5-10. Does not provide through connections to Area A. Access to Area D (Substation) and two-mile 115 kV Transmission Line	Bad.

¹⁵⁵ OSCNOIDoc14-13 Lake County SAG Comments Transportation System Plan 2016-06.

¹⁵⁶ OSCNOIDoc14-13 Lake County SAG Comments Transportation System Plan 2016-06.

Table 8: Roadway Network Characteristics of Proposed Access Routes

Road	Functional Classification	Access use	Lake County TSP Road Conditions ¹
County Road 5-14 (Christmas Valley Road)	Major Collector	Provides main access to, from and through Christmas Valley.	Good. Christmas Valley Rd. between OR 31 and US 395 are not currently designated as freight routes but are often used by freight vehicles.
County Road 5-14 G (Oil Dri Road)	Local Road	Local access road in the vicinity of the site. Provides connection between Christmas Valley Road and Country Road 5-12 A.	Poor. Blowing dust and sand can limit visibility.

¹Source: OSCNOIDoc14-13 Lake County SAG Comments Transportation System Plan 2016-06. Designations of road conditions are rated from Good, Fair, Poor, and Bad.

Because approximately two-thirds (100) of the workers are expected to commute from areas such as La Pine and Bend, an increase in workers commuting from outside the analysis area would have the potential to increase traffic on the roads within the analysis area. During peak construction periods, 150 construction employees will be on site daily with an average vehicle occupancy of 1.25 people per car, which equals 120 vehicle trips to and 120 trips from the site per day on average, for a total of 240 vehicle trips per day during peak worker levels, not including delivery trucks as discussed below. During average construction levels, 120 construction employees will be onsite daily with an average vehicle occupancy of 1.25 people per car, which equal 96 vehicle trips to and 96 trips from the site per day on average, for a total of 192 vehicle trips per day during average worker levels.

The applicant's traffic evaluation also includes estimates for the construction related deliveries such as water, solar panels, racks, and posts for panels during construction. The applicant estimates that truck deliveries to the site boundary would include 20 to 40 trips during the workday, 2 to 4 of which are expected per hour throughout the estimated 10-hour workday. The applicant provides that this results in an average of 60 truck trips per day (30 in and 30 out of the proposed facility site boundary). The Department notes that using these totals, and during peak construction truck deliveries may result in 80 trips per day (40 in and 40 out of the proposed facility site boundary). Table 9: *Expected Trip Generation During Peak Construction Levels* below represents the total expected trips generated by workers and deliveries during peak construction.¹⁵⁷

¹⁵⁷ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, Appendix U-1. Table 1 of Appendix U-1 provides the expected trip generation during average construction levels, the Department provides the trip estimates in Table 9 based on the applicant's estimates in ASC Exhibit U during peak construction.

Table 9: Expected Trip Generation During Peak Construction Levels

Trip Description	Daily Trips (round trip)	Trips During AM Commute (one way)	Trips During PM Commute (one way)
Worker Trips	240	120	120
Delivery Trips	160	80	80
Total	400	200	200

As shown in Figure 2 of Attachment U-1, the primary and secondary access routes to the proposed site boundary will generally follow major Lake County travel routes.¹⁵⁸ It is noted, however, that the primary access route to Area A for those traveling to/from La Pine would add turning movements to the County Road 5-10 (Fort Rock Road)/County Road 5-12 A intersection. The configuration of this intersection and the route to/from Area A is shown in Figure 3 of Attachment U-1 and shows vehicles traveling to/from Area A would need to turn off County Road 5-10 (Fort Rock Road) at the start of a horizontal curve, in order to continue traveling east along County Road 5-12.¹⁵⁹

Impacts to traffic service providers (public road department and law enforcement) associated with construction of the proposed facility ~~is~~ could include increased fugitive dust. Dust generated from construction activities and vehicles may aggravate existing conditions where blowing dust limits visibility, especially on County Road 5-14 G (Oil Dri Road). The applicant describes in the ASC it will water roads for dust suppression, especially during dry months. The applicant also commits to adhering to best management practices outlined in the Dust Abatement and Management Control Plan, as provided in Attachment U-4 of this order, such as employing a designated fugitive dust control coordinator to manage the requirements of the draft plan and monitor dust conditions. The draft plan includes speed limits and requirements for earth moving activities and hauling. In addition, it establishes a hotline program, advertised through facility signage located on the perimeter fence. Based on the applicant's representations and to minimize dust-related impacts on roads used during facility construction, the Department recommends Council impose Public Services Condition 1 and 2, as follows:

Recommended Public Services Condition 1: Prior to construction of the facility, the certificate holder shall:

- a. Place a roadside sign along North Oil Dri Road and at facility entrance, including the contact information (cell number) for an onsite representative for dust complaints.
- b. Finalize the Dust Abatement and Management Control Plan included as Attachment U-4 to the Final Order on the ASC, in consultation with the Department.

¹⁵⁸ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, Appendix U-1, Figure 2. Note that the Kittelson Traffic Memorandum, including Figure 2, contains previously proposed Area C in its evaluation, however the applicant has removed this area from the ASC evaluated by EFSC.

¹⁵⁹ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, Appendix U-1, p. 6.

Recommended Public Services Condition 2: During construction of the facility, certificate holder shall:

a. Implement the requirements of the Dust Abatement and Management Control Plan, as finalized per sub(b) of the condition.

b. Report to the Department, as soon as possible, any reported dust nuisance complaints received by the onsite representative, including date, time, complainant name and measures implemented to resolve the issue, or explanation if measures not implemented [OAR 345-025-0006(6)].

To minimize and avoid potential collisions or traffic safety issues at this intersection, the applicant states it will install permanent new traffic signs at the intersection of Fort Rock Road and County Road 5-12 to improve traffic safety during construction and operation and will coordinate with Lake County to define stopping locations and establish clear right-of-way and turning movement priority. The Department notes that the applicant must coordinate with Lake County to install or provide funding for the sign installation, as included in the Recommended Public Services Condition ~~34~~ below for the inclusion in the Construction Traffic Management Plan. Detailed figures of the recommended sign placement are in Appendix U-1 Figures A1 and A2.

The applicant also states that it will reduce the risk of accidents by posting signs for low-speed zones near access points, route intersections and pull-outs and require speed limits within the site boundary. The discussion in the Lake County TSP regarding the condition of rural county roads within the project area indicates concerns with the conditions and safety issues associated roads. Further, during the NOI comment period, the Department received several comments about concerns with visibility, general road conditions, and equipment on roadways posing access and safety issues. The Lake County Road Department (or Lake County Road Superintendent) is responsible for maintaining and improving roadways within the County, and do not have sufficient resources to ensure County roadways are not impacted by construction of the proposed facility. Therefore, as provided in the Construction Traffic Management Plan, the Department recommends the applicant execute a road use agreement or funding agreement with Lake County to ensure that damage or wear to state or county roads that is caused by facility construction related traffic and road use is repaired by the applicant. The agreement would include financial security as well as a system to evaluate conditions and monitor road conditions.

Based on applicant proposed conditions, and Department recommendations to reduce potential impacts to traffic service providers for impacts from proposed facility construction, the Department recommends the Council require the submission and compliance with a final a Construction Traffic Management Plan by imposing the following condition¹⁶⁰:

¹⁶⁰ In comments on the record of the DPO, Lake County Board of Commissioners expressed support of the proposed facility and confirmed that the county had the tools to supervise roads and that the applicant had committed to repairing any construction related road damage. OSCAPDoc4-8 DPO Special Advisory Group Comment Winters 2020-05-18.

Recommended Public Services Condition ~~31~~:

- a. Prior to construction of the facility, the certificate holder shall submit to the Department for review and approval in consultation with Lake County Planning and County Road Department, a Construction Traffic Management Plan that includes, at a minimum, the best management practices, County road use agreement, and traffic sign coordination provided in Attachment U-2 of the Final Order on the ASC;
- b. During construction of the facility, the certificate holder shall implement the Construction Traffic Management Plan, as approved by the Department in consultation with Lake County.

[GEN-PS-01]

During operation, there will be approximately 6 to 10 full-time or part-time workers employed to support operations of the solar modules, substation and possible battery storage facilities. This results in up to 6 to 10 one-way passenger vehicle or light truck trips to and from the site per day, totaling 12 to 20 one-way vehicle trips per workday. Truck deliveries will occur infrequently during operation, on an as-needed basis, for delivery of equipment or materials to the site. These totals are not expected to significantly impact providers of traffic services within the analysis area.

Based on compliance with the recommended Public Service Condition 1, and the temporary nature of potential construction-related impacts, the Department recommends Council find that the construction and operation of the proposed facility are not likely to result in significant adverse impacts to the ability of transportation providers to provide traffic safety.

Air Traffic

Within the Public Services analysis area, there are several public and private airstrips which provide access for general aviation. Potential impacts to navigable airspace from the proposed facility could result from panel glare, impacting pilots vision ability. The applicant identifies in ASC Exhibit E that a glare analysis would be completed, pursuant to Federal Aviation Act (FAA) of 1958 (49 U.S.C. Section 44718) 14 Code of Federal Regulations Section 77, prior to construction to ensure that the proposed facility receives a Determination of No Hazard from the Federal Aviation Administration. Recommended Land Use Condition 5 would require that, prior to construction, the certificate holder identify all State and Federal permits and approvals necessary for the facility, and that copies of such permits and approval be provided to the Department. If an FAA Determination of No Hazard is required for the facility, evidence would be provided through the recommended condition.

Police and Fire Protection

Police

As discussed in the preceding sections, of the 150 estimated maximum workers on site during peak construction approximately two-thirds (100) workers are expected to commute from

1 areas such as La Pine and Bend, which are outside the analysis area. Approximately 50 workers
2 are assumed to travel to the work site from within the analysis area. During peak construction
3 periods, 150 construction employees will be on site daily with an average vehicle occupancy of
4 1.25 people per car, which equals 120 vehicle trips to and 120 trips from the site per day on
5 average, for a total of 240 vehicle trips per day during peak worker levels. Including the
6 estimates for truck deliveries, the total amount of trips to and from the work site is
7 approximately 400 trips per day. An increase in workers commuting and deliveries from outside
8 the analysis area would have the potential to increase traffic and traffic safety risks on the
9 roads within the analysis area.

10
11 Law enforcement and traffic safety services within the analysis would be primarily from the
12 Lake County Sheriff's Office, with secondary service provided by the Oregon State Police, as
13 needed. The Lake County Sheriff's Office has an office in Silver Lake and an annex in the town of
14 Christmas Valley, and the Oregon State Police have offices in La Pine and Lakeview. In ASC
15 Exhibit U, Appendix U-2, the applicant provides a letter of correspondence from the Lake
16 County Sheriff's Office that they provide primary law endorsement services in Fort Rock near
17 the proposed solar site. The letter also requests the applicant update the Sheriff's Office about
18 size, location, personnel and possible service needs from construction of the proposed facility.
19 Because this is the primary law enforcement agency that would service the proposed facility in
20 the event of an emergency or incident, the Department recommends the applicant provide this
21 information to the Sheriff's Office, as required in Recommended Public Services Condition 42
22 below and added to the Attachment U-3 Draft Fire Protection and Emergency Response Plan.
23 The applicant does not provide verification of service to potential risks at the facility from the
24 Oregon State Police, whose offices in La Pine and Lakeview are outside the 15-mile service area.

25
26 As discussed in the traffic service provider section above, in ASC Exhibit U, and in
27 Recommended Public Services Condition 1, the applicant identified a potential measure that
28 could increase traffic safety during construction and operation at the intersection of Fort Rock
29 Road and County Road 5-12. Further, the applicant proposes to use measures to reduce the
30 amount of fugitive dust caused by construction of the proposed facility, which would
31 potentially impact visibility of drivers within the analysis area.

32
33 The approximately 6 to 10 full-time or part-time workers employed to support operations
34 would not be anticipated to impact law enforcement providers within the analysis area.

35 *Fire*

36
37
38 The proposed facility could result in increased fire risk within the analysis area during both
39 construction and operation. Construction-related fire risks include accidental grass/shrub fires
40 primarily caused by running vehicles and equipment. The risks of fires during operation of the
41 proposed facility would be the potential for electrical fires from electrical equipment associated
42 with the solar modules and collector connections, collector substations, transmission line, and
43 the step-up substation components. In ASC Exhibit U, the applicant discusses operational fire

1 risk being caused from outside sources or from possible arcing faults at electrical connects. The
2 three common types of arch faults that can cause a fire are:

- 3 • A series arc occurs when a connection is broken while the PV equipment is providing
4 electric current. These connections may include soldered joints within the module,
5 compression type wire connections, connectors used on the wire leads attached to PV
6 modules, connections in direct current (dc) isolators and inverters, any dc circuitry in the
7 inverter, or any of the dc cabling in the string circuit.
- 8 • A parallel arc occurs when there is a breakdown in the insulation system and current
9 flows between positive and negative. The insulation between the two wires of opposite
10 polarity can become ineffective due to animals chewing on them, UV breakdown,
11 embrittlement, cracking, moisture ingress, and mechanical damage. Parallel arc faults
12 can continue along the conductors towards the array, burning materials along the way.
- 13 • A ground fault only requires the failure of one insulation system to ground. This can
14 occur in the solar module frame, the solar array racking, or a grounded surface.

15
16 The Christmas Valley Rural Fire Protection District (CVRFPD) is located within the analysis area
17 for the EFSC review, however, in a letter from the CVRFPD, they state that the current site
18 boundary for the proposed facility is not within the jurisdiction of the District. The letter from
19 CVRFPD does indicate that the applicant may request to annex the location of the proposed
20 facility into the service area of the District, however, the applicant states in ASC Exhibit U, that
21 it does not plan to apply for annexation at the time of application submittal.¹⁶¹ The CVRFPD
22 does indicate that if there was a structural fire within the site boundary, the CVRFPD may
23 respond, but only on a voluntary basis. They indicate that in the event of a brushfire of wildland
24 fire, the Bureau of Land Management (BLM) and the High Desert Rangeland Fire Protection
25 Association (RFPA) would likely respond, with the CVRFPD.

26
27 The applicant does not provide verification of service from the BLM but does include
28 correspondence from the RFPA in ASC Exhibit U, Appendix U-2. The RFPA is a non-profit,
29 volunteer organization that is governed and directed by its members and managed by a board
30 of directors that services the location of the proposed facility. Using grant funds, member fees,
31 and donations, the RFPA obtains equipment through the Federal Excess Personal Property
32 Program for the prevention and suppression of rural and wildland fires and prescribed
33 burning.¹⁶² The applicant anticipates applying for membership in the RFPA and to make an
34 appropriate donation, the RFPA then would work with the applicant to locate fire suppression
35 equipment at the proposed facility. Through its participation in the High Desert RFPA, and the
36 applicant will have access to federal excess personal property (FEPP), including excess U.S.
37 Forest Service wildland fire engines and equipment.¹⁶³ The equipment, along with nearby
38 equipment owned by other RFPA members, would be available for quick response to fires. The
39 most likely location will be at the eastern proposed facility site access gate just off Oil Dri Road.
40 Alternatively, or perhaps in addition, equipment may be stored just off Connley Lane. Members

¹⁶¹ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.7.

¹⁶² OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.7.

¹⁶³ OSCAPDoc20 ASC Applicant Responses to Additional RAIs_Combined 2020-02-24 to 2020-03-09.

1 of the RFPA agree to respond to fires in the service territory, which would then include the
2 applicant.

3
4 The applicant discusses additional measures it will implement to reduce the risk of fires from
5 and to the proposed facility potentially impacting nearby fire service providers. The applicant
6 states it will adhere to all federal, state, and local requirements for fire safety, including Oregon
7 Fire Code sections 605.12.1 through 605.12.3 and National Fire Protection Association Standard
8 70 (the National Electric Code).¹⁶⁴ Further, the perimeter road will be at least 20 feet wide and
9 the inter-array access roads will be at least 12 feet wide, to allow for access by emergency
10 vehicles. Any small or early state fires are expected to be controlled and monitored by trained
11 on-site staff. In most cases, the applicant expects trained, on-site staff to contain fires (but not
12 extinguish them) and let them burn out. In response to additional information requests from
13 the Department, the applicant provided its SOLV Vegetation Management and Fire Prevention
14 Plan. SOLV, Swinerton Builder's will conduct vegetation and electrical equipment inspections
15 (visual inspection and infra-red scanning, as appropriate for the particular area) and vegetation
16 would be managed with mowing and spraying as necessary to avoid any hazardous conditions.
17 SOLV will also be notified via the SCADA system, (as discussed in Section III.A., *Proposed Facility*
18 *Components*) which provides constant electrical equipment monitoring.

19
20 Across several ASC exhibits, the applicant represents fire prevention and emergency control
21 measures that would be enacted during construction and operation of the proposed facility.
22 Based on representations in the ASC and comments from service providers, the Department
23 consolidated fire response and prevention measures and emergency response measures into a
24 Draft Fire Protection and Emergency Response Plan, as provided in Attachment U-3 of this
25 order. The Department includes in the plan that the applicant either submits an application for
26 annexation to the Christmas Valley Rural Fire Protection District or becomes a lifetime member
27 of the Rangeland Fire Protection Association, to provide fire protection and response to the
28 site, and provides verification to the Department. To ensure the applicant implements
29 measures to minimize impacts to fire and law enforcement agencies, the Department
30 recommends Council impose the following condition:

31
32 **Recommended Public Services Condition ~~42~~:**

- 33 a. Prior to construction of the facility, the certificate holder shall submit a Final
34 Construction Fire Protection and Emergency Response Plan to the Department,
35 consistent with the components included in the draft plan provided in Attachment U-3
36 of the Final Order on the ASC, for review and approval. The plan shall also include an
37 updated Emergency and Fire contact list.
- 38 b. Prior to operation of the facility, the certificate holder shall submit an Operational Fire
39 Protection and Emergency Response Plan to the Department, consistent with the
40 components included in the draft plan provided in Attachment U-3 of the Final Order on
41 the ASC). The plan shall also include an updated Emergency and Fire contact list.
- 42 [GEN-PS-02]

¹⁶⁴ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.7.

1 For the reasons stated in this section, construction or operation of the proposed facility is not
2 anticipated to have a significant adverse impact on the ability of the Lake County sheriff's
3 office, the Christmas Valley Rural Fire Protection District, or the local RFP to provide services
4 in the analysis area.

5
6 Based on compliance with the recommended Public Services Condition ~~42~~, the Department
7 recommends Council find that the construction and operation of the proposed facility is not
8 likely to result in significant adverse impacts to the ability of police protection or fire services
9 providers to provide services.

10 11 *Housing*

12
13 The applicant anticipates being able to hire some construction workers who permanently reside
14 within the analysis area, however, to estimate a "worse-case" scenario of potential impacts to
15 public and private housing providers, the applicant's evaluation is of a work force that temporarily
16 resides within and outside of the analysis area. Of the 150 workers expected during peak
17 construction periods, the applicant estimates that approximately one-third (50) of workers to
18 temporarily reside within the analysis area in nearby communities, such as Christmas Valley, Fort
19 Rock, and Silver Lake. The remaining two-thirds (100) of workers will likely travel to the work site
20 from outside the analysis area, including the cities of La Pine and Bend. The applicant assumes that
21 the average household size during construction will be 2.0 persons, up to 300 temporary new
22 residents may be associated with construction of the proposed facility.¹⁶⁵ Actual numbers of new
23 residents would likely be lower, depending on the amount of local, qualified staff hired. Temporary
24 construction workers within and outside of the analysis area are expected to stay in travel
25 trailer/recreational vehicle (RV) parks, motels, hotels, or short-term rentals. Some workers may
26 secure short-term rentals such as apartments or houses or already live in a nearby community and
27 would commute to the work site.

28
29 In Lake County, Oregon Housing and Community Services reports that vacancy rates between 2011
30 and 2015 were 7.1 percent for rental units in Lake County, and the United States Census Bureau
31 notes that there was a total of 4,519 housing units in Lake County in 2017.¹⁶⁶ Within the 15-mile
32 analysis area, there are approximately 34 hotel rooms in the communities of Christmas Valley and
33 Silver Lake, and approximately 64 travel trailer/RV park sites in the towns of Christmas Valley, Silver
34 Lake, and Fort Rock. There are also at least 13 travel trailer/RV parks with approximately 385 trailer
35 sites as well as at least nine non-luxury, traveler hotel/motel options with approximately 150
36 rooms available within a 1-hour driving distance of the location of the proposed facility.

37
38 Of the six to 10 permanent employees required for operation of the proposed facility, the applicant
39 assumes some will already reside within the analysis area or within a commutable distance to the
40 analysis area. If operational employees permanently relocated to within the analysis area or within
41 a nearby community, it is not anticipated to have an impact on housing providers.

¹⁶⁵ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.5.

¹⁶⁶ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.4.5.

Based on the applicant's information in the ASC and availability of temporary housing within the analysis area and within driving distance to the proposed facility, the Department recommends Council find that construction and operation of the proposed facility are not likely to result in significant adverse impacts to the ability of housing providers to provide housing.

Healthcare and Schools

Healthcare

On-site emergencies may occur during construction and operation of the proposed facility. Accidents that occur on site or on public roads will require use of services from the North Lake County Emergency Medical Service in the community of Christmas Valley, which transports patients to Bend by ambulance; additionally, services from Air Ambulance, which also transports patients to Bend, may be used for accidents on public roads. A description of health care providers within the analysis area and hospitals with the capability to provide more advance trauma medical services are provided below in Table 10: *Health Care Providers within Analysis Area*.

Table 10: Health Care Providers within Analysis Area

Provider	Distance from Site Boundary
North Lake County Emergency Medical Services – Ambulance service to St. Charles Health System Hospital	Christmas Valley, Oregon (11 miles from Facility)
La Pine Community Health Center – No urgent care available at this facility	Christmas Valley, Oregon (16 miles from Facility)
St. Charles Health System Hospital – Level II Trauma Center	Bend, Oregon (83 miles from Facility)
Lake District Hospital – Level IV Trauma Center	Lakeview, Oregon (105 miles from Facility)
Oregon Health and Science University – Level I Trauma Center	Portland, Oregon (258 miles from Facility)
Air Ambulance – Applicant will contract with Air Ambulance for emergency helicopter medical transport. The Air Ambulance is able to utilize the Christmas Valley Airport.	Lands at Christmas Valley Airport

Construction workers with minor injuries will be treated on site or transported by vehicle to La Pine Community Health Center in the community of Christmas Valley. Construction workers with moderate injuries will be transported by vehicle to St. Charles Medical Center in Bend. For severe injuries, the applicant may require the services of the Air Ambulance to transport patients to Bend.

The applicant maintains that there will be trained emergency medical technicians on-site during construction and will arrange for medical transport during medical emergencies that occur at the proposed facility. For accidents that occur on the site, or on the travel and access routes to the site

boundary, construction workers would be transported to the type and size of facility that is best able to handle their type of injury. These provisions are included in the draft Fire Protection and Emergency Response Plan Attachment U-3, to this order, to reduce the potential impacts to health service providers. The applicant provides reference of correspondence with the Christmas Valley/North Lake Chamber of Commerce) indicated that the North Lake County Emergency Medical Services (ambulance service) and the Air Ambulance will provide primary emergency medical transport service at the location of the proposed facility.¹⁶⁷

During operation, emergency medical technicians will not be retained onsite, and the applicant will rely on services from the North Lake County Emergency Medical Service and from Air Ambulance in the rare occasion a medical emergency occurs.

Proposed facility construction could result in increased demand of health care providers. However, due to the relatively small number of new temporary residents and new permanent residents within the analysis area, significant new demands are not expected from health care facilities that serve the area. Therefore, no significant adverse impact on the ability of communities to provide health care is anticipated as a result of proposed facility construction or operation.

Schools

The applicant estimates that approximately 15 percent of the average work force would bring families with at least one school-aged child (children up to the age of 18). It is expected that one-third (6 students) would require schooling within the analysis area, and two-thirds (12 students) in the La Pine area, if families relocated with their families. It is anticipated that some children would be home-schooled, some may attend school in the Christmas Valley area at the North Lake County School or in La Pine, and some children may attend the private Solid Rock Christian School in the community of Christmas Valley. Based on conversations referenced by the applicant with a representative at the North Lake School District, the anticipated number of additional students attending school due to construction of the proposed facility will not exceed the school's capabilities.¹⁶⁸ As discussed in Section IV.E.3., *Goal 3 Exception*, portion of the *Land Use* section in this order, based on an applicant-representation to provide local economic benefits as a result of the construction and operation of the proposed facility, the Department recommends Land Use Condition 7, which includes a one-time contribution to the North Lake County School District based on \$10,000 per MWac capacity, based on final design of the facility.

Of the anticipated six to 10 staff required for operation of the proposed facility, some may reside within the analysis area, in towns such as Christmas Valley, Fort Rock, and Silver Lake, but others will likely reside in the La Pine area or even the Bend area. The applicant notes that even if all operational personnel have school-aged children, the increase in the number of school-aged children will likely be similar to or smaller than during construction. Due to the small number of expected school-aged children, adverse impacts on the schools are not

¹⁶⁷ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.7.

¹⁶⁸ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.7.

1 expected. Therefore, the Department recommends Council find that construction and
2 operation of the proposed facility are not likely to result in significant adverse impacts to the
3 ability of school providers to provide schools.

4 5 **Conclusions of Law**

6
7 Based on the foregoing analysis, compliance with the recommended conditions, and in
8 compliance with OAR 345-022-0110(2), the Department recommends Council find that the
9 proposed facility would comply with the Council's Public Services Standard.

10 11 **IV.N. Waste Minimization: OAR 345-022-0120**

12
13 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the*
14 *Council must find that, to the extent reasonably practicable:*

15
16 *(a) The applicant's solid waste and wastewater plans are likely to minimize*
17 *generation of solid waste and wastewater in the construction and operation of the*
18 *facility, and when solid waste or wastewater is generated, to result in recycling and*
19 *reuse of such wastes;*

20
21 *(b) The applicant's plans to manage the accumulation, storage, disposal and*
22 *transportation of waste generated by the construction and operation of the facility*
23 *are likely to result in minimal adverse impact on surrounding and adjacent areas.*

24
25 *(2) The Council may issue a site certificate for a facility that would produce power from*
26 *wind, solar or geothermal energy without making the findings described in section (1).*
27 *However, the Council may apply the requirements of section (1) to impose conditions on*
28 *a site certificate issued for such a facility.*

29 ***

30 31 **Findings of Fact**

32
33 The Waste Minimization Standard requires the Council to find that the applicant would
34 minimize the generation of solid waste and wastewater, and that the waste generated would
35 be managed to minimally impact surrounding and adjacent areas. Pursuant to OAR 345-022-
36 0020(2), the Council may issue a site certificate for a solar facility without making findings
37 regarding the Waste Minimization standard; however, the Council may impose site certificate
38 conditions based upon the requirements of the standard.

39 40 *Solid Waste*

41
42 Construction and operation of the proposed facility would result in the generation of solid
43 waste. However, ASC Exhibit V explains that the applicant will manage solid waste in a manner
44 that will minimize the generation of solid waste and would result in minimal impacts on

1 surrounding and adjacent areas, as well as manage solid waste consistent with the Lake County
2 Water Waste Ordinance (Ordinance 23).¹⁶⁹

3
4 The applicant estimates that 10-20 metric tons of solid waste would be generated during
5 construction of the proposed facility.¹⁷⁰ The solid waste generated include general construction
6 debris such as scrap metal (steel, copper, and aluminum), packing materials (corrugated
7 cardboard packaging for new solar panels), office waste, wood (pallets), waste concrete, and
8 excavated soil. Erosion control materials, such as straw and silt fencing, would also be
9 generated during construction. The waste generated from construction may also include small
10 amounts of hazardous waste, such as oil rags, spent small appliance batteries (e.g., from
11 flashlights or radios), and equipment and vehicle maintenance solvents and oils.

12
13 To minimize the amount of solid waste generated, during construction, a grinder will be kept on
14 site and pallets and other wood waste would be ground and used on site for soil stabilization
15 and ground cover, as necessary. In addition, a cardboard bailer will be kept on site during
16 construction and waste cardboard will be bailed and deposited with a local contractor, hauled
17 or delivered to a local sanitation provider or recycler. Non-hazardous solid waste would likely
18 end up with Lakeview Sanitation in the Lake County landfill. Corrugated cardboard will likely be
19 delivered for recycling to Mid Oregon Recycling in Bend. Additional discussion of waste disposal
20 and recycling facilities within the analysis area, see Section IV.M., *Public Services*. Excavated soil
21 would be used on site as fill or transported off site for disposal, and waste concrete would be
22 disposed of as solid waste, recycled, or used on site as fill, as appropriate.

23
24 The applicant describes that waste generated during construction would be minimized by
25 implementing efficient construction practices and ensuring that detailed amounts of materials
26 are delivered. Materials used during construction will be recycled or re-used as feasible. Waste
27 that can be recycled includes metals, glass, paper, and yard debris. The applicant expects that
28 Lakeview Sanitation (or a similar provider) would be expected to handle waste disposal and
29 recycling for the proposed facility during construction and be responsible for providing and
30 disposing of wastewater associated with portable toilets and handwashing stations used during
31 construction of the facility.

32
33 During operation, the primary waste generated would be office waste in the operations and
34 maintenance building(s) and packaging from equipment used for replacements and repairs,
35 including cardboard from replacement solar panels. Office waste will be composed primarily of
36 paper, packaging, and food scraps. During operation, the applicant estimates that in ASC Exhibit

¹⁶⁹ Based on information provided by applicant, the Lake County Solid Waste Management Plan was prepared in 2005 but was not adopted by ordinance and is not used as a binding planning document.

¹⁷⁰ OSCAPPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.4.

1 U that approximately 300 pounds or less of waste per month, and less than 220 pounds of
2 hazardous waste per month will be generated.

3
4 The applicant explains in ASC Exhibit G that, during operation, any oils, lubricants, and solvents
5 on site would be stored within covered containers such as work trailers and Conex boxes to
6 prevent incidental spills or drips from reaching the environment. Fuels would be stored in
7 mobile, double-walled tanks. The hazardous materials required for maintenance will be stored
8 in accordance with U.S. Environmental Protection Agency and U.S. Occupational Safety and
9 Health Administration regulations, as applicable.¹⁷¹ Safety data sheets of each hazardous
10 material would be stored onsite. Properly trained operational personnel would be responsible
11 for managing the handling, storage, transport, and disposal of hazardous materials. Hazardous
12 materials would be stored inside the O&M building(s) and substation(s) and hazardous material
13 containment and cleanup kits would be maintained and available on site to minimize the
14 impact resulting from a spill. These measures are discussed in ASC Exhibit G and the
15 Department recommends they be included in the final Spill Management Plan (a draft of which
16 is included as Attachment I-2 to this order). See also Recommended Soil Protection Condition 2
17 in Section IV .D., *Soil Protection*.

18
19 The applicant states that solar PV modules to be installed on the project are not classified as
20 hazardous waste. During operation and facility retirement, some solar PV panels may need to
21 be replaced, the applicant explains that many solar module manufacturers have “take-back”
22 and recycling programs for their products, but that panels that are nonfunctional or are retired
23 would be recycled to the maximum extent feasible through the Solar Energy Industries
24 Association National PV Recycling Program or a similar program. Battery components, including
25 the non-hazardous electrolyte fluid, would also be recycled and disposed of in accordance with
26 the manufacturer’s instructions at a permitted facility during operation and retirement of the
27 proposed facility.

28
29 During operation of the proposed facility, cardboard and packaging waste would either be
30 delivered to be recycled or collected by a local waste disposal provider, likely Lakeview
31 Sanitation or Mid Oregon Recycling. As noted in Section IV.M., *Public Services*, the applicant
32 provides documentation from Lakeview Sanitation of their ability and capacity to dispose of and
33 recycle waste associated with the proposed facility.

34
35 At the time of facility retirement and decommissioning, as discussed further in Section IV.G.,
36 *Retirement and Financial Assurance*, aboveground equipment would be removed and sold for
37 scrap, reused or recycled, or disposed of at a local landfill. Electrical cables would be rendered
38 inert; aboveground cables would be removed, and underground cables would be left in place if
39 below three feet below ground. The applicant maintains that similar procedures for minimizing,
40 recycling, and disposing of solid waste during construction will be employed during retirement
41 of the proposed facility.

42

¹⁷¹ OSCAPPDoc4 ASC 07 OSC ASC Exhibit G 2019-10-17, G.3.

1 Based on the applicant's proposed solid waste minimization measures, the Department
2 recommends Council impose the following condition:

3
4 **Recommended Waste Minimization Condition 1:** During construction, operation, and
5 retirement of the facility, the certificate holder shall develop and implement a Solid Waste
6 Management Plan that includes at a minimum the following measures:

- 7 a. Measures for recycling steel and other metal scrap;
8 b. Measures for reusing or recycling wood waste;
9 c. Measures for recycling packaging wastes such as paper and cardboard;
10 d. Collecting non-recyclable waste for transport to a local landfill by a licensed waste
11 hauler;
12 e. Segregating hazardous wastes such as oil, oily rags and oil-absorbent materials, mercury
13 containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed
14 firm specializing in the proper recycling or disposal of such materials.

15 [GEN-WM-01]

16
17 *Wastewater*

18
19 Wastewater generated during construction will result from the use of portable toilets. Portable
20 toilets and handwash stations will be managed by a local solid waste hauler, likely Lakeview
21 Sanitation, and wastewater will be properly disposed of. An average of six portable toilets will
22 be used onsite during construction, including 12 portable toilets during peak construction.

23
24 Other than washwater periodically generated from washing panels, industrial wastewater will
25 not be generated during operation of the proposed PV only facility. If used, solar panel
26 washwater would not have added cleaning solvents and would be discharged on-site and would
27 by evaporate and seep into the sandy soils. Water for panel washing may be covered under an
28 Oregon General Water Pollution Control Facilities 1700-B Permit, which, if required, would be
29 obtained by a third-party contractor and is not included in this Application for Site Certificate.¹⁷²
30 For additional discussion of third-party contractor permits, including the 1700-B permit, see
31 Section IV.B., *Organizational Expertise*, of this order.

32
33 As discussed in Section IV.M., *Public Services*, the applicant may install septic system(s) at the
34 O&M building(s) but may also rely on portable toilets and handwashing stations during
35 construction and operation. Sanitary wastewater generated on site would be confined to
36 portable toilets and handwash stations and would be disposed of by Lakeview Sanitation or a
37 similar provider in accordance with applicable regulations. If a septic system is used, daily
38 sewage flow would be directed to an onsite septic system and managed and hauled by a
39 licensed disposal provider.

40

¹⁷² It is unclear if DEQ continues to require the 1700-B permit related to solar panel washwater. Nevertheless, if such a permit is required, the application states that the applicant's third-party contractor would secure the permit, if necessary, and as such it is not subject to EFSC jurisdiction nor is it governed by the site certificate.

Based on the limited sources of wastewater, the Department recommends Council find that it would be unlikely for the surrounding area to be impacted by proposed facility wastewater generation.

Conclusions of Law

Based on the foregoing analysis, and in compliance with OAR 345-022-0120(2), the Department recommends that the Council find that, based upon negligible sources of facility-related wastewater and compliance with the recommended solid waste management plan condition, waste would be minimized during proposed facility construction, operation and decommissioning and therefore the applicant has sufficiently addressed the Council's Waste Minimization Standard.

IV.O. Division 23 Standards

The Division 23 standards apply only to "nongenerating facilities" as defined in ORS 469.503(2)(e)(K), except nongenerating facilities that are related or supporting facilities. The proposed facility would not be a nongenerating facility as defined in statute and therefore Division 23 is not applicable.

IV.P. Division 24 Standards

The Council's Division 24 standards include specific standards for the siting of energy facilities, including wind projects, underground gas storage reservoirs, transmission lines, and facilities that emit carbon dioxide.

The proposed facility would include approximately 2 miles of new 115 kilovolt (kV) double circuit transmission line to interconnect the power output of new solar facilities to a proposed new substation. For approximately 1/2 miles at the eastern portion of the route, the double circuit transmission line would be centered within a 60-foot wide right of way (ROW). For approximately 1 1/2 miles at the western portion of the route, the double circuit transmission line would be located about 5-feet away from the northern ROW edge. The Council's Division 24 Siting Standards for Transmission Line standard applies, as evaluated below.

IV.P.1. Siting Standards for Transmission Lines: OAR 345-024-0090

To issue a site certificate for a facility that includes any transmission line under Council jurisdiction, the Council must find that the applicant:

- (1) Can design, construct and operate the proposed transmission line so that alternating current electric fields do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public;*
- (2) Can design, construct and operate the proposed transmission line so that induced currents resulting from the transmission line and related or supporting facilities will be as low as reasonably achievable.*

Findings of Fact

The Siting Standards for Transmission Lines address issues associated with alternating current electric fields and induced currents generated by high-voltage transmission lines. OAR 345-024-0090(1) sets a limit for electric fields from transmission lines of not more than 9 kV per meter at one meter above the ground surface in areas that are accessible to the public. Section (2) requires implementation of measures to reduce the risk of induced current.

The proposed facility includes an approximately 2-mile 115-kV transmission line. The proposed transmission line corridor would be 60 feet in width and would extend approximately 2 miles from the proposed collector substation in Area A to the proposed 115/500 kV step-up substation in Area D. For approximately 0.5 miles from Area A, the transmission corridor would be located within private property, within a 60-foot-wide transmission easement, to be secured prior to construction. For the remaining 1.5 miles to Area D, the transmission corridor would be located within an existing 60-foot county road (Connley Lane) right-of-way, to be authorized by the county prior to construction.

ASC Exhibit AA provides the applicant's analysis to support Council's review of the proposed facility's compliance with the standard.

Electric Fields

Electric fields around transmission lines are produced by the presence of an electric charge, measured as voltage, on the energized conductor. Electric field strength is directly proportional to the line's voltage; increased voltage produces a stronger electric field. The strength of the electric field is inversely proportional to the distance from the conductors; the electric field strength declines as the distance from the conductor increases. The minimum distance from the proposed 115 kV transmission line center to the existing county road right of way (ROW) edge is 5 feet (in the westernmost 1.5 miles of the transmission line), and 30 feet (in the easternmost 0.5 miles of the transmission line), with an overall ROW width of 60 feet.

The applicant provides an Electric and Magnetic Field Study included as Appendix AA-1 to ASC Exhibit AA which calculated electric and magnetic field levels from the proposed center line to 200 feet on each side of the proposed center line, at 1-meter aboveground level. The Electric and Magnetic Field Study was conducted, and report generated by EMDEX LLC who provide EMF measurement, modeling, calibration, and equipment for transmission lines substations computer modeling services. Electric and magnetic field calculations were conducted using "EMF Workstation 2015" which is a software program developed for the Electric Power Research Institute (EPRI). Modeling was conducted at 1-meter (3.28 feet) above ground level in accordance with American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE) Standards. Electric field calculations were performed assuming a worst-case adding 5 percent overvoltage condition (i.e., 121 kV instead of the nominal 115 kV). Radio noise calculations were conducted at 6.6 feet above ground level in accordance with ANSI/IEEE Standards.

1 The results of the study, as provided in ASC Exhibit AA, for the double circuit configuration
2 centered in the proposed transmission line easement on private land, calculated electric fields
3 ranging from 0.248 to 0.251 kV/m at the 60-foot easement edges, with a maximum of 0.985
4 kV/m within the easement. Calculated magnetic fields range from 44.1 to 45.0 milligauss (mG) at
5 the easement edges, with a maximum of 148.1 mG within the easement area.

6
7 For the double circuit configuration located within 5 feet of the county road ROW on Connley
8 Lane, calculated electric fields range from 0.031 to 0.982 kV/m at the ROW edges, with a
9 maximum of 0.985 kV/m within the ROW. Calculated magnetic fields range from 13.0 to 140.9
10 mG at the ROW edges, with a maximum of 148.1 mG within the ROW. Therefore, under both
11 configurations, the maximum electric fields are 0.985 kV/m within the ROW. This total is well
12 below the 9 kV/m at one meter above the ground surface in areas that are accessible to the
13 public determined in OAR 345-024-0090(1).

14
15 Based upon review of the applicant's modeling results presented in ASC Exhibit AA, the
16 Department recommends that the Council find that the proposed 115 kV transmission line
17 would not exceed 9 kV per meter at one meter above ground level.

18 19 *Induced Voltage and Current*

20
21 The Siting Standards for Transmission Lines requires the Council to find that the applicant "can
22 design, construct and operate the proposed transmission line so that induced currents resulting
23 from the transmission line and related or supporting facilities will be as low as reasonably
24 achievable." Recommended General Standard Condition 8 [based on the mandatory condition
25 contained in OAR 345-025-0010(4)], presented in Section IV.A. *General Standard of Review*
26 requires, in part, the applicant to develop and implement a program that provides reasonable
27 assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a
28 permanent nature that could become inadvertently charged with electricity are grounded or
29 bonded throughout the life of the line. To further reduce the risk of induced current and
30 nuisance shocks, the Department recommends the Council adopt the following condition:

31
32 **Recommended Siting Standards for Transmission Lines Condition 1:** Prior to operation of
33 the facility, the certificate holder shall provide landowners within 500 feet of the site
34 boundary a map of the 115-kV transmission line and inform landowners of possible health
35 and safety risks from induced currents caused by electric and magnetic fields.
36 [PRO-TL-01]

37 38 **Conclusions of Law**

39
40 Based on the foregoing findings of fact and conclusions, and subject to compliance with the
41 recommended site certificate conditions, the Department recommends that the Council find
42 that the proposed facility would comply with the Council's Siting Standards for Transmission
43 Lines.

IV.Q. Other Applicable Regulatory Requirements Under Council Jurisdiction

Under ORS 469.503(3) and under the Council's General Standard of Review (OAR 345-022-0000), the Council must determine whether the proposed facility complies with "all other Oregon statutes and administrative rules...as applicable to the issuance of a site certificate for the proposed facility." This section addresses the applicable Oregon statutes and administrative rules that are not otherwise addressed in Council standards, including noise control regulations, regulations for removal or fill of material affecting waters of the state, and regulations for water rights.

IV.Q.1. Noise Control Regulations: OAR 340-035-0035

(1) Standards and Regulations:

(b) New Noise Sources:

(B) New Sources Located on Previously Used Sites:

- i. No person owning or controlling a new industrial or commercial noise source located on a previously unused industrial or commercial site shall cause or permit the operation of that noise source if the noise levels generated or indirectly caused by that noise source increase the ambient statistical noise levels, L10 or L50, by more than 10 dBA in any one hour, or exceed the levels specified in Table 8, as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule, except as specified in subparagraph (1)(b)(B)(iii).*
- ii. The ambient statistical noise level of a new industrial or commercial noise source on a previously unused industrial or commercial site shall include all noises generated or indirectly caused by or attributable to that source including all of its related activities. Sources exempted from the requirements of section (1) of this rule, which are identified in subsections (5)(b)–(f), (j), and (k) of this rule, shall not be excluded from this ambient measurement.*

(3) Measurement:

- (a) Sound measurements procedures shall conform to those procedures which are adopted by the Commission and set forth in Sound Measurement Procedures Manual (NPCS-1), or to such other procedures as are approved in writing by the Department;*
- (b) Unless otherwise specified, the appropriate measurement point shall be that point on the noise sensitive property, described below, which is further from the noise source:*
 - A. 25 feet (7.6 meters) toward the noise source from that point on the noise sensitive building nearest the noise source;*
 - B. That point on the noise sensitive property line nearest the noise source.*

1 (4) *Monitoring and Reporting:*

2 (a) *Upon written notification from the Department, persons owning or controlling*
3 *an industrial or commercial noise source shall monitor and record the statistical*
4 *noise levels and operating times of equipment, facilities, operations, and*
5 *activities, and shall submit such data to the Department in the form and on the*
6 *schedule requested by the Department. Procedures for such measurements shall*
7 *conform to those procedures which are adopted by the Commission and set*
8 *forth in Sound Measurement Procedures Manual (NPCS-1);*

9 ***

10 (5) *Exemptions: Except as otherwise provided in subparagraph (1)(b)(B)(ii) of this rule,*
11 *the rules in section (1) of this rule shall not apply to:*

12 ***

13 (c) *Sounds created by the tires or motor used to propel any road vehicle*
14 *complying with the noise standards for road vehicles;*

15 ***

16 (g) *Sounds that originate on construction sites.*

17 (h) *Sounds created in construction or maintenance of capital equipment;*

18 (i) *Sounds created by lawn care maintenance and snow removal equipment;*

19 ***

20 (k) *Sounds created by the operation of road vehicle auxiliary equipment*
21 *complying with the noise rules for such equipment as specified in OAR 340-035-*
22 *0030(1)(e);*

23 ***

24 **Findings of Fact**

25
26 OAR 340-035-0035 provides the Oregon Department of environmental Quality (DEQ) noise
27 rules for industry and commerce and establishes noise limits for new industrial or commercial
28 noise sources based upon whether those sources would be developed on a previously used or
29 previously unused site.¹⁷³ Pursuant to OAR 340-035-0015(47), a “previously unused industrial or
30 commercial site” is defined as property which has not been used by any industrial or
31 commercial noise source during the 20 years immediately preceding commencement of
32 construction of a new industrial or commercial source on that property. There is no evidence in
33 the record that the proposed facility site has been in industrial or commercial use at any time
34 during the last 20 years, therefore the site is considered a previously unused site and evaluated
35 per the requirements of OAR 340-035-0035(1)(b)(B).¹⁷⁴

36
37 Noise generated by a new industrial or commercial source located on a previously unused site
38 must comply with two standards: the “ambient noise degradation standard” and the

¹⁷³ A “previously unused industrial or commercial site” is defined in OAR 340-035-0015(47) as property which has not been used by any industrial or commercial noise source during the 20 years immediately preceding commencement of construction of a new industrial or commercial source on that property.

¹⁷⁴ As provided in OAR 340-035-0110, in 1991, the Legislative Assembly withdrew all funding for implementing and administering DEQ’s noise program; therefore, Council assumes the authority as the decision maker to implement the DEQ noise rules.

“maximum allowable noise standard.” Both of these standards represent allowable noise levels at “real properties normally used for sleeping,” otherwise referred to as a “noise sensitive property.”¹⁷⁵ The analysis area for evaluating compliance with the DEQ noise rules includes the area within and extending one-mile from the proposed site boundary, however the applicant conducted its evaluation out to 1.1 miles from the site boundary because of a noise sensitive property (R-7) located 1.1 miles southwest of the facility. Within the analysis area and extended area evaluated by the applicant, the applicant identified 17 noise sensitive properties. Therefore, compliance with the DEQ noise rules, as further described below, is based upon modeled noise levels of proposed facility operation at the identified 17 noise sensitive properties.

Under the ambient noise degradation standard, facility-generated noise must not increase the ambient hourly L10 or L50 noise levels at any noise sensitive property by more than 10 dBA, with ambient noise levels established based on noise measurements taken at an appropriate noise measurement location (point on the noise sensitive property line nearest to the noise source).¹⁷⁶ Under the maximum allowable noise standard at OAR 340-035-0035(1)(b)(B)(i), new industrial or commercial noise sources may not exceed the noise levels specified in the noise rules, as represented in Table 11: *Statistical Noise Limits for Industrial and Commercial Noise Sources* below.

Table 11: Statistical Noise Limits for Industrial and Commercial Noise Sources

Statistical Descriptor ¹	Maximum Permissible Hourly Statistical Noise Levels (dBA)	
	Daytime (7:00 AM - 10:00 PM)	Nighttime (10:00 PM - 7:00 AM)
L50	55	50
L10	60	55
L1	75	60
Notes: 1. The hourly L50, L10 and L1 noise levels are defined as the noise levels equaled or exceeded 50 percent, 10 percent, and 1 percent of the hour, respectively. Source: OAR 340-035-0035, Table 8		

Potential Noise Impacts

The applicant’s evaluation of compliance with DEQ’s noise rules is presented in ASC Exhibit X. Based upon review of ASC Exhibit X, the Department presents its assessment for Council review

¹⁷⁵ OAR 340-035-0015(38) defines noise sensitive property as, “real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries. Property used in industrial or agricultural activities is not Noise Sensitive Property unless it meets the above criteria in more than an incidental manner.”

¹⁷⁶ OAR 340-035-0035(3)(b) establishes appropriate measurement points as also inclusive of “25 feet toward the noise source from that point on the noise sensitive building nearest the noise source,” which was not referenced above because the applicant evaluated ambient based on the point on the property line nearest to the noise source, as also allowed by the rule.

of the applicant's ability to comply with the noise requirements.

Construction

OAR 340-035-0035(5)(g) specifically exempts noise caused by construction activities; however, an evaluation of construction-related noise is presented in accordance with OAR Chapter 345 Division 21 information requirements and to inform the construction-related noise analysis required under the Council's Protected Areas and Recreation standards, found in Sections IV.F., *Protected Areas*, and IV.L., *Recreation*, of this order.

Proposed facility construction, including solar components, step up substation, battery storage components, and the 115-kV transmission line, would include site preparation, brush clearing, onsite access road preparation; array foundation installation, conductor installation. Activities would also include construction of collector substation(s); solar panel assembly and construction electrical components; inverter pad construction; commissioning of solar array and grid interconnection; installation of transmission structure foundations, erection of support structures and conductor stringing. Construction noise levels were estimated using the methods described in the Federal Highway Administration Highway Construction Noise: Measurement, Prediction and Mitigation, the applicant's analysis used equipment sound levels documented in the Federal Highway Administration's Roadway Construction Noise Model (FHWA RCNM). Table 12: *Typical Construction Noise Levels for Phases of Construction* below represents the following typical construction equipment and predicted sound pressure levels at specific distances from proposed construction activities.

Table 12: Typical Construction Noise Levels for Phases of Construction

Construction Phase	Loudest Equipment	Maximum Noise Level at 50 feet (dBA Lmax) ^a
Clearing, grubbing, and earthwork	Bulldozer, Grader, Backhoe, Haul Trucks	88
Foundation and Base preparation for systems	Backhoe, Loader, Tractor Trailers, Crane	84
Support installation	Pneumatic impact pile drivers	94 – 101
Solar Array and Transmission Line Installation	Backhoe, Loader, Tractor Trailers, Crane	84
a. Maximum noise level measured at 50 feet under normal use. Source: FHWA (2006) Roadway Construction Noise Model. OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Table X-2.		

The maximum hourly noise levels at 50 feet for equipment noise in Table 12: *Typical Construction Noise Levels for Phases of Construction*, listed above are evaluated as the "worst case" noise levels. The applicant states that the maximum levels would occur during the installation of the support posts using a pneumatic pile driver, with levels of 101 dBA at 50 feet average hourly noise levels would be substantially lower, with typical hourly L50 noise levels of

72 to 75 dBA.¹⁷⁷ The applicant conducted noise monitoring to establish ambient baseline noise levels for its noise analysis, as discussed in the below section. The applicant notes that some of the daytime measures from normal daily agricultural activities in the vicinity of the monitoring sites was 70 dBA to 86 dBA, which can be compared to the maximum noise levels expected from construction equipment. To demonstrate how noise levels attenuate the farther away from the noise source, the applicant evaluated various equipment at distances ranging from 3,000 feet and 25,000 feet. These are illustrated in Figures 7 and 8 of the noise analysis in ASC Exhibit X, Appendix X-1.

ASC Exhibit X, Section 8.4 outlines applicant-represented measures to limit potential impacts from construction noise. The applicant states that its contractor shall ensure that all engine powered equipment have mufflers installed according to the manufacturer's specifications, and that all equipment complies with pertinent equipment noise standards of the U.S. Environmental Protection Agency.¹⁷⁸ Further, ASC Exhibit X explains that if a noise complaint is received during construction that several noise mitigation measures will be considered. The measures are included in Noise Control Regulations Condition 1 below. Based on the applicant-represented measures, the Department recommends the Council impose the following condition to reduce potential impacts from DEQ noise rules exempted construction noise.¹⁷⁹

Recommended Noise Control Condition 1:

- a. Prior to construction, the certificate holder shall establish a noise complaint response system to address noise complaints during construction and make it available at the construction manager's office. The Certificate holder shall submit a copy of noise complaint response system to the Department. Records of noise complaints during construction must be made available to the Department upon request. The noise complaint response system shall include, but not be limited to:
 - i. Locate stationary engine-powered construction equipment as far from nearby noise sensitive properties as possible.
 - ii. Shut off idling equipment.
 - iii. Consideration of reschedule construction activities to avoid periods of noise annoyance identified in the complaint.
 - iv. Notify nearby residents before extremely noisy work occurs.
 - v. Locate stationary engine-powered construction equipment as far from nearby noise sensitive properties as possible.

¹⁷⁷ OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, 8.3.

¹⁷⁸ OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, 8.4.

¹⁷⁹ OSCAPPDoc4-6 DPO Comments Applicant 2020-04-28. In comments on the record of the DPO, the applicant requests that recommended Noise Control Condition 1(a)(vi) be amended to align the construction noise time restriction with DEQ's daytime statistical noise level thresholds, which start at 7:00 a.m. Based on review of Table 11 as presented in this section, the Department agrees that the requested condition revision would be consistent with DEQ's daytime statistical noise level threshold and recommends Council incorporate the change in the Proposed Order, as presented.

- vi. Restrict the installation of solar module support posts using the pneumatic pile driver to weekdays and Saturdays, during daytime hours of ~~7~~8:00 am to ~~5~~6:00 pm, and notify the residences near the site prior to performing the work.
- b. During construction, all engine powered equipment must have mufflers installed according to the manufacturer's specifications, and all equipment must comply with pertinent equipment noise standards of the U.S. Environmental Protection Agency. [GEN-NC-01]

Operations

As described above, OAR 340-035-0035(1)(b)(B)(i) requires a demonstration that noise generated during proposed facility operation must not cause the ambient hourly L10 and L50 noise levels at any noise-sensitive property to exceed 10 dBA above ambient, with ambient noise levels established using noise measurements at the location on the noise sensitive property line nearest to the proposed noise source.

Within the analysis area and extended area evaluated by the applicant, the applicant identified 17 noise sensitive properties by using aerial photos and on-site inspections to determine residential structures.

Proposed facility components that would generate noise during operations include: transformers and inverters associated with the solar arrays, battery storage system components, the collector substations as well as the 115 kV to 500 kV step up substation. The 115-kV transmission line would also emit noise associated with the corona effect (buzz or crackling during wet conditions). In ASC Exhibit X Appendix X-1, the applicant provides a noise analysis that includes these operational sources and sound power levels (in A-weighted decibels). The noise analysis was conducted by Michael Minor & Associates, a consultant who conducts noise, vibration, and air environmental analysis.

Table 13: *Operational Noise Sources and Sound Power Levels* below lists the sound power levels representing the standard performance of each of these components and includes assumptions that were incorporated into the evaluation. The level of corona noise produced from transmission lines is dependent on many factors, and for most lines only occurs when there is a high level of moisture in the air, so the applicant assumed noise from the 115-kV transmission line would occur under wet conditions. The sound power levels were assigned based either on data supplied by manufacturers, or field measurements of similar equipment made at other existing facilities and data from other similar types of EFSC facilities.¹⁸⁰ The reference noise levels were also reviewed against product design information found in the technical literature provided by the National Electrical Manufacturers Association (NEMA).

¹⁸⁰ Manufacture representative specifications found as Attachment B to the Noise Analysis: OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, Attachment B.

Table 13: Operational Noise Sources and Sound Power Levels

Equipment	Number of Units ^a	Sound Power Level (dBA)
Solar Array Invertors/Transformers ^b	159	87
Battery/Energy Storage Units ^c	64	88
Collector Substation Transformers (34.5 kV to 115 kV) ^d	4	97
115 kV Transmission Line ^e	1	46
Step-up Substation Transformer (115 kV to 500 kV) ^f	1	105
<p>Noise Study Assumptions:</p> <p>^a Number of each type of noise-producing unit included in SoundPlan modeling.</p> <p>^b Based on Power Electronics FS3000M Specification of < 79 dBA at 3 feet.</p> <p>^c Based on General Electric Battery/Energy Storage Unit Specifications of <60 dBA at 3 meters.</p> <p>^d Based on sound power level for a typical solar collector 35.5-kV to 115-kV power transformer of 97 dBA.(Boardman Solar Energy Facility 2017, Carty Generating Station 2018).</p> <p>^e Based on typical corona noise levels provided in Appendix AA -1 of Exhibit AA of this Application for Site Certificate of: < 15 dBA for wet conditions at 50 feet and 0 dBA for dry conditions at 50 feet; for this analysis, the sound power of 46 dBA is based on the worst-case level of 15 dBA at 50 feet.</p> <p>^f Based on sound power level for a typical 115-kV to 500-kV step-up transformer of 97 to 105 dBA; the higher 105 dBA level was used to assure a conservative analysis (See EFSC Carty Generating Station 2011)</p> <p>Source: OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, Table 5.</p>		

Ambient Noise Measurements

OAR 340-035-0035(1)(b)(B)(i) restricts noise levels of new industrial or commercial noise sources located on a previously unused industrial or commercial site from increasing the ambient statistical noise level, L10 or L50, by more than 10 dBA in any one hour, where ambient noise levels must be based on an appropriate noise measurement, as previously discussed, and noise measurement procedures established in OAR 340-035-0035(3)(b). OAR 340-035-0035(3)(b) establishes acceptable procedures as the Sound Measurement Procedure Manual (NPCS-1) adopted by the DEQ Commission in the 1970's or as otherwise approved by the Department.

Existing ambient noise monitoring was conducted to establish the existing noise environment, with the purpose of demonstrating compliance with the allowable 10 dB increase in the L10 and L50 criteria set forth in OAR 340-035-0035(1)(b)(B)(i). All measurement procedures complied with those procedures adopted by the Commission and set forth in Sound Measurement Procedures Manual (NPCS-1) from the DEQ, and more recent methods from the ANSI procedures for community noise measurements. Two sites were selected for ambient noise monitoring: sites M-1 and M-2. Site M-1 is near a cluster of residences located just east of the solar array and west of the existing 500-kilovolt (kV) transmission line. Site M-1 is

representative of all residences in this immediate area. Site M-2 is to the north of the solar array, in an area with even fewer residences and lower traffic volumes than the area of M-1. This monitoring site was used to represent residences in the north and east sections of the study area.

Equipment used for the noise measurements were Bruel & Kjaer Type 2238 sound level meters. The sound level meters meet or exceed American National Standards Institute (ANSI) S1.4-1983 for Type 1 Sound Measurement Devices. System calibration was performed before and after each measurement session with a Bruel & Kjaer Type 4231 sound level calibrator.¹⁸¹ The meters are calibrated by an accredited laboratory on an annual basis. The noise monitoring was performed on July 5 through July 7, 2018, using three systems, and performing monitoring at all three sites simultaneously. Weather was clear, and there was no precipitation during the measurement period. Noise from the existing 500-kV lines and other existing transmission line and energy related noise sources was included in the background noise level measurements taken near the proposed site. ASC Exhibit X, Appendix X-1 Figure 2 demonstrates the layout of the proposed facility, noise sensitive properties, and the noise monitoring positions. To account for the time-varying nature of noise, several noise metrics are useful. Commonly used noise descriptors include the Lmax, Lmin, and Leq. The Lmax and Lmin are the greatest and smallest RMS (root-mean-square) sound levels, in dBA, measured during a specified measurement period. The equivalent sound pressure level (Leq) is defined as the average noise level, on an energy basis, for a stated time period (for example, hourly). Table 14: *Summary of Measured Background Noise Levels*, below represents the minimum, maximum and average baseline sound levels at the two monitoring positions.

Table 14: Summary of Measured Background Noise Levels ¹

Monitoring Site	L10 (dBA)	L50 (dBA)	Leq (dBA)
Minimum			
M-1	30 (night)	28 (night)	29 (night)
M-2	20 (night)	20 (night)	20 (night)
Maximum			
M-1	54 (day)	47 (day)	55 (day)
M-2	51 (day)	43 (day)	47 (day)
Average			
M-1	42	37	45
M-2	34	28	34
¹ Rounded			
Source: OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, Attachment C.			

As presented in Table 14: *Summary of Measured Background Noise Levels* above, ambient conditions as measured at the representative monitoring positions in proximity to proposed facility components ranged from 20 to 47 dBA for L50 for the 48-hour recordation period.

¹⁸¹ OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, p. 7.

Based on ambient noise monitoring and noise sensitive properties within the analysis area, ambient noise levels at potentially affected property locations are presented in Table 15 below.

Statistical Noise Modeling

To evaluate the “worse-case” noise generated from the operation of the proposed facility, the applicant’s noise analysis assumed the facility will be in constant operation, with power transmission during nighttime hours from the battery storage. The applicant explains in the noise analysis that this assumption was made because the lowest L50 noise levels were measured during nighttime and very early morning hours, during which time the solar panels would not produce any energy or sound, so assuming the batteries will discharge during these quiet periods, compliance with the DEQ noise rules can be supported during those periods with the lowest measured L50 noise levels.

The applicant conducted additional noise modeling for the evaluation of impacts under the EFSC Protected Area and Recreation standards, located four miles north of the proposed facility, and discussed further in Sections IV .F., *Protected Areas*, and IV.L., *Recreation*, of this order.

Noise modeling was performed using SoundPlan Noise Modeling Software (Essential Version 4.1). The calculations conducted by SoundPlan to model noise levels are based on and are compliant with the International Standards Organization (ISO) 9613-2 methods for outdoor propagation of noise sources, like those from solar facilities, wind farms, and other industrial sources.¹⁸² The software allows the input of geographical and topographical information and provides a true 3-D acoustical model for noise propagation. Facility-specific inputs inserted into the model included topographical information from Google Earth, computer-aided drafting (CAD) information for the locations of facility equipment provided in Table 14, above, and locations of noise sensitive properties within 1.1-miles of the site boundary. The applicant states that no additional attenuation was assumed for groundcover shielding, such as from trees or shrubs, and that the noise levels presented were calculated assuming wet conditions and include noise from the 115 kV transmission lines where applicable. Corona noise can occur from electronic ionization of the air surrounding transmission lines. The modeling software produced noise contour maps that cover an area large enough to include all areas where noise levels from facility operation equipment are equal to or lower than the lowest measured ambient noise levels of 20 dBA.

Noise sensitive properties R-1, R-4, and R-5 have the highest predicted noise levels in this part of the study area due to the proximity to the 115-kV to 500-kV step-up substation transformer for (R-1) and the set of four 34.5-kV to 115-kV collector substations (for R-4 and R-5). Modeled noise levels for residences located to the east of the solar array, represented by noise sensitive properties R-8 through R-17, ranged from 21 to 28 dBA due to the close proximity to the nearby solar array inverter/transformer units and battery storage units. ASC

¹⁸² OSCAPPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, p. 17.

1 Exhibit X, Appendix X-1, Attachment D, Figure D-1 illustrates the proposed facility location, the
2 location of noise sensitive properties as well as the predicted noise levels at each property.

3
4 *Ambient Noise Degradation and Maximum Allowable Standards*
5

6 The ambient noise degradation standard requires a demonstration that noise generated during
7 proposed facility operation must not cause the hourly L50 noise level at any noise-sensitive
8 property to exceed 10 dBA above measured ambient conditions or, in this case, ambient
9 conditions ranging from 20 to 47 dBA. Based upon the applicant's noise analysis and noise
10 contour maps, maximum increases in ambient noise level from proposed facility operation
11 would not exceed 9 dBA, as presented in Table 15: *Ambient, Predicted, and Change in L50 Noise*
12 *Levels* and Figure 3: *Proposed Facility Operational Noise Contour Map* below. Therefore, the
13 ambient noise degradation standard would not be exceeded at any noise sensitive property,
14 even during maximum operational noise and rainy conditions.¹⁸³

¹⁸³ The 115-kV transmission line was modeled based on typical corona noise levels provided in ASC Appendix AA -1 of Exhibit AA: < 15 dBA for wet conditions at 50 feet and 0 dBA for dry conditions at 50 feet; for the analysis, the sound power of 46 dBA is based on the worst-case level of 15 dBA at 50 feet.

1 **Figure 3: Proposed Facility Operational Noise Contour Map**

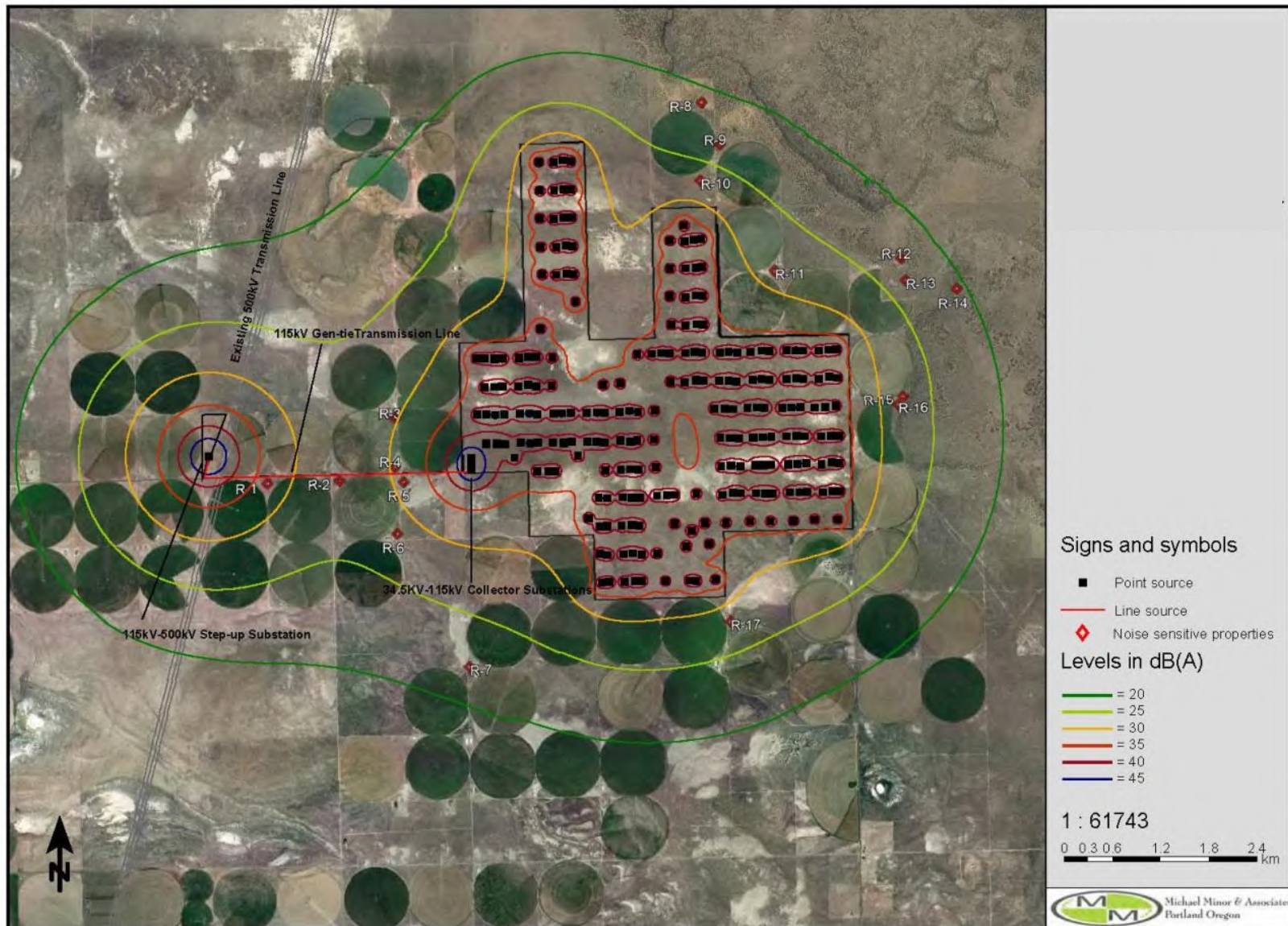


Table 15: Ambient, Predicted, and Change in L50 Noise Levels

Noise Sensitive Property		Existing Background L50 (dBA) ^a	Total Noise of Facility Equipment (dBA) ^b	Combined Noise (Background + Total Noise of Facility Equipment, dBA) ^c	Total Change in L50 Noise (dBA) ^d
ID	Address				
R-1	83394 Connley Lane Silver Lake, OR	28	33	34	+6
R-2	83136 Connley Lane Silver Lake, OR	28	28	31	+3
R-3	83391 Connley Lane Silver Lake, OR	28	30	32	+4
R-4		28	31	33	+5
R-5	83394 Connley Lane Silver Lake, OR	28	31	33	+5
R-6	83136 Connley Lane Silver Lake, OR	28	28	31	+3
R-7 ^e	PO Box 69 Fort Rock, OR	28	22	29	+1
R-8	PO Box 39 Fort Rock, OR	20	21	24	+4
R-9		20	23	25	+5
R-10	PO Box 437 Christmas Valley, OR	20	27	28	+8
R-11	PO Box 39 Fort Rock, OR	20	28	29	+9
R-12	PO Box 1031 Ferndale, CA	20	22	24	+4
R-13		20	23	25	+5
R-14	2422 Lara Court Medford, OR	20	21	24	+4
R-15	PO Box 784 Christmas Valley, OR	20	27	28	+8
R-16	2614 1 st St. Tillamook, OR	20	28	29	+9
R-17	PO Box 784 Christmas Valley, OR	20	28	29	+9
Notes: a. Background measured noise level: L50, using minimum M-1 for R-1 through R-7 and M-3 for R-8 through R-17. b. Total noise from Facility operation at noise sensitive properties. c. Total noise, background and Facility operations, predicted by logarithmically summing the background noise and operational noise. d. Change in total noise at noise sensitive properties, (existing levels to Facility operation).					

Table 15: Ambient, Predicted, and Change in L50 Noise Levels

Noise Sensitive Property		Existing Background L50 (dBA) ^a	Total Noise of Facility Equipment (dBA) ^b	Combined Noise (Background + Total Noise of Facility Equipment, dBA) ^c	Total Change in L50 Noise (dBA) ^d
ID	Address				
R-1	83394 Connley Lane Silver Lake, OR	28	33	34	+6
R-2	83136 Connley Lane Silver Lake, OR	28	28	31	+3
R-3	83391 Connley Lane Silver Lake, OR	28	30	32	+4
R-4		28	31	33	+5
R-5	83394 Connley Lane Silver Lake, OR	28	31	33	+5
R-6	83136 Connley Lane Silver Lake, OR	28	28	31	+3
R-7 ^e	PO Box 69 Fort Rock, OR	28	22	29	+1
R-8	PO Box 39 Fort Rock, OR	20	21	24	+4
R-9		20	23	25	+5
R-10	PO Box 437 Christmas Valley, OR	20	27	28	+8
R-11	PO Box 39 Fort Rock, OR	20	28	29	+9
R-12	PO Box 1031 Ferndale, CA	20	22	24	+4
R-13		20	23	25	+5
R-14	2422 Lara Court Medford, OR	20	21	24	+4
R-15	PO Box 784 Christmas Valley, OR	20	27	28	+8
R-16	2614 1 st St. Tillamook, OR	20	28	29	+9
R-17	PO Box 784 Christmas Valley, OR	20	28	29	+9
e. R-7 is a noise sensitive property identified by the applicant located 1.1 miles from the site boundary. Source: OSCAPDoc4 ASC 24 OSC ASC Exhibit X 2019-10-17, Appendix X-1, Table 7.					

- 1
2 Under the maximum allowable noise standard at OAR 340-035-0035(1)(b)(B)(i), a new industrial
3 or commercial noise source to be located on a previously unused site may not exceed the noise
4 levels specified in Table 8 of the noise rules. The nighttime L50 value of 50 dBA is used because

1 it represents the most restrictive portion of the noise standard. The applicant's noise modeling
2 results show that noise generated during proposed facility operation would not exceed the
3 maximum allowable standard of 50 dBA at any noise sensitive property within the analysis area,
4 with maximum statistical noise levels modeled at 34 dBA. Therefore, the maximum allowable
5 standard would not be exceeded at any noise sensitive property, even during maximum
6 operational noise/rainy conditions.

7
8 To ensure that operational noise associated with the proposed facility, at final design, is
9 consistent with or less than the modeled noise levels presented in ASC Exhibit X, and due to
10 discrepancies in the number of modeled noise sources (step-up substation transformers,
11 battery system enclosures), the Department recommends Council impose the following
12 condition to afford the Department the ability to verify compliance with DEQ's noise rules,
13 based on consistency of sound power levels associated with final equipment selection
14 compared to equipment information relied upon in ASC Exhibit X:

15
16 **Recommended Noise Control Condition 2:** Prior to construction of the facility, the
17 certificate holder shall:

- 18 a. Submit to the Department a noise summary report presenting the sound power levels
19 (in dBA) of noise generating equipment including solar array inverters and transformers,
20 substation transformers, and battery system inverters and cooling systems, as
21 applicable to final design. The sound power levels shall be supported by equipment
22 manufacturer specifications and noise data. The certificate holder shall provide, in
23 tabular format, a comparison of the sound power levels used in ASC Exhibit X for noise
24 generating equipment and sound power levels validated by manufacturer specifications.
25 b. If the sound power levels used in ASC Exhibit X to evaluate compliance with DEQ's noise
26 rules are lower than sound power levels of final equipment selected, the certificate
27 holder shall provide an updated noise analysis to demonstrate compliance with the
28 ambient degradation standard and maximum allowable threshold. The ambient noise
29 level utilized in ASC Exhibit X may be used for the updated noise analysis, if required.

30 [PRE-NC-01]

31
32 In ASC Exhibit X, the applicant represents that it will set back the inverters and transformers
33 associated with the solar array components 500 feet from the site boundary in proximity to
34 noise sensitive properties. The applicant does not specify which noise sensitive properties the
35 condition would apply to, nor does the applicant provide specific information about which
36 inverter/transformers would be set back. As discussed above, the applicant's noise analysis
37 demonstrates compliance with both the ambient noise degradation and maximum allowable
38 noise standards in the DEQ noise rules. As noted in Table 15 above, the noise sensitive
39 properties that would experience the greatest potential increase from noise generated by the
40 operation of the proposed facility are R-10, R-11, R-15, R-16, and R-17, however each of these is
41 below the allowable noise increase of 10 dBA and as such, no additional mitigation is required
42 by Council rule.

Conclusions of Law

Based on the foregoing findings of fact and conclusions, and subject to compliance with the recommended site certificate conditions, the Department recommends that the Council find that the proposed facility would comply with the Noise Control Regulations in OAR 340-035-0035(1)(b)(B).

IV.Q.2. Removal-Fill

The Oregon Removal-Fill Law (ORS 196.795 through 196.990) and Department of State Lands (DSL) regulations (OAR 141-085-0500 through 141-085-0785) require a removal-fill permit if 50 cubic yards or more of material is removed, filled, or altered within any “waters of the state.”¹⁸⁴ The Council, in consultation with DSL, must determine whether a removal-fill permit is needed and if so, whether a removal-fill permit should be issued. The analysis area for wetlands and other waters of the state is the area within the site boundary. If a removal-fill permit is needed for the facility, it is Council that makes a determination whether or not DSL should issue such a permit.

Findings of Fact

The applicant describes its assessment of potential impacts to waters of the state, including wetlands and non-wetlands, in ASC Exhibit J. In ASC Exhibit J, the applicant describes that there are 35 non-wetland “playas” in the site boundary, and no wetlands, or other waters of the state. Playas are considered waters of the state and subject to regulation under the DSL removal-fill permit requirements. The playas at the site range in size from 0.01 acre to 3.4 acres. As described in ASC Exhibit J, playas are also called “playa lakes” or “dry lakes,” and are characterized as dry for extended periods of time, sometimes years, and inundated with shallow levels of water during large or extended precipitation events. Additional description of playas is included in ASC Exhibit J. The applicant completed a wetland delineation report for the facility; the report is included as an attachment to ASC Exhibit J. In 2019, DSL issued a letter concurring with the applicant’s wetland delineation report.¹⁸⁵

The applicant describes that the proposed facility will be built on playas. However, only solar module rack support posts will be installed in playas, not other facility components. The posts would be pile-driven, and electrical cables between the modules would be suspended in trays aboveground, and not trenched below ground, to avoid impacts. It is anticipated that water would still be able to flow and pond at the playas, under the solar arrays, after construction. As is described in ASC Exhibit J and the ASC Exhibit J Supplement, the facility is anticipated to impact approximately 14 cubic yards of playa, mostly based on the impact of installing the solar module rack posts.

¹⁸⁴ ORS 196.800(15) defines “Waters of this state.” The term includes wetlands and certain other waterbodies.

¹⁸⁵ OSCAPDoc31 pASC Reviewing Agency Comment Letter WD#2018-0581 Concurrence DSL_McAllister 2019-5-09.

1 In the wetland concurrence letter and also in an additional email from DSLin 2019, confirmed
2 that if direct impacts are less than 50 cubic yards, no removal-fill permit is needed. The email
3 from DSL also noted that if the applicant wanted a letter from DSL stating that no removal-fill
4 permit is needed for the proposed facility, a joint permit application (or JPA) would need to be
5 completed and submitted to DSL.¹⁸⁶
6

7 The DSL threshold for requiring a removal-fill permit is 50 cubic yards in playas, the Department
8 agrees with the applicant that no removal-fill permit is required for the proposed facility, based
9 on the anticipated level of impacts to playas as describes in ASC Exhibit J and the ASC Exhibit J.
10

11 Therefore, the Department recommends the Council find that the proposed facility maintains
12 compliance with the removal-fill law and the certificate holder is not currently required to
13 obtain a removal-fill permit.
14

15 **Conclusions of Law**

16
17 Based on the foregoing findings of fact and conclusions, the Department recommends that the
18 Council find that a removal-fill permit is not needed for the proposed facility.
19

20 **IV.Q.3. Water Rights**

21
22 Under ORS Chapters 537 and 540 and OAR Chapter 690, the Oregon Water Resources
23 Department (OWRD) administers water rights for appropriation and use of the water resources
24 of the state. Under OAR 345-022-0000(1)(b), the Council must determine whether the
25 proposed facility would comply with these statutes and administrative rules. OAR 345-021-
26 0010(1)(o)(F) requires that if a proposed facility needs a groundwater permit, surface water
27 permit, or water right transfer, that a decision on authorizing such a permit rests with the
28 Council.
29

30 **Findings of Fact**

31
32 As discussed in Section IV.M., *Public Services* of this order and in ASC Exhibit O, under high
33 temperatures and dry climactic conditions (i.e. “worst-case conditions”), proposed facility
34 construction would use over 17 million gallons of water per year for dust suppression, road
35 compaction, on-site worker drinking and sanitation use. Proposed facility operation would use
36 approximately 1.3 million gallons of water per year to support O&M building drinking water
37 use, possible septic system, and solar panel washing. Estimated water use from proposed
38 facility construction and operation is presented in Table 16: *Estimated Worst-Case Annual*
39 *Water Use from Construction and Operation* below.
40

¹⁸⁶ OSCAPDoc20 ASC Applicant Response to Additional RAIs_Combined 2020-02-24 to 2020-03-09.

Table 16: Estimated Worst-Case Annual Water Use from Construction and Operation

Water Use Description	Quantity/Units
<i>Construction</i>	Gallons/Year
Dust Suppression	16,208,500
Soil Maintenance	677,500
Equipment Washing	8,500
Fire Suppression	171,500
Potable Water (bottled/tap drinking water)	84,000
Annual Estimated Construction Water Use =	17,150,000
<i>Operation</i>	Gallons/Year
O&M Building/Septic Systems	875,000
Solar Panel Washing	489,000
Annual Estimated Operational Water Use =	1,364,000
Source: OSCAPDoc4 ASC 15 OSC ASC Exhibit O 2019-10-17, Tables O-1 and O-2.	

1 The applicant maintains it would obtain water for construction and operation of the proposed
2 facility from the Christmas Valley Domestic Water Supply District (Water District), which ~~has~~
3 agreed to provide as their system demand allows. In a comment letter provided to the
4 applicant (ASC Exhibit O Appendix O-1), the water district manager/operator, ~~Erica Anderson,~~
5 describes that the Water Districts' priorities are to serve its water customers and provide
6 water for fire suppression and therefore strongly advised the applicant to maintain a secondary
7 water source in case the district had to discontinue services due to an issue or shortage with
8 their system. The applicant states that it would purchase water from the Water District under
9 water right permits to appropriate water identified in ASC Exhibit O and updated in
10 consultation with the Oregon Water Resources Department (OWRD) as permit numbers G-
11 12660, G-12659, and G-10790. An OWRD Permit to Appropriate the Public Waters (water right
12 permit) establishes the date of water right, use of water, the point of diversion, and the place of
13 use under the permit and to which the water right is appurtenant (applies). The place of use in
14 a permit is described using the Township/Range survey system and generally designates where
15 the water may be used.¹⁸⁷ The permits referenced by the applicant establish the purpose or use as
16 quasi-municipal, which under OWRD rules, Quasi-Municipal Water Use means the delivery and
17 use of water through the water service system of a corporation, other than a public corporation
18

¹⁸⁷ Commenters contend that because the location of the proposed facility in Township/Range/Sections are not designated as a place of use within the Water District's Quasi Municipal permit, that the Water District may not sell water to the applicant for the use in the location of the proposed facility, and therefore the applicant would not be able to supply water for the represented uses in the application for construction and operation of the proposed facility. Township Range for facility. OSCAPDoc4-24 DPO Public Comment Reeder and Fort Rock Neighbors 2020-07-20.

For facility location see ASC Exhibit B: Area A is located in Township 26 south, Range 16 east, Sections 5, 8, 9, 15, 16, 17, 20, 21, and 2, Area D in Township 26 south, Range 15 east, Sections 13, and the gen-tie transmission in Township 26 south, Range 15 east, Sections 13 and 24, and in Township 26 south, Range 16 east, Sections 18 and 19.

created for the purpose of operating a water supply system, for those uses usual and ordinary to municipal water use. Here, municipal water use means use of water through the water service system of a municipal corporation for, among other uses, commercial water use and industrial water use.^{188, 189} OWRD affirms that water use for the construction and operation for the proposed facility qualifies under 690-300-0010(25) as “industrial water use”, which includes the use of water associated with the processing or manufacture of a product, such as the construction, operation, and maintenance of an industrial site like a solar facility.¹⁹⁰ The Department recommends Council find that the proposed solar facility, as an industrial or commercial use, qualifies as a municipal use under OWRD rules.

The applicant notes that the Water District is an entity organized under ORS chapter 264.¹⁹¹ Oregon Revised Statutes (ORS) 264.110 designate the authority for the formation of a water district and the sale of surplus water and under ORS 198.010(2), a “district” means a domestic water supply district organized under ORS chapter 264. The Department also notes that under OAR Chapter 690 definitions the Water District is also considered a "Municipal Corporation", which means any county, city, town or district as defined in ORS 198.010, that is authorized by law to supply water for usual and ordinary municipal water uses, and Department maintains that the use of water for the solar facility would be considered ordinary municipal water uses as discussed above.¹⁹² Finally, under OAR 690-300-0010 (39), the Department asserts that the Water District would also be considered a "Public Corporation", which means a corporation that operates subject to control by a local government entity which, at least in part, is organized to serve a public purpose of, and receives public funds, from such government. The Department clarifies the above to point to the definition for Quasi-Municipal Water Use (the water use purpose within the Water District’s permits), that states, “use of water through the water service system of a corporation *other than a public corporation created for the purpose of operating a water supply system*, for those uses usual and ordinary to municipal water use...A

¹⁸⁸ OAR 690-300-0010 (40) "Quasi-Municipal Water Use" means the delivery and use of water through the water service system of a corporation other than a public corporation created for the purpose of operating a water supply system, for those uses usual and ordinary to municipal water use, or a federally recognized Indian tribe that operates a water supply system for uses usual and ordinary to a municipal water use. A quasi-municipal water right shall not be granted the statutory municipal preferences given to a municipality under ORS 537.190(2), 537.230(1), 537.352, 537.410(2), 540.510(3), 540.610(2), (3), or those preferences over minimum streamflows designated in a basin program.

¹⁸⁹ OAR 690-300-0010 (29) "Municipal Water Use" means the delivery and use of water through the water service system of a municipal corporation for all water uses usual and ordinary to such systems. Examples of these water uses shall include but are not limited to domestic water use, irrigation of lawns and gardens, commercial water use, industrial water use, fire protection, irrigation and other water uses in park and recreation facilities, and street washing. Such uses shall not include generation of hydroelectric power.

¹⁹⁰ OSCAPP Proposed Order Agency Consultation Solar Industrial Use OWRD Bjork 2020-09-09.

¹⁹¹ Commenters on the DPO assert that the Water District is prohibited under its water permits/certificates from selling water to the Developer to be used at the Facility. The applicant provides an explanation in its responses to comments on the DPO, including the assertion that the Water District is an entity organized under ORS chapter 264, however the applicant does not provide any supporting documentation. OSCAPPDoc4-24 DPO Public Comment Reeder and Fort Rock Neighbors 2020-07-20; OSCAPPDoc4-6.5 DPO Comments Applicant Responses to DPO Comments 2020-07-22

¹⁹² OAR 690-300-0010 (28).

1 quasi-municipal water right shall not be granted the statutory municipal preferences given to a
2 municipality under ... 540.510(3)...".¹⁹³ [Emphasis added.] ORS 540.510 establishes that all water
3 used for any purpose shall remain appurtenant to the premises upon which it is used and no
4 change in use or place of use of any water for any purpose may be made without compliance
5 with the listed provisions or with the exceptions defined in the statute. ORS 540.510(3)(a)
6 allows for any water used under a permit or certificate issued to a municipality may be applied
7 to beneficial use on lands to which the right is not appurtenant if the use continues to be for
8 municipal purposes and would not interfere with or impair prior vested water rights, such as
9 the case with the Water District selling water to the applicant for use during construction and
10 operation of the proposed facility. ORS 540.510(3)(b) expands on what is considered a
11 municipality, which includes a domestic water supply district formed under ORS chapter 264.
12 Notably, the Water District is considered a public corporation formed under ORS chapter 264
13 and a municipal corporation under OAR 690-300-0010 (28), therefore the statutory limitations
14 stated in OAR 690-300-0010 (40), specially that quasi-municipal water rights shall not be
15 granted the statutory municipal preferences given to a municipality under ORS 540.510, do not
16 apply to the Water District and the Water District may use water which the right is not
17 appurtenant (different place of use), if the use continues to be for municipal purposes and
18 would not interfere with or impair prior vested water rights.¹⁹⁴

19
20 The applicant also preliminarily confirmed with the City of La Pine that if additional or
21 alternative water is needed, the applicant may purchase water from the City of La Pine,
22 however verification of this was not provided in the ASC. To verify that the applicant does not
23 need a water right for construction and operation of the proposed facility, the Department
24 recommends the following condition:

25
26 **Recommended Water Rights Condition 1:** Prior to construction of the facility, certificate
27 holder shall submit to the Department the following information related to its water service
28 provider for construction related water use:

- 29 a. Name of water provider, water permit or water right number or copy of, and letter from
30 provider confirming water availability to meet construction water demand;

¹⁹³ ORS 540.510 (3):

(a) Any water used under a permit or certificate issued to a municipality...may be applied to beneficial use on lands
to which the right is not appurtenant if:

(A)The water is applied to lands which are acquired by annexation or through merger, consolidation or formation
of a water authority, so long as the rate and use of water allowed in the original certificate is not exceeded;

(B)The use continues to be for municipal purposes and would not interfere with or impair prior vested water
rights; or

(b)As used in this subsection, "municipality" means a city... a domestic water supply district formed under ORS
chapter 264, a water supplier as defined in ORS 448.115 (Definitions for ORS 448.115 to 448.285) or a water
authority formed under ORS chapter 450.

¹⁹⁴ This assessment is confirmed by OWRD who explains that, "ORS 540.510(3)(a)(B) states that any water used
under a permit issued to a municipality may be applied to beneficial use on lands to which the right is not
appurtenant if the use under the water use permit continues to be for "municipal purposes" and the use "would
not interfere with or impair prior vested water rights." The Christmas Valley Water Supply District is a municipality
for the purposes of ORS 540.510(3)..." OSCAPP Proposed Order Agency Consultation OWRD Bjork 2020-09-15

- b. Confirmation from water provider that water can be used at the facility site given any applicable restrictions of the water right or permit;
- c. If sufficient water is not available from local service provider(s) to meet facility construction water needs, certificate holder shall confirm whether it needs to amend the site certificate to incorporate a water permit/right under Council jurisdiction or provide evidence that its third party contractor has obtained a water right or permit for water use at the site.

The applicant would also construct up to two on-site wells, one at each O&M building to be used during construction and operation of the proposed facility. Under 690-340-0010(1)(d), a commercial or industrial operation (in this case the construction and operation of a solar facility) shall be allowed only one well system and exemption under the exemptions defined in ORS 537.545(1)(f) on each ownership or tax lot, whichever is larger. The proposed facility would be located on separate tax lots according to ASC Exhibit F, Figure F-1, therefore under the rule, separate wells, part of a well systems may be constructed and apply under the exemption discussed below. Under ORS 537.545(1)(f), an exempt use of ground water includes any single industrial or commercial purpose in an amount not exceeding 5,000 gallons a day. The “purpose” is the construction and operation of the proposed solar facility; therefore, the proposed facility may not exceed 5,000 gallons per day use water from the well system.¹⁹⁵ The applicant’s proposal for use of groundwater from groundwater wells qualifies for an exemption under ORS 537.545(1)(f), therefore no registration, certificate of registration, application for a permit, permit, certificate of completion or ground water right certificate is required.¹⁹⁶

~~In accordance with OAR 690-340-0010(1)(d), each O&M building, if on a separate tax lot, and on its own water system (unique well, pump, and piping) would qualify for its own commercial exemption of 5,000 gallons per day.~~ Under ORS 537.545(5) through (7), the landowner where an exempt well is constructed must file a record of the well, with appropriate fee, with the OWRD.¹⁹⁷ The provisions of ORS 537.765 outline water log requirements and apply to any person who constructs, alters, abandons or converts a well, which would apply to bonded contractors installing the wells, and not the applicant.

During operation, the applicant expects to use approximately 1,364,000 gallons per year under worst-case conditions, and 1,201,00 gallons of water per year under average conditions.¹⁹⁸ Water will primarily be used for solar panel washing activities, for potable water in the O&M

¹⁹⁵ Commenters contend that ORS 537.545(1)(f) exempts ground water usage for a purpose and that the purpose of water use is the proposed solar facility, therefore the applicant may not withdraw more than 5,000 gallons per day from the two on-site wells without a WRD permit. The Department concurs. The applicant affirms this position in its responses to DPO comments, and maintains that it will limit its daily usage to 5,000 gallons per day under ORS 537.545(1)(f). OSCAPDoc4-24 DPO Public Comment Reeder and Fort Rock Neighbors 2020-07-20; OSCAPDoc4-6.5 DPO Comments Applicant Responses to DPO Comments 2020-07-22.

¹⁹⁶ ORS 537.545(1)(f) “No registration, certificate of registration, application for a permit, permit, certificate of completion or ground water right certificate under ORS 537.505...is required for the use of ground water for: ** (f) Any single industrial or commercial purpose in an amount not exceeding 5,000 gallons a day...”

¹⁹⁷ See OAR 690-190-0005 for exempt groundwater use recording requirements in rule.

¹⁹⁸ OSCAPDoc4 ASC 21 OSC ASC Exhibit U 2019-10-17, U.2.2.

buildings, water use if septic systems are installed. The primary sources of water during operation will be the one to two wells dug on site, which together, will each may provide up to 5,000 gallons of water per day. ~~The primary sources of water during operation will be the one to two wells dug on site (as described above), which will each provide up to 5,000 gallons of water per day.~~

In response to comments on the record, the applicant represents that it would install a water meter on any groundwater wells located within the proposed facility boundary to confirm the water usage for the construction and operation in within the 5,000 gallon per day limit identified in ORS 537.545(1)(f).¹⁹⁹ This applicant represented condition is also consistent with OAR 690-215-0080, which allows the Oregon Water Resources Department (WRD) to require landowners to install totalizing flowmeters or dedicated measuring tubes on existing permitted wells and on wells which are exempted by ORS 537.545.

Because the applicant proposes to use water from the up to two on-site wells during construction and operation of the facility, and represents it will install water meter(s) at the well(s), to ensure compliance with statutory ~~requirements~~ limitations under ORS Chapters 537, the Department recommends the following condition:

Recommended Water Rights Condition 21: The certificate holder shall:

- a. Following installation of any onsite groundwater well, but prior to water withdrawal for facility water use, install a totalizing flowmeter or dedicated measuring tubes for tracking of daily water use not to exceed 5,000 gallons per well.
- b. During construction and operation, maintain totalizing flowmeters or dedicated measuring tubes.
- c. Within 30 days after well completion for ~~each~~ new exempt well(s) under ORS 537.545, the certificate holder shall follow the recording requirements under OAR 690-190-0100. If the certificate holder is not the landowner, the certificate holder shall facilitate the landowner submission of required materials to Oregon Water Resources Department. The certificate holder shall submit to the Department a copy of the file submitted to Oregon Water Resources Department.

[GEN-WR-01]

The applicant maintains that if more water is needed, applicant ~~will~~ would purchase it from a private or municipal source that has the necessary permits.

Based on the recommended findings and proposed condition, the Department recommends Council find that the applicant does not need a groundwater permit, surface water permit, or water right transfer. If such a permit is required by the applicant at a later time, a site certificate amendment would be required to review and consider such a permit application if secured by the applicant (certificate holder) directly.

¹⁹⁹ OSCAPPDoc4-24 DPO Public Comment Reeder and Fort Rock Neighbors 2020-07-20.

1 **Conclusions of Law**

2

3 Based on the foregoing findings of fact and recommended condition of compliance with other
4 applicable rules, the Department recommends that the Council conclude that the proposed
5 facility does not need a groundwater permit, surface water permit, or water right transfer.

6

V. PROPOSED CONCLUSIONS AND ORDER

The applicant submitted an application for site certificate to construct and operate approximately 400 MWac of solar photovoltaic power generation equipment and its related or supporting facilities (2-mile 115 kV transmission line; collector substations; operations and maintenance building; communication and supervisory control and data acquisition system; temporary staging areas; battery storage) to be located in northern Lake County. Subject to compliance with the recommended site certificate conditions and based on the preponderance of evidence on the record, the Department recommends Council find that:

1. The proposed Obsidian Solar Center complies with the requirements of the Oregon Energy Facility Siting Statutes, ORS 469.300 to 469.520.
2. The proposed Obsidian Solar Center complies with the standards adopted by the Council pursuant to ORS 469.501.
3. The proposed Obsidian Solar Center complies with all other Oregon statutes and administrative rules identified in the second amended project order as applicable to the issuance of a site certificate for the proposed facility.

Based on the recommended findings of fact, reasoning, recommended conditions and conclusions of law in this proposed order, the Department recommends that Council conclude that the applicant has satisfied the requirements for issuance of a site certificate for the proposed Obsidian Solar Center. The Department further recommends that, pursuant to ORS 469.401, the Chairperson execute the site certificate authorizing the applicant to construct, operate and retire the facility subject to the conditions set forth in the site certificate.

Issued this 9th day of October 2020

The OREGON DEPARTMENT OF ENERGY

By: 
Todd Cornett, Assistant Director
Oregon Department of Energy, Energy Facility Siting Division

Attachments:

- Attachment A: Draft Site Certificate Conditions
- Attachment B: ~~{Reserved for}~~ Draft Proposed Order Comment Index and Crosswalk
- Attachment C: Reviewing Agency Comment Letters Referenced in the DPO
- Attachment I-1: Draft Erosion and Sediment Control Plan
- Attachment I-2: Draft Spill Management Plan
- Attachment P-1: Draft Habitat Mitigation Plan
- Attachment P-2: Wildlife Monitoring Plan
- Attachment P-3: Draft Revegetation and Noxious Weed Control Plan
- Attachment S-1: Archaeological Testing and Excavation Methodologies Plan
- Attachment S-2: Inadvertent Discovery Plan
- Attachment S-3: ~~Draft~~ Cultural Mitigation and Monitoring Plan
- Attachment S-4: SHPO Archaeological Permits (Redacted)
- Attachment U-1 Kittelson Traffic Impact Assessment
- Attachment U-2 Draft Construction Traffic Management Plan
- Attachment U-3 Draft Fire Protection and Emergency Response Plan
- Attachment U-4: Draft Dust Abatement and Management Plan

Notice of the Right to Appeal

[Text to be added to Final Order]

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Attachment A: List of Draft Site Certificate Conditions

List of Draft Site Certificate Conditions by Standard

As recited in the context of the applicable Council Standard to which they refer, the Department recommends that the Site Certificate be subject to the following conditions. Revisions to recommended conditions between the Draft Proposed Order to Proposed Order are presented in red-line to support review and tracking.

General Standard of Review (OAR 345-022-0000)

Recommended General Standard Condition 1: The certificate holder shall begin and complete construction of the facility by the dates specified in the site certificate.

- a. Construction of the facility shall commence within three years after the date of Council action [DATE TO BE SPECIFIED]. Within 7 days of construction commencement, the certificate holder shall provide the Department written verification of the construction commencement date and that it has met the construction commencement deadline.
- b. Construction of all facility components shall be completed within three years after construction commencement identified in (a.) of this condition. Within 7 days of construction completion, the certificate holder shall provide the Department written verification that it has met the construction completion deadline.

[GEN-GS-01; Mandatory Condition OAR 345-025-0006(4)]

Recommended General Standard Condition 2: The certificate holder shall submit a legal description of the site to the Oregon Department of Energy within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identify the outer boundaries that contain all parts of the facility.

[OPR-GS-01; Mandatory Condition OAR 345-025-0006(2)]

Recommended General Standard Condition 3: The certificate holder shall design, construct, operate, and retire the facility:

- a. Substantially as described in the site certificate;
- b. In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the site certificate is issued; and
- c. In compliance with all applicable permit requirements of other state agencies.

[GEN-GS-02; Mandatory Condition OAR 345-025-0006(3)]

Recommended General Standard Condition 4: Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under this section, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the certificate holder has construction rights

on all parts of the site. For the purpose of this rule, “construction rights” means the legal right to engage in construction activities. For the transmission line associated with the energy facility, if the certificate holder does not have construction rights on all parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-0010, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and the certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of a transmission line occurs during the certificate holder’s negotiations to acquire construction rights on another part of the site.

[PRE-GS-01; Mandatory Condition OAR 345-025-0006(5)]

Recommended General Standard Condition 5: If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and any affected site certificate conditions.

[GEN-GS-03; Mandatory Condition OAR 345-025-0006(6)]

Recommended General Standard Condition 6: Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for facility operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility.

[OPR-GS-01; Mandatory Condition OAR 345-025-0006(11)]

Recommended General Standard Condition 7: Before any transfer of ownership of the facility or ownership of the site certificate holder, the certificate holder shall inform the Department of the proposed new owners. The requirements of OAR 345-027-0100 apply to any transfer of ownership that requires a transfer of the site certificate.

[GEN-GS-04; Mandatory Condition OAR 345-025-0006(15)]

Recommended General Standard Condition 8: The certificate holder shall:

- a. Design, construct and operate the transmission line in accordance with the requirements of the National Electrical Safety Code as approved by the American National Standards Institute; and
- b. The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the line.

[GEN-GS-05; Site Specific Condition OAR 345-025-0010(4)]

Recommended General Standard Condition 9: The certificate holder is authorized to construct a 115-kV transmission line anywhere within the approved corridor, subject to the conditions of the site certificate. The approved corridor extends approximately 2 miles from Area A to Area D. From east to west, the first 0.5-mile corridor extends 60 feet in width within a private property transmission easement, and the remaining 1.5-mile corridor extending 60 feet in width within the exiting road right-of-way of Connley Lane, as further described in ASC Exhibits B and C and as presented in Figure 1 of the site certificate. [GEN-GS-06; Site Specific Condition OAR 345-025-0010(5)]

Recommended General Standard Condition 10: At least 90 days prior to beginning construction of the facility (unless otherwise agreed to by the Department), the certificate holder shall submit to the Department a compliance plan documenting and demonstrating actions completed or to be completed to satisfy the requirements of all site certificate terms and conditions and applicable statutes and rules. The plan shall be provided to the Department for review and compliance determination for each requirement. The Department may request additional information or evaluation deemed necessary to demonstrate compliance. [PRE-GS-02; OAR 345-026-0048]

Organizational Expertise (OAR 345-022-0010)

Recommended Organizational Expertise Condition 1: During construction and operation of the facility, the certificate holder shall report to the Department, within 21 days, any change of the parent companies, Obsidian Renewables, LLC and Lindgren Development, Inc., such as changes within the Board of Directors, President or Chief Executive Office, where the certificate holder considers such change to that could impact the certificate holder's access to the resources or expertise of the parent companies. [GEN-OE-01]

Recommended Organizational Expertise Condition 2: Before beginning construction of the facility, the certificate holder shall notify the Department of the identity and qualifications of the major design, engineering and construction contractor(s). The certificate holder shall select contractors that have substantial experience in the design, engineering and construction of similar facilities. The certificate holder shall report to the Department any changes of major contractors. [PRE-OE-01]

Recommended Organizational Expertise Condition 3: During design, construction, operation, and retirement of the facility, the certificate holder shall contractually require all contractors and subcontractors to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. The contractual obligation shall be required of each contractor and subcontractor prior to that firm working on the facility. Such

contractual provisions shall not operate to relieve the certificate holder of responsibility under the site certificate.

[GEN-OE-02]

Recommended Organizational Expertise Condition 4: Any matter of non-compliance under the site certificate is the responsibility of the certificate holder. Any notice of violation issued under the site certificate will be issued to the certificate holder. Any civil penalties under the site certificate will be levied on the certificate holder.

[GEN-OE-03]

Recommended Organizational Expertise Condition 5: In addition to the requirements of OAR 345-026-0170, within 72 hours after discovery of incidents or circumstances that violate the terms or conditions of the site certificate, the certificate holder must report the conditions or circumstances to the Department.

[GEN-OE-04]

Structural Standard (OAR 345-022-0020)

Recommended Structural Standard Condition 1: At least 60-days prior to construction of the facility, the certificate holder shall:

1. ~~Con~~Conduct a site-specific geotechnical investigation in accordance with the 2014 version of the Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports, or newer guidelines if available. The investigation report shall be submitted to DOGAMI and the Department, for review. The geotechnical investigation will include the following:
 - a. Borings sufficient to develop seismic site classification(s) to facilitate engineering studies and site design;
 - b. Foundation-specific investigations appropriate for the structures and their accompanying loads; and
 - c. As recommended by licensed project engineers, soil and rock laboratory tests, such as soil and rock classification and strength testing, electrical resistance, corrosivity, scanning electron microscopy, soil collapsibility, and other parameters.
2. The certificate holder's final facility engineering must include geotechnical engineering design for foundations (substations, O&M buildings, inverter/transformer pads, battery systems), including seismic design that incorporates detailed site-specific conditions, based on the results of the site-specific investigation report described in this condition.

[PRE-SS-01]

Recommended Structural Standard Condition 2: The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule "seismic hazard" includes ground shaking, ground failure, landslide, liquefaction triggering and consequences (including flow

failure, settlement buoyancy, and lateral spreading), cyclic softening of clays and silts, fault rupture, directivity effects and soil-structure interaction.

[GEN-SS-01; Mandatory Condition OAR 345-025-0006(12)]

Recommended Structural Standard Condition 3: The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the application for a site certificate. After the Department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division to propose and implement corrective or mitigation actions.

[GEN-SS-02; Mandatory Condition OAR 345-025-0006(13)]

Recommended Structural Standard Condition 4: The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site. After the Department receives notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division to propose and implement corrective or mitigation actions.

[GEN-SS-03; Mandatory Condition OAR 345-025-0006(14)]

Soil Protection (OAR 345-022-0022)

Recommended Soil Protection Condition 1:

- a. Prior to obtaining the DEQ-issued NPDES 1200-C permit, the certificate holder shall evaluate the results of the preconstruction Geotechnical Investigation to develop appropriate, site-specific erosion and dust control measures, to be reflected in the Erosion and Sediment Control Plan.
- b. Prior to construction of the facility, the certificate holder shall provide a copy to the Department of its DEQ-issued NPDES 1200-C permit, including final Erosion Sediment Control Plan and associated drawings (as provided in Attachment I-1 of the Final Order on the ASC).
- c. During construction of the facility, the certificate holder shall conduct all work in compliance with a final Erosion and Sediment Control Plan that is satisfactory to the Oregon Department of Environmental Quality as required under the National Pollutant Discharge Elimination System Construction Stormwater Discharge General Permit 1200-C.
- d. The certificate holder must provide include-copies of completed Erosion and Sediment Control Inspection Forms (forms) for Department review during construction inspections and, if requested by the Department based on continuous erosion and dust issues and corrective actions at the site, must provide form copies to the Department within 7-days of inspections, in electronic format, to allow the Department, in

consultation with Oregon Department of Environmental Quality and Lake County Public Works Department, the ability to recommend additional site control evidence include evidence of compliance with the permit in its semi-annual construction reports and annual reports to the Department.

[GEN-SP-01]

Recommended Soil Protection Condition 2:

- a. Prior to construction of the facility, the certificate holder must submit to the Department ~~for review and approval~~ an updated a Spill Management Plan for Construction (i.e. materials inventory). The Spill Management Plan shall contain the measures discussed in the ASC for managing and disposing of hazardous materials. The certificate holder must construct the facility in compliance with the ~~Department-~~ approved plan.
- b. Prior to operation of the facility, the certificate holder must submit to the Department ~~for review and approval~~ an updated Spill Management Plan for Operation (i.e. materials inventory). The certificate holder must operate the facility in compliance with the Department-approved plan.

[GEN-SP-02]

Land Use (OAR 345-022-0030)

Recommended Land Use Condition 1: Prior to construction of the facility, the certificate holder shall:

- a. Submit a conditional use and zoning permit application along with the proper filing fees to Lake County Planning Department for issuance pursuant to ORS 469.401(3); and
- b. Obtain all other necessary local permits, including building permits and onsite sewage treatment system permits.

[PRE-LU-01]

Recommended Land Use Condition 2: Prior to construction of the facility, the certificate holder shall demonstrate to the Department and Lake County Planning Department through mapping or other engineering drawing that the final facility layout complies with the following county yard setback and vision clearance area requirements:

- a. 50-foot minimum sideyard setback distance from permanent foundations (inverter/transformer units, collector/step-up substations, O&M buildings, battery storage enclosures) to adjacent non-participating property boundaries.
- b. 20-foot minimum front and rear yard setback distance from permanent foundations (inverter/transformer units, collector/step-up substations, O&M buildings, battery storage enclosures) to adjacent non-participating property boundaries.
- c. 45-foot minimum setback from the centerline of any county or other public or street right-of-way to permanent foundations (inverter/transformer units, collector/step-up substations, O&M buildings, battery storage enclosures).
- d. ~~At the intersection of any two streets, existing and constructed,~~ 20-foot minimum

triangular vision clearance area at access road driveways constructed by the facility that provide access to a public roadway.

- e. ~~At the intersection of any two streets, existing and constructed,~~ 2.5-foot height restriction on planting, fence, wall, structure, or temporary or permanent obstruction, measured from the top of the curb or, where no curb exists, from the established street center line grade, except that trees exceeding this height may be located in this area, provided all branches and foliage are removed to a height eight (8) feet above grade.

[PRE-LU-02]

Recommended Land Use Condition 3: Prior to construction of the facility, the certificate holder shall provide a map presenting facility site boundary, access roads and road approaches; county roads; and, the County's mapped Goal 5 Big Game Winter Range habitat overlay. If the certificate holder ~~identifies constructs~~ new facility access roads or road approaches from County Road 5-12 A onto the site, certificate holder shall demonstrate to the Department and Lake County Planning Department how the length of the road or road ~~deh~~ approach ~~has been minimized to reduce big game habitat impacts from road related habitat fragmentation~~ complies with LCZO Section 18.05(D)(3)(c).

[PRE-LU-03]

Recommended Land Use Condition 4: During facility operation, the certificate holder shall include in the annual report the condition of the perimeter fence and identify whether any repairs were completed within the reporting year, or if scheduled for following reporting year.

[OPR-LU-01]

Recommended Land Use Condition 5: The certificate holder shall:

- a. Prior to construction of the facility, provide to the Department a list of all State and federal permits or approval necessary for construction or operation of the facility. Certificate holder shall consider ASC Exhibit E in identifying necessary permits.
- b. At least 90-day following construction commencement, provide evidence of all State and federal permits or approval identified per sub(a) of this condition.

[GEN-LU-1]

Recommended Land Use Condition 6: Prior to construction of the facility, the certificate holder shall sign and record in the county deed records a document binding the certificate holder owner, and any certificate holder owner successors in interest, prohibiting them from pursuing a claim for relief of cause of action alleging injury from farming or forest practices as defined in ORS 30.930(2) and (4).

[PRE-LU-04]

Recommended Land Use Condition 7: Prior to operation of the facility, the certificate holder shall:

- a. Provide a copy to the Department of the Strategic Investment Program Agreement as executed by Lake County and certificate holder. The SIP agreement shall demonstrate, at a minimum, annual Community Service Fees of \$2,000 per megawatt alternating current (MWac), based on nameplate installed capacity.
- b. Provide a one-time contribution to the North Lake County School District Foundation based on \$10,000 per MWac capacity, based on final design of the facility constructed by the construction completion deadline defined in General Standard Condition 1.

[PRO-LU-01]

Protected Areas (OAR 345-022-0040)

The Department does not recommend any conditions specific to the Protected Areas standard.

Retirement and Financial Assurance (OAR 345-022-0050)

Recommended Retirement and Financial Assurance Condition 1: The certificate holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder.

[Mandatory Condition OAR 345-025-0006(7); GEN-RF-01]

Recommended Retirement and Financial Assurance Condition 2: The certificate holder shall retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder shall retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder shall pay the actual cost to restore the site to a useful, nonhazardous condition at the time of retirement, notwithstanding the Council's approval in the site certificate of an estimated amount required to restore the site.

[Mandatory Condition OAR 345-025-0006(9); RET-RF-01]

Recommended Retirement and Financial Assurance Condition 3: If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council shall notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed final retirement plan for the Council's approval.

Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in OAR 345-025-0006(8) to restore the site to a useful,

nonhazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall pay any additional cost necessary to restore the site to a useful, nonhazardous condition. After completion of site restoration, the Council shall issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan.

[Mandatory Condition OAR 345-025-0006(16); RET-RF-02]

Recommended Retirement and Financial Assurance Condition 4: Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility.

[Mandatory Condition OAR 345-025-0006(8); PRE-RF-01]

Recommended Retirement and Financial Assurance Condition 5: Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The total bond or letter of credit amount for the facility is \$28.8 million dollars (Q3 2018 dollars), to be adjusted to the date of issuance, and adjusted on an annual basis thereafter, as described in sub-paragraph (b) of this condition:

- a. The certificate holder may adjust the amount of the bond or letter of credit based on the design configuration of the facility by applying the unit costs, general costs and ODOE applied contingencies as illustrated in Table 3 of the Final Order on the ASC. Any revision to the restoration costs should be adjusted to the date of issuance as described in (b) and subject to review and approval by the Council.
- b. The certificate holder shall adjust the amount of the bond or letter of credit using the following calculation:
 - i. Adjust the amount of the bond or letter of credit (expressed in Q3 2018 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency and using the third quarter 2018 index value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, the Council shall select a comparable calculation to adjust third quarter 2018 dollars to present value.
 - ii. Round the result total to the nearest \$1,000 to determine the financial assurance amount.

- c. The certificate holder shall use an issuer of the bond or letter of credit approved by the Council, based on the Council's pre-approved financial institution list.
 - d. The certificate holder shall use a form of bond or letter of credit approved by the Council. The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under OAR 345-026-0080. The bond or letter of credit shall not be subject to revocation or reduction before retirement of the facility site.
- [PRE-RF-02]

Fish and Wildlife Habitat (OAR 345-022-0060)

Recommended Fish and Wildlife Habitat Condition 1: The certificate holder shall:

- a. Prior to construction of the facility, the certificate holder shall finalize and submit the Revegetation and Noxious Weed Control Plan, based upon the draft plan provided in Attachment P-3 of the Final Order on the ASC, for review and approval by the Department, in consultation with ODFW and Lake County Weed Control Supervisor. The scope of finalizing the plan shall, at a minimum, include the following:
 - 1. Final assessment of temporary habitat impacts (in acres), based on habitat quality of habitat subtype, and final facility design, presented in tabular format.
 - 2. Survey and sampling protocol for evaluating the success criteria against paired monitoring and reference sites determined to represent a statistically significant number of sites based on pre-disturbance habitat quality and diversity of habitat temporarily impacted.
 - 3. Approval of appropriate revegetation seed mix from ODFW.
 - 4. Confirmation of revegetation and noxious weed monitoring frequency, to occur annually for the first 5-years following construction, unless otherwise agreed to by the Department in consultation with ODFW, Lake County or the Cooperative Weed Management Area
 - 5. Assurance that the success criteria for vegetation cover is based upon desirable, native vegetation.
- b. During construction and operation of the facility, the certificate holder shall implement the requirements of the plan; monitor and report results of revegetation activities to the Department, as required by the plan.

[GEN-FW-01]

Recommended Fish and Wildlife Habitat Condition 2: The certificate holder shall:

- a. Prior to construction of the facility, the certificate holder shall finalize and submit a Habitat Mitigation Plan, based upon Option 3 of the draft plan provided in Attachment P-1 of the Final Order on the ASC, for review and approval by the Department, in consultation with ODFW.

HMP Option 3 is the only mitigation that may be utilized without amendment of the HMP due to insufficient evidence available to demonstrate that Options 1 and 2 meet the requirements of OAR 345-022-0060.

In the finalization of the plan, the Department may request reporting requirements including specific information, frequency and format. Components of the plan to be finalized shall include, at a minimum, a final assessment of permanent habitat impacts (in acres) based on habitat quality of habitat subtype, and final facility design, presented in tabular format.

- b. During construction and operation of the facility, the certificate holder shall implement the requirements of the plan as approved under sub(a) of this condition.

[GEN-FW-02]

Recommended Fish and Wildlife Habitat Condition 3: Prior to and during construction of the facility, the applicant shall provide, and keep records documenting completion of, environmental awareness training for all facility personnel and on-site contractors. The training program shall discuss State Sensitive Species and all other environmental issues related to the facility, including information about pygmy rabbit identification information and reporting procedures.

[GEN-FW-03]

Recommended Fish and Wildlife Habitat Condition 4: During construction, operation, and retirement of the facility, the certificate holder shall impose and enforce a speed limit of 15 miles per hour within the site boundary.

[GEN-FW-04]

Recommended Fish and Wildlife Habitat Condition 5: During trenching and backfilling activities necessary for construction or operation of the facility, the certificate holder shall ensure that contractors or facility personnel responsible for the work avoid leaving trenches open overnight, as practicable. Where trenches remain open overnight, the trenches shall include wildlife escape ramps approximately every 90 meters with slopes of less than 45 degrees. Trenches shall be inspected, and any wildlife found removed prior to backfilling.

[GEN-FW-05]

Recommended Fish and Wildlife Habitat Condition 6: The certificate holder shall:

- a. Prior to construction or any subsequent year of construction of the facility, the certificate holder shall hire a qualified biologist to conduct a ground survey for non-raptor migratory bird nests, based on a protocol to be submitted to the Department for review and approval in consultation with ODFW. Nest surveys for non-raptor species shall be conducted within 50 feet of all disturbance areas, including the transmission line and access roads.

- b. During construction of the facility, if the biologist detects active migratory bird nests during bird nest surveys, the certificate holder shall ensure that construction activities adhere to 30-foot disturbance buffers around the nests until the nest has been abandoned/depredated or the eggs hatch and young have fledged.

[GEN-FW-06]

Recommended Fish and Wildlife Habitat Condition 7: The certificate holder shall:

- a. Prior to any year of construction of the facility, the certificate holder shall hire a qualified biologist to conduct a pre-construction survey for raptor nests, based on a protocol to be submitted to the Department for review and approval in consultation with ODFW. Pre-construction raptor nest surveys shall extend 0.5 miles of proposed disturbance areas, to the extent the certificate holder has legal access. Raptor nest surveys shall be conducted no more than two weeks prior to the start of construction activities. If the biologist detects active raptor nests, the certificate holder shall implement and maintain disturbance buffers around the nests in which construction activities are prohibited until the nest has been abandoned/depredated or the eggs hatch and young have fledged.
- b. Prior to construction, the certificate holder shall develop a construction plan that demonstrates construction activities within 0.25 of a mile from previously identified active nest sites, except for golden eagle nest sites which should apply a 0.50-mile buffer distance, are scheduled to avoid the sensitive nesting and breeding season. Previously identified nest sites are those identified during surveys per sub(a) of this condition.
- c. During construction of the facility, the certificate holder shall ensure that construction work maintains a 0.25-mile buffer distance from all raptor nests, except for golden eagle (*Aquila chrysaetos*) 0.5 miles) and red-tailed hawk (300 to 500 feet) during the sensitive nesting and breeding season presented in the table below. In cases where smaller buffers or restricted work authorizations might be appropriate, the certificate holder shall coordinate with the Department and ODFW or the USFWS to decrease buffer sizes and/or to allow restricted construction activities. Facility vehicles shall be permitted within buffers on paved public roads. Most light traffic by rubber-tired vehicles shall be permitted to pass through the buffer on existing unpaved access roads, if needed, and as determined by the on-site environmental monitor.

Status Sensitive/Raptor Species	Buffer Size (Radius Around Nest Site):	Sensitive Nesting and Breeding Season
Western burrowing owl	0.25 mile	April 1 to August 15
Ferruginous hawk	0.25 mile	March 15 to August 15
Swainsons hawk	0.25 mile	April 1 to August 15
Red-tailed hawk	500 feet	March 1 to August 31
Golden eagle	0.50 25 mile	Feb 1 – August 31

[GEN-FW-07]

Recommended Fish and Wildlife Habitat Condition 8: During design and construction of the facility, the certificate holder shall ensure that aboveground transmission line and aboveground portions of the electrical collection system adhere to the current APLIC guidelines for minimizing avian electrocution risks.

[GEN-FW-08]

Recommended Fish and Wildlife Habitat Condition 9: The certificate holder shall:

- a. No more than 3-years prior to construction of the facility, conduct pygmy rabbit (*Brachylagus idahoensis*) surveys within the portion of the site boundary inside the perimeter fence, based on the final design of the facility, using the same ~~based on a survey area appropriate for the location of facility components and a~~ protocol approved for the pygmy rabbit surveys conducted as part of ASC Exhibit P (Attachment P-1 Section 2.3). ~~by the Department in consultation with ODFW.~~ Pygmy rabbit surveys shall also document presence of ~~burrowing owls (*Athene cunicularia hypugaea*) and~~ white-tailed jack rabbits (*Lepus townsendii*). Pygmy rabbit survey reports shall be submitted to the Department for review, in consultation with ODFW.
- b. From January 15 through June 15 (pygmy rabbit breeding period), implement a 3-meter (10 foot) buffer area using flagging or constraint maps around burrow complexes identified during preconstruction surveys per subpart(a) of this condition or identified incidentally during construction, unless otherwise approved ~~Prior to construction, the certificate holder shall submit an incidental wildlife mitigation plan (plan) to the Department for review and approval in consultation with ODFW. The plan shall include appropriate minimization and/or mitigation measures that may be implemented if burrow or burrow complexes are identified for pygmy rabbits, burrowing owls, or white-tailed jack rabbits during construction within the survey area. In the event of an incidental wildlife observation of a State-sensitive species occurs during construction, the certificate holder shall notify the Department and ODFW within 24 hours. Construction activities shall halt in the immediate area of the identified complex or burrow site until an appropriate minimization and/or mitigation approach, as established in the plan, is determined~~ by the Department in consultation with ODFW.
- c. During design and prior to construction of the facility, the certificate holder shall develop constraint maps clearing delineating avoidance areas for any previously identified complex (ASC Exhibit P Figure P-1 and pre-construction survey maps) within or in close proximity to the site boundary. Disturbance and facility components shall not occur or be located within identified complexes.

[GEN-FW-9]

Recommended Fish and Wildlife Habitat Condition 10: Prior to any year of construction where vegetation clearing activities would occur, the certificate holder shall implement the following measures to minimize use at the site by, and impacts to, ground nesting birds:

- a. Schedule vegetation clearing activities, including removal of trees, shrubs, and tall grasses to stubs, to occur between September 1 and March 31 for shrubs and trees

shorter than 15 feet, and September 1 to January 15 for trees over 15 feet tall, to the extent practicable.

- b. The certificate holder shall remove vegetation slash material offsite to an approved location or chipping slash in place prior to March 31 to the extent practicable.

[GEN-FW-10]

Recommended Fish and Wildlife Habitat Condition 11: During operation, the certificate holder shall implement the post-construction bird and bat mortality monitoring as established in the Wildlife Monitoring Plan provided in Attachment P-2 of the Final Order on the ASC.

[OPR-FW-01]

Threatened and Endangered Species (OAR 345-022-0070)

The Department does not recommend any conditions specific to the Threatened and Endangered Species standard.

Scenic Resources (OAR 345-022-0080)

Recommended Scenic Resources Condition 1: The certificate holder shall ensure that facility design, construction and operation adheres to the following requirements:

- a. Use earth-tone colors on battery storage enclosures and other buildings to match or complement the predominant colors of surrounding vegetation, or use steel for the enclosure siding that produces a brown rusty patina when weathered.
- b. Facility lighting must be shielded and directed downward and be the minimum necessary for construction, operation, safety, and security. Lighting for operation, safety, and security must be on-demand or motion-activated and/or use timers to minimize light exposure.

[GEN-SR-01]

Historic, Cultural and Archeological Resources (OAR 345-022-0090)

Recommended Historic, Cultural and Archeological Condition 1: The certificate holder shall:

- a. Prior to and during construction, and operation of the facility implement ~~conduct any necessary surveys and construction activities in compliance with~~ the Archeological Testing and Excavation Methodologies Plan (Attachment S-1 to Final Order on ASC) and the Cultural Mitigation and Monitoring Plan (Attachment S-2 to the Final Order on ASC).
 - i. ~~The certificate holder shall submit results of any survey data and technical reports to SHPO in accordance with SHPO's Go Digital requirements and affected Tribal Governments.~~

- ~~ii. Under separate confidential cover, at the completion of construction of the facility, the certificate holder shall submit the final report, including SHPO-NRHP eligibility recommendations, to the Department.~~
 - ~~b. Prior to construction of the facility finalize the Draft Cultural Mitigation and Monitoring Plan, as provided in Attachment S-3 of the Final Order on ASC, and submit to the Department for review and approval, in coordination with SHPO and the affected Tribal Governments. The certificate holder may coordinate with Tribal Governments prior to submitting the finalized Plan to the Department. The Plan shall identify any modifications based on results of any surveys completed following the Archeological Testing and Excavation Methodologies Plan (Attachment S-1 to Final Order on ASC) identified in sub (a) of this condition, or any modifications derived from Tribal or SHPO coordination.~~
 - ~~c.~~ b. During construction and operation of the facility, the certificate holder shall implement and adhere to the requirements of the Inadvertent Discovery Plan, as provided in Attachment S-2 of the Final Order on ASC and the Cultural Mitigation and Monitoring Plan, as provided in Attachment S-3 of the Final Order on ASC.
 - ~~d. During construction and operation of the facility, the certificate holder shall implement and adhere to the requirements of the Cultural Mitigation and Monitoring Plan, as finalized per sub(b) of this condition.~~
- [GEN-HC-01]

Recommended Historic, Cultural and Archeological Condition 2: The certificate holder shall:

- a. Prior to and during construction, and during operation, conduct field testing, excavation and removal of archaeological, historical, prehistoric, and anthropological materials within archaeological sites or objects under ORS 358.920 and ORS 390.235 in compliance with the SHPO Archaeological Permits AP2816, AP2817, AP2818, and AP2819, Attachment S-4 of the Final Order on ASC.
 - b. Administratively Amend, renew, or extend SHPO Archaeological Permits with SHPO for any work governed by the permits to be consistent with the construction commencement **DATE** and construction completion **DATE**, as stated in General Standard Condition 1. Provide copies of any renewed or extended SHPO Archaeological Permits to the Department.
- [GEN-HC-02]

Recreation (OAR 345-022-0010)

The Department does not recommend any conditions specific to the Recreation standard.

Public Services (OAR 345-022-0100)

Recommended Public Services Condition 1: Prior to construction of the facility, the certificate holder shall:

- a. Place a roadside sign along North Oil Dri Road and at facility entrance, including the contact information (cell number) for an onsite representative for dust complaints.
- b. Finalize the Dust Abatement and Management Control Plan included as Attachment U-4 to the Final Order on the ASC, in consultation with the Department.

Recommended Public Services Condition 2: During construction of the facility, certificate holder shall:

- a. Implement the requirements of the Dust Abatement and Management Control Plan, as finalized per sub(b) of the condition.
- b. Report to the Department, as soon as possible, any reported dust nuisance complaints received by the onsite representative, including date, time, complainant name and measures implemented to resolve the issue, or explanation if measures not implemented [OAR 345-025-0006(6)].

Recommended Public Services Condition ~~31~~:

- a. Prior to construction of the facility, the certificate holder shall submit to the Department for review and approval in consultation with Lake County Planning and County Road Department, a Construction Traffic Management Plan that includes, at a minimum, the best management practices, County road use agreement, and traffic sign coordination provided in Attachment U-2 of the Final Order on the ASC;
- b. During construction of the facility, the certificate holder shall implement the Construction Traffic Management Plan, as approved by the Department in consultation with Lake County.

[GEN-PS-01]

Recommended Public Services Condition ~~42~~:

- a. Prior to construction of the facility, the certificate holder shall submit a Final Construction Fire Protection and Emergency Response Plan to the Department, consistent with the components included in the draft plan provided in Attachment U-3 of the Final Order on the ASC, for review and approval. The plan shall also include an updated Emergency and Fire contact list.
- b. Prior to operation of the facility, the certificate holder shall submit an Operational Fire Protection and Emergency Response Plan to the Department, consistent with the components included in the draft plan provided in Attachment U-3 of the Final Order on the ASC). The plan shall also include an updated Emergency and Fire contact list.

[GEN-PS-02]

Waste Minimization (OAR 345-022-0120)

Recommended Waste Minimization Condition 1: During construction, operation, and retirement of the facility, the certificate holder shall develop and implement a Solid Waste Management Plan that includes at a minimum the following measures:

- a. Measures for recycling steel and other metal scrap;
- b. Measures for reusing or recycling wood waste;
- c. Measures for recycling packaging wastes such as paper and cardboard;
- d. Collecting non-recyclable waste for transport to a local landfill by a licensed waste hauler;
- e. Segregating hazardous wastes such as oil, oily rags and oil-absorbent materials, mercury containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of such materials.

[GEN-WM-01]

Siting Standards for Transmission Lines (OAR 345-024-0090)

Recommended Siting Standards for Transmission Lines Condition 1: Prior to operation of the facility, the certificate holder shall provide landowners within 500 feet of the site boundary a map of the 115-kV transmission line and inform landowners of possible health and safety risks from induced currents caused by electric and magnetic fields.

[PRO-TL-01]

Noise Control Regulations (OAR 340-035-0035)

Recommended Noise Control Condition 1:

- a. Prior to construction, the certificate holder shall establish a noise complaint response system to address noise complaints during construction and make it available at the construction manager's office. The Certificate holder shall submit a copy of noise complaint response system to the Department. Records of noise complaints during construction must be made available to the Department upon request. The noise complaint response system shall include, but not be limited to:
 - i. Locate stationary engine-powered construction equipment as far from nearby noise sensitive properties as possible.
 - ii. Shut off idling equipment.
 - iii. Consideration of reschedule construction activities to avoid periods of noise annoyance identified in the complaint.
 - iv. Notify nearby residents before extremely noisy work occurs.
 - v. Locate stationary engine-powered construction equipment as far from nearby noise sensitive properties as possible.
 - vi. Restrict the installation of solar module support posts using the pneumatic pile driver to weekdays and Saturdays, during daytime hours of 7:00 am to 5:00 pm, and notify the residences near the site prior to performing the work.

- b. During construction, all engine powered equipment must have mufflers installed according to the manufacturer's specifications, and all equipment must comply with pertinent equipment noise standards of the U.S. Environmental Protection Agency. [GEN-NC-01]

Recommended Noise Control Condition 2: Prior to construction of the facility, the certificate holder shall:

- a. Submit to the Department a noise summary report presenting the sound power levels (in dBA) of noise generating equipment including solar array inverters and transformers, substation transformers, and battery system inverters and cooling systems, as applicable to final design. The sound power levels shall be supported by equipment manufacturer specifications and noise data. The certificate holder shall provide, in tabular format, a comparison of the sound power levels used in ASC Exhibit X for noise generating equipment and sound power levels validated by manufacturer specifications.
- b. If the sound power levels used in ASC Exhibit X to evaluate compliance with DEQ's noise rules are lower than sound power levels of final equipment selected, the certificate holder shall provide an updated noise analysis to demonstrate compliance with the ambient degradation standard and maximum allowable threshold. The ambient noise level utilized in ASC Exhibit X may be used for the updated noise analysis, if required. [PRE-NC-01]

Removal Fill (ORS 196.795 through 196.990)

The Department does not recommend any conditions specific to Removal Fill Law.

Water Rights (ORS 537, 540 and 690)

Recommended Water Rights Condition 1: Prior to construction of the facility, certificate holder shall submit to the Department the following information related to its water service provider for construction related water use:

- a. Name of water provider, water permit or water right number or copy of, and letter from provider confirming water availability to meet construction water demand;
- b. Confirmation from water provider that water can be used at the facility site given any applicable restrictions of the water right or permit;
- c. If sufficient water is not available from local service provider(s) to meet facility construction water needs, certificate holder shall confirm whether it needs to amend the site certificate to incorporate a water permit/right under Council jurisdiction or provide evidence that its third party contractor has obtained a water right or permit for water use at the site.

Recommended Water Rights Condition ~~21~~: The certificate holder shall:

- a. Following installation of any onsite groundwater well, but prior to water withdrawal for facility water use, install a totalizing flowmeter or dedicated measuring tubes for tracking of daily water use not to exceed 5,000 gallons per well.
- b. During construction and operation, maintain totalizing flowmeters or dedicated measuring tubes.
- c. Within 30 days after well completion for each new exempt well under ORS 537.545, the certificate holder shall follow the recording requirements under OAR 690-190-0100. If the certificate holder is not the landowner, the certificate holder shall facilitate the landowner submission of required materials to Oregon Water Resources Department. The certificate holder shall submit to the Department a copy of the file submitted to Oregon Water Resources Department.

[GEN-WR-01]

Attachment B DPO Comment Index and Crosswalk

Attachment B: Draft Proposed Order Comment Index and Crosswalk

Please follow these links to view and download:

All comments received on the DPO: <https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/07-30-2020-OSC-APPDoc4-DPO-Comments.pdf>

Applicant response to comments on the DPO: <https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/07-30-2020-OSC-APPDoc4-Applicant-Responses-to-DPO-Comments.pdf>

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
Public Comments					
4-2	Mike and Dorothy Ferns	Public	03/19/2020	Roadway dust from project-related road use	Comment did not result in revisions to proposed order; however, issues are addressed in IV.M. Public Services.
4-4	Gail Carbiener	Public	03/31/2020	Potential historic road within site	IV.K. Historic, Cultural and Archeological Resources
4-7	Brad Thorsted	Public	05/11/2020	Road impacts from project-related use	Comment did not result in revisions to proposed order; however, issues are addressed in IV.M. Public Services.
4-11	Doris Kittredge	Public	05/18/2020	Roadway and crop impacts; limited local economic benefit	Comment did not result in revisions to proposed order; however, issues are addressed in IV.M. Public Services and IV.E. Land Use.
4-12	Paul Koreiva	Public	05/19/2020	In favor of project	Comment did not result in revisions to proposed order.

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
4-13	Sam and Alice Dinsdale	Public	05/18/2020	In favor of project	Comment did not result in revisions to proposed order.
4-14	Scott and Jana Kittredge	Public	05/20/2020	Roadway and crop impacts; limited local economic benefit	Comment did not result in revisions to proposed order; however, issues are addressed in IV.M. Public Services and IV.E Land Use.
4-10	Justin Ferrell	Fort Rock/Silver Lake Soil and Water Conservation District	05/19/2020	Wind and water erosion, weeds, water runoff; and sufficiency of monitoring	Sections IV.D. Soil Protection and IV.M. Public Services
4-15	Ryan Nielsen	Oregon & Southern Idaho District Council of Laborers	06/03/2020	In favor of project, job creation	Comment did not result in revisions to proposed order.
4-16	Mike Reeder	Law Office of Mike Reeder (representing six individuals)	05/15/2020; 06/03/2020 07/01/2020 07/13/2020	Procedural issues re: hearing and public notice	Comment did not result in revisions to proposed order.
4-17	Rose Gibson	Public	06/09/2020	Wildlife impacts and global warming	Revisions not incorporated into proposed order. Comments do not refer to any analysis within the ASC or DPO or provide any rule references to support review of issues.
4-18	Gray Eagle	Public	06/13/2020	Wildlife impacts and global warming	Revisions not incorporated into proposed order. Comments do not refer to any analysis within the ASC or DPO

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
					or provide any rule references to support review of issues.
4-19	Paul Hawkins	Public	07/14/2020	In favor of project	Comment did not result in revisions to proposed order.
4-20	Bill Richardson	Rocky Mountain Elk Foundation	07/16/2020	Recommends ODFW coordination to minimize elk displacement impacts	IV.E. Land Use
4-21	James Walls	Lake County Resources Initiative	07/17/2020	Project would benefit climate change – reduce greenhouse gas emissions	Comment did not result in revisions to proposed order.
4-22	Scott and Tonya Mobley	Dog Lake Construction	07/20/2020	In favor of project – job creation	Comment did not result in revisions to proposed order.
4-23	Michael O’Casey	Theodore Roosevelt Conservation Partnership	07/20/2020	Habitat mitigation requirement of 2:1 acreage ratio; address long-term monitoring (Department); request for evaluation in future of cumulative project impacts	IV.H. Fish and Wildlife Habitat
4-24	Mike Reeder	Fort Rock Neighbors	07/20/2020	Water use; soil erosion; agricultural impacts from soil erosion, dust; consistency with comprehensive plan goals and policies; rodent/animal displacement; public services (recommended conditions); financial capability and retirement estimate	Comments did not specifically result in revisions to proposed order, but issues raised are addressed in Sections IV.D. Soil Protection, IV.E. Land Use, IV.H Fish and Wildlife Habitat and IV.M. Public Services Water Rights, IV.Q.3., for revisions addressing

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
					comments regarding water rights and wells.
4-25	Brian Meiering	Wetlands and Wildlife LLC	07/20/2020	2:1 habitat mitigation ratio; rodent/animal displacement – impacts to agriculture/adjacent landowners	IV.H. Fish and Wildlife Habitat; IV.E. Land Use
4-26	Jason Jaeger	Lake County Cooperative Weed Management Association	07/20/2020	Confirmation that CWMA will support project with weed control and revegetation; support of proposed methods/plan	IV.H. Fish and Wildlife Habitat
4-27	David Kerr	North Lake Education Foundation	07/20/2020	In favor of project; confirmation of local economic benefit – school funding	IV.E. Land Use
4-28	Terry Ozbun	Archeological Investigations Northwest, Inc	07/20/2020	Evaluation/confirmation of project compliance with EFSC Historic, Cultural & Arch standard	Comment did not result in revisions to proposed order.
4-29	Sue Anderson	Public	07/20/2020	Concern expressed on documented Golden Eagle nest in proximity to project site	Comment did not result in revisions to proposed order (note: previously recommended F&W Habitat Condition 7 imposes a 0.5-mile buffer restriction from Golden Eagle nest sites, which were not identified during surveys)
4-30	Aaron and Rebecca Borrer	Public	07/20/2020	Concerns regarding dust, road impacts and traffic safety,	Comments did not result in revisions to proposed order;

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
				adjacent farming impacts, waste disposal and facility retirement, issue with Dept of State Land lease and EFSC jurisdiction	however, issues are Sections IV.D. Soil Protection and IV.M. Public Services
4-31	Carl Shumway	Public	07/20/2020	General concern with battery storage, request to see facility plot plan	Comments did not result in revisions to proposed order
4-32	Jerald and Verlinda Simmons	Public	07/20/2020	Concerns regarding property values, wildlife impacts, visual impacts	Revisions not incorporated into proposed order. Comments do not refer to any analysis within the ASC or DPO or provide any rule references to support review of issues
4-33	LeeRoy and Nancy Horton; Dave Hogan	Public and representing LR Farming and Golden Acres	07/20/2020	Concerns regarding impacts to adjacent farm, specifically from wind-borne soil erosion and dust, displacement of rodents, weeds, concern of solar array affecting ambient temperature and humidity; also concern regarding waste and toxicity of broken solar panels.	IV.E. Land Use
4-34	Meriam and Jerimiah Thorsted	Public	07/20/2020	Concerns regarding impacts to adjacent farm, specifically impacts from wind-borne soil erosion and dust to livestock and workers; water use; public safety concern.	Revisions not incorporated into proposed order; however issues are addressed in Section IV.E. Land Use and IV.M. Public Services

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
4-35	Richard Morehouse	Public; past or current owner of leased land to OSC	07/20/2020	Support for project, states that the site is not suitable for agriculture, there is no available water for irrigation, in adequate land to support cattle grazing operation.	IV.E. Land Use
4-36	Travis Eri	IBEW Local 125	07/20/2020	Support for project	Comment did not result in revisions to proposed order.
<i>Applicant Comments/Responses to DPO Comments</i>					
4-6; 4.6-1, 4.6-2, 4.6-3, 4.6-4	Elaine Albrich	David Wright Tremaine LLP - Applicant	04/30/2020; 05/22/2020; 06/08/2020; 07/16/2020; 07/20/2020	See comment letters and materials	Applicant comments and supplemental materials incorporated throughout proposed order
<i>Reviewing Agency Comments</i>					
4-1	John Pouley	Oregon State Historic Preservation Office	03/13/2020; 05/15/2020	Cultural Mitigation and Monitoring Plan; Archeological Permits	IV.K. Cultural, Historic and Archeological
4-3	Seth Thompson	Oregon Department of Aviation	05/14/2020	7460 Analysis Not Required for Facility	Comment did not result in revisions to proposed order.
4-5; 4-9; 4.9-1, 4.9-2	Sarah Reif	Oregon Department of Fish and Wildlife	04/24/2020; 05/18/2020; 06/11/2020; 07/16/2020	Draft Habitat Mitigation Plan; draft Wildlife Monitoring Plan; draft Revegetation and Noxious Weed Plan	IV.H. Fish and Wildlife Habitat
4-8	Melanie Boozenny (for	Lake County Board of Commissioners	05/18/2020	Road conditions.	Comment did not result in revisions to proposed order.

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
	Lake Co. Commissioners)				
<i>Oral Comments on 07/20/2020 Hearing</i>					
	David Brown Michelle Slater	Applicant; Obsidian Solar Center LLC	07/20/2020	Project description and Procedural History; Coordination with Reviewing Agencies including Tribal Governments; Mitigation goals (Habitat and Historic Cultural)	Applicant comments and supplemental materials incorporated throughout proposed order
	Terry Craig	Fort Rock/Silver Lake Soil and Water Conservation District	07/20/2020	Wind and water erosion, weeds, water runoff; and sufficiency of monitoring	Sections IV.D. Soil Protection and IV.M. Public Services
	Carl Shumway	Public	07/20/2020	Concern of Battery components; displeased with County planning process	Comment did not result in revisions to proposed order.
	Jerald Simmons	Public	07/20/2020	Concerns for impact to property value; and light pollution from Battery components	Comment did not result in revisions to proposed order.
	Aaron Borrer	Public	07/20/2020	Concerns of road use impacts; concerns of impact to Elk (migration pattern, and roadway safety due to project fence proximity)	Revisions not incorporated into proposed order; however issues are addressed in Section IV.E. Land Use and IV.M. Public Services
	LeeRoy Horton	Public	07/20/2020	Concern of soil erosion and impact to sheep, cattle, and haying operations; impacts from displacing refugee	IV.D. Soil Protection, IV.E Land Use and IV.M. Public Services

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
				rodents/wildlife (damage to haying/crop operation); weed management;	
	LeeRoy Horton	On behalf of David Hogan/Golden Acres Farms	07/20/2020	Concern of impact to Hay operation; impacts (and results) of diversion to Elk migration	IV.E. Land Use
	Mariam Thorsted	Public	07/20/2020	Concern to future farming and health of livestock (from contaminated soils)	IV.D. Soil Protection and IV.E Land Use
	Patrick Barker	Public	07/20/2020	Concerns to property value; Wildlife impacts (habitat, rodents, and elk)	IV.H. Fish and Wildlife Habitat
	Harold Miles	Public	07/20/2020	Concern of erosion; impacts to elk migration; unclear how project benefits the community	IV.D. Soil Protection and IV.E. Land Use
	Donny Gallagher	Swinerton	07/20/2020	Obsidian construction contractor - Description of erosion and dust control measures during construction; traffic controls and road impacts managed through road use agreement	IV.D. Soil Protection, IV.E Land Use and IV.M. Public Services
	Jen Kirby	Swinerton	07/20/2020	Support for revegetation plan/measures – appropriate seed mix	IV.E Land Use and IV.H. Fish and Wildlife Habitat
	Mary and Craig Foster	Fosters Natural Resource Contracting	07/20/2020	Support for habitat mitigation, juniper treatment	IV.H. Fish and Wildlife Habitat

Table 1: DPO Comment Index and Crosswalk

DocID	Commenter Name	Agency/Entity/Public	Date(s) Received	Issue/Topic	Issue Evaluation - Proposed Order Section
	Mike Reeder	Fort Rock Neighbors	07/20/2020	Erosion; groundwater; dust impacts to adjacent landowners and area	IV.D. Soil Protection and IV.E. Land Use
	Sarah Reif	ODFW	07/20/2020	WLIP agreement – comments on durability	IV.H. Fish and Wildlife Habitat
	Terry Ozbun	Archeological Investigations Northwest, Inc	07/20/2020	Evaluation/confirmation of project compliance with EFSC Historic, Cultural & Arch standard	Comment did not result in revisions to proposed order.
	Irene Gilbert	Public	07/20/2020	Consistency with Comprehensive Plan goals and policies, weeds	Comment did not result in revisions to proposed order.
	Jeremiah Thorsted	Public	07/20/2020	Traffic Impacts; elk migration and impact to farming operations	IV.E. Land Use and IV.M. Public Services
	Elaine Albrich	Applicant, Davis Wright Tremaine	07/20/2020	Confirmation that responses have been provided for numerous comments (from Public and ODFW); disagree with 2:1 ratio for ODFW mitigation policy for F&W Standard	IV.H. Fish and Wildlife Habitat

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**Attachment C Reviewing Agency Comment Letters
Referenced**

TARDAEWETHER Kellen * ODOE

From: TARDAEWETHER Kellen * ODOE
Sent: Wednesday, December 4, 2019 4:40 PM
To: 'MCALLISTER Lynne'
Subject: RE: Dec. 9 Deadline: Request for Comments - Complete Application for the Obsidian Solar Center

Thanks Lynne for getting back to me. At the various steps throughout the EFSC review process, we are obligated to request comments from reviewing agencies, such as DSL. These are opportunities for agencies to provide feedback for items within their jurisdiction or concerns about potential impacts of a proposed facility. So we send requests to agencies for the same project several times. We have the wetland delineation and concurrence letter on file and Exhibit J of the application states:

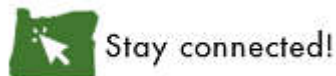
“Applicant plans to construct solar modules on most or all playas within the site boundary, and the total fill will be about 14.8 cubic This is well below the Oregon Department of State Lands (DSL) threshold of 50 cubic yards of fill for needing removal-fill permit; therefore, the Facility will not require a removal-fill permit from DSL....”

So I think we are good! Thanks for following up and hope you’ve been well!

Kellen



Kellen Tardaewether
Senior Siting Analyst
550 Capitol St. NE Salem, OR 97301
P: 503-373-0214
C: 503-586-6551
P (In Oregon): 800-221-8035



From: MCALLISTER Lynne <lynne.mcallister@state.or.us>
Sent: Wednesday, December 4, 2019 2:45 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Subject: RE: Dec. 9 Deadline: Request for Comments - Complete Application for the Obsidian Solar Center

Hi Kellen,

I believe that our agency approved the wetland delineation for Obsidian awhile back and trust that the project is working with our agency (Bethany Harrington) on permitting if wetlands cannot be avoided during construction or if removal/fill in wetlands exceeds 50 cubic yards for the whole project. So I think we have already gone through these hoops months ago, but please let me know if there is something I’m not understanding about why I’m getting this request now.

Thank you.

Lynne

Lynne McAllister
Jurisdiction Coordinator, Southwest Region
Oregon Department of State Lands
Aquatic Resource Management Program
775 Summer Street NE, Ste. 100
Salem, OR 97301
503-986-5300
503-378-4844 (Fax)
www.oregonstatelands.us

From: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Sent: Monday, December 2, 2019 10:05 AM
To: BLEAKNEY Leann <bleakney@nwcouncil.org>; MILLS David <david.mills@state.or.us>; JOHNSON Jim * ODA <jjohnson@oda.state.or.us>; Brownj@science.oregonstate.edu; heather.peck@aviation.state.or.us; GERMOND Jon P <Jon.p.Germond@state.or.us>; svelund.greg@deg.state.or.us; HAYES-GORMAN Linda <Linda.HAYES-GORMAN@state.or.us>; MUIR Jonathan D <Jonathan.D.Muir@state.or.us>; REIF Sarah J <Sarah.J.Reif@state.or.us>; WANG Yumei * DGMI <Yumei.WANG@oregon.gov>; HALLYBURTON Rob <IMCEAEX-
_o=ETS+20Exchange_ou=Exchange+20Administrative+20Group+20+28FYDIBOHF23SPDLT+29_cn=Recipients_cn=Rob+20
Hallyburtona81@Oregon.gov>; EDELMAN Scott <scott.edelman@state.or.us>; JININGS Jon <jon.jinings@state.or.us>; HOWARD Gordon <gordon.howard@state.or.us>; MCALLISTER Lynne <lynne.mcallister@dsl.state.or.us>; HARRINGTON Bethany <bethany.harrington@dsl.state.or.us>; scott.peters@odot.state.or.us; heather.peck@aviation.state.or.us; MULDOON Matt <matt.muldoon@state.or.us>; LGKOH@puc.state.or.us; jerry.k.sauter@state.or.us; LAWYER Matthew A <Matthew.A.LAWYER@aviation.state.or.us>
Subject: Dec. 9 Deadline: Request for Comments - Complete Application for the Obsidian Solar Center

Good morning,

Below is an email I previously sent with an attached reviewing agency memorandum requesting your comments on the Obsidian Solar Center, an Energy Facility Siting Council jurisdictional solar energy facility. The comment deadline is next Monday December 9, 2019. If you need more time to review the materials and provide comments, let me know. Your comments are valuable for the Department's review and recommendations to the Council in the upcoming draft proposed order (DPO). Thank you!

Kellen



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Stay connected!

From: TARDAEWETHER Kellen * ODOE
Sent: Wednesday, October 30, 2019 4:46 PM
To: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: Request for Comments - Complete Application for the Obsidian Solar Center

Good afternoon,

On September 16, 2019, the Oregon Department of Energy (ODOE), as staff to the Energy Facility Siting Council (EFSC), determined that Obsidian Solar Center LLC (applicant) preliminary application for a site certificate for the Obsidian Solar Center is complete. The application for site certificate (ASC) is available for viewing and downloading on the ODOE project webpage for the [Obsidian Solar Center](#).

Here us the full link to the project webpage that has the ASC and additional info:

<https://www.oregon.gov/energy/facilities-safety/facilities/Pages/OSC.aspx>

Attached is a memo notifying reviewing agencies for the Obsidian Solar Center that the application is complete and provides a detailed request for comments in an agency report. I've also attached word templates for comments if that helps you to provide feedback. The request for an agency report on the ASC is associated with compliance with applicable rules, ordinances, and statutes, and recommended site certificate conditions for the proposed facility.

The deadline for comments on the ASC associated with compliance is **Monday, December 9, 2019**. Please see the [Public Notice](#) for details about the upcoming public informational meeting. The summary details are below:

Date: Thursday, November 14, 2019

Time: 5:30 p.m. to 8:00 p.m.

Location: North Lake School Gymnasium
57566 Fort Rock Road
Silver Lake, OR 97638

You are encourage to attend if you like, but it is not required.

If you have questions, I am more than happy to have an in-person meeting or a call to go over the process, review request or the application. Thank you!



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Stay connected!

ESTERSON Sarah * ODOE

From: Jordan Brown <brownj@science.oregonstate.edu>
Sent: Tuesday, January 28, 2020 12:00 PM
To: ESTERSON Sarah * ODOE
Cc: TARDAEWETHER Kellen * ODOE
Subject: Re: Proposed Solar Facility (Obsidian Solar Center) - Lake County - Bogg's Lake hedge hyssop

Hello Sarah,
This is exactly what I'm here for, so thanks for contacting me about this.

According to our protocols for [determining if a survey is needed](#), if a species is known to occur in the county where the project is taking place, and potential habitat has been identified within the project area, a survey is required.

Based on geography, and the more detailed description of the seasonally wet playa habitat at the project site, there's good justification that a survey for Bogg's Lake hedge hyssop is *not* needed. Although this species is known to occur within the same county as the project, all but the lone OR occurrence of this species are located in CA. The one OR occurrence represents the northernmost (known) extent of the species, which is less than a mile north of the CA/OR border, but about 135 miles southeast of the project site. It is unlikely that Bogg's Lake hedge hyssop would be found so much farther north of the current northernmost site since there are significant geographical barriers that stand between the two site and no occurrences have ever been detected between the two locations.

Based on the information I have available, I question the suitability the seasonal wetland habitat at the project site. Exhibit P of the Obsidian Solar Center Application for Site Certificate describes the hydrology and vegetation of the seasonally wet playas in a way that differs from the description of typical Bogg's Lake hedge hyssop habitat (vernal pools, marshy margins of water bodies and seasonal freshwater wetlands). The salt crusts observed on some of the playas may signify unsuitable saline conditions for Bogg's Lake hedge hyssop. Also, the lack of aquatic vegetation and "water loving" (hydrophytic) plants, as described in Exhibit P, suggest that the typical plant associates are not present, indicating unsuitable habitat. It would be helpful to have more vegetation data (plant species lists from the playa habitat) to further confirm or refute the playa's suitability for Bogg's Lake hedge hyssop, but at this point, I expect the habitat is not suitable.

Unfortunately, the wildlife surveys don't count for much with regards to endangered plants because their rarity make them very easy to miss without targeted surveys. It would be valuable if, during these habitat mapping efforts, surveyors documented habitat conditions and some of the associated vegetation in potentially suitable, rare-plant habitat to help determine whether suitable rare-plant habitat is present and justify whether or not a targeted plant survey is needed.

I hope this helps. Feel free to call and talk this over.

Quoting ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>:

Hi Jordan,

We have a 3,000-acre solar facility proposed in Lake County that identified suitable habitat (seasonal wetland in open juniper and sagebrush) for Bogg's Lake hedge hyssop within the project area. However, the applicant indicates that because there has only been one recorded occurrence of the species near the California border in Lake County, that there is no likelihood that the species would be present within the project area.

Habitat and wildlife species surveys were completed in March/June 2018, which appears to be within the flowering season for the species, and while rare plant surveys were not conducted for this project, the occurrence of the species was not identified.

Could you confirm whether, based on your understanding of the species and attached habitat map and any other factors, whether you agree that the species is unlikely to occur within the project area or whether additional surveys should be completed prior to construction to identify potential presence?

Let me know if additional information is needed.

Thanks,
Sarah



Sarah T. Esterson

Senior Siting Analyst

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Stay connected!

Jordan Brown
Program Lead / Conservation Biologist
OR Department of Agriculture
Native Plant Conservation Program
Oregon State University, Dept. of Botany
Cordley 2082
Corvallis, OR 97331
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cell: (541)-224-2245

TARDAEWETHER Kellen * ODOE

From: POULEY John * OPRD
Sent: Thursday, February 27, 2020 9:09 AM
To: TARDAEWETHER Kellen * ODOE
Subject: RE: SHPO Case Nbr SHPO Case No.: 18-0246, ODOE, Obsidian Solar Center LLC

Hi Kellen,

It just means that much of the archaeological work could have been completed by this time.

-John

From: TARDAEWETHER Kellen * ODOE
Sent: Wednesday, February 26, 2020 3:43 PM
To: POULEY John * OPRD <John.Pouley@oregon.gov>
Subject: RE: SHPO Case Nbr SHPO Case No.: 18-0246, ODOE, Obsidian Solar Center LLC

Thanks John! Can you clarify the below sentence?

"After the SHPO comments to the NOI in March 2018, had consultation with SHPO and tribes, and archaeological fieldwork (and associated permits) been conducted in the succeeding months, that phase of the project would likely be finished at this time."



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Stay connected!

From: POULEY John * OPRD <John.Pouley@oregon.gov>
Sent: Wednesday, February 26, 2020 3:31 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Subject: SHPO Case Nbr SHPO Case No.: 18-0246, ODOE, Obsidian Solar Center LLC

Please find the SHPO's response to your request for comment on cultural resources at the above-identified project. This attachment serves as your file copy. If you have any questions, please feel free to contact me.



John O. Pouley | Assistant State Archaeologist

Oregon Parks and Recreation Department, Heritage Division
State Historic Preservation Office
725 Summer Street NE, Suite C, Salem, OR 97301



Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org



February 26, 2020

Ms. Kellen Tardaewether
Oregon Department of Energy
550 Capitol St N.E., 1st Floor
Salem, OR 97301

RE: SHPO Case No. 18-0246
ODOE, Obsidian Solar Center LLC
7000 acre solar farm

[REDACTED]
Evaluation of the Obsidian Solar proposal

Dear Ms. Tardaewether:

The SHPO position regarding the field methods and Inadvertent Discovery Plan (IDP) for the Obsidian Solar project are described below. Areas of previous concerns are provided first, followed with a statement regarding whether such concerns have been addressed or if any still remain.

Oregon SHPO first received notice for the Obsidian Solar project on February 7th, 2018. In a Memorandum a request to Oregon SHPO asked for comments on the Notice of Intent for the Obsidian Solar Center, LLC, for the Obsidian Solar Center in Lake County. In accordance with OAR 345-015-0120, ODOE requested information pertaining to the agency contact person, comments on the facility, recommendations on the size of the analysis area, a list of studies for mitigation, a list of applicable statutes, and a list of permits issued by SHPO. Oregon SHPO responded on March 8th, 2018 addressing each request. Concerns relating to recommendations on the size of the facility were provided as follows:

There are too many archaeological sites to count in the direct effects area, as well as many in between project area components and beyond. The latter would almost certainly involve indirect effects. More archaeological sites and properties of religious and cultural significance [to Indian tribes] will almost certainly be found from subsequent survey and consultation, given that much of the proposed project area has not been surveyed. The proposed project area is in an area with one of the highest concentrations of archaeological and cultural properties in the county, which does not include information from tribes. The amount of work to consult and conduct inventories, evaluations, and mitigation will be relatively large compared with most projects of its size. Oregon SHPO requires an understanding of the horizontal and vertical extent of archaeological sites, a robust assessment under all four of the National Register of Historic Places (NRHP) criteria, which includes patterns as opposed to treating each cultural resource as if in a vacuum [March 8, 2018 Letter from John Pouley, Assistant State Archaeologist, SHPO to Kellen Tardaewether, Senior Siting Analyst, ODOE].

On June 17, 2019, Oregon SHPO commented on a Draft Completeness Review, Exhibit S, Obsidian Solar Center Project Memorandum submitted by Historical Research Associates, Inc (HRA). As an independent contractor, the HRA review was meant to assist SHPO by conducting the initial review. The Memorandum addressed whether the proposed project would comply with the EFSC Historic, Cultural, and Archaeological Resources Standard (OAR 345-022-0090).

As part of the SHPO response, an overview of the National Register of Historic Places (NRHP), and associated



Criteria were provided, including references to how archaeological properties can be eligible under any of the four criteria, echoing the recommendations and concerns in the March 8, 2018 letter quoted above. Oregon SHPO concurred with all Requests for Additional Information (RAI). Among the RAI, Oregon SHPO concurred with HRA that boundaries of archaeological objects and sites were not properly delineated, and that the process for determining NRHP eligibility was inadequate.

Oregon SHPO was next asked to review the archaeological report to assist with portions under Lake County jurisdiction. The Supplement and Appendix S-5 to Exhibit S was included in the submission, which additionally included the IDP. As with previous correspondence, Oregon SHPO addressed concerns relating to NRHP eligibility, developing an understanding of the vertical and horizontal extent of archaeological sites and isolates, and the extent of tribal consultation.

In short, it is [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED] *It is further unclear why the NRHP recommendations focused exclusively on Criterion D, despite NRHP Bulletins and SHPO Reporting guidelines. The focus on Criterion D leaves an apparent Criterion A pattern of events district unaddressed. Consequently, the report lacks justification and support for how Oregon SHPO can concur with not eligible recommendations, when all criteria were not addressed. An added uncertainty is in regards to the lack of tribal views on any traditional, cultural, or religious significance of the sites and isolates recommended not eligible. The letter concludes with: To accomplish these objectives and for SHPO to provide support and justification for NRHP determinations of eligibility, adherence to SHPO guidelines and National Register Bulletins, with evaluations under all four NRHP criteria, and consultation with all appropriate tribes and SHPO are critical [September 30, 2019 Letter from John Pouley, Assistant State Archaeologist, SHPO to Kellen Tardaewether, Senior Siting Analyst, ODOE].*

After an October 8, 2019 conference call, Oregon SHPO submitted a proposal on October 14, 2019 for archaeological investigations associated with the project. The proposal was a clear deviation from SHPO guidelines and expectations submitted in an attempt to move the project forward. It is also unprecedented for SHPO to submit archaeological methods for a specific project, and likely would only occur again in extremely rare instances. As stated above, SHPO concerns had been provided in the initial 2018 comments to the NOI, and are largely addressed in SHPO Field Guidelines (2013) and Reporting Guidelines (2015).

On December 18th, 2019 a meeting was held with the applicant, its archaeologist, ODOE, SHPO and representatives from the affected Tribes, where a somewhat revision of the SHPO proposal for archeological testing and excavation methodologies was discussed. Conversations addressed some requested changes. The Archeological Testing and Excavation Methods Plan addresses:

- Delineating Archaeological Site Boundaries
- Definitions
- Archaeological Testing at Isolates
- Trenching within a Recorded Archaeological Site
- Testing at Project Related (non-archaeological) Excavation
- Historical and Multicomponent Archaeological Sites
- Artifact Analysis
- Reporting
- Archaeological Permits

In addition, it was agreed that the known archaeological sites and isolates would be treated as an eligible district under Criterion A of the NRHP and the Archaeological Testing and Excavation Methods Plan addresses procedures for addressing Criterion D through targeted archaeological testing in areas of ground

disturbance, and through the IDP. SHPO reviewed and commented on the minor changes to the Archeological Testing and Excavation Methods Plan developed by SHPO, and, at this time, agree with the proposal. SHPO encourages project developers to coordinate as early as possible with SHPO about known archaeological sites, or the probability for archaeological sites, survey and field testing methods, especially if they deviate from SHPO guidelines. After the SHPO comments to the NOI in March 2018, had consultation with SHPO and tribes, and archaeological fieldwork (and associated permits) been conducted in the succeeding months, that phase of the project would likely be finished at this time.

The EFSC Historic, Cultural and Archaeological Resources standard (OAR 345-022-0090), requires the Council to find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to historic, cultural or archaeological resources that have been listed or would likely be listed on the NRHP. Since the applicant represents it will follow the Archeological Testing and Excavation Methods Plan, SHPO concurs that construction and operation of the proposed facility, taking into account mitigation, are not likely to adversely affect known resources that are likely to be listed on the NRHP.

Pursuant to ORS 358.920(1)(a) A person may not excavate, injure, destroy or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon unless that activity is authorized by a permit issued under ORS 390.235 (SHPO archaeological permit). Because the applicant intends to conduct work within an area of known archaeological objects and site, the applicant must comply with ORS 390.235, OAR 736-051-0000 through 736-051-0090, and requested that the SHPO archaeological permits be included and governed by the site certificate under the EFSC review process.

The proposed Archeological Testing and Excavation Methods Plan was agreed upon by SHPO and is included by the Oregon "qualified archaeologist" (per ORS 390.235) in four archaeological permit applications. The 30-day review period for these permits ended on February 18, 2020, and included conditions from reviewers. Oregon SHPO forwarded the complete permit packets electronically to ODOE

At this time, Oregon SHPO has no outstanding concerns with the proposed archaeological investigations, associated methods, and ID associated with the project moving forward. Please feel free to contact me if you have any questions or comments related to this letter.

Sincerely,

A handwritten signature in cursive script, reading "John D. Pouley".

John Pouley, M.A., RPA
Assistant State Archaeologist
(503) 986-0675
john.pouley@oregon.gov

ESTERSON Sarah * ODOE

From: Darwin Johnson <djohnson@co.lake.or.us>
Sent: Tuesday, March 3, 2020 7:15 PM
To: ESTERSON Sarah * ODOE
Cc: TARDAEWETHER Kellen * ODOE
Subject: [Fortimail Spam Detected] Re: Obsidian Solar Center - Section 20.12 Fence - Barbed Wire Restriction

We have allowed it with all Solar projects, but not razor wire.

~Darwin

Get [Outlook for iOS](#)

From: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>
Sent: Tuesday, March 3, 2020 4:46:57 PM
To: Darwin Johnson <djohnson@co.lake.or.us>
Cc: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Subject: Obsidian Solar Center - Section 20.12 Fence - Barbed Wire Restriction

[EXTERNAL]

Hi Darwin,

For the Obsidian Solar Center, the applicant proposes to install a 7' chain-link perimeter fence, inclusive of 1' of barbed wire. LCZO Section 20.12 prohibits barbed wire on fencing with A-2 zoned land, unless otherwise approved by the County. It appears that for the Morehouse Solar Facility (19-027-CUP), county approved use of barbed wire for the fence. But, we would like to confirm whether county also agrees for the Obsidian Solar Center, that barbed wire fencing may be otherwise approved in A-2 zoned land.

Thanks in advance,
Sarah



Sarah T. Esterson
Senior Siting Analyst
550 Capitol St. NE | Salem, OR 97301
P: 503-373-7945
C: 503-385-6128
P (In Oregon): 800-221-8035



Stay connected!

[EXTERNAL]: This message came from outside our organization. Please exercise caution when clicking on any links or attachments. If you are concerned about a message, please email support@co.lake.or.us



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RESEARCH
ASSOCIATES, INC.

MEMORANDUM

To:	Ian Johnson, Oregon State Historic Preservation Office, Department of Parks and Recreation
CC:	Kellen Tardaewether, Oregon Department of Energy; Kara Warner, Golder Associates, Inc.
From:	Natalie Perrin and Michele Punke, Historical Research Associates, Inc.
Subject:	Draft Completeness Review, Exhibit S, Obsidian Solar Center Project
Date:	May 30, 2019

Introduction

Obsidian Solar Center LLC (Obsidian Solar) proposes to construct the Obsidian Solar Center (Project) in Lake County, Oregon, with an alternating current generating capacity of up to 400 megawatts. Prior to construction, Obsidian Solar must receive a site certificate from the Energy Facility Siting Council (EFSC or the Council). Obsidian Solar submitted to the Oregon Department of Energy (ODOE) a Preliminary Application for Site Certificate (pASC), which seeks authorization for project features within Oregon in accordance with the EFSC process.

Exhibit S of the pASC provides information on the historic, cultural, and archaeological resources on which the Project may have an impact. The information in Exhibit S must demonstrate that the Project will comply with EFSC's Historic, Cultural, and Archaeological Resources Standard, Oregon Administrative Rule (OAR) 345-022-0090, which requires that neither project construction nor operation (taking into account mitigation) are likely to result in significant adverse impacts to historic, cultural, or archaeological resources listed or eligible for listing in the National Register of Historic Places (NRHP); archaeological objects; or archaeological sites.

ODOE retained Golder Associates, who contracted Historical Research Associates, Inc. (HRA), to assist the Oregon State Historic Preservation Office (SHPO) in review of Exhibit S for completeness as defined in OAR 345-021-0010(s).

Regulatory Requirements

OAR 345-021-0010(s) requires the applicant to provide evidence of:

- A. Historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, in the NRHP.

- B. For private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.
- C. For public lands, archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.
- D. The significant potential impacts, if any, of the construction, operation, and retirement of the proposed facility on the resources described in paragraphs (A), (B), and (C) and a plan for protection of those resources that includes at least the following:
 - i. A description of any discovery measures, such as surveys, inventories, and limited subsurface testing work, recommended by the State Historic Preservation Officer (SHPO) or the National Park Service of the U.S. Department of Interior for the purpose of locating, identifying and assessing the significance of resources listed in paragraphs (A), (B), and (C).
 - ii. The results of the discovery measures described in subparagraph (i), together with an explanation by the applicant of any variations from the survey, inventory, or testing recommended.
 - iii. A list of measures to prevent destruction of the resources identified during surveys, inventories, and subsurface testing referred to in subparagraph (i) or discovered during construction.
- E. The applicant's proposed monitoring program, if any, for impacts to historic, cultural, and archaeological resources during construction and operation of the proposed facility.

As noted in OAR 345-022-0090, with certain exceptions, in order to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:

- a) Historic, cultural, or archaeological resources that have been listed, or would likely be listed, in the NRHP;
- b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and
- c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).

The Council may issue a site certificate for a facility that would produce power from wind, solar, or geothermal energy without making the findings described above. However, the Council may impose conditions on a site certificate issued for such a facility.

Completeness Review

In support of the completeness review, HRA identified the following items for consideration.

1. Edits to Exhibit S:

Generally, Exhibit S is orderly and presents the required information. The following are items of confusion that can be easily resolved via these minor edits:

- A. Exhibit S does not specifically state that architectural/built environment resources were considered. The Executive Summary (Exhibit S, page S-1) states “The investigation was undertaken to determine if prehistoric or historic archaeological sites that may be eligible for inclusion in the National Register of Historic Places (NRHP) are present within the site boundary.” This sentence is echoed in the executive summaries for both technical reports (Appendix S-1 and S-2). There is no mention in Exhibit S or its appendices that architectural/built environment resources were considered. Based on the results of the technical reports (Appendix S-1 and S-2), all identified resources are archaeological; there do not appear to be any extant architectural/built environment resources in the analysis area. However, this needs to be stated in Exhibit S.

HRA recommends revising the Exhibit S Executive Summary to read: “The investigation was undertaken to determine if prehistoric or historic archaeological sites or historic architectural resources that may be eligible for inclusion in the National Register of Historic Places (NRHP) are present within the site boundary.” Additional clarity should be added to Section S.2, specifically a sentence that reads “No extant architectural/built environment resources are located in the analysis area.”

- B. Both Exhibit S and the associated technical reports reference Section 106 of the National Historic Preservation Act, thus implying a federal nexus for the Project. As there is no federal nexus, this reference is confusing to the reader. HRA recommends removing reference to federal requirements from the body of Exhibit S (see Executive Summary, pages S-1–S-2).
- C. Section S.3 (Exhibit S, page S-2), notes that sites were “determined” not to be eligible, eligible, or potentially eligible. However, SHPO has not made determinations of eligibility on any sites to date, and there are no previously determined resources in the analysis area. HRA recommends changing “determined” to “recommended” in this section. Though the word determined is used in other places in the document, Section S.3 is the only instance in which HRA recommends this change.
- D. Reference to Isolated Finds (page S-9) directs the reader to Appendix S-3. This should be Appendix S-4.
- E. Section S.5.3 (page S-22, paragraph 1) states “...Applicant will be developing additional measures to avoid, minimize, and mitigate for impacts to resources identified as significant to the tribes and Oregon SHPO.” HRA recommends rewording this to read “...Applicant will be developing additional measures to avoid, minimize, and mitigate for impacts to resources identified as significant to the tribes or determined eligible by Oregon SHPO.”
- F. Section S.5.3 (page S-22, paragraph 2, first sentence) states “Sites that are deemed not eligible and isolated finds require no further work.” HRA recommends revising to read “Sites and isolated finds that Oregon SHPO determines not eligible require no further work.”
- G. Section S.5.3 (page S-22, paragraph 2, last sentence) states “Archaeological sites and, in particular, burials are protected under Oregon state law (ORS 97.740-97.760, 358.905-358.955, 390.235) on

public or private land even if reviewing agencies have concurred that the project is in compliance with applicable regulations.” HRA recommends adding a reference to the Monitoring Program (Section S.6).

- H. Section S.5.3 (page S-22, paragraph 3) states “Included in the supplement to this exhibit will be Applicant’s request for Oregon Energy Facility Siting Council to grant archeological permits to disturb eligible or potentially eligible archeological sites that cannot be avoided.” EFSC cannot grant archeological permits. HRA recommends revising the word “grant” to “support the pursuance of.”

2. Identify, for private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area; and for public lands, archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.

Problem:

Exhibit S presents lists of archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area on either public or private lands as required by OAR 345-021-0010(s)(A) and (B). However, the methods by which the isolates and sites were identified and delineated were inconsistent and generally did not meet SHPO standards.

Evidence:

The methods of site delineation are not clearly stated in Appendices S-1 and S-2, the archaeological survey reports for Project Areas A and D. The text states “locations with 10 or more artifacts found within a 10-m diameter area were recorded as sites. In locations where specific landforms created discrete surfaces (e.g., blowout surfaces, dune rises), 10 or more artifacts present on the landform were the basis for site designation” (Appendix S-1, page 20). This implies artifacts found more than 10 meters (m) in distance from other artifacts were not considered part of the same resource. However, examination of the GIS data indicates that the distance between resources (sites and isolates) is extremely variable, with some archaeological isolates mapped within 10 m of another resource or even *inside* of site boundaries (for example, Isolates IF 163 and 164 are within the FRA-P73/90 site boundary).

Although SHPO does not explicitly state how sites should be defined relative to other resources, the guidelines regarding boundary testing indicate that, with boundary probes, site boundaries can be established with two negative probes at 10-m intervals from the site (SHPO Field Guidelines 2015, page 33). Thus, a minimum of 30 m should be observed between artifacts for them to be separate sites.

Additionally, although isolated finds were identified on both public and private lands, the methodology for determining the nature of the find (whether it represented an isolate or a site) was not adequate. SHPO requires verification (through subsurface probing) that a precontact isolated find does not represent a site: “Precontact period isolated finds identified through systematic surface survey may require, at a minimum, excavation of 2-4 shovel test probes/pits in the area of each surface manifestation” (SHPO Field Guidelines 2015, page 35).

3. Identify historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, in the NRHP.

Problem:

A list of eligible and potentially eligible historic and cultural resources is presented within Exhibit S, as required by OAR 345-021-0010(s)(A). However, the fieldwork methodology and NRHP evaluations that are presented in Appendices S-1 and S-2 and upon which eligible, potentially eligible, or not eligible recommendations were based are inadequate.

Evidence:

Fieldwork Methodology: As noted above, establishing site boundaries and understanding the nature of site deposits, including subsurface components, are critical to evaluating and managing archaeological resources. SHPO guidelines concerning eligibility assessments state that recommendations “should include support for both horizontal and vertical boundaries and include information of integrity and composition” (SHPO Reporting Guidelines 2015, page 19).

The archaeological work detailed in Appendices S-1 and S-2 indicates that archaeological resources were identified, delineated, and assessed for NRHP significance based on surficial survey of the landscape only. The report states that “sites with few artifacts and no identified tools found on the valley floor hardpan flats are less likely to yield sufficient data to be determined NRHP eligible” (Appendix S-1, page 57). Contrary to this argument, a number of sites in the project vicinity have identified subsurface components and buried soils meters below the surface of the dunes or below blowout areas/flats (for example, Site 35LK4435 or sites in nearby Buffalo Flats). Additionally, the Fort Rock Basin has experienced significant aeolian erosion and deposition throughout the Holocene, exposing some sites and burying others. Modern dunes are still active in the vicinity (e.g., Christmas Valley Sand Dunes), the movements from which can potentially cap archaeological deposits on the basin floor. Therefore, although sites have been identified on the ground surface within the project area, given the dynamic nature of the basin floor over the last 11,000 years, the full extent and nature of the sites cannot be assessed without subsurface investigations.

Appendix S-1 also states that the 69 precontact sites recommended not eligible for inclusion in the NRHP were designated as such because they “are generally very diffuse, contain no diagnostic chipped stone tools and less than 100 artifacts, are less than 1,000 m² in extent, and are situated on hardpan surfaces with no demonstrated potential for containing substantial subsurface deposits. These sites are considered likely to be determined not NRHP-eligible even with additional investigation” (Appendix S-1, page 57). Given that at least 18 of these 69 sites are positioned on or adjacent to dunes (see Appendix S-1, Table A-1), buried and potentially significant archaeological deposits may be present.

NRHP Evaluations: The NRHP evaluations presented for both sites and isolates provide inadequate discussions of NRHP Criteria A, B, and C. SHPO guidelines state that assessments under the four criteria must “be supported by research and not just include a citation of each criterion preceded with ‘the site is’ or ‘the site is not’ eligible. Addressing NRHP eligibility should consist of a robust description, often covering

several pages, and not just a boiler-plate eligibility statement. The archaeologist must clearly explain why they believe a site is or is not eligible, based on their own thoughts, backed by their research and analyses as applicable” (SHPO Reporting Guidelines 2015, page 9).

Given the amount of contextual literature available, historic-period and multicomponent sites in particular should include thorough assessments of these criteria in relation to the documented history of the area. Additionally, while archaeological sites received a cursory assessment under Criterion D, the technical reports provide no discussion of the reasoning behind the recommendation for non-significance of archaeological isolates.

4. Identify significant potential impacts, if any, of the construction, operation and retirement of the proposed facility on resources and a plan for protection of those resources.

Problem:

Resources were not fully delineated vertically or horizontally; full evaluations under NRHP criteria were not provided; construction plans were not provided in Exhibit S (or other pASC Exhibits, such as Exhibits B or C); and potential impacts of construction, operation, and retirement of the facility was not discussed. Without information regarding the extent and significance of the resources, it is not possible to determine if resources will be impacted by the Project.

Evidence:

As previously noted, SHPO field guidelines state in multiple places that shovel probes should be used to define site boundaries. The SHPO indicates that “Because environmental conditions...and modern disturbances may obscure the surface evidence, some technique of subsurface observation (e.g. shovel probes) should be part of most surveys conducted” (SHPO Field Guidelines 2015, page 30). As discussed in No. 3, above, dune deposits within the Fort Rock Basin have shifted through time, exposing some archaeological deposits and burying others; as such, the rationale provided in Appendices S-1 and S-2 for no subsurface probing is not adequate for all sites. Additionally, no information is provided concerning the reasoning for not confirming that each isolated find contains nine or fewer artifacts (i.e., no context information provided in text). Finally, no isolate forms were provided with the technical reports (Appendices S-1 and S-2).

5. Provide a proposed monitoring program, if any, for impacts to historic, cultural and archaeological resources during construction and operation of the proposed facility.

Problem:

Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan, was not provided in the current filing.

Evidence:

Exhibit S notes that Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan, will be provided as a supplemental filing. HRA assumes that Appendix S-5 will fulfill the requirements of OAR 345-021-0010(s)(E); however, as Appendix S-5 was not provided, HRA could not confirm its adequacy as part of the completeness review.

Request for Additional Information (RAI):

To address items of concern Nos. 2–5 identified above, archaeological resources should be investigated using subsurface techniques in order to establish the full extent of sites and to assess the nature and integrity of deposits, both horizontally and vertically. The methods, results, and NRHP recommendations should be provided in a plan or addendum technical report meeting SHPO guidelines. As part of that plan/report:

- Subsurface shovel probing should be conducted in order to delineate resources, including both sites and isolates.
- A concise definition of archaeological resource delineation should be provided, including minimum distance between resources for them to be considered separate and/or a discussion of why resources were not combined if site setting or constituents suggested they did not represent a single resource.
- Resources should be evaluated using all four criteria, with research information provided to support evaluation recommendations.

SHPO Reporting Guidelines (pages 16–19) indicate that the methods should be part of the larger research design, which includes research questions, methods, and expectations. Research questions and expectations are missing from both archaeological survey reports (Appendices S-1 and S-2) and should be included in the addendum technical report.

Also, HRA noted that the lack of finer-scale project maps, site sketch maps, overview photographs, or artifact photos within the text of Appendices S-1 and S-2 made it difficult to assess site context, ground surface visibility and conditions, locations of disturbance, possible areas of sediment deposition or erosion (blowouts versus dunes), artifact concentrations, or any other such information that would help support the reasoning behind why subsurface investigations were not conducted, how site boundaries were defined, and how initial recommendations of eligibility were made. Such details should be included in the addendum report.

Conclusion

HRA reviewed Obsidian Solar's pASC Exhibit S for completeness in accordance with the EFSC process (OAR 345-021-0010[s]). Based on HRA's review of Exhibit S and its appendices, insufficient information was provided for SHPO to make determinations of eligibility on the vast majority of resources; all not eligible (site and isolate) recommendations should remain unevaluated pending additional investigations (i.e., probes for resource verification and delineation, evaluation under all NRHP criteria, etc.).

Obsidian Solar should present a plan to SHPO and ODOE for additional work to meet the requirements of OAR 345-021-0010(s)(D) and (E). This plan should focus on subsurface investigations to:

- confirm isolates are surface finds without subsurface components;
- delineate site boundaries; and
- fully evaluate resources under all NRHP criteria.

Obsidian Solar should focus these investigations in the Project's construction footprint. This plan should be referenced in Exhibit S (i.e., as Appendix S-6). It may be appropriate to include these additional investigations as part of Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan, which as noted in Exhibit S is to be provided as a supplemental filing. HRA assumes that Appendix S-5 will fulfill the requirements of OAR 345-021-0010(s)(E); however, as Appendix S-5 was not provided, HRA could not confirm its adequacy as part of the completeness review.

HRA does *not* recommend revisions (aside from the minor clarifying edits to Exhibit S noted above) to Exhibit S or its appended technical reports. Instead, the RAI is for a separate plan/report focused on the above bullets in compliance with OAR 345-021-0010(s)(D) and (E).

HRA would like to note that site forms submitted with Appendix S-1 and S-2 appear to meet minimum SHPO requirements and can be reviewed and accepted. However, assuming SHPO concurrence with HRA's RAI, resources recommended not eligible will be assessed as unevaluated pending additional investigations. No isolate forms were provided with Appendices S-1 and S-2; these will need to be submitted to SHPO.

In conclusion, it is HRA's opinion that Obsidian Solar's pASC can be deemed "complete" under OAR 345-021-0010(s) following completion of a plan/addendum technical report that delineates and fully evaluates resources within the Project's construction footprint under all NRHP criteria and assesses significant potential impacts, and completion and approval of Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan.



HISTORICAL
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ASSOCIATES, INC.

MEMORANDUM

To:	Ian Johnson, Oregon State Historic Preservation Office, Department of Parks and Recreation
CC:	Kellen Tardaewether, Oregon Department of Energy; Kara Warner, Golder Associates, Inc.
From:	Natalie Perrin and Michele Punke, Historical Research Associates, Inc.
Subject:	Draft Completeness Review, Exhibit S, Obsidian Solar Center Project
Date:	May 30, 2019

Introduction

Obsidian Solar Center LLC (Obsidian Solar) proposes to construct the Obsidian Solar Center (Project) in

[REDACTED]
[REDACTED] or
[REDACTED]
[REDACTED]
[REDACTED]

Exhibit S of the OASC provides information on the historic, cultural, and archaeological resources on which the Project may have an impact. The information in Exhibit S must demonstrate that the Project will comply with HESC's Historic, Cultural, and Archaeological Resources Standard, Oregon Administrative Rule (OAR) 345-022-0090, which requires that neither project construction nor operation (taking into account mitigation) are likely to result in significant adverse impacts to historic, cultural, or archaeological resources listed or eligible for listing in the National Register of Historic Places (NRHP).

ODOE retained Golder Associates, who contracted Historical Research Associates, Inc. (HRA) to assist the Oregon State Historic Preservation Office (SHPO) in review of Exhibit S for completeness as defined in OAR 345-021-0010(s).

OAR 345-021-0010(s) requires the applicant to provide evidence of:

- A. Historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, in the NRHP.

- B. For private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.
- C. For public lands, archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.
- D. The significant potential impacts, if any, of the construction, operation, and retirement of the proposed facility on the resources described in paragraphs (A), (B), and (C) and a plan for protection of those resources that includes at least the following:
 - i. A description of any discovery measures, such as surveys, inventories, and limited subsurface testing work, recommended by the State Historic Preservation Officer (SHPO) or the National Park Service of the U.S. Department of Interior for the purpose of locating, identifying and assessing the significance of resources listed in paragraphs (A), (B), and (C).
 - ii. The results of the discovery measures described in subparagraph (i), together with an explanation by the applicant of any variations from the survey, inventory, or testing recommended.
 - iii. A list of measures to prevent destruction of the resources identified during surveys,

E. The applicant's proposed monitoring program, if any, for impacts to historic, cultural, and archaeological resources during construction and operation of the proposed facility.

a) Historic, cultural, or archaeological resources that have been listed, or would likely be listed, in the NRHP.

905(1)(a), or archaeological sites as defined in ORS 358.905(1)(c) and

The Council may issue a site certificate for a facility that would produce power from wind, solar, or geothermal energy without making the findings described above. However, the Council may impose conditions on a site certificate issued for such a facility.

Completeness Review

In support of the completeness review, HRA identified the following items for consideration.

1. Edits to Exhibit S:

Generally, Exhibit S is orderly and presents the required information. The following are items of confusion that can be easily resolved via these minor edits:

- A. Exhibit S does not specifically state that architectural/built environment resources were considered. The Executive Summary (Exhibit S, page S-1) states “The investigation was undertaken to determine if prehistoric or historic archaeological sites that may be eligible for inclusion in the National Register of Historic Places (NRHP) are present within the site boundary.” This sentence is echoed in the executive summaries for both technical reports (Appendix S-1 and S-2). There is no mention in Exhibit S or its appendices that architectural/built environment resources were considered. Based on the results of the technical reports (Appendix S-1 and S-2), all identified resources are archaeological; there do not appear to be any extant architectural/built environment resources in the analysis area. However, this needs to be stated in Exhibit S.

HRA recommends revising the Exhibit S Executive Summary to read: “The investigation was undertaken to determine if prehistoric or historic archaeological sites or historic architectural resources that may be eligible for inclusion in the National Register of Historic Places (NRHP) are present within the site boundary.” Additional clarity should be added to Section S.2, specifically a

- B. Both Exhibit S and the associated technical reports reference Section 106 of the National Historic Preservation Act, thus implying a federal nexus for the Project. As there is no federal nexus, this

- C. Section S.3 (Exhibit S, page S-2) notes that sites were “determined” not to be eligible, eligible, or potentially eligible. However, SHPO has not made determinations of eligibility on any sites to date, and there are no previously determined resources in the analysis area. HRA recommends changing “determined” to “recommended” in this section. Though the word “determined” is used in other places

- D. Reference to Isolated Finds (page S-2) directs the reader to Appendix S-3. This should be Appendix

- E. Section S.5.3 (page S-22, paragraph 2, first sentence) states “The Applicant will be developing additional measures to avoid, minimize, and mitigate for impacts to resources identified as significant to the tribes and Oregon SHPO.” HRA recommends rewording this to read “...Applicant will be developing additional measures to avoid, minimize, and mitigate for impacts to resources identified as significant

- F. Section S.5.3 (page S-22, paragraph 2, first sentence) states “Sites that are deemed not eligible and isolated finds require no further work.” HRA recommends revising to read “Sites and isolated finds that Oregon SHPO determines not eligible require no further work.”

- G. Section S.5.3 (page S-22, paragraph 2, last sentence) states “Archaeological sites and, in particular, burials are protected under Oregon state law (ORS 97.740-97.760, 358.905-358.955, 390.235) on

public or private land even if reviewing agencies have concurred that the project is in compliance with applicable regulations.” HRA recommends adding a reference to the Monitoring Program (Section S.6).

- H. Section S.5.3 (page S-22, paragraph 3) states “Included in the supplement to this exhibit will be Applicant’s request for Oregon Energy Facility Siting Council to grant archeological permits to disturb eligible or potentially eligible archeological sites that cannot be avoided.” EFSC cannot grant archaeological permits. HRA recommends revising the word “grant” to “support the pursuance of.”

2. Identify, for private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area; and for public lands, archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.

Problem:

Exhibit S presents lists of archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area on either public or private lands as required by OAR

358.905(1)(a) and (c). HRA has identified several problems with the archaeological survey data. The methods of site delineation are not clearly stated in Appendices S-1 and S-2, the archaeological survey reports for Project Areas A and D. The text states “locations with 10 or more artifacts found within a 10-m diameter area were recorded as sites. In locations where specific landforms created discrete surfaces (e.g., blowout surfaces, dune rises), 10 or more artifacts present on the landform were the basis for site designation” (Appendix S-1, page 20). This implies artifacts found more than 10 meters (m) in distance from other artifacts were not considered part of the same resource. However, examination of the GIS data indicates that the distance between resources (sites and isolates) is

Although SHPO does not explicitly state how sites should be defined relative to other resources, the guidelines regarding boundary testing indicate that, with boundary probes, site boundaries can be established with two negative probes at 10-m intervals from the site (SHPO Field Guidelines 2015, page 35). Thus, a minimum of 50 m should be observed between artifacts for them to be separate sites.

On both public and private lands, the methodology for determining the nature of the find (whether it represented an isolate or a site) was not adequate. SHPO requires verification (through subsurface probing) that a precontact isolated find does not represent a site: “Precontact period isolated finds identified through systematic surface survey may require, at a minimum, excavation of 2-4 shovel test probes/pits in the area of each surface manifestation” (SHPO Field Guidelines 2015, page 35).

3. Identify historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, in the NRHP.

Problem:

A list of eligible and potentially eligible historic and cultural resources is presented within Exhibit S, as required by OAR 345-021-0010(s)(A). However, the fieldwork methodology and NRHP evaluations that are presented in Appendices S-1 and S-2 and upon which eligible, potentially eligible, or not eligible recommendations were based are inadequate.

Evidence:

Fieldwork Methodology: As noted above, establishing site boundaries and understanding the nature of site deposits, including subsurface components, are critical to evaluating and managing archaeological resources. SHPO guidelines concerning eligibility assessments state that recommendations “should include support for both horizontal and vertical boundaries and include information of integrity and composition” (SHPO Reporting Guidelines 2015, page 19).

[REDACTED]

NRHP Evaluations: The NRHP evaluations presented for both sites and isolates provide inadequate discussions of NRHP Criteria A, B, and C. SHPO guidelines state that assessments under the four criteria must “be supported by research and not just include a citation of each criterion preceded with ‘the site is’ or ‘the site is not’ eligible. Addressing NRHP eligibility should consist of a robust description, often covering

several pages, and not just a boiler-plate eligibility statement. The archaeologist must clearly explain why they believe a site is or is not eligible, based on their own thoughts, backed by their research and analyses as applicable” (SHPO Reporting Guidelines 2015, page 9).

Given the amount of contextual literature available, historic-period and multicomponent sites in particular should include thorough assessments of these criteria in relation to the documented history of the area. Additionally, while archaeological sites received a cursory assessment under Criterion D, the technical reports provide no discussion of the reasoning behind the recommendation for non-significance of archaeological isolates.

4. Identify significant potential impacts, if any, of the construction, operation and retirement of the proposed facility on resources and a plan for protection of those resources.

Problem:

Resources were not fully delineated vertically or horizontally; full evaluations under NRHP criteria were not provided; construction plans were not provided in Exhibit S (or other pASC Exhibits, such as Exhibits B or C); and potential impacts of construction, operation, and retirement of the facility was not discussed. Without information regarding the extent and significance of the resources, it is not possible to determine if resources will be impacted by the Project.

Evidence:

Technical reports (e.g., shovel test logs) were not provided in Exhibit S (or other pASC Exhibits, such as Exhibits B or C). Additionally, no information is provided concerning the reasoning for not confirming that each isolated find contains nine or fewer artifacts (i.e., no context information provided in text). Usually, no isolate forms were provided with the technical reports (Appendices S.1 and S.2).

5. Provide a proposed monitoring program, if any, for impacts to historic cultural and archaeological resources during construction and operation of the proposed facility.

Problem:

Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan, was not provided in the current filing.

Evidence:

Exhibit S notes that Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan, will be provided as a supplemental filing. HRA assumes that Appendix S-5 will fulfill the requirements of OAR 345-021-0010(s)(E); however, as Appendix S-5 was not provided, HRA could not confirm its adequacy as part of the completeness review.

Request for Additional Information (RAI):

To address items of concern Nos. 2–5 identified above, archaeological resources should be investigated using subsurface techniques in order to establish the full extent of sites and to assess the nature and integrity of deposits, both horizontally and vertically. The methods, results, and NRHP recommendations should be provided in a plan or addendum technical report meeting SHPO guidelines. As part of that plan/report:

- Subsurface shovel probing should be conducted in order to delineate resources, including both sites and isolates.
- A concise definition of archaeological resource delineation should be provided, including minimum

[REDACTED] resources

- Resources should be evaluated using all four criteria, with research information provided to support evaluation recommendations.

[REDACTED]

Also, HRA noted that the lack of finer-scale project maps, site sketch maps, overview photographs, or artifact photos within the text of Appendices S-1 and S-2 made it difficult

[REDACTED]

Conclusion

HRA [REDACTED] in accordance with the EFSC process (OAR 345-021-0010[s]). Based on HRA's review of Exhibit S and its appendices, insufficient information was provided for SHPO to make determinations of eligibility on the vast majority of resources; all not eligible (site and isolate) recommendations should remain unevaluated pending additional investigations (i.e., probes for resource verification and delineation, evaluation under all NRHP criteria, etc.).

Obsidian Solar should present a plan to SHPO and ODOE for additional work to meet the requirements of OAR 345-021-0010(s)(D) and (E). This plan should focus on subsurface investigations to:

- confirm isolates are surface finds without subsurface components;
- delineate site boundaries; and
- fully evaluate resources under all NRHP criteria.

Obsidian Solar should focus these investigations in the Project's construction footprint. This plan should be referenced in Exhibit S (i.e., as Appendix S-6). It may be appropriate to include these additional investigations as part of Appendix S-5, Cultural Resources Mitigation, Monitoring, and Inadvertent Discovery Plan, which as noted in Exhibit S is to be provided as a supplemental filing. HRA assumes that Appendix S-5 will fulfill the requirements of OAR 345-021-0010(s)(E); however, as Appendix S-5 was not provided, HRA could not confirm its adequacy as part of the completeness review.

HRA does *not* recommend revisions (aside from the minor clarifying edits to Exhibit S noted above) to Exhibit S or its appended technical reports. Instead, the RAI is for a separate plan/report focused on the above bullets in compliance with OAR 345-021-0010(s)(D) and (E).

HRCA would like to note that site forms submitted with Appendix S-1 and S-2 appear to meet minimum SHPO requirements and can be reviewed and accepted. However, assuming SHPO concurrence with HRCA's KAI, resources recommended not eligible will be assessed as unevaluated pending additional investigations. No isolate forms were provided with Appendices S-1 and S-2; these will need to be submitted to SHPO.

[illegible]

TARDAEWETHER Kellen * ODOE

From: POULEY John * OPRD
Sent: Monday, June 17, 2019 2:57 PM
To: TARDAEWETHER Kellen * ODOE
Subject: SHPO Case Nbr SHPO Case No.: 18-0246, ODOE, Obsidian Solar Center LLC
Attachments: SHPO Response Letter Case Nbr SHPO Case No._ 18-0246.pdf

Please find the SHPO's response to your request for comment on cultural resources at the above-identified project. This attachment serves as your file copy. If you have any questions, please feel free to contact me.

John Pouley
Assistant State Archaeologist
Oregon SHPO
503-986-0675



Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org



June 17, 2019

Ms. Kellen Tardaewether
Oregon Department of Energy
550 Capitol St N.E., 1st Floor
Salem, OR 97301

RE: SHPO Case No. 18-0246
ODOE, Obsidian Solar Center LLC
7000 acre solar farm
, Lake County

Dear Ms. Tardaewether:

Oregon SHPO has reviewed the Draft Completeness Review, Exhibit S, Obsidian Solar Center Project Memorandum submitted by Historical Research Associates, Inc. The Memorandum addresses whether the proposed project will comply with the Energy Facility Siting Council's (EFSC) Historic, Cultural, and Archaeological Resources Standard, as defined in Oregon Administrative Rule (OAR) 345-022-0090. According to OAR 345-022-0090, neither project construction nor operation (taking into account mitigation) are likely to result in significant adverse impacts to historic, cultural, or archaeological resources listed or eligible for listing in the National Register of Historic Places (NRHP); archaeological objects; or archaeological sites. With one minor exception, Oregon SHPO concurs with the comments in the Memorandum. Below, Please find some supporting background information as well as Oregon SHPO comments to the Completeness Review in the Memorandum.

Background:

The NRHP consists of four criteria for evaluation. Any site, district, structure, or object (National Register Bulletin 15) or landscape (National Register Bulletin 38) can be listed or eligible for listing in the NRHP. To be eligible for listing, only one of the four criteria needs to be met, but assessment under all four is necessary to fully understand if a property is not eligible to satisfy EFSC Exhibit S completeness. Significance is reflected in architecture, history, archaeology, engineering, and culture (National Register Bulletin 38). For the latter, culture is defined as the traditions, beliefs, and social institutions of any community, be it an Indian tribe, a local ethnic group, or the people of the nation as a whole. Consultation, especially with Indian tribes in Oregon, is a critical part of identifying such places. As an example, according to federal regulations, Tribes possess special expertise in assessing the eligibility of historic properties that may possess religious and cultural significance to them (36CFR800.4[c][1]). The Legislative Commission of Indian Services (LCIS) is tasked with identifying which tribes in Oregon have interests in any part of the state.

Pertinent to comments in the Memorandum, it should also be noted that archaeological "isolates" are not defined by the NRHP. Some states use the term as a way to document less complex surface archaeological material assemblages. In Oregon, SHPO generally defines isolates as less than ten archaeological objects, without archaeological features that mark something lost or discarded. However, if an archaeologist feels that an isolate actually marks the location of an (e.g.) activity area, such as a camp, even if there are fewer than ten artifacts and a lack of features, Oregon SHPO will record it as an archaeological site, if the archaeologist recommends it. That being said, for the NRHP, "a site need not be marked by physical remains if it is the location of a prehistoric or historic event or pattern of events and if no buildings, structures, or objects marked it at the time of the events" (National Register Bulletin 15). As such, isolates as informally defined by SHPO can be eligible to the NRHP. They also can mark areas where additional buried archaeological objects exist.



SHPO guidelines additionally request archaeological excavation of between 2 to 4 shovel probes around surface isolates to collect data on whether they mark a surface area where something was discarded, or if they are the "tip of the iceberg" and mark the location of a buried activity area (site).

The four NRHP criteria (A, B, C, and D) are briefly described. Properties are eligible for listing under any combination of the four and significant at the national, state, or local level. Criterion A eligibility relates to properties associated with a significant event, or a series of events. Criterion B is when a property is associated with a significant person, where person refers to both tangible human existence in the past or gods and demigods who feature in the traditions of a group (National Register Bulletin 38). Criterion C eligibility relates to associations with a type, period, or method of construction, or that represent the work of a master, or possess high artistic values. Criterion D relates to properties that have yielded, or have the potential to yield important information.

National Register Bulletins 15 and 38 provide examples of historic, and precontact archaeological sites, as well as properties of religious and cultural significance to Indian tribes for each of the four criteria. The NRHP requires that eligible properties retain integrity of location, design, setting, materials, workmanship, feeling, and association. For archaeological sites, National Register Bulletin 16A states that for archaeological sites, all seven qualities of integrity do not need to be present for eligibility as long as the overall sense of past time and place is evident.

Examples of eligible archaeological site types are provided in National Register bulletins. For Criterion A, one example provided in National Register Bulletin 15 includes: "a site where prehistoric Native Americans annually gathered for seasonally available resources and for social interaction". For National Register Bulletin 38, an example states: "...as long as the tradition itself is rooted in the history of the group, and associates the property with traditional events, the association can be accepted." Under Criterion B, National Register Bulletin 15 provides one example as: The known major villages of individual Native American s who were important during the contact period or later...". In National Register Bulletin 38, properties associated with legendary figures included in tribal traditions are eligible. Under Criterion C, an example in National Register Bulletin 15 states: "A Late Mississippian village that illustrates the important concepts in prehistoric community design and planning will qualify". As such, village locations and associated activity areas, which can consist of multiple archaeological sites, could be determined eligible under Criterion C if they illustrate such designs.. Under Criterion D, research examples are provided in National Register Bulletin 15 and National Register Bulletin 38 states that properties that have traditional cultural significance often have already yielded, or have the potential to yield, important information through ethnographic, archaeological, sociological, folkloric, or other studies."

In addition to the above, under state law (ORS 358.905 and ORS 97.74) archaeological sites, objects and human remains are protected on both state public and private lands in Oregon. Archaeological permits to conduct excavations or collect items related to ORS 358.905-961 and 97.740-760 are issued under ORS 390.235. Only archaeologists that meet state qualification standards are able to apply for archaeological permits under ORS 390.235.

Information on archaeological site types, traditional cultural properties, and properties of religious and cultural significance are available to all researchers in National Register publicaiton, and are cited in SHPO guidelines. Consultation with Oregon Tribes can provide critical information related to project areas, that can aid National Register Eligibility of all property types. For example, Tribal information compliments archaeological fieldwork, and can assist with more fully understanding the context of archaeological sites.

HRA Memorandum:

1. Edits to Exhibit S:

Oregon SHPO concurs with the minor edits described in sections (A-H) of the Memorandum. To fully address Exhibit S completeness, the report must address historic, cultural and archaeological resources. If the report focusses on archaeology only, it may not address any potential historic or cultural sites, if any exist in the project area (per OAR 345-022-0090).

2. Identify, for private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area; and for public lands,

archaeological sites, as defined in ORS358.905(1)(c), within the analysis area:

Oregon SHPO concurs that isolates and sites were not appropriately delineated and do not meet our standards. Oregon SHPO was additionally not consulted with regarding any methods that did not conform to our 2013 Field Guidelines, or 2015 Reporting Guidelines. Since SHPO was not consulted and the guidelines were not followed, the problems documented in the Memorandum occurred at the inception of the archaeological work, and should not be considered a later holdup of the EFSC review process. Ten meters between archaeological sites is less than our guidelines, and as stated above, testing of isolates is included in SHPO guidelines to ascertain if they mark a discreet discard episode, or are an indication that an archaeological site exists beneath the surface. As stated in the forward to SHPO archaeology field guidelines, the intent is to clarify expectations for archaeologists, their clients, and the public. Archaeology contractors that conduct work in the state of Oregon, were also provided the opportunity to review and comment on the guidelines prior to making them final.

3. Identify historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, in the NRHP.

Oregon SHPO concurs that the process for determining NRHP eligibility is inadequate. No attempt was made to assess the vertical (subsurface) boundary (depth of cultural materials) which are critical to NRHP evaluations. Section 10 of the National Park Service (NPS) 10-900 form (National Register Nomination Form) is titled Geographical Data. The section is where boundaries of NRHP properties are defined and justified. For archaeological sites, which are often buried and out of view, understanding a representative sample of the below ground component is critical for assessing eligibility as well as justifying the boundary. As mentioned above, it is also part of SHPO guidelines to archaeologically excavate test probes around surface isolates to determine if they are manifestations of buried sites.

As stated above, for an archaeological site to be considered not eligible to the NRHP, they must be evaluated under all four criteria (as indicated above, isolates are considered sites in the NRHP definitions of eligible property types). Archaeological sites should also not be evaluated in a vacuum. As indicated above, a group of sites across a landscape can be part of a series of events, and eligible under Criterion A, for example. If the Memorandum is correct, in that only Criterion D was assessed, then NRHP eligibility assessment would be inadequate. If isolates are recommended not eligible, and they have not been tested for buried cultural deposits, then we could not concur that they are not eligible to the NRHP without understanding their full vertical and horizontal boundary.

4. Identify significant potential impacts, if any, of the construction, operation and retirement of the proposed facility on resources and a plan for protection of those resources.

Oregon SHPO concurs that resources were not fully delineated vertically or horizontally and that full evaluations under NRHP criteria were not provided. Given archaeological sites in the area that have vertical depth, it is critical to assess that potential in the project area. It is also important to note that boundary testing is not the same as NRHP evaluative testing. The two can complement one another, but evaluative testing is typically targeting specific research objectives other than the boundary of a site. For example, for assessment under Criterion D, formal archaeological testing within the boundaries of a site may focus on areas where information on the potential to address important research questions is implied by the surface assemblage, which can be distant from the boundary. Also, evaluative testing typically involves larger formal excavation units, as opposed to typical smaller boundary probes which are intended to merely identify presence or absence of archaeological objects.

As stated in the Memorandum, delineating archaeological site boundaries are referenced in SHPO guidelines in multiple places. That being said, after fieldwork and report write-up, our office was contacted by the contracting archaeologist regarding whether they needed to submit SHPO isolate forms. The authors of the Memorandum were not aware of this exchange, and as such, their discussion on this topic is not fully informed. At times, SHPO has agreed to forgo isolate form submissions if the archaeologist is able to provide all pertinent information in a tabular format. Through email exchanges, this was conveyed to the archaeologist, and as such, the tabular isolate data in the report is acceptable, so long as it contains the appropriate information for SHPO to identify specific locations for each isolate, and understand what each constituted.

5. Provide a proposed monitoring program, if any, for impacts to historic, cultural and archaeological

resources during construction and operation of the proposed facility.

Oregon SHPO concurs with the Memorandum, if the Mitigation, Monitoring, and Inadvertent Discovery Plan were not included in the filing, as required.

If you have any questions about the above comments or would like additional information, please feel free to contact me at your convenience. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

Sincerely,

A handwritten signature in cursive script, reading "John D. Pouley". The signature is written in dark ink and is positioned above the printed name and title.

John Pouley, M.A., RPA
Assistant State Archaeologist
(503) 986-0675
john.pouley@oregon.gov

**BEFORE THE
ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON**

IN THE MATTER OF THE APPLICATION)	ORDER APPOINTING LAKE COUNTY
FOR SITE CERTIFICATE FOR THE)	BOARD OF COMMISSIONERS AS
OBSIDIAN SOLAR CENTER)	SPECIAL ADVISORY GROUP

The Oregon Department of Energy received the Notice of Intent to submit an application for site certificate for the Obsidian Solar Center from Obsidian Solar Center, LLC, a subsidiary of Obsidian Renewables, LLC, on January 16, 2018. The proposed facility location is in Lake County.

ORS 469.480(1) requires the Energy Facility Siting Council to designate as a special advisory group the governing body of any local government within whose jurisdiction a facility is proposed to be located. The governing body of Lake County is the Lake County Board of Commissioners.

Therefore, it is ordered that the Lake County Board of Commissioners is appointed as the special advisory group to advise the Energy Facility Siting Council in any site certificate proceedings for the Obsidian Solar Center.



Barry Beyeler, CHAIR
OREGON ENERGY FACILITY SITING COUNCIL

2/23/2018
DATE

TARDAEWETHER Kellen * ODOE

From: BJORK Mary F * WRD
Sent: Tuesday, September 15, 2020 2:16 PM
To: TARDAEWETHER Kellen * ODOE; ESTERSON Sarah * ODOE
Cc: BJORK Mary F * WRD
Subject: ODOE Summary Email For OWRD Rules

Hi Kellen and Sarah,

We have reviewed the matter and it is our position that the Christmas Valley Water Supply District may utilize the authority in ORS 540.510(3) to apply water it holds under its groundwater permits to lands that are not “appurtenant” to those permits pursuant to ORS 540.510(3).

ORS 540.510(3)(a)(B) states that any water used under a permit issued to a municipality may be applied to beneficial use on lands to which the right is not appurtenant if the use under the water use permit continues to be for “municipal purposes” and the use “would not interfere with or impair prior vested water rights.” The Christmas Valley Water Supply District is a municipality for the purposes of ORS 540.510(3) and though the nature of the district’s water rights are “quasi-municipal” the definition of quasi-municipal as provided in the commission’s division 300 rules appears inapplicable in this instance.

Best Regards,

Mary

[Mary F. Bjork](#)

Water Rights Program Analyst

725 Summer St NE, Suite A, Salem OR 97301 | Phone 503-986-0817



Integrity | Service | Technical Excellence | Teamwork | Forward-Looking

ESTERSON Sarah * ODOE

Subject: FW: Info on CVDWSD Permit G-10790
Attachments: Permit G-10790.pdf

From: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Sent: Thursday, August 20, 2020 2:17 PM
To: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Cc: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>; BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: RE: Info on CVDWSD Permit G-10790

Hi Kellen,

I've attached a copy of Permit G-10790, and a link below the permit's data on our website.
https://apps.wrd.state.or.us/apps/wr/wrinfo/wr_details.aspx?snp_id=21660

I haven't heard back from Renee yet, and have the municipal vs. quasi-municipal issue on a meeting agenda for tomorrow with Alyssa.

Hope this helps,

[Mary F. Bjork](#)

Water Rights Program Analyst

725 Summer St NE, Suite A, Salem OR 97301 | Phone 503-986-0817



[Integrity](#) | [Service](#) | [Technical Excellence](#) | [Teamwork](#) | [Forward-Looking](#)

From: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Sent: Thursday, August 20, 2020 2:06 PM
To: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Cc: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>
Subject: Info on CVDWSD Permit G-10790

Hi again Mary!

In the application for the Obsidian Solar Center, the applicant included copies of permit No. G-12660 and G-12659, so we can see the designated uses and place of use in the permits. However, there isn't a copy of permit No. G-10790. Could WRD send a copy of that permit or verify the designated/permissible uses and place of use in that permit? This request is in addition to the verification review in the other email. Again, thank you so much for all your help. We know you are busy and really appreciate helping us with this review!

Kellen



Kellen Tardaewether

Senior Siting Analyst

550 Capitol St. NE Salem, OR 97301

P: 503-373-0214

C: 503-586-6551

P (In Oregon): 800-221-8035



Stay connected!



STATE OF OREGON

County of LAKE

PERMIT TO APPROPRIATE THE PUBLIC WATERS

This is to certify that I have examined APPLICATION G-11581 and do hereby grant the same SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

This permit is issued to Christmas Valley Domestic Water Supply District of P.O. Box 142, Christmas Valley, Oregon 97641, for the use of water from one well,

for the PURPOSE of quasi-municipal,

that the PRIORITY OF THE RIGHT dates from September 11 1986,

and is limited to the amount of water which can be applied to beneficial use and shall not exceed 1.5 cubic feet per second

measured at the point of diversion from the well, or its equivalent in case of rotation with other water users.

The well is to be LOCATED: 400 feet North and 50 feet West from the center of Section 13, being within the SE1/4 NW1/4 of Section 13, Township 27 South, Range 17 East, W.M., in the County of Lake.

A description of the PLACE OF USE under the permit, and to which such right is appurtenant, is as follows:

Township 27 South, Range 17 East, W.M., Section 8	W1/2 SW1/4	Quasi-
Section 9	E1/2 NE1/4	municipal
	S1/2	
Section 10	All	
Section 11	SW1/4 NW1/4	
	S1/2	
Section 12	SW1/4 SW1/4	
Section 13	NW1/4	
Section 14	N1/2	
	NE1/4 SW1/4	
	W1/2 SW1/4	
	N1/2 SE1/4	
Section 15	N1/2	
	N1/2 SE1/4	
	SE1/4 SE1/4	
Section 16	N1/2	
	W1/2 SW1/4	
Section 17	All	
Section 18	All	
Section 19	NE1/4 NE1/4	
Section 20	NE1/4	
Section 23	NW1/4 NW1/4	

SEE NEXT PAGE

Page 2

The use of water under the right allowed herein shall be limited to appropriation only to the extent that it does not impair or substantially interfere with prior surface water rights, as well as prior ground water rights of others.

The well shall be constructed in accordance with the General Standards for the Construction and Maintenance of Water Wells in Oregon. The works constructed shall include an air line and pressure gauge or an access port for measuring line, adequate to determine water level elevation in the well at all times. The permittee shall install and maintain a weir, meter, or other suitable measuring device, and shall keep a complete record of the amount of ground water withdrawn.

Actual construction work shall begin on or before March 28, 1989, and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 19 89 . Extended to October 1, 1991 , 10-1-93 , 10-1-98 2020

Complete application of the water to the proposed use shall be made on or before October 1, 19 90 . Extended to October 1, 1991 , 10-1-93 , 10-1-98

Witness my hand this 28th day of March , 19 88 .

/s/ WILLIAM H. YOUNG

WATER RESOURCES DIRECTOR

This permit is for the beneficial use of water. By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan. It is possible that the land use you propose may not be allowed if it is not in keeping with the goals and the acknowledged plan. Your city or county planning agency can advise you about the land-use plan in your area.

TARDAEWETHER Kellen * ODOE

From: TARDAEWETHER Kellen * ODOE
Sent: Friday, October 9, 2020 1:23 PM
To: TARDAEWETHER Kellen * ODOE
Subject: FW: Water Use Impacts for Obsidian Solar Project in Lake County - Availability?

From: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Sent: Thursday, July 23, 2020 2:41 PM
To: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>; TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Cc: MUCKEN Alyssa M * WRD <Alyssa.M.Mucken@oregon.gov>; COPE Kerri H * WRD <Kerri.H.Cope@oregon.gov>; BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: RE: Water Use Impacts for Obsidian Solar Project in Lake County - Availability?

Hi,

Per our discussion today, I'm forwarding the following information:

*Is water used for construction and operation of an energy facility considered an industrial use? **Yes, it is considered an industrial use.***

690-300-0010(25) "Industrial Water Use" means the use of water associated with the processing or manufacture of a product. These uses include, but are not limited to, construction, **operation and maintenance of an industrial site**, facilities and buildings and related uses. Examples of these uses include, but are not limited to, general construction; road construction; non-hydroelectric power production, including down-hole heat exchange and geothermal; agricultural or forest product processing; and fire protection. Such use shall not include irrigation or landscape maintenance of more than 1/2 acre. Notwithstanding this definition, exempt industrial water use under Division 340 does not include irrigation or landscape maintenance.

*If so, are industrial water uses authorized under quasi-municipal uses as defined in OAR 690-300-0010(40)? **Yes, quasi-muni does includes industrial use.***

**

I will get back to you soon with the information that you requested in regards to enforcement on exempt wells. And, as discussed, will forward the confirmation next week on whether they could supply a demand of 17,150,000 gallons per year (for two years), and the percentage of total demand the project would represent.

Best Regards,

Mary F. Bjork

Water Rights Program Analyst

725 Summer St NE, Suite A, Salem OR 97301 | Phone 503-986-0817



From: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>
Sent: Tuesday, July 21, 2020 3:14 PM
To: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Cc: TARDAEWETHER Kellen * ODOE <Kellen.Tardaewether@oregon.gov>
Subject: RE: Water Use Impacts for Obsidian Solar Project in Lake County - Availability?

Hi Mary,

Hope all is well!

We are currently evaluating an application for site certificate for a proposed 400 MW solar facility in Lake County, Oregon (Obsidian Solar Center). The applicant indicates construction water use could result in up to 34 million gallons over a 2-year duration (up to 17,150,000 gallons per year worst-case), to be obtained from a mix of sources including up to two onsite wells (each on separate tax lots, not to exceed 5,000 gallons/day) and purchased from Christmas Valley Domestic Water Supply District and La Pine Public Works Department. Here are our questions:

- The applicant proposes to construct and operate up to 2 permit exempt wells for the proposed energy facility. The wells would be on separate tax lots or lots under different ownership, but would be owned by the applicant and operated for the purpose of the solar facility. Does OAR 690-340-0010(1)(d) limit the number of permit exempt wells allowable per taxlot/ownership, or by use (i.e. industrial use)?
- The applicant states that it would purchase water from the Christmas Valley Domestic Water Supply District and identifies Permits to Appropriate Water (G-12659, G-12864, and G-11581). Each of these permits establish the purpose or use as: quasi-municipal. Is water used for construction and operation of an energy facility considered an industrial use? If so, are industrial water uses authorized under quasi-municipal uses as defined in OAR 690-300-0010(40)?
- For the Permits to Appropriate Water listed above, do the Places of Use establish a limit of where purchased water can be used? In other words, if the project site is not within the Place of Use township/range, would sale of water for use in these areas be prohibited under the permit? Note that half of the proposed facility site is within the Place of Use, while half is outside.
- Could you review the 10-year maximum and average water use under the Permits to Appropriate Water listed above and confirm whether they could supply a demand of 17,150,000 gallons per year (for two years), and confirm the percentage of total demand the project would represent?
- If you have access to La Pine Public Works Department Water Rights/Permits, could you confirm whether the permit(s) authorize sale/use of water to the project site, based on location and industrial use, and whether, under the permit(s), it could supply the demand of 17,150,000 gallons per year (for two years)

We have attached the water use analysis from the application for reference. Please let us know if additional information is needed to support your review.

I will send you a meeting invite for 1pm on Thursday to discuss.

Thanks,
Sarah



Sarah T. Esterson
Senior Siting Analyst
550 Capitol St. NE | Salem, OR 97301
P: 503-373-7945
C: 503-385-6128
P (In Oregon): 800-221-8035



Stay connected!

From: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Sent: Tuesday, July 21, 2020 8:08 AM
To: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>
Cc: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: RE: Water Use Impacts for Obsidian Solar Project in Lake County - Availability?

Hi Sarah,

I will have some time this Thursday if that works for you. Any background you can share before then would be great.

Thanks,

[Mary F. Bjork](#)

Water Rights Program Analyst
725 Summer St NE, Suite A, Salem OR 97301 | Phone 503-986-0817



Integrity | Service | Technical Excellence | Teamwork | Forward-Looking

From: ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>
Sent: Tuesday, July 21, 2020 7:56 AM
To: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: Water Use Impacts for Obsidian Solar Project in Lake County - Availability?

Hi Mary,

Hope all is well! Might you have availability today to discuss a few water use/permit related questions for a proposed solar facility in Lake County? If not today, might you have availability Wed or Thurs?

Thanks in advance,
Sarah



Sarah T. Esterson

Senior Siting Analyst

550 Capitol St. NE | Salem, OR 97301

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C: 503-385-6128

P (In Oregon): 800-221-8035



Stay connected!

Attachment I-1 Draft Erosion and Sediment Control Plan

STANDARD EROSION AND SEDIMENT
CONTROL PLAN DRAWING NOTES:

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
2. ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
3. INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE B.1.C AND B.2)
4. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, THE ABOVE RECORDS MUST BE RETAINED BY THE PERMIT REGISTRANT BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE. (SCHEDULE B.2.C)
5. ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A 8.A)
6. THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SCHEDULE A.12.C.1)
7. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV. AND V)
8. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A.7.A.III)
9. IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) AND (2))
10. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
11. MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FEET OF WATERS OF THE STATE. (SCHEDULE A.7.B.1 AND (2)(A)(B))
12. INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SCHEDULE A.8.C.I.(5))
13. CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
14. CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
15. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
16. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATIONS MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS.(SCHEDULE A.8.C.II.(3))
17. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
18. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LANDDISTURBING ACTIVITIES. (SCHEDULE A 7.D.II AND A.8.C.I(4))
19. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(5))
20. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SCHEDULE A.6)
21. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZERS, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
22. IMPLEMENT THE FOLLOWING BMPS WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCHEDULE A.7.E.III.)
23. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A.7.A.IV)
24. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.III)
25. IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
26. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.B)
27. AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A.7.E.II.(2))
28. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND ACTIVITIES DURING WET WEATHER. (SCHEDULE A.7.A.I)
29. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
30. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.I)
31. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.9.C.III & IV)
32. WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.1)
33. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
34. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
35. PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
36. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.III(1) AND D.3.C.II AND III)

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

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EC-4	EROSION AND SEDIMENT CONTROL PLAN
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EC-7	EROSION AND SEDIMENT CONTROL PLAN
EC-8	EROSION AND SEDIMENT CONTROL PLAN
EC-9	EROSION AND SEDIMENT CONTROL STANDARD DETAILS

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS:

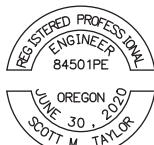
EROSION AND SEDIMENT
CONTROL
COVER SHEET

Michael Baker
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9755 Clairmont Mesa Blvd., San Diego, CA 92124
Phone: (858) 614-5000 • MBAKERINTL.COM

INITIAL

DESIGNED BY: JM	DRAWING NO.:168058
DRAWN BY: JM	SCALE: AS NOTED
CHECKED BY: ST	
PERPARED FOR:	SWINERTON BUILDERS 16798 WEST BERNARDO DRIVE SAN DIEGO, CA 92127 PHONE: 858-229-5774

OBSIDIAN SOLAR CENTER
FORT ROCK
TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16
OREGON



JOB NUMBER

SHEET
EC-1

EROSION AND SEDIMENT CONTROL PLAN

DEVELOPER

DEVELOPER/COMPANY: OBSIDIAN SOLAR CENTER, LLC
CONTACT: MICHELLE SLATER
5 CENTERPOINTE DRIVE #250
LAKE OSWEGO, OR 97035
PHONE: 503-488-6153

CONTRACTOR

SWINERTON BUILDERS
CONTACT: DONNY GALLAGHER
16798 WEST BERNARDO DRIVE
SAN DIEGO, CA 92127
PHONE: 858-229-5774

ENGINEERING

MICHAEL BAKER INTERNATIONAL
CONTACT: SCOTT DAVIS
9755 CLAIREMONT MESA BLVD
SAN DIEGO, CA 92128
PHONE: 858-229-5774

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

UNDEVELOPED LAND

DEVELOPED CONDITIONS

SOLAR PANEL ARRAYS

NATURE OF CONSTRUCTION ACTIVITY AND
ESTIMATED TIME TABLE

CLEARING (TBD)
GRADING (TBD)
UTILITY INSTALLATION (TBD)
SITE IMPROVEMENT CONSTRUCTION (TBD)
FINAL STABILIZATION (TBD)

TOTAL SITE AREA = 3520 ACRES

TOTAL DISTURBED AREA = 3520 ACRES

SITE SOIL CLASSIFICATION

200 - ABERT ASHY LOAM SAND, 0 TO 2 PERCENT SLOPES
217 - BONNIQH-FORT ROCK COMPLEX, 0 TO 2 PERCENT SLOPES
470 - MOREHOUSE ASHY LOAM FINE SAND, 0 TO 2 PERCENT SLOPES
472 - MOREHOUSE ASHY LOAM FINE SAND, 0 TO 20 PERCENT SLOPES

ON-SITE SOILS HAVE A MODERATE TO HIGH EROSION POTENTIAL. ALL FILL MATERIAL SHALL BE GENERATED ON-SITE FROM GRADING EXCAVATION AND UTILITY TRENCH SPOILS

IMPORTED MATERIAL FOR ROADWAY WILL CONSIST OF ROAD SPECIFIED 3"-MINUS AND 3/4"-MINUS GRAVEL

RECEIVING WATER BODIES

NEAREST WATER BODY: BEASLEY LAKE

PERMITTEE'S SITE INSPECTOR: MAREN FULTON

COMPANY/AGENCY: ECOLOGY & ENVIRONMENT, INC

PHONE: (503) 248-5600

FAX: N/A

E-MAIL: MFULTON@ENE.COM

DESCRIPTION OF EXPERIENCE:

SITE CONDITIONS	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING. AT LEAST ONCE EVERY TWO (2) WEEKS REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDER DAYS.	ONCE EVERY TWO (2) WEEKS.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGE UNLIKELY.

BMP MATRIX FOR CONSTRUCTION PHASING

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S

	CLEARING	MASS GRADING	UTILITIY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATIO N	WET WEATHER (OCT.1-MAY 31)
EROSION PREVENTION						
PRESERVE NATURAL VEGETATION	X		X	X		X
GROUND COVER					X	X
HYDRAULIC APPLICATIONS					X	
PLASTIC SHEETING						
MATTING					X	
DUST CONTROL	X		X	X		X
TEMPORARY/PERMANENT SEEDING			X	X	X	X
BUFFER ZONE					X	
OTHER:						
SEDIMENT CONTROL						
SEDIMENT FENCE (PERIMETER)			X	X		
SEDIMENT FENCE (INTERIOR)			X	X		
STRAW MATTTLES	X		X	X	X	X
FILTER BERM			X	X		
INLET PROTECTION			X	X		
DEWATERING			X	X		
SEDIMENT TRAP			X	X		
OTHER:						
RUN OFF CONTROL						
CONSTRUCTION ENTRANCE	X		X	X		X
PIPE SLOPE DRAIN					X	
OUTLET PROTECTION			X	X	X	
SURFACE ROUGHENING						
CHECK DAMS					X	
OTHER:						
POLLUTION PREVENTION						
PROPER SIGNAGE	X		X	X	X	X
HAZ WASTE MGMT	X		X	X	X	X
SPILL KIT ON-SITE	X		X	X	X	X
CONCRETE WASHOUT AREA	X		X	X	X	X
OTHER:						

LOCAL AGENCY-SPECIFIC EROSION CONTROL
NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BOUNDARIES OF THE CLEARING LIMITS, VEGETATED BUFFERS, AND ANY SENSITIVE AREAS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED IN THE FIELD. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE IS PERMITTED BEYOND THE CLEARING LIMITS. THE OWNER/PERMITTEE MUST MAINTAIN THE DELINEATION FOR THE DURATION OF THE PROJECT. THE OWNER IS REQUIRED TO DELINEATE ANY PLAYAS ON SITE. NOTE: VEGETATED CORRIDORS TO BE DELINEATED WITH ORANGE CONSTRUCTION FENCE OR APPROVED EQUAL.
3. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BMP'S THAT MUST BE INSTALLED ARE GRAVEL CONSTRUCTION ENTRANCE, PERIMETER SEDIMENT CONTROL, AND INLET PROTECTION. THESE BMP'S MUST BE MAINTAINED FOR THE DURATION OF THE PROJECT.
4. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAN SEPTEMBER 1; THE TYPE AND PERCENTAGES OF SEED IN THE MIX MUST BE IDENTIFIED ON THE PLANS
5. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP I.E. (FILTER BAG)
6. THE ESC PLAN MUST BE KEPT ON SITE. ALL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED PROPERLY TO ENSURE THAT SEDIMENT OR SEDIMENT LADEN WATER DOES NOT ENTER A SURFACE WATER SYSTEM, ROADWAY, OR OTHER PROPERTIES.
7. THE ESCP MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE MEASURES SHALL BE UPGRADED AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION CONTROL REGULATIONS. CHANGES TO THE APPROVED ESC PLAN MUST BE SUBMITTED IN THE FORM OF AN ACTION PLAN TO DEQ PER THE 1200C PERMIT.
8. IN AREAS SUBJECT TO WIND EROSION, APPROPRIATE BMP'S MUST BE USED WHICH MAY INCLUDE THE APPLICATION OF FINE WATER SPRAYING, PLASTIC SHEETING, MULCHING, OR OTHER APPROVED MEASURES.
9. ALL EXPOSED SOIL MUST BE COVERED DURING THE WET WEATHER PERIOD.

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 1-800-332-2344. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING ANY EXCAVATION. CALL 1-800-332-2344.

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESCP MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRENCHES, ECT) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, PLAYAS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED 10 FEET OUTSIDE THESE AREAS WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: CHECK DAMS, SURFACE ROUGHENING, BANK STABILIZATION, AND SEDIMENT FENCE.

EROSION AND SEDIMENT CONSTRUCTION NOTES:

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF THE FOLLOWING MIXTURE, UNLESS OTHERWISE AUTHORIZED:
SEED MIX (MIN. 10LB/AC.)
1. BLUE BUNCH WHEATGRASS
2. REGREEN
3. IDAHO FESCUE
4. CANBY BLUEGRASS
5. PRAIRIE JUNE GRASS
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURED SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED WITHIN 14 DAYS IF COMPLETION THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF THE APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
10. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
11. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
12. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
13. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
14. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
15. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

CONSTRUCTION PHASING

- PHASE 1
1. PLACE PERIMETER STRAW WATTLES AND SEDIMENT FENCE
- PHASE 2
1. CONSTRUCTION ENTRY ROADWAY
2. CONSTRUCT SITE IMPROVEMENTS
3. HYDROSEED AREAS ALL DISTURBED
- PHASE 3
1. CLEAN OUT AND RESTORE SITE

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDE MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOIL BY OCTOBER 1.
4. THE STORM WATER FACILITY SHALL BE CONSTRUCTED AND LANDSCAPED PRIOR TO THE STORM WATER SYSTEM FUNCTIONING AND SITE PAVING.
5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.
6. DUST ABATEMENT WATERING CREWS WILL SPRAY WATER ON SOILS IN A MANNER THAT DOES NOT RESULT IN POOLING OR CHANNELIZING OF WATER.

THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1ST AND MAY 31ST.

PRELIMINARY
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REVISIONS:

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DRAWN BY: JM SCALE: AS NOTED
CHECKED BY: ST
PERPARED FOR: SWINERTON BUILDERS
16708 WEST BERNARDO DRIVE
SAN DIEGO, CA 92127
PHONE: 858-229-5774

OBSIDIAN SOLAR CENTER

FORT ROCK

OREGON

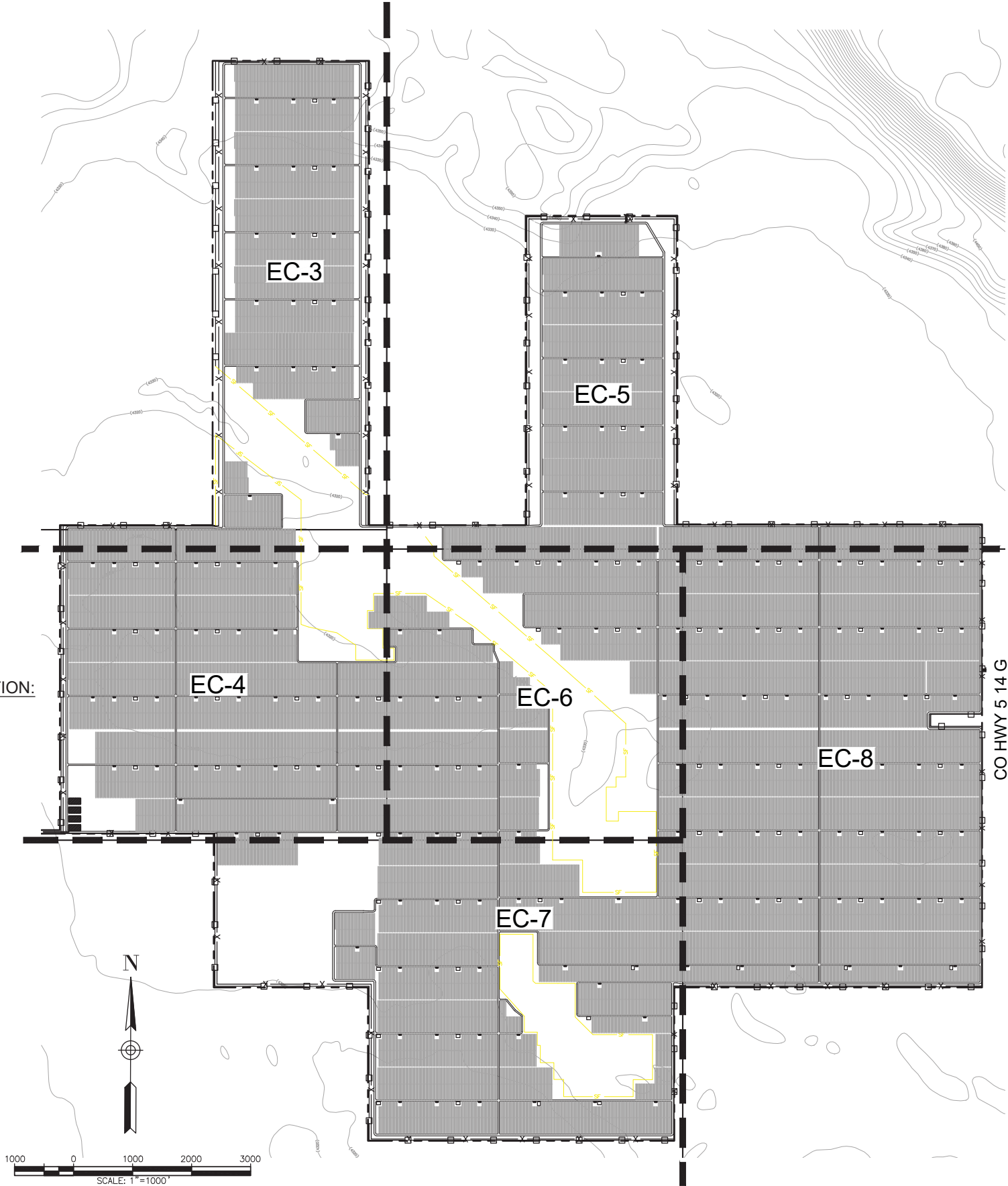
TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

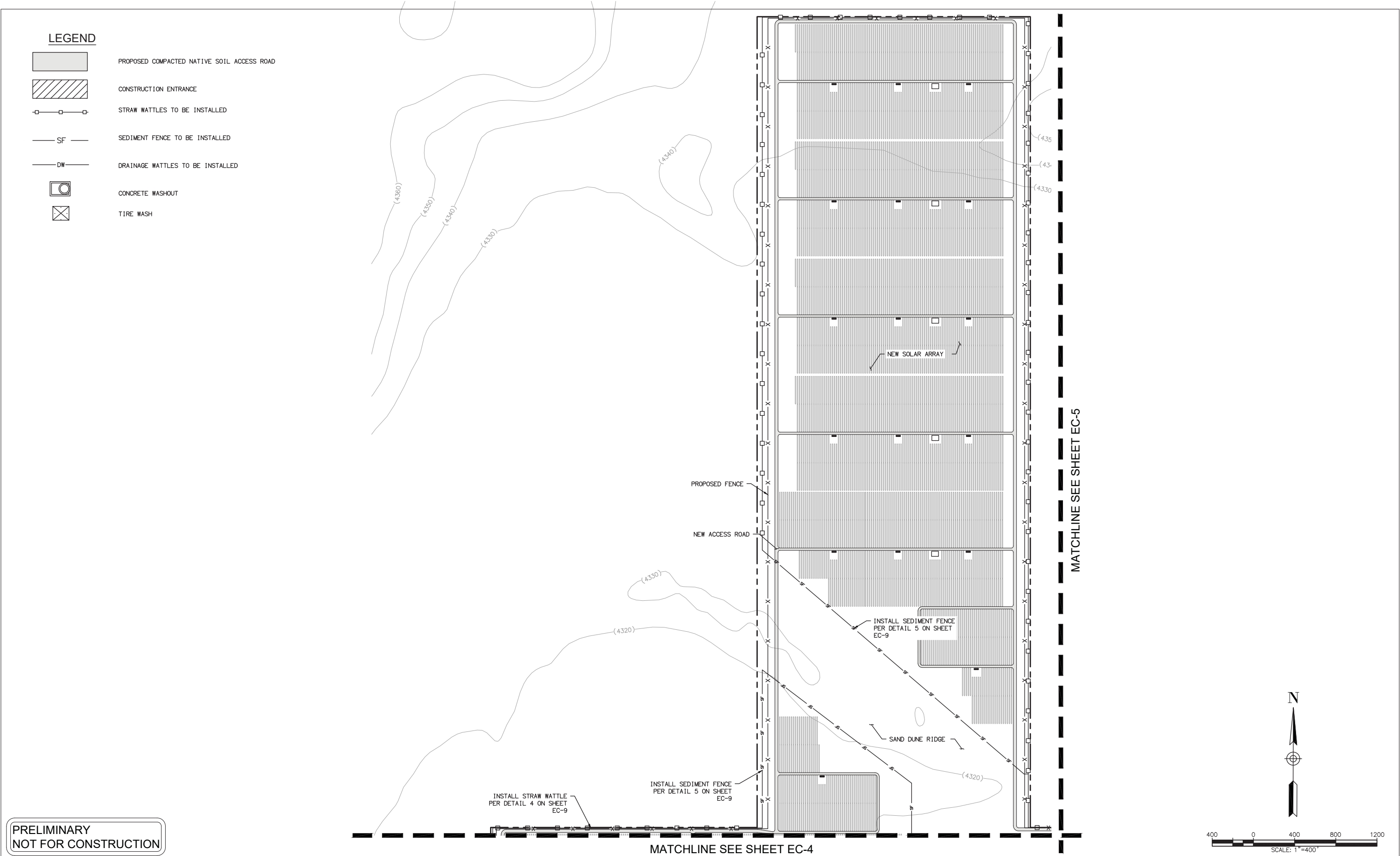


JOB NUMBER

SHEET

EC-2





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FORT ROCK

TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

OREGON

SCOTT M. TAYLOR

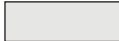
REGISTERED PROFESSIONAL
ENGINEER
84501PE


OREGON
JUNE 30, 2020
SCOTT M. TAYLOR


JOB NUMBER


SHEET
EC-3


LEGEND


- 


PROPOSED COMPACTED NATIVE SOIL ACCESS ROAD
- 

CONSTRUCTION ENTRANCE
- 

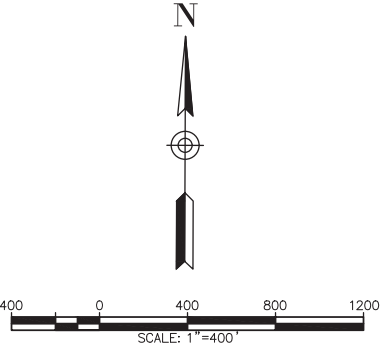
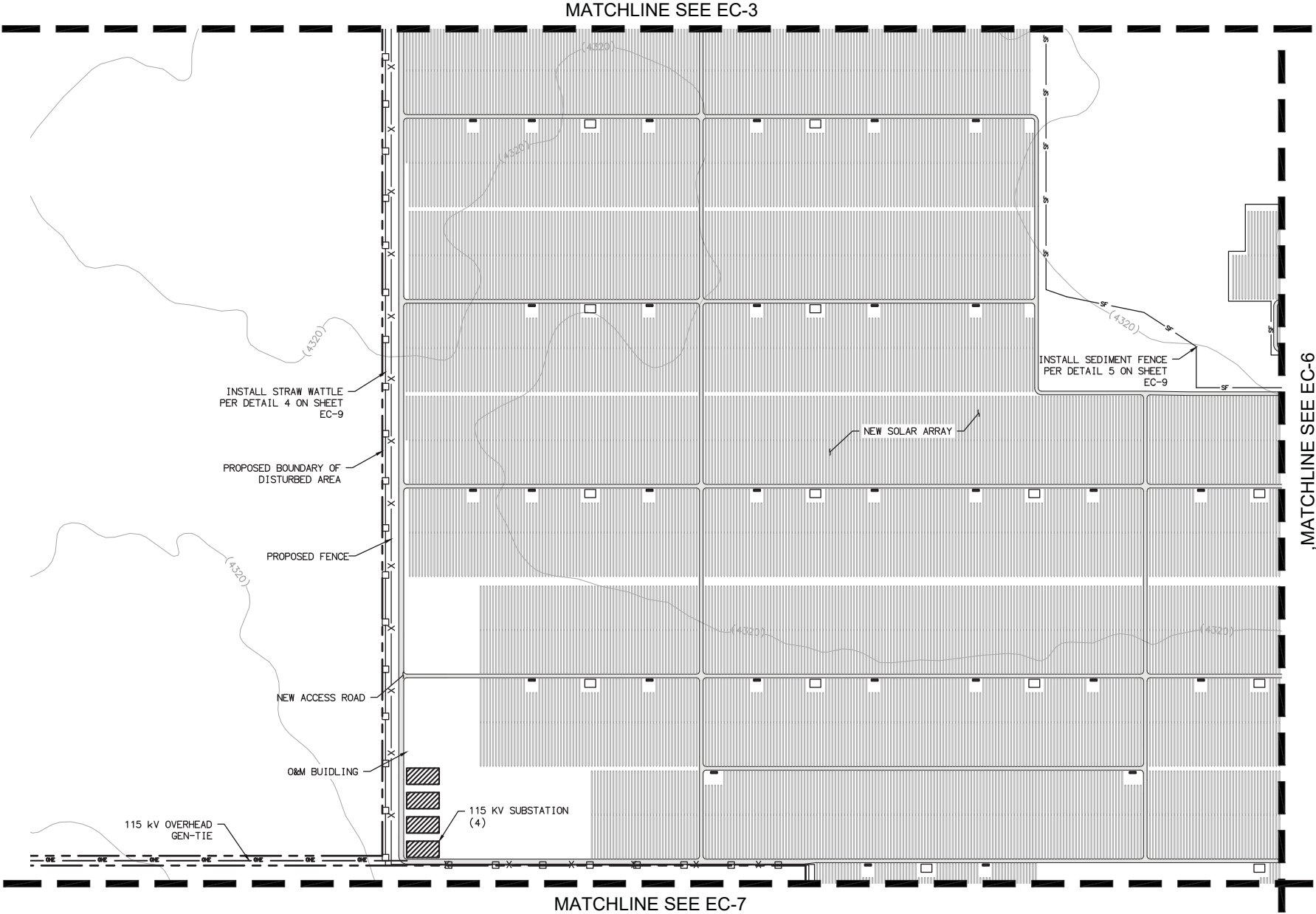
STRAW WATTLES TO BE INSTALLED
- 

SEDIMENT FENCE TO BE INSTALLED
- 

DRAINAGE WATTLES TO BE INSTALLED
- 

CONCRETE WASHOUT
- 

TIRE WASH



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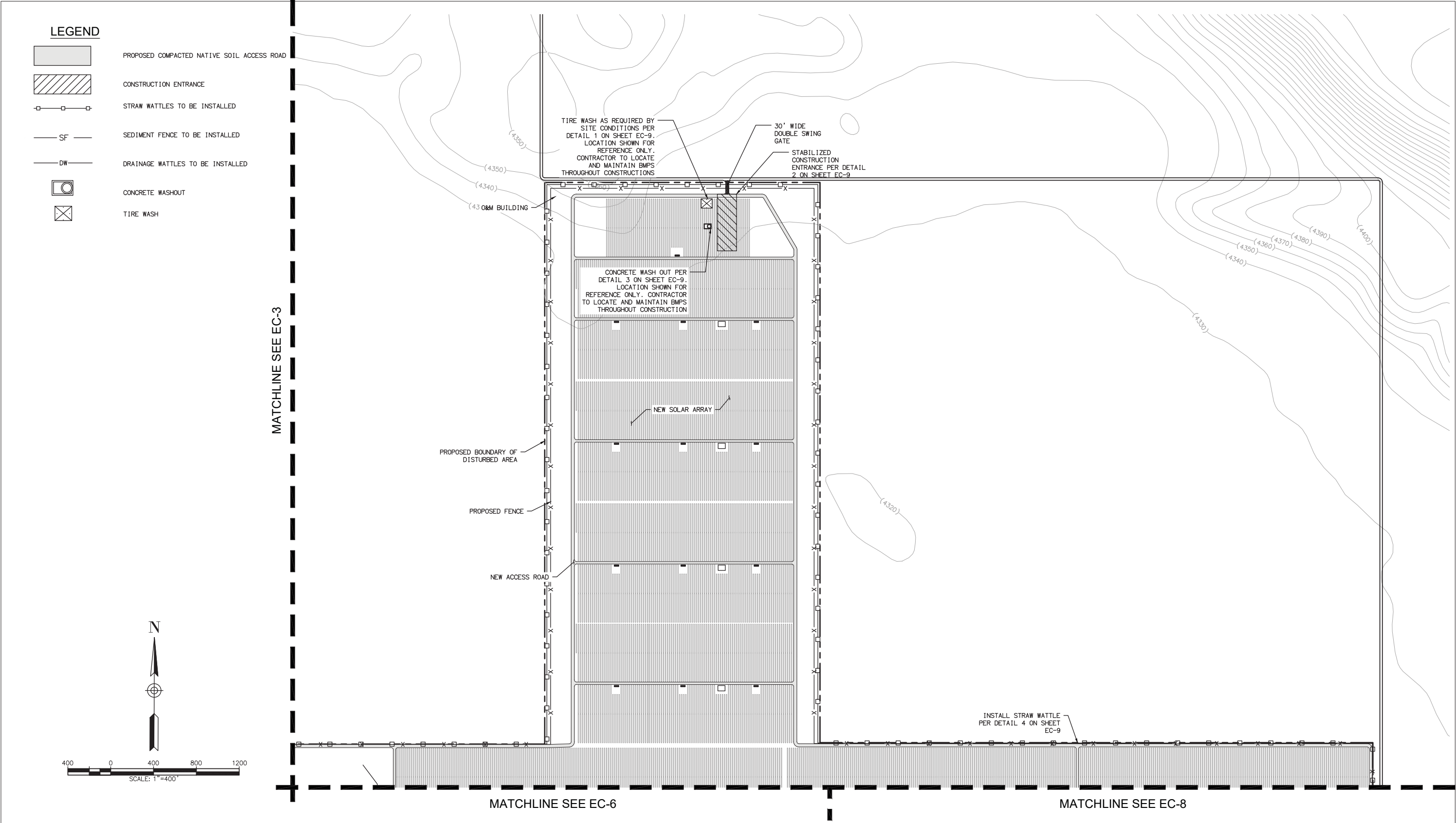
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DRAWN BY: JM	SCALE: AS NOTED
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OBSIDIAN SOLAR CENTER
FORT ROCK
TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16
OREGON



JOB NUMBER

SHEET
EC-4



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OBSIDIAN SOLAR CENTER

FORT ROCKOREGON

TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

REGISTERED PROFESSIONAL
ENGINEER
84501PE

OREGON
JUNE 30, 2020
SCOTT M. TAYLOR

JOB NUMBER

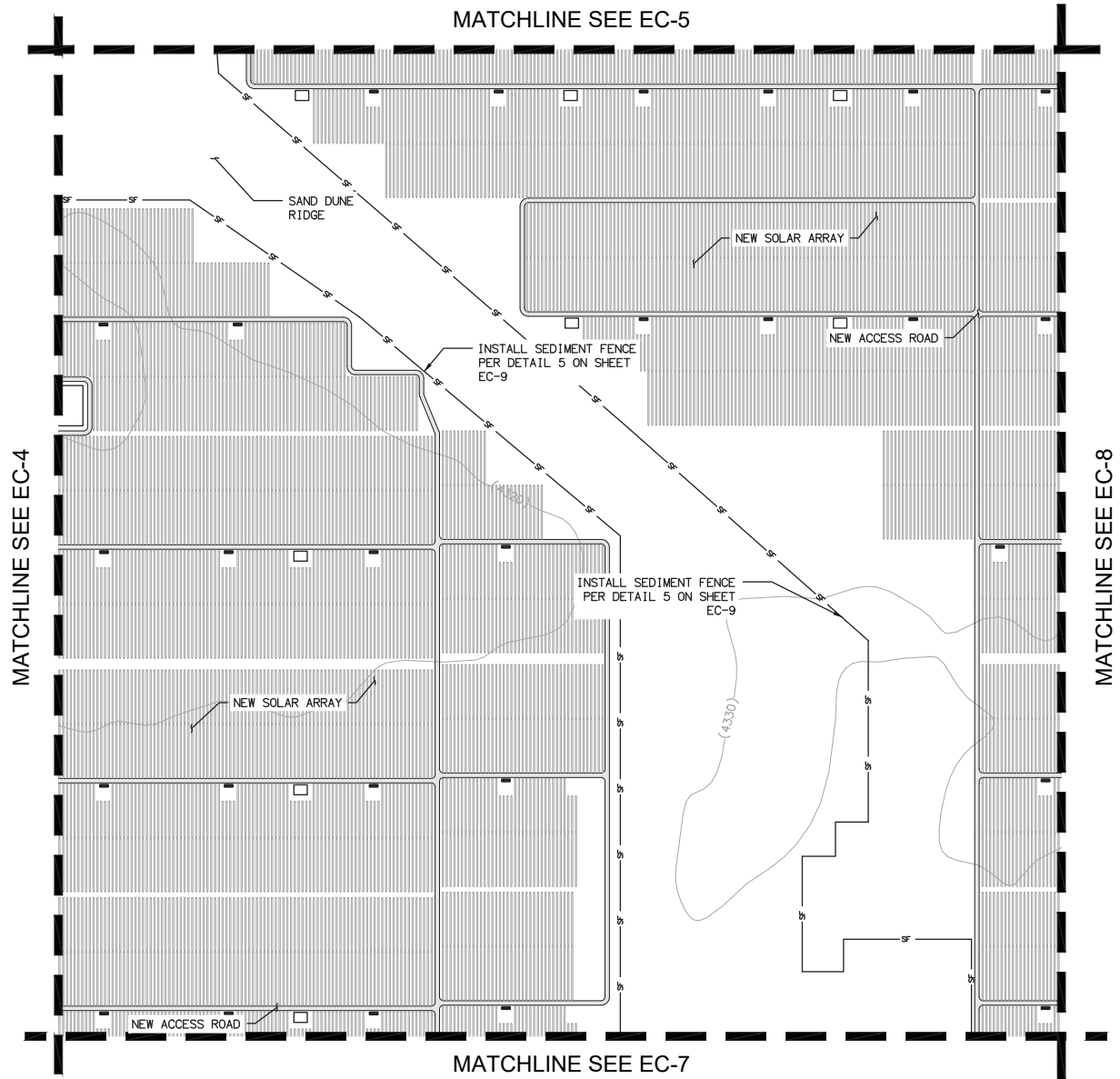
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EC-5

LEGEND

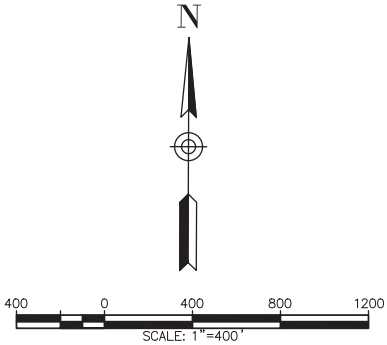
- PROPOSED COMPACTED NATIVE SOIL ACCESS ROAD
- CONSTRUCTION ENTRANCE
- STRAW WATTLES TO BE INSTALLED
- SF

SEDIMENT FENCE TO BE INSTALLED
- DW

DRAINAGE WATTLES TO BE INSTALLED
- CONCRETE WASHOUT
- TIRE WASH



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OBSIDIAN SOLAR CENTER

FORT ROCK


OREGON


TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16





JOB NUMBER
SHEET
EC-6


LEGEND


- 


PROPOSED COMPACTED NATIVE SOIL ACCESS ROAD
- 

CONSTRUCTION ENTRANCE
- 

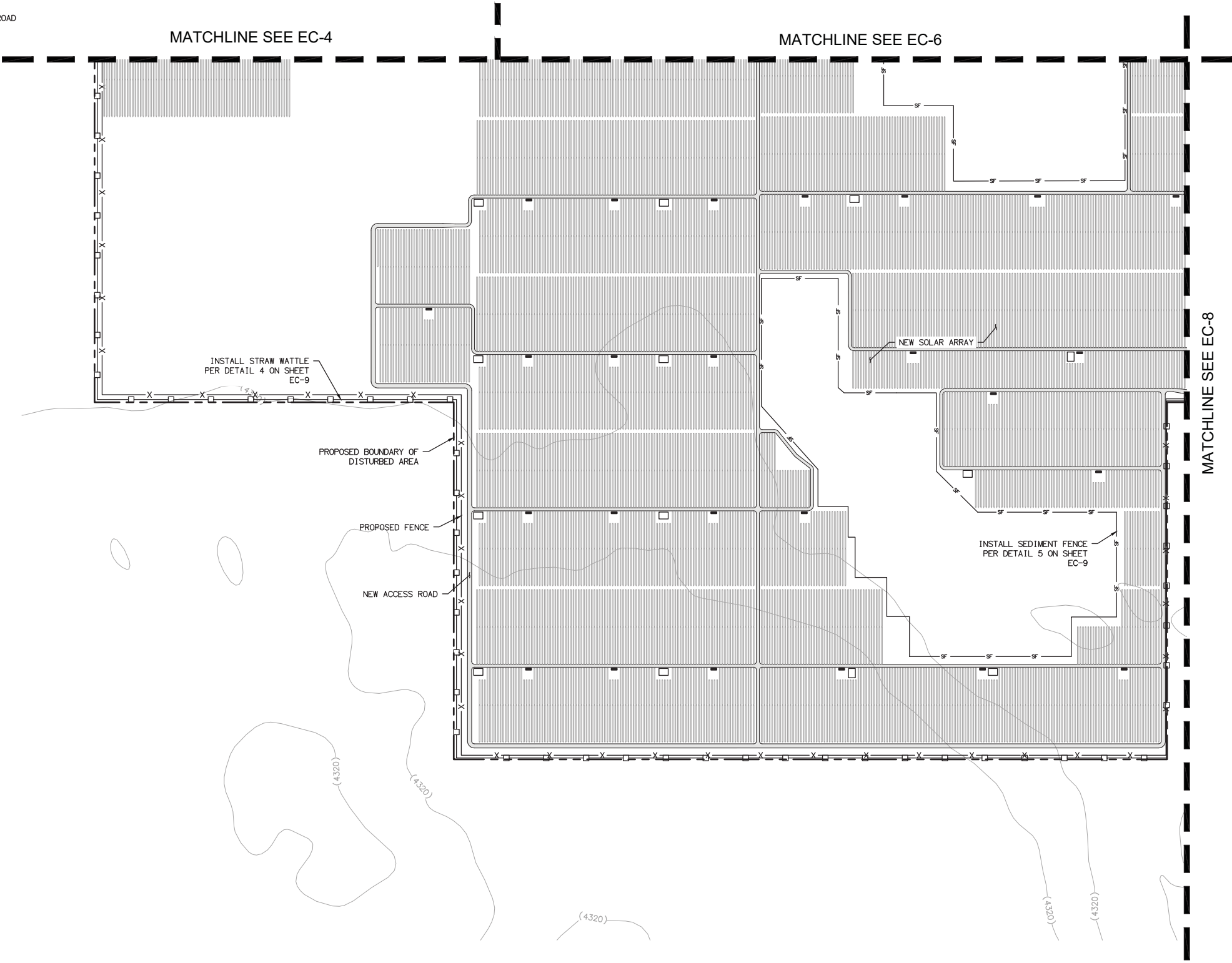
STRAW WATTLES TO BE INSTALLED
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SEDIMENT FENCE TO BE INSTALLED
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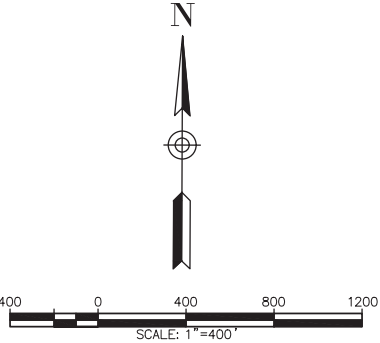
DRAINAGE WATTLES TO BE INSTALLED
- 

CONCRETE WASHOUT
- 

TIRE WASH



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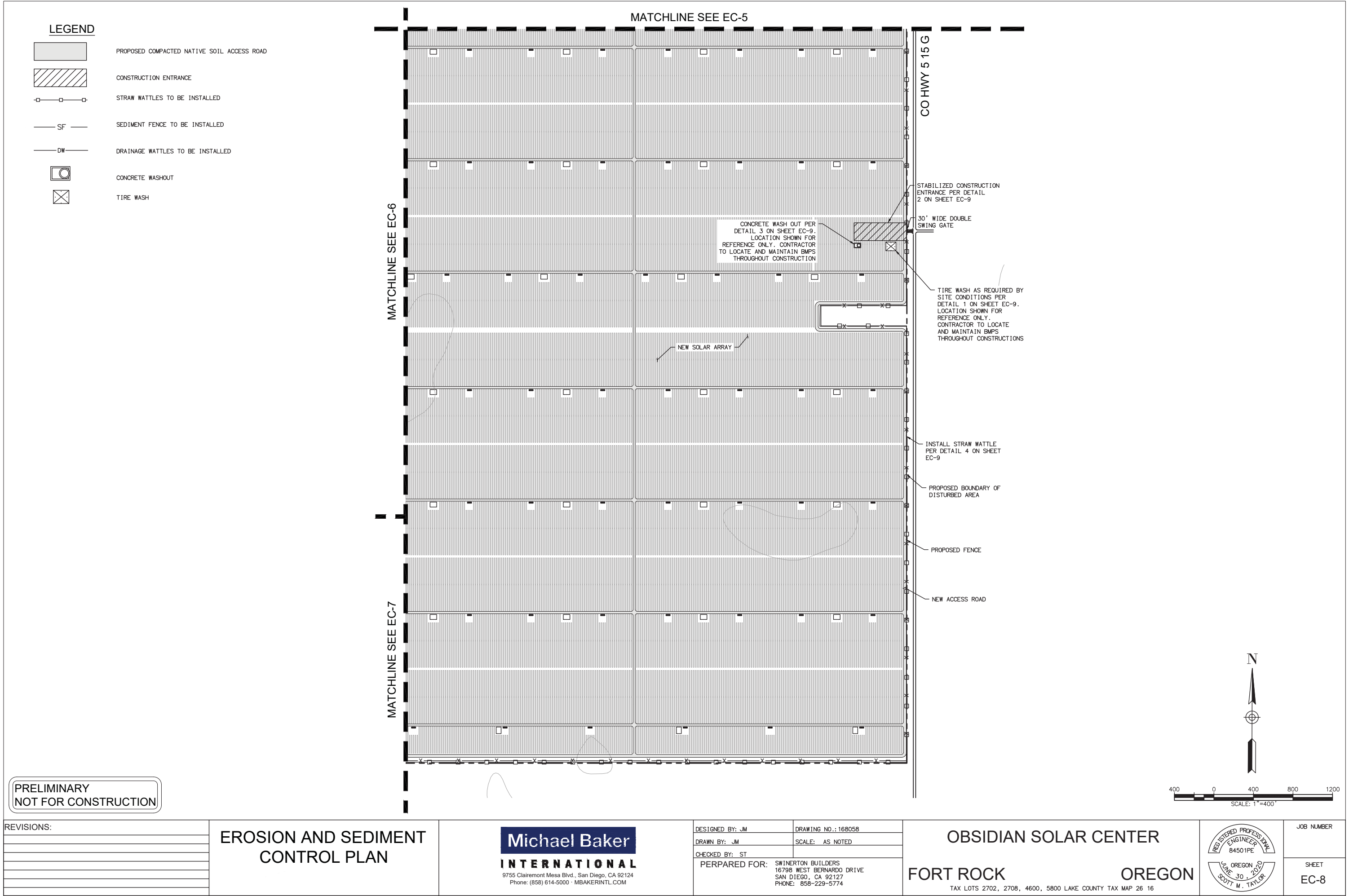
OBSIDIAN SOLAR CENTER

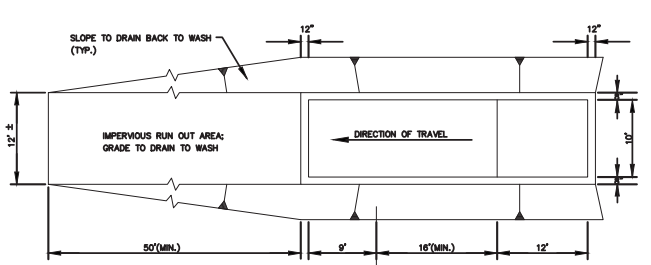
FORT ROCKOREGON

TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

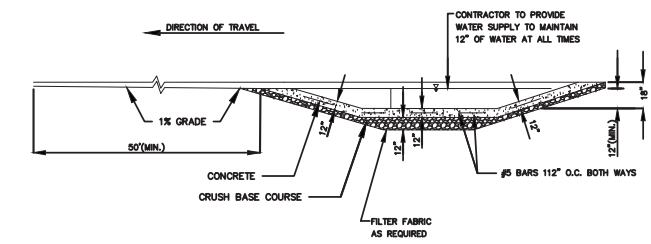


JOB NUMBER
SHEET
EC-7





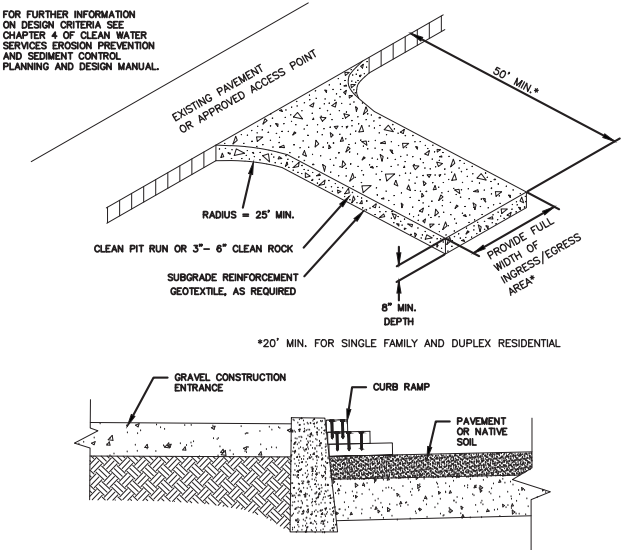
PLAN VIEW



PROFILE

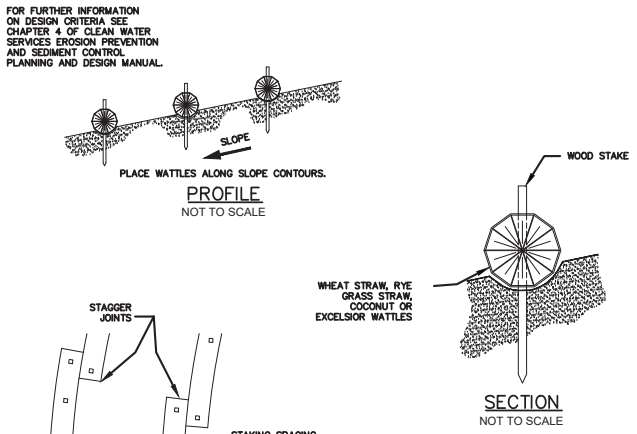
- NOTES:
- CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT AS NEEDED TO PREVENT TRACKING FROM TIRE WASH; SEDIMENT LADEN WATER MAY BE PIPED TO AN APPROVED SEDIMENT TRAP.
 - USE GEOTEXTILE FABRIC WITH AGGREGATE FOR A TEMPORARY TIRE WASH.
- FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

1 TIRE WASH
N.T.S



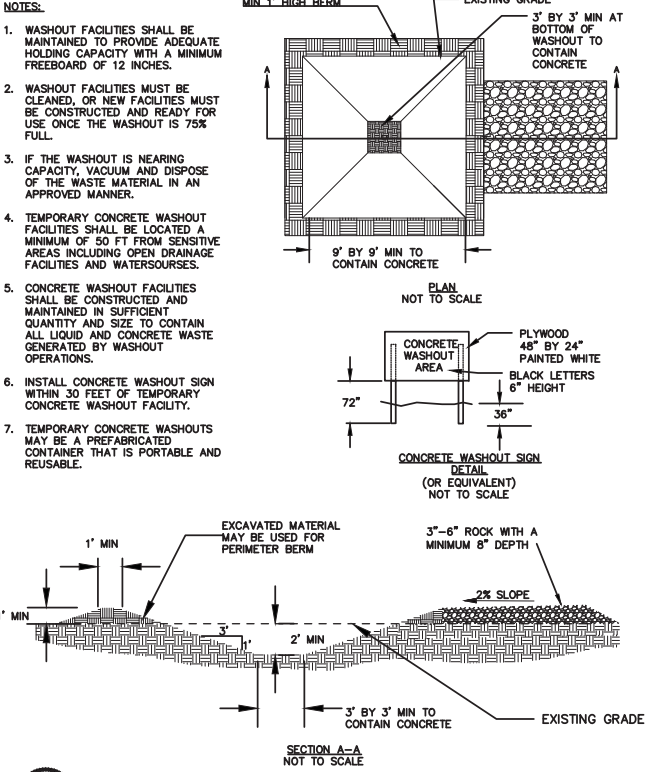
- NOTES:
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 - WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
 - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
 - WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.

2 CONSTRUCTION ENTRANCE
N.T.S

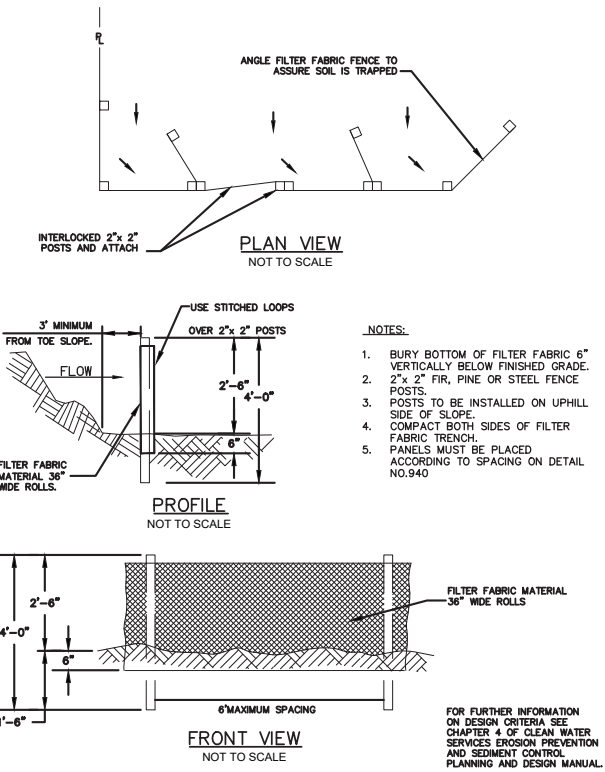


- NOTES:
- STAKING SPECIFICATIONS:
a. 1"x2" WOODEN STAKES
b. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES, ON STEEP SLOPE OR HIGHLY ERODING SOILS.
 - SPACING IN ACCORDANCE WITH DETAIL 940.
 - REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED WATTLES WILL HAVE DIRECT CONTACT WITH THE SOIL.
 - INSTALL THE WATTLES IN A 2" DEEP TRENCH, INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE WATTLE. THE ENDS OF ADJACENT WATTLES SHALL BE OVERLAPPED 1 FT. MINIMUM TO PREVENT SEDIMENT PASSING THROUGH THE FIELD JOINT.

4 STRAW WATTLE
N.T.S



3 CONCRETE WASH OUT
N.T.S



5 SEDIMENT FENCE
N.T.S

DETAIL 940

BARRIER SPACING FOR GENERAL APPLICATION		
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS		
% SLOPE	SLOPE	MAXIMUM SPACING ON SLOPE
10% OR FLATTER	10:1 OR FLATTER	300 FT
>10% OR <15%	>10:1 OR <7.5:1	150 FT
>15% OR <20%	>7.5:1 OR <5:1	100 FT
>20% OR <30%	>5:1 OR <3.5:1	50 FT
>30% OR <50%	>3.5:1 OR <2:1	25 FT

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REVISIONS:

EROSION AND SEDIMENT
CONTROL
STANDARD DETAILS

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OBSIDIAN SOLAR CENTER
FORT ROCK
TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

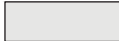
OREGON


REGISTERED PROFESSIONAL
ENGINEER
84501PE


OREGON
JUNE 30, 2020
SCOTT M. TAYLOR


JOB NUMBER
SHEET EC-9

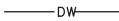
LEGEND


- 


PROPOSED COMPACTED NATIVE SOIL ACCESS ROAD
- 

CONSTRUCTION ENTRANCE
- 

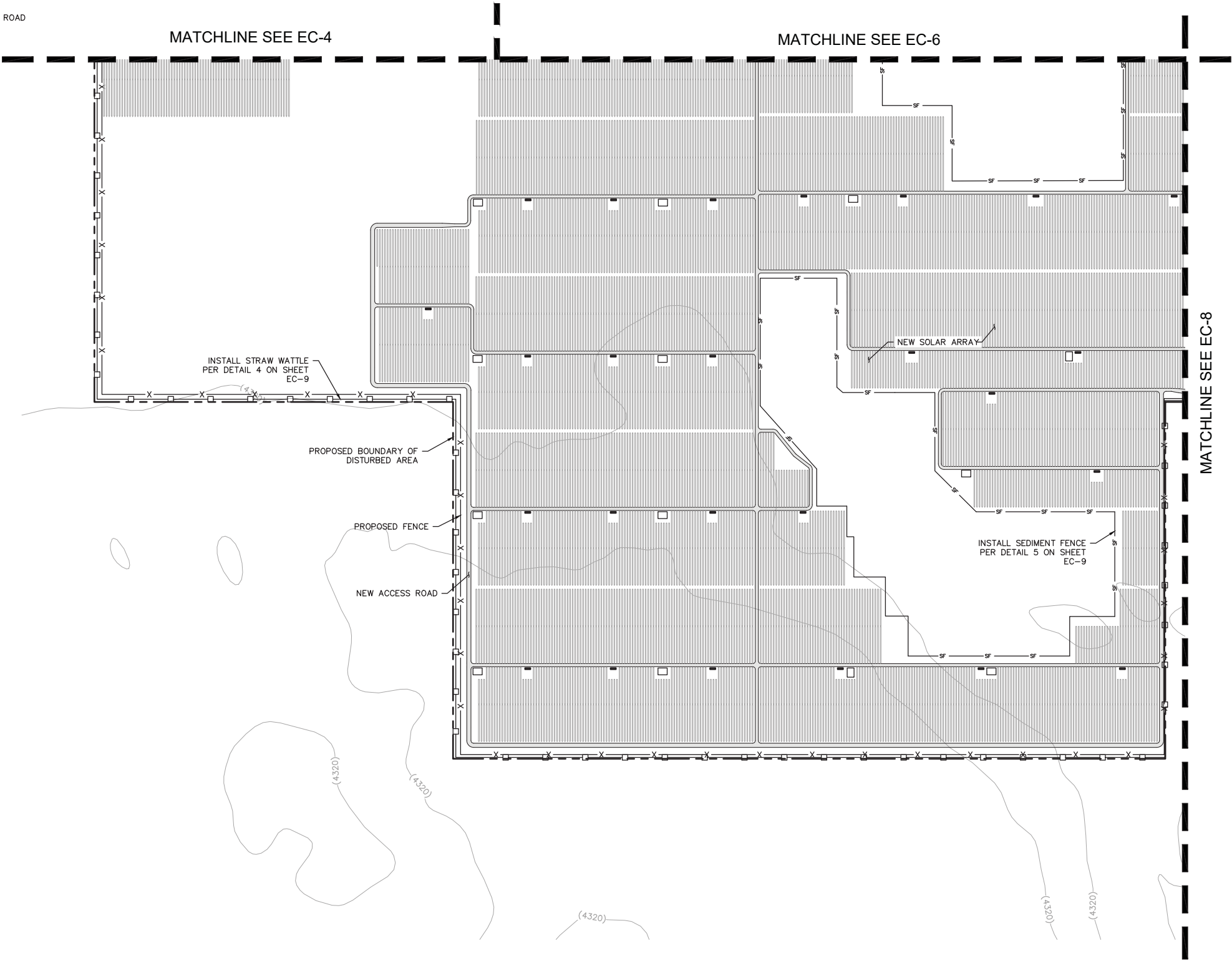
STRAW WATTLES TO BE INSTALLED
- 

SEDIMENT FENCE TO BE INSTALLED
- 

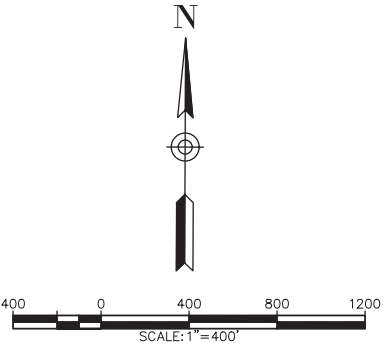
DRAINAGE WATTLES TO BE INSTALLED
- 

CONCRETE WASHOUT
- 

TIRE WASH



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REVISIONS:

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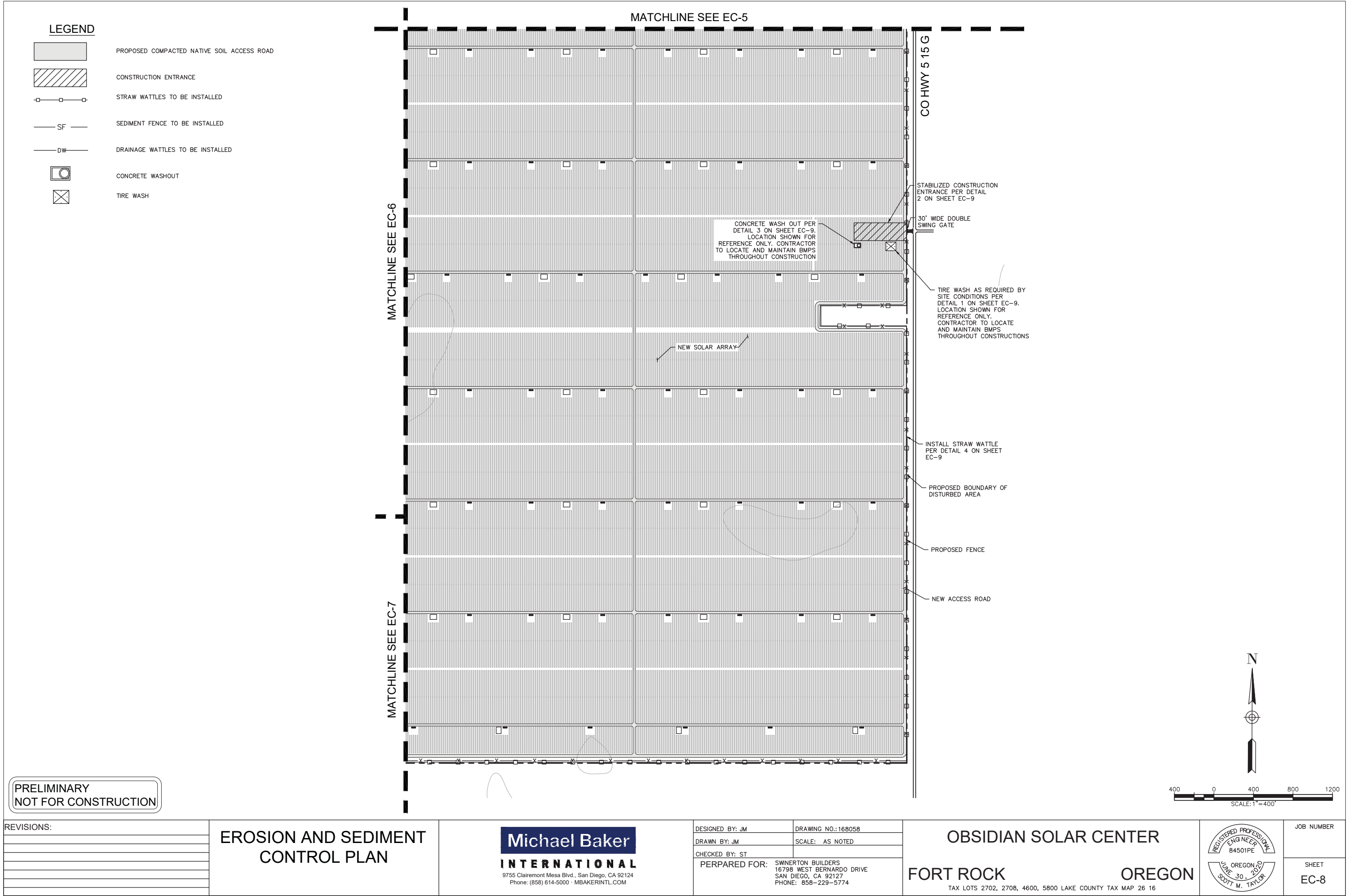
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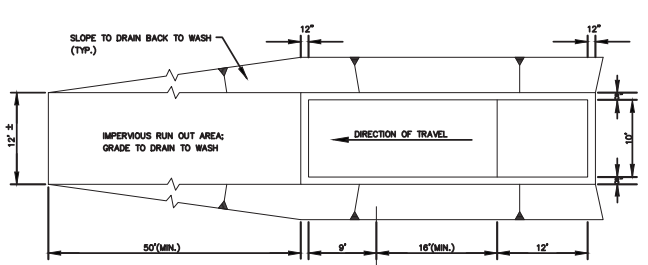
TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

REGISTERED PROFESSIONAL
ENGINEER
84501PE

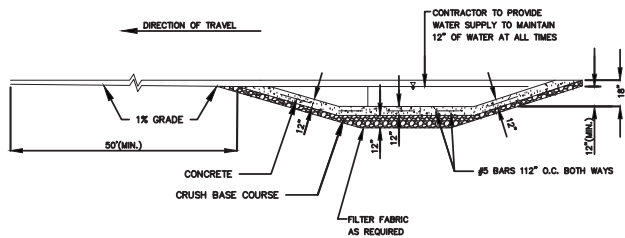
OREGON
JUNE 30, 2020
SCOTT M. TAYLOR

JOB NUMBER
SHEET
EC-7





PLAN VIEW



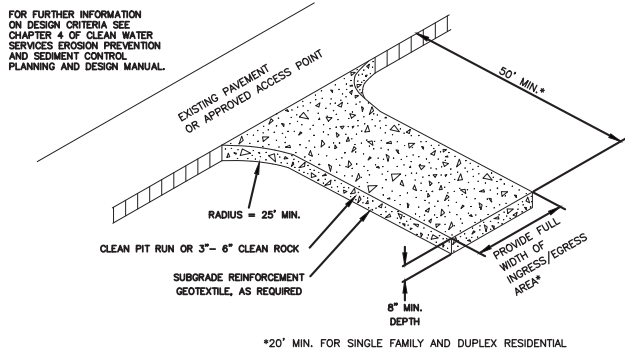
PROFILE

NOTES:

1. CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT AS NEEDED TO PREVENT TRACKING FROM TIRE WASH; SEDIMENT LADEN WATER MAY BE PIPED TO AN APPROVED SEDIMENT TRAP.
2. USE GEOTEXTILE FABRIC WITH AGGREGATE FOR A TEMPORARY TIRE WASH.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

1 TIRE WASH
N.T.S

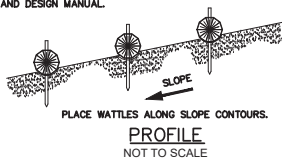


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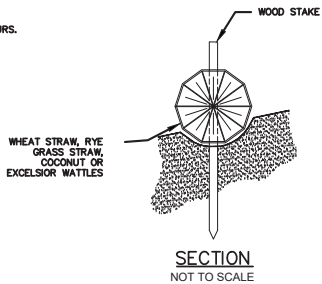
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2 CONSTRUCTION ENTRANCE
N.T.S

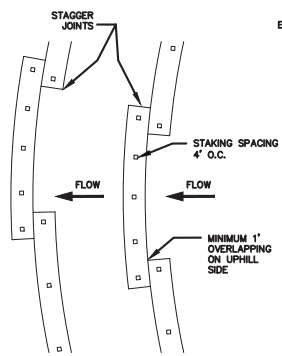
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PROFILE
NOT TO SCALE



SECTION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

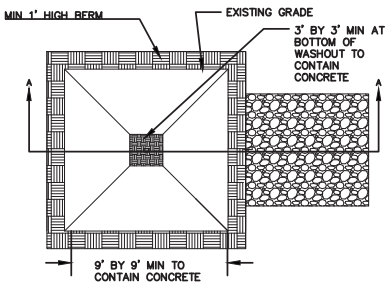
NOTES:

1. STAKING SPECIFICATIONS:
a. 1"x2" WOODEN STAKES
b. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES, ON STEEP SLOPE OR HIGHLY ERODING SOILS.
2. SPACING IN ACCORDANCE WITH DETAIL 940.
3. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED WATTLES WILL HAVE DIRECT CONTACT WITH THE SOIL.
4. INSTALL THE WATTLES IN A 2" DEEP TRENCH, INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE WATTLE. THE ENDS OF ADJACENT WATTLES SHALL BE OVERLAPPED 1 FT. MINIMUM TO PREVENT SEDIMENT PASSING THROUGH THE FIELD JOINT.

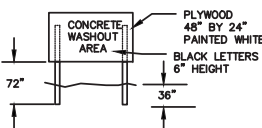
4 STRAW WATTLE
N.T.S

NOTES:

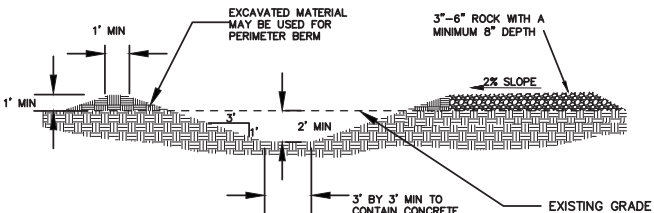
1. WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES.
2. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
3. IF THE WASHOUT IS NEARING CAPACITY, VACUUM AND DISPOSE OF THE WASTE MATERIAL IN AN APPROVED MANNER.
4. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FT FROM SENSITIVE AREAS INCLUDING OPEN DRAINAGE FACILITIES AND WATERSOURCES.
5. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
6. INSTALL CONCRETE WASHOUT SIGN WITHIN 30 FEET OF TEMPORARY CONCRETE WASHOUT FACILITY.
7. TEMPORARY CONCRETE WASHOUTS MAY BE A PREFABRICATED CONTAINER THAT IS PORTABLE AND REUSABLE.



PLAN
NOT TO SCALE

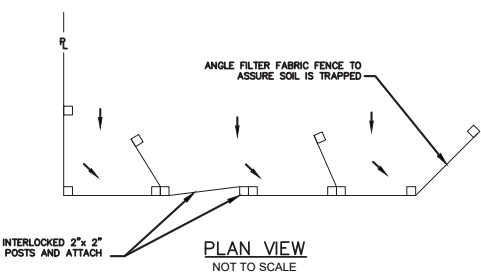


CONCRETE WASHOUT SIGN
DETAIL
(OR EQUIVALENT)
NOT TO SCALE

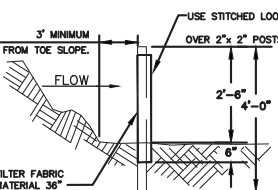


SECTION A-A
NOT TO SCALE

3 CONCRETE WASH OUT
N.T.S



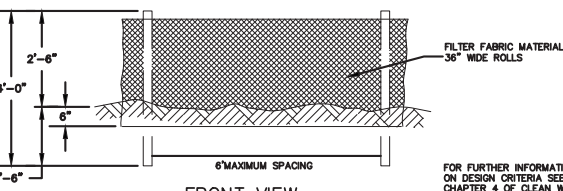
PLAN VIEW
NOT TO SCALE



PROFILE
NOT TO SCALE

NOTES:

1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
3. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
5. PANELS MUST BE PLACED ACCORDING TO SPACING ON DETAIL NO.940



FRONT VIEW
NOT TO SCALE

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

5 SEDIMENT FENCE
N.T.S

PRELIMINARY
NOT FOR CONSTRUCTION

File: \\...\\Desktop\\Fort Rock Spacing.pdf
Revisions: Missing for invalid reference

EROSION AND SEDIMENT
CONTROL
STANDARD DETAILS

**Michael Baker
INTERNATIONAL**
9755 Clairemont Mesa Blvd., San Diego, CA 92124
Phone: (858) 614-5000 · MBAKERINTL.COM

DESIGNED BY: JM
DRAWN BY: JM
CHECKED BY: ST
PERPARED FOR: SWINERTON BUILDERS
16798 WEST BERNARDO DRIVE
SAN DIEGO, CA 92127
PHONE: 858-229-5774

DRAWING NO.:168058

SCALE: AS NOTED

OBSIDIAN SOLAR CENTER

FORT ROCK

OREGON

TAX LOTS 2702, 2708, 4600, 5800 LAKE COUNTY TAX MAP 26 16

REGISTERED PROFESSIONAL
ENGINEER
84501PE
OREGON
JUNE 30, 2020
SCOTT M. TAYLOR

JOB NUMBER

SHEET

EC-9

Attachment I-2 Draft Spill Management Plan

Appendix I-2

Draft Spill Management Plan

1. Plan Information & Certification

This document constitutes a provisional Spill Prevention, Control, and Countermeasure (SPCC) Plan for the Obsidian Solar Center facility. A final SPCC plan will be completed and signed by the owner or operator of the facility. This plan addresses the requirements of 40 CFR part 112.

Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day, or for a facility attended fewer than four hours per day, at the nearest field office. When making operational changes at a facility that are necessary to comply with the rule requirements, the owner/operator should follow state and local requirements (such as for permitting, design and construction) and obtain professional assistance, as appropriate.

Facility Description

Facility Name	Obsidian Solar Center
Facility Address	TBD
City	Fort Rock
State	Oregon
ZIP	97735
County	Lake County
Telephone Number	(503) 245-5800
Owner or Operator Name	TBD
Owner or Operator Address	
City	
State	
ZIP	
County	
Telephone Number	

Facility Diagram

A diagram of the proposed Operations building(s) and all materials storage areas will be included as an attachment in the final SPCC plan.

Plan Certification

I _____ certify that the following is accurate:

1. I am familiar with the applicable requirements of 40 CFR part 112;
2. I have visited and examined the facility;
3. This Plan was prepared in accordance with accepted and sound industry practices and standards;
4. Procedures for required inspections and testing have been established in accordance with industry inspection and testing standards or recommended practices;
5. I will fully implement the Plan;
6. This facility meets the following qualification criteria (under §112.3(g)(1)):
 - a. The aggregate aboveground oil storage capacity of the facility is 10,000 U.S. gallons or less; and
 - b. The facility has had no single discharge as described in §112.1(b) exceeding 1,000 U.S. gallons and no two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan self-certification date, or since becoming subject to 40 CFR part 112 if the facility has been in operation for less than three years (not including oil discharges as described in §112.1(b) that are the result of natural disasters, acts of war, or terrorism); and
 - c. There is no individual oil storage container at the facility with an aboveground capacity greater than 5,000 U.S. gallons.
7. This Plan does not deviate from any requirement of 40 CFR part 112 as allowed by §112.7(a)(2) (environmental equivalence) and §112.7(d) (impracticability of secondary containment) or include any measures pursuant to §112.9(c)(6) for produced water containers and any associated piping;
8. This Plan and individual(s) responsible for implementing this Plan have the full approval of management and I have committed the necessary resources to fully implement this Plan.

I also understand my other obligations relating to the storage of oil at this facility, including, among others:

1. To report any oil discharge to navigable waters or adjoining shorelines to the appropriate authorities. Notification information is included in this Plan.
2. To review and amend this Plan whenever there is a material change at the facility that affects the potential for an oil discharge, and at least once every five years. Reviews and amendments are recorded in an attached log [See Five Year Review Log and Technical Amendment Log in Attachment D]

3. Optional use of a contingency plan. A contingency plan:

- a. May be used in lieu of secondary containment for qualified oil-filled operational equipment, in accordance with the requirements under §112.7(k), and;
- b. Must be prepared for flowlines and/or intra-facility gathering lines which do not have secondary containment at an oil production facility, and;
- c. Must include an established and documented inspection or monitoring program; must follow the provisions of 40 CFR part 109; and must include a written commitment of manpower, equipment and materials to expeditiously remove any quantity of oil discharged that may be harmful. If applicable, a copy of the contingency plan and any additional documentation will be attached to this Plan as Attachment 2.

I certify that I have satisfied the requirement to prepare and implement a Plan under §112.3 and all of the requirements under §112.6(a). I certify that the information contained in this Plan is true.

Signature: _____ Title: _____

Name Date: ____/____/20____

2. Record of Review & Reporting

The primary contact or designee shall administer this plan and will be responsible for updating and including any required documentation. This SPCC Plan will be amended when there is a change in the facility design, construction, operation, or maintenance that materially affects the potential for a discharge to navigable waters or adjoining shorelines. Examples include adding or removing containers, reconstruction, replacement, or installation of piping systems, changes to secondary containment systems, changes in product stored at this facility, or revisions to standard operating procedures. Any technical amendments to this Plan will be re-certified in accordance with Section 1 of this plan.

Plan Management (Five-Year Review)

Complete a review and evaluation of this SPCC Plan at least once every five years. As a result of the review, amend this Plan within six months to include more effective prevention and control measures for the facility, if applicable. Implement any SPCC Plan amendment as soon as possible, but no later than six months following Plan amendment. Document completion of the review and evaluation, and complete the Five Year Review Log in Attachment D. If the facility no longer meets Tier I qualified facility eligibility, the owner or operator must revise the Plan to meet Tier II qualified facility requirements, or complete a full PE certified Plan

3. Plan Requirements

General Requirements

The following describes general elements of the spill control plan at the facility:

- Ensure all hazardous substances are properly labeled.
- Store, dispense, and/or use hazardous substances in a way that prevents releases.
- Provide secondary containment when storing hazardous substances in bulk quantities (~55 g).
- Maintain good housekeeping practices for all chemical materials at the facility.
- Routine/Daily checks in the hazardous substance storage area to be performed by _____
- Monthly inspections of the hazardous substance storage area, secondary containment, and annular space (interior cavity of double wall tank) on any Above-ground Storage Tanks (AST) or Underground Storage Tanks (UST) need to be logged in this plan.

Facility Specific Requirements

List all facility-specific requirements. Update facility-specific requirements as-needed.

-
-

Oil Storage Containers

This table includes a complete list of all oil storage containers (aboveground containers^a and completely buried tanks^b) with capacity of 55 U.S. gallons or more, unless otherwise exempt from the rule. For mobile/portable containers, an estimated number of containers, types of oil, and anticipated capacities are provided.

Oil Storage Container (indicate whether aboveground (A) or completely buried (B))	Type of Oil	Shell Capacity (gallons)
Total Aboveground Storage Capacity ^c		gallons
Total Completely Buried Storage Capacity		gallons
Facility Total Oil Storage Capacity		gallons

a Aboveground storage containers that must be included when calculating total facility oil storage capacity include: tanks and mobile or portable containers; oil-filled operational equipment (e.g. transformers); other oil-filled equipment, such as flow-through process equipment. Exempt containers that are not included in the capacity calculation include: any container with a storage capacity of less than 55 gallons of oil; containers used exclusively for wastewater treatment; permanently closed containers; motive power containers; hot-mix asphalt containers; heating oil containers used solely at a single-family residence; and pesticide application equipment or related mix containers.

b Although the criteria to determine eligibility for qualified facilities focuses on the aboveground oil storage containers at the facility, the completely buried tanks at a qualified facility are still subject to the rule requirements and must be addressed in the SPCC; however, they are not counted toward the qualified facility applicability threshold.

c Counts toward qualified facility applicability threshold.

Other Hazardous Materials

This table lists other hazardous materials (40 CFR 302) stored on site.

Material	CAS ^a Number	Quantity Stored on Site (provide units)

^a Chemical Abstract Service

Secondary Containment

This table identifies the tanks and containers at the facility with the potential for an oil discharge; the mode of failure; the flow direction and potential quantity of the discharge; and the secondary containment method and containment capacity that is provided.

Area	Type of failure (discharge scenario)	Potential discharge volume (gallons)	Direction of flow for uncontained discharge	Secondary containment method ^a	Secondary containment capacity (gallons)
Bulk Storage Containers and Mobile/Portable Containers ^b					
Oil-filled Operational Equipment (e.g., hydraulic equipment, transformers) ^c					
Piping, Valves, etc.					
Product Transfer Areas (location where oil is loaded to or from a container, pipe or other piece of equipment.)					
Other Oil-Handling Areas or Oil-Filled Equipment (e.g. flow-through process vessels at an oil production facility)					

a Use one of the following methods of secondary containment or its equivalent: (1) Dikes, berms, or retaining walls sufficiently impervious to contain oil; (2) Curbing; (3) Culverting, gutters, or other drainage systems; (4) Weirs, booms, or other barriers; (5) Spill diversion ponds; (6) Retention ponds; or (7) Sorbent materials.

b For storage tanks and bulk storage containers, the secondary containment capacity must be at least the capacity of the largest container plus additional capacity to contain rainfall or other precipitation.

c For oil-filled operational equipment: Document in the table above if alternative measures to secondary containment (as described in §112.7(k)) are implemented at the facility.

Bulk Storage Containers

Use of bulk storage containers at the facility will conform with the following requirements of 40 CFR 112:

- Secondary containment for the bulk storage containers (including mobile/portable oil storage containers) holds the capacity of the largest container plus additional capacity to contain precipitation. Mobile or portable oil storage containers are positioned to prevent a discharge as described in §112.1(b). [§112.6(a)(3)(ii)]
- Each aboveground bulk container is tested or inspected for integrity on a regular schedule and whenever material repairs are made. Scope and frequency of the inspections and inspector qualifications are in accordance with industry standards. Container supports and foundations are regularly inspected. [See Inspection Log and Schedule and Bulk Storage Container Inspection Schedule in Attachment A] [§112.8(c)(6) and §112.12(c)(6)(i)]
- Outsides of bulk storage containers are frequently inspected for signs of deterioration, discharges, or accumulation of oil inside diked areas. [See Inspection Log and Schedule in Attachment A] [§§112.8(c)(6) and 112.12(c)(6)]
- Each container is provided with a system or documented procedure to prevent overfills for the container. Describe:

- Liquid level sensing devices are regularly tested to ensure proper operation [See Inspection Log and Schedule in Attachment A]. [§112.6(a)(3)(iii)]
- Visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts are promptly corrected and oil in diked areas is promptly removed. [§§112.8(c)(10) and 112.12(c)(10)]
- Aboveground valves, piping, and appurtenances such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces are inspected regularly. [See Inspection Log and Schedule in Attachment A] [§§112.8(d)(4) and 112.12(d)(4)]

Bulk storage containers will be inspected according to the following schedule and a record of each inspection provided in the Inspection Log and Schedule in Attachment A.

Container Size and Design Specification	Inspection requirement
Portable containers (including drums, totes, and intermodal bulk containers (IBC))	Visually inspect monthly for signs of deterioration, discharges or accumulation of oil inside diked areas
55 to 1,100 gallons with sized secondary containment	Visually inspect monthly for signs of deterioration, discharges or accumulation of oil inside diked areas plus any annual inspection elements per industry inspection standards
1,101 to 5,000 gallons with sized secondary containment and a means of leak detection ^a	
1,101 to 5,000 gallons with sized secondary containment and no method of leak detection	Visually inspect monthly for signs of deterioration, discharges or accumulation of oil inside diked areas, plus any annual inspection elements and other specific integrity tests that may be required per industry inspection standards

^a Examples of leak detection include, but are not limited to, double-walled tanks and elevated containers where a leak can be visually identified.

Emergency Procedures

The following is a description of the immediate actions to be taken by facility personnel in the event of a discharge to navigable waters or adjoining shorelines:

- Immediately call **911** in the event of injury, fire or potential fire, or spill of a hazardous substance that gives rise to an emergency situation.
- If a spill has occurred, contact the Key Facility Contacts. Refer to the Facility Contacts Table on the following page.

In the event of a large spill, a properly trained employee should:

- Assess the area for any immediate dangers to health or safety (i.e. a wrecked car on fire). If any dangers are present, move away from the area, **call 911**.
- Notify the primary and/or secondary contact from the list above and then continue your spill response. The primary contact should assess additional notification requirements.
- Retrieve the spill kit from the closest location.
- Assess the size of the leak and any immediate threat of the spill reaching the floor/storm drains or permeable surfaces in the area. If there is an immediate threat and there are no safety concerns, then attempt to block the spill from coming in contact with the floor/storm drain or permeable surface. If no drain covers are available, then try to use

absorbent (cat litter) and/or sock booms or rags to stop the spill from getting into the drains or to any permeable surfaces.

- If the spill can be contained with absorbent booms, deploy them around the spill. Use the booms to direct the spill away from any immediate hazards (i.e. a wrecked car).
- If there is no immediate threat to the floor/storm drains or permeable surfaces, or after controlling the spill, try to plug or stop the leak, if possible. If applicable, put on protective gear (gloves, goggles, protective clothing, etc.) and plug the leak.
- Once the spill has been contained and any immediate threat to storm drains or permeable surfaces has been minimized, contact the spill cleanup contractor and dispatch them to clean up the spill or commence spill cleanup procedures.

Spill cleanup for large spills should be handled by the Spill Cleanup Contractor. Refer to the Facility Contacts Table on the following page.

Facility Contacts List	
<u>Contact Organization / Person</u>	<u>Telephone Number</u>
National Response Center (NRC)	1-800-424-8802
Cleanup Contractor(s)	
Key Facility Personnel	
Designated Person Accountable for Discharge Prevention:	
	Office:
	Emergency:
	Office:
	Emergency:
	Office:
	Emergency:
	Office:
	Emergency:
State Oil Pollution Control Agencies	
Oregon Emergency Response System	1-800- 452-0311
Other State, Federal, and Local Agencies	
Local Fire Department	
Local Police Department	
Hospital	
Other Contact References (e.g., downstream water intakes or neighboring facilities)	

Spill Reporting

Notify the following agency(s) when the spill or threat of a spill includes:

- Any amount of oil to waters of the state (including surface water and storm drains);
- Oil spills on land in excess of 42 gallons;
- Hazardous materials and reportable quantities that are equal to the Code of Federal Regulations, 40 CFR Part 302.

Agency(s) to be contacted:

National Response Center (NRC)
1-800-424-8802

Oregon Emergency Response System
1-800- 452-0311

In the event of a discharge of oil to navigable waters or adjoining shorelines, the following information identified in Attachment 4 will be provided to the National Response Center immediately following identification of a discharge to navigable waters or adjoining shorelines [See Discharge Notification Form in Attachment C]:

- The exact address or location and phone number of the facility;
- Date and time of the discharge;
- Type of material discharged;
- Estimate of the total quantity discharged;
- Estimate of the quantity discharged to navigable waters;
- Source of the discharge;
- Description of all affected media;
- Cause of the discharge;
- Any damages or injuries caused by the discharge;
- Actions being used to stop, remove, and mitigate the effects of the discharge;
- Whether an evacuation may be needed; and
- Names of individuals and/or organizations who have also been contacted.

Spill Containment

The general spill response procedure at this facility is to stop the source of the spill, contain any spilled material and clean up the spill in a timely manner to prevent accidental injury or other damage.

Small spills will be contained by site personnel if they are able to do so without risking injury. Spill kits are located at the following location(s):

List all spill kits and indicate their location on the Facility Diagram provided in Section 1.

Facility Inspections

Routine inspections will be conducted daily during regular business hours. Daily inspections will include, at a minimum, a visual inspection of the hazardous substances containers and the area immediately adjacent to it for signs of a spill or leak. These inspections do not need to be logged unless a spill or leak is detected. Ideally, these inspections will be conducted by a manager or by regular employees.

Full site inspections will be conducted monthly by the primary contact or designee and, at a minimum, will include those items on the Inspection Log. If any item on the inspection form is found unacceptable, the inspection form will be attached to this plan. If all items are deemed acceptable; it is sufficient for the inspector to log only the inspection and the results in the Inspection Log.

Training

All personnel who may respond to any spill, need to be trained on the contents and procedures in this plan. Trained personnel will add their names and dates of training to the Training Log [to be attached]. Only persons trained on this plan shall respond to a spill. If you are not trained and witness a spill, call or notify the primary and secondary contacts listed above.

The following table will be used to keep records of facility inspections, testing, and personnel training:

Inspections, Testing, Recordkeeping and Personnel Training	
An inspection and/or testing program is implemented for all aboveground bulk storage containers and piping at this facility. [§§112.8(c)(6) and (d)(4), 112.9(c)(3), 112.12(c)(6) and (d)(4)]	
The following is a description of the inspection and/or testing program (e.g. reference to industry standard utilized, scope, frequency, method of inspection or test, and person conducting the inspection) for all aboveground bulk storage containers and piping at this facility:	
Inspections, tests, and records are conducted in accordance with written procedures developed for the facility. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph. [§112.7(e)]	
A record of the inspections and tests are kept at the facility or with the SPCC Plan for a period of three years. [§112.7(e)] [See Inspection Log and Schedule in Attachment D]	
Inspections and tests are signed by the appropriate supervisor or inspector. [§112.7(e)]	
Personnel, training, and discharge prevention procedures [§112.7(f)]	
Oil-handling personnel are trained in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan. [§112.7(f)]	
A person who reports to facility management is designated and accountable for discharge prevention. [§112.7(f)] Name/Title:	
Discharge prevention briefings are conducted for oil-handling personnel annually to assure adequate understanding of the SPCC Plan for that facility. Such briefings highlight and describe past reportable discharges or failures, malfunctioning components, and any recently developed precautionary measures. [§112.7(f)] [See Oil-handling Personnel Training and Briefing Log in Attachment B]	

Site Security

Security measures will be implemented at this facility to prevent unauthorized access to oil handling, processing, and storage area.

The following is a description of how the facility will secure and control access to the oil handling, processing and storage areas; secure master flow and drain valves; prevent unauthorized access to starter controls on oil pumps; secure out-of service and loading/unloading connections of oil pipelines; address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges:

Spill Tracking (Recordkeeping)

Any spills must be entered into the Discharge Log [Attachment C] and copies kept with this Plan. If a large catastrophic spill occurs, attach additional pages to describe the event. Include known or possible causes, areas affected, and effectiveness of the cleanup. Include a review of the cleanup contractor and their procedures. For small spills, it is sufficient to fill out the Spill Log, and to take measures to prevent a repeat occurrence.

4. Attachments

Attachment A – Inspection Log & Schedule

Attachment B – Materials Handling Personell Training and Briefing Log

Attachment C – Discharge Notification Form

Attachment D – Five Year Review Form

Attachment A – Inspection Log and Schedule

[illegible]

a Indicate in the table above if records of facility inspections are maintained separately at this facility.

Attachment B – Materials Handling Personnel Training and Briefing Log

[illegible]

Attachment C – Discharge Notification Form

In the event of a discharge of oil to navigable waters or adjoining shorelines, the following information will be provided to the National Response Center [also see the notification information provided in Section 3 – Spill Reporting]:

Discharge/Discovery Date		Time	
Facility Name			
Facility Location (Address, Lat/Long, Section, Township, Range)			
Name of Reporting Individual		Telephone	
Type of Material Discharged		Estimated total quantity discharged	_____ (gallons)
Source of the discharge		Media Affected	<input type="checkbox"/> Soil
			<input type="checkbox"/> Water (specify)
			<input type="checkbox"/> Other (specify)
Actions Taken			
Damage or injuries	<input type="checkbox"/> No <input type="checkbox"/> Yes (specify)	Evacuation Needed?	<input type="checkbox"/> No <input type="checkbox"/> Yes (specify)
Organizations and individuals contacted	<input type="checkbox"/> National Response Center 800-424-8802 Time		
	<input type="checkbox"/> Cleanup contractor (Specify) Time		
	<input type="checkbox"/> Facility personnel (Specify) Time		
	<input type="checkbox"/> State Agency (Specify) Time		
	<input type="checkbox"/> Other (Specify) Time		

Attachment D – Five Year Review Form

In the event of a discharge of oil to navigable waters or adjoining shorelines, the following information will be provided to the National Response Center [also see the notification information provided in Section 3 – Spill Reporting]:

Table D.1 - Review and Evaluation of SPCC Plan for Facility			
Review Date	Plan Amendment		Name and signature of person authorized to review this Plan
	Will Amend	Will Not Amend	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	

Table D.2 - Description and Certification of Technical Amendments		
Review Date	Description of Technical Amendment	Name and signature of person authorized to review this Plan

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Attachment P-1 Draft Habitat Mitigation Plan

Obsidian Solar Center LLC

Obsidian Solar Center

Habitat Mitigation Plan

July ~~February~~ 2020

Obsidian Solar Center LLC

5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

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Easement [*Submitted Under Separate Cover*]

Appendix 2 Juniper Treatment Plan

~~Attachment Appendix 3~~ Juniper Phase Mapping Technical Memo

~~Attachment Appendix 4~~ Desktop Habitat Mapping Technical Memorandum

Acronyms and Abbreviations

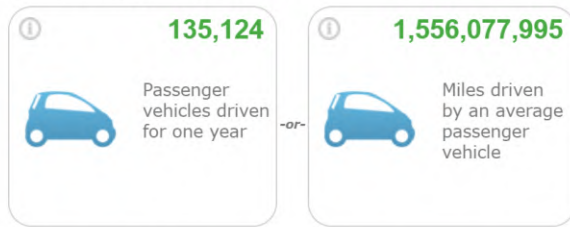
Applicant	Obsidian Solar Center LLC
ASC	Application for Site Certificate
CWMA	Cooperative Weed Management Area
EFSC or the Council	Energy Facility Siting Council
Facility	Obsidian Solar Center
gen-tie	generation tie
HMP	Habitat Management Plan
MW	megawatts
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
OHW	ordinary high water
WLIP	Working Lands Improvement Program

1.0 INTRODUCTION

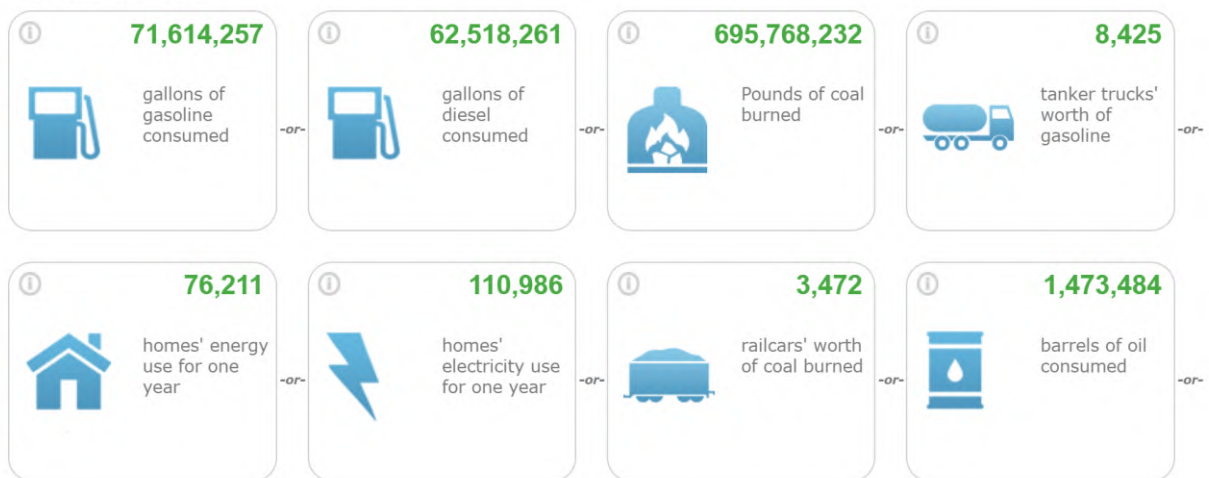
This draft Habitat Mitigation Plan (“HMP”) describes how Obsidian Solar Center LLC (“Applicant”) will mitigate unavoidable habitat impacts from the Obsidian Solar Center (“Facility”) located in Lake County, Oregon. The purpose of the Facility is to generate renewable, clean energy that will replace, in part, energy currently generated by Northwest coal plants scheduled for closure. The Facility will operate about 30 percent of the time on a full-time equivalency basis. Applicant expects the Facility to produce about 900,000-megawatt (MW) hours per year of clean, renewable energy, which would reduce the carbon dioxide emissions equivalent to burning almost 3,500 railcars filled with coal each year (EPA 2018; Figure 1). Clean energy improvements of this kind are crucial for countering climate change, which in turn help conserve wildlife and their habitats on a landscape scale.

Figure 1. Greenhouse Gas and Carbon Dioxide Emissions Reduced Annually by the Proposed Facility

Greenhouse gas emissions from



CO₂ emissions from



Source: EPA 2018

Habitat loss and degradation are among the greatest threats to many wildlife species around the world. Climate change also is an increasing threat to wildlife and their habitats, including to species of interest for the Facility. Research has indicated that elk (*Cervus canadensis*) (Wang et al. 2002; Sala 2006) and sagebrush habitat (Poore et al. 2009; Bradley 2010; Schrag et al. 2011) are negatively affected by climate change. Exhibit P, Section P.7.2, of the Application for Site Certificate (ASC) identifies several State Sensitive bird species in the

Facility's analysis area that are Climate Threatened or Climate Endangered, according to the National Audubon Society (2015). The Facility is a renewable energy project that will contribute to stemming climate change by reducing carbon dioxide emissions. Although the reduction in carbon emissions that will result from Facility operations may not completely counteract the loss or modification of habitat with the site boundary, it does provide a benefit to wildlife and their habitats.

This draft HMP outlines specific measures Applicant will undertake to satisfy the Oregon Energy Facility Siting Council (EFSC) Fish and Wildlife Habitat standard (Oregon Administrative Rule (OAR) 345-022-0060), which requires that the Facility, with mitigation, demonstrate consistency with the Oregon Department of Fish and Wildlife (ODFW) Habitat Mitigation Policy (OAR 635-415-0025). Applicant proposes three mitigation pathways including (1) ODFW Payment-to-Provide ([Option 1](#)), (2) a Third Party Fee-in-Lieu Program ([Option 2](#)), and (3) Working Lands Improvement Program (in-kind, in-proximity mitigation) ([Option 3](#)). [Applicant opts to implement Option 3 as mitigation for the Facility. If Applicant sought to implement Option 1 or Option 2, or an](#) ~~In addition, Applicant reserves the right to pursue~~ alternative mitigation pathways ~~if available~~ in the future, [Applicant would seek by pursuing](#) an amendment to this HMP, as provided under Section 6.0 below.

2.0 DESCRIPTION OF THE IMPACTS ADDRESSED BY THE HMP

The Facility is located entirely within the more than 1 million acre-area mapped by ODFW staff as elk winter range and a portion of the Facility is located within the area mapped by ODFW staff as mule deer (*Odocoileus hemionus*) winter range, which overlaps in its entirety with elk winter range (together, referred as "Big Game Winter Range"). ODFW staff has designated acres within Big Game Winter Range as Category 2 (essential and limited) habitat under ODFW's Fish and Wildlife Habitat Mitigation Policy (ODFW 2014, 2016a) ("ODFW Habitat Mitigation Policy"). ~~While Category 2 serves as the habitat category for the entire Facility, the~~ The area within the site boundary consists primarily of sagebrush shrubland, with a mosaic of stand cover, plant heights, and levels of disturbance. ~~No acres of sagebrush shrubland habitat were field characterized as Category 2 habitat, based on vegetation communities observed on-site.~~

Permanent habitat impacts will be associated primarily with the installation of permanent Facility structures. The solar array areas and related or supporting facilities will be fenced as required by electrical code and safety needs, and ODFW considers all areas inside the fence to be permanently disturbed. Temporary impacts are anticipated from the construction of the gen-tie transmission line (about 1.2 acres). Otherwise, all construction-related activities will occur within the area designated for the Facility's permanent footprint (or the area located within the perimeter fence). Temporary impacts will be fully mitigated through successful implementation of the Revegetation Plan ([ASC, Appendix P-3Final Order Attachment P-3](#)).

The Facility will not have impacts on Category 1 habitat. The Facility will have some temporary and permanent impacts on Category 6 habitat, which do not require compensatory

mitigation.¹ For the remaining habitat types, permanent impacts must be mitigated at Category 2 under the ODFW Habitat Mitigation Policy because the impacts area is mapped Big Game Winter Range. Habitat values for Big Game Winter Range can include thermal cover, security from predation and harassment, quality forage, and limited disturbance. The area in the Facility site boundary is primarily sagebrush shrubland, and given the habitat characteristics, its primary habitat value for big game is forage and limited thermal cover.

Table 1: Acres of Temporary and Permanent Impact to Habitat within the Site Boundary

Habitat Category based on Field Habitat Assessment	Habitat Type	Temporary Impact	Permanent Impact	Total
<i>ODFW Designated Category 2 Habitat</i>				
<u>23</u>	Sagebrush Shrubland	0.00	3,419.21	3,419.21
<u>23</u>	Playa OHW – Not Wetlands	0.00	16.91	16.91
<u>24</u>	Sand Dune	0.03	108.78	108.81
<u>24</u>	Non-sagebrush Shrubland	0.15	0.00	0.15
<u>25</u>	Non-native Forb	0.05	42.77	42.82
Total Category 2 Habitat Impacts to be Mitigated		0.23	3,587.67	3,587.90
6	Agricultural Lands	0.56	1.00	1.56
6	Developed	0.21	0.00	0.21
Total Impacts		1.20	3,588.47	3,589.67

Key:

ODFW = Oregon Department of Fish and Wildlife; OHW = Ordinary High Water

The impact analysis presented in the ASC and mitigation outlined in this HMP represents the fully built-out scenario of 400 MW. The Facility will be built as directed by market demands and power sales. For example, if Applicant enters into two separate power purchase agreements, each for 200 MW, Applicant may construct the first 200 MW and then the second 200 MW. In that case, mitigation would follow a corresponding scope and timeline.

¹ Under the ODFW Habitat Mitigation Policy, no compensatory mitigation is required for Category 6 impacts; only minimization of impacts (OAR 635-415-0025(6)).

Table 2 summarizes the habitat characteristics within the Site Boundary, as detailed in the 2018 Habitat Assessment and Biological Resources Field Report (ASC Exhibit P, Appendix P-1). Photo documentation of Area A habitat quality is also provided in photos 1-23b and 53-54 of ASC Exhibit P Appendix P-1, Attachment 1.

Table 2: Habitat Characteristics within Site Boundary

Habitat Category based on Field Habitat Assessment	Habitat Type	Native Shrub Stratum and Ground Cover	Native Herbaceous Stratum and Ground Cover	Bare Ground Cover
ODFW Designated Category 2 Habitat				
<u>23</u>	Sagebrush Shrubland	Big Sagebrush (<i>Artemisia tridentata</i>) (15-30%), Green rabbitbrush (<i>Chrysothamnus viscidiflorus</i>) and Rubber rabbitbrush (<i>Ericameria nauseosa</i>) (10-25%)	Saltgrass (<i>Distichlis spicata</i>), Claspig pepperweed (<i>Lepidium perfoliatum</i>), and cheatgrass (<i>Bromus tectorum</i>) ($\leq 25\%$)	40 – 60%
<u>23</u>	Playa	Inclusions with Big Sagebrush ($\leq 2\%$), Green rabbitbrush ($\leq 8\%$), and shadscale saltbrush (<i>Atriplex confertifolia</i>) ($\leq 15\%$)	Usually devoid; or small areas of Saltgrass (<i>Distichlis spicata</i>) ($\leq 25\%$)	$\geq 90\%$
<u>24</u>	Sand Dune	Big sagebrush and green rabbitbrush ($< 5\%$)	Saltgrass (<i>Distichlis spicata</i>) ($< 5\%$)	

3.0 MITIGATION OPTIONS

Applicant has identified three options for addressing the mitigation obligation where habitat protection and enhancement and/or commensurate funding are feasible and consistent with the EFSC Fish and Wildlife Standard. Based on the information provided on the record of the ASC, Applicant currently may only utilize Option 3, unless ODFW adopts appropriate regulations to support Option 1 ~~or and~~ Applicant proposes an HMP amendment to utilize Option 1 or Option 2 that ~~EFSC is approved~~. If other mitigation options become available or are identified, Applicant reserves the right to pursue alternative mitigation pathways by pursuing an amendment to this HMP, as provided under Section ~~67~~.0 below.

3.1 Option 1: ODFW Payment-to-Provide

Applicant understands that ODFW is considering a payment-to-provide program that could be used to mitigate habitat impacts related to energy facilities. Applicant recognizes that

Option 1 is not available at the time of ASC review but Applicant reserves the right to use Option 1 through an HMP Amendment should it be an available ODFW program in the future. Applicant, along with other certificate holders and applicants have encouraged ODFW to adopt such a program that could be used to mitigate habitat impacts related to renewable energy projects. Such a program would help further landscape-scale mitigation projects and create greater benefits for rangeland habitat, including Big Game Winter Range habitat.

3.2 Option 2: Third Party Fee-in-Lieu Program

Under this option, Applicant would partner with EFM, Inc., an affiliate of EcoTrust. Applicant and EFM would present to Oregon Department of Energy (ODOE) and ODFW a mitigation plan designed to protect and restore habitat within the Big Game Winter Range on a portion of the about 22,000 contiguous acres west of Fort Rock currently owned and being managed by EFM, including for the benefit of mule deer. The mitigation measures that would be employed on this land are different from those outlined under Option 3 given the enhancement opportunities. Applicant presents Option 2 for discussion. Applicant may not implement Option 2 without an HMP amendment as discussed above.

3.3 Option 3: Working Lands Improvement Program (in-kind, in-proximity)

Option 3 involves habitat protection and enhancement measures on lands proximate to the Facility. Specifically, Applicant would secure land in proximity to the Facility and implement a Working Lands Improvement Program (WLIP). The WLIP is twofold: it ensures that (1) there is no net loss in quantity or quality of habitat for the life of the Facility, and (2) there is a net benefit of habitat quality for the life of the Facility. Applicant will carry out the WLIP on suitable land located two to 20 miles from the Facility and within the ODFW-mapped Big Game Winter Range. These sites are considered “in-proximity” to the Facility because the identified acres are within the home range of elk and mule deer that may also use the land within the Facility site boundary.

The WLIP is a habitat protection program and a western juniper (*Juniperus occidentalis*) treatment and management program on working rangeland. The juniper program includes juniper removal and thinning, which is consistent with the Oregon Conservation Strategy’s recommended approaches for conservation of sagebrush habitats. The treatment includes controlling encroaching junipers by chipping or cutting for firewood, while maintaining pre-settlement juniper stands and juniper trees with old-age characteristics, which are important nesting habitat for birds and other wildlife (ODFW 2016b). Removal of juniper can, over time, result in redistribution of water budget components in the rangeland due to lack of tree canopy interception, in turn influencing soil moisture and vegetation. In the ODFW-mapped Big Game Winter Range, juniper removal can improve the quality and quantity of sagebrush shrubland forage while preserving effective cover habitat (such as large sagebrush and old age juniper).

Working Lands Improvement Program Agreement Easements

Applicant will enter into enforceable and recordable Working Lands Improvement Program (WLIP) Agreements ~~working land leases~~ with the underlying property owners for land

enrolled in Applicant's WLIP. A ~~copy template~~ of the ~~WLIP Agreement working lands lease~~ is included as ~~Attachment Appendix 1~~. The ~~WLIP Agreement working lands lease~~ is a legally binding agreement, authorizing Applicant to implement the WLIP consistent with this HMP and obligating the property owner to manage and operate the land consistent with the goals of the WLIP. The term of the ~~WLIP Agreement working lands lease~~ is for the life of the Facility.² The terms of the ~~WLIP Agreements working lands leases will~~ provide for mitigation to achieve a no net loss of habitat quality or quantity. The implementation of the juniper treatment and management program on lands subject to ~~WLIP Agreements working lands leases will~~ achieve mitigation results in a net benefit of habitat quality. Applicant will provide copies of the executed ~~WLIP Agreements working lands leases~~ to ODOE prior to construction of the Facility. Applicant is obligated to maintain in good standing under the WLIP Agreement for the life of the Facility.

WLIP Sites

Applicant performed a juniper phase desktop analysis of about 22,722 acres of land in Big Game Winter Range near the Facility site. The desktop analysis identified juniper woodland succession phases (Phase 1, Phase 2, Phase 3) and provided mapping of the phases as well as areas unsuitable for mitigation (e.g., lava beds or quarries).³ See ~~Attachment Appendix 32~~. From this information, Applicant identified two property owners with large tracts of land for participation in the WLIP: the Morrison Ranch at about 1,870 acres and the Nine Peaks Ranch

² "For the life of the Facility" is defined at the point when EFSC terminates the site certificate pursuant to OAR 345-027-0010. Before EFSC terminates a site certificate, the certificate holder must apply to EFSC to terminate the site certificate and provide EFSC with a proposed retirement plan consistent with OAR 345-027-0110(5), which requires, among other things, the information about how certificate holder will address impacts to wildlife and the environment during retirement. Before certificate holder may take action, EFSC must review the proposed final retirement plan, considered comments from the public and reviewing agencies, approved the proposed final requirement plan, and issued an order authorizing the retirement according to the approved final retirement plan, as provided for in OAR 345-027-0010. The approved final retirement plan will require certificate holder to restore the site and ODFW may comment on the retirement plan to ensure that the Facility continues to meet the ODFW Mitigation Policy "for the life of the Facility." EFSC may not terminate the site certificate until EFSC finds that certificate holder has completed retirement according to EFSC order authorizing retirement. See OAR 345-027-0110(8).

³ The desktop analysis was conducted according to the protocols in the *Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions: U.S. Geological Circular 1321*, Miller et al. (2007).

at about 4,500 acres, totaling about 6,370 acres.⁴ Applicant conducted a preliminary desktop assessment of habitat types and categories on the about 6,370 acres to confirm that the habitat is of similar structure and function as the habitat within the Facility site boundary. See Attachment Appendix 43 for the desktop habitat mapping.

The Morrison Ranch mitigation area is located, at its closest point, about 2 miles north of the Facility site boundary. This mitigation area is within the ODFW-mapped Big Game Winter Range and has about 970 acres of sagebrush shrubland and 960 acres of juniper woodland. The sagebrush shrubland within this mitigation area has similar habitat structure and function to the sagebrush shrubland within the Facility site boundary. Roughly, half of the juniper woodlands in the Morrison Ranch mitigation area are Phase 2 succession and likely support an understory with levels of sagebrush and perennial bunchgrasses that are suitable for restoration or conversion to sagebrush shrubland. The Phase 3 succession areas, which is also about half of the juniper woodland habitat in this mitigation area, may also exhibit restoration potential. The Morrison Ranch mitigation area also provides primary habitat values for big game, such as forage and thermal cover. Therefore, this land represents in-kind habitat for purposes of meeting Applicant's Category 2 habitat mitigation obligations.

The Nine Peaks Ranch mitigation area is located, at its closest point, about 7 miles north of the Facility site boundary. This mitigation area is within the ODFW-mapped Big Game Winter Range and has about 4,225 of sagebrush shrubland and 330 acres of juniper woodland. Sagebrush shrubland at Nine Peaks Ranch would be similar in structure and function as the sagebrush shrubland within the Facility site boundary; however, almost 85 percent of sagebrush shrubland in this mitigation area exhibits Phase 1 juniper encroachment. Phase 1 encroachment areas are in danger, long term, of further juniper succession, and would be great candidates for juniper restoration. The Nine Peaks Ranch mitigation area also provides primary habitat values for big game, such as forage and thermal cover. Therefore, this land represents in-kind habitat for purposes of meeting Applicant's Category 2 habitat mitigation obligations.

~~Prior to construction of the Facility~~In addition, Applicant ~~will~~conducted field-based habitat mapping of the WLIP sites, based on a protocol approved by ODOE, in consultation with ODFW (consistent with the field-based habitat mapping performed for the field surveys conducted as a part of Exhibit P). ~~Applicant will provide to~~The resulting written report of a survey and mapping ~~to ODOE and ODFW attached as Attachment~~Appendix 4 and provided to ODFW on or about May 22, 2020, demonstrate to verify that selected mitigation acres

⁴ The GIS data show the Morrison Ranch and Nine Peaks Ranch mitigation area acreage as slightly larger than the tax lot acres. The GIS data show the Nine Acres Ranch mitigation area at about 4,595 acres and the Morrison Ranch mitigation area at about 1,939 acres, rather than 4,500 and 1,870 acres, respectively.

within the Morrison Ranch and the Nine Peaks Ranch are “in-kind” habitat to meet the Facility’s mitigation obligations under this HMP.

Once ODOE, in consultation with ODFW, ~~has concurred~~ concurs with Applicant’s field verifications, Applicant will execute WLIP Agreements ~~working lands leases substantially in the form attached as Attachment Appendix 1~~ with the Morrison Ranch and/or the Nine Peaks Ranch. Land under ~~control lease~~ will total 1.2⁴ acres for every 1 acre of habitat impacted by the Facility components.

Implementation of the WLIP for Habitat Enhancement

Applicant will implement the WLIP across acreage totaling 1.2 acres for every 1 acre of habitat permanently impacted by the Facility components based on final Facility design. For example, if the final Facility footprint is 3,588 acres, Applicant will protect 4,306 acres of habitat from development and conduct the habitat enhancement measures across the 4,306 acres, as described below. The WLIP includes the following components⁵:

Step 1: Pre-Treatment Juniper Survey

Applicant ~~will conduct~~ ed a pre-treatment survey to determine the appropriate ~~Juniper Treatment areas Unit, facilitate preparation of the applicable Juniper Treatment Plan for that Unit, and record pre-treatment conditions (the “Pre-Treatment Survey”). The Pre-Treatment survey will also inform the Juniper Treatment Plans. The Pre-Treatment Survey may occur as part of, or concurrently with, the pre-construction field-based habitat assessment of the WLIP sites (as described above).~~ The Pre-Treatment Survey ~~will~~ was be conducted in accordance with a protocol, ~~to be~~ submitted and approved by ODFW, based on the methods included in the *Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions: U.S. Geological Survey Circular 1321* (Miller et al, 2007). ~~The Pre-Treatment Survey will document dominant plant species within each habitat type, including general habitat conditions, such as tree and shrub heights and cover (including presence of pre-settlement junipers), weed species and coverage, and level of disturbance. Applicant shall provide the results of the Pre-Treatment Survey to ODOE and ODFW.~~

~~Applicant will use the desktop analysis and field-based habitat/weed surveys, in consultation with its qualified consultants, to identify Juniper Treatment Units within the WLIP sites. The Juniper Treatment Units may vary in size depending on natural landscape divisions, qualities, prior uses, etc. and the treatment schedule for different Juniper Treatment Units may vary.⁶~~

⁶ ~~As stated in the ASC, Applicant will develop the Facility based on market demands and other factors. This means that construction may occur in steps or on a rolling basis. Mitigation for each step of construction or implementation of rolling mitigation would correspond to the rolling construction.~~

Step 2: *Develop Juniper Treatment Plan*

~~Prior to construction of the Facility, following completion of the Pre-Treatment Habitat/Weed Surveys, Applicant will has developed and submitted for review and approval to ODOE, in consultation with ODFW, a juniper treatment plan or plans depending on the areas selected for treatment within the WLIP sites. site-specific Juniper Treatment Plan(s). A Juniper Treatment Plan, Aat a minimum, tThe plans will include the following components:~~

- Habitat maps identifying the boundary of proposed Juniper Treatment Unit within WLIP site and treatment areas.
- A description and figures table identifying approximate acres of treatment areas by treatment type application per treatment plan for the Juniper Treatment Unit (e.g., xx acres for thinning, xx acres for juniper removal, xx acres for protection of juniper stands).
- Best management practices to minimize the risk of noxious weed introduction into juniper treatment areas including equipment wash out station, reseeding of burned slash treatment piles with a grass/legume mix (within 30 days of the fire), and monitoring burned areas for noxious weeds (annually for three years following reseeding).
- A protocol establishing methods for documentation of pre- and post-treatment conditions such as through photo documentation; and, field based methods including walking a representative sample of 100-meter random transects to assess soil disturbance and vegetation conditions (plant cover, native herbaceous cover, non-native cover).
- Recommendations for post-treatment monitoring, weed treatment, and juniper re-treatment.

~~A Juniper Treatment Plan may correspond to one or more designated mitigation units within the WLIP sites. Mitigation work must commence within the same season or year of the correlative Facility construction commencement, based on final Facility design and construction schedule at that time. Following construction completion, Applicant may adjust the mitigation obligation (site size, extent of juniper treatment) if changes in final Facility design during construction occur that reduce the mitigation obligation.~~

Step 3: *Juniper Treatment*

Applicant Certificate holder will hire one or more contractors (locally, to the extent possible) to implement the Juniper Treatment Plan(s) across the WLIP sites. Depending on the local site conditions and the capabilities of the contractor(s), felled juniper may be burned on site or hauled away. If slash burning is to occur, contractor will obtain necessary burn permits and will coordinate with landowners, as applicable. Juniper may also be sorted and decked, delimbed, and any commercial product taken off site. ~~Juniper Treatment Plans will emphasize retaining pre-settlement juniper (or late successional junipers) and removing young~~

~~juniper encroaching into pre-settlement juniper stands as well as other young juniper within the treatment area. The methods for juniper removal will vary depending in local site conditions. One method would be to hand cut and hand pile the trees. Another would be to pull the mid-sized juniper with a rubber tire tractor or small excavator and hand cut the large and very small post-settlement juniper; all juniper would be mechanically piled. In implementing t~~The Juniper Treatment Plans, Certificate holder will direct the cutting contractor to minimize impacts to sagebrush in the understory.

Step 4: Weed Monitoring and Treatment

Applicant will engage the Lake County Cooperative Weed Management Area (Lake County CWMA) ~~or other qualified contractor~~ to monitor the WLIP sites for noxious weeds. Lake County CWMA ~~(or qualified contractor)~~ will monitor noxious weeds within a treated area annually for two years Juniper Treatment Unit within 12 months and again within the following 12 months after initial juniper treatment and Lake County CWMA will treat weeds as needed during the monitoring. ~~In addition, Lake County CMWA will monitor burned slash treatment pile areas annually for in year 3 years following reseeding and will treat weeds as needed during the monitoring. Applicant will provide copies of the annual weed monitoring and treatment reports to ODOE and ODFW.~~ Thereafter, Lake County CWMA ~~(or other qualified contractor)~~ will monitor and treat noxious weeds in the WLIP sites as described below.

Step 5: Monitoring and Reporting

Applicant will hire a qualified contractor to conduct monitoring in the treated areas ~~of each Juniper Treatment Unit~~ and provides reports to ODOE, ODFW, and Lake County as provided for in the applicable Juniper Treatment Plans. The monitoring program will consist of monitoring for noxious weeds as well as monitoring for mitigation success.

Generally, the first post-treatment monitoring for mitigation success will occur within one year begin about 24 months after the initial ~~j~~Juniper ~~t~~Treatment is completed and continue every ~~seven~~ten years thereafter for the life of the Facility. Polygons where no treatment is planned will be monitored when neighboring polygons with a common boundary are scheduled for treatment or monitoring. For those areas that have been seeded following disturbance, monitoring will include collection of the following information:

- Confirmation that all disturbance areas requiring active re-vegetation have been re-seeded;
- Visual estimates of:
 - Percent of total vegetative ground cover of individual plant species in two categories (grasses/forbs and shrubs), and

- Percentage bare soil

- Presence of noxious weeds species (including density and geographical extent of populations); and
- Presence of windblow or water erosion problems that require additional measures.

More generally, mMonitoring measures to be documented include:

- Confirm ongoing compliance with WLIP ~~leases~~agreements;
- Assess changes in vegetation cover (species, structural stage, health)~~), and progress towards meeting success criteria, including the presence or lack of noxious weeds;~~
- Document environmental factors such as average rainfall, average snowfall, occurrence of wildfire, etc.; and
- Assess juniper encroachment to evaluate whether retreatment may be needed, using the location points identified during the initial Juniper Treatment.

Prior to construction of the Facility, Applicant shall provide a draft report template for review and comment by ODOE, in consultation with ODFW. Based on the agency-reviewed report template, Applicant will provide ODOE and ODFW a report following each monitoring period detailing the observations and results, including the details of any noxious weed treatment and juniper retreatment.

In addition to reporting, ODOE has authority to conduct inspections pursuant to OAR 345-026-0050 to ensure that WLIP is being carried out consistent with the HMP. The WLIP Agreement grants ODOE and ODFW limited access rights for inspections with reasonable written notice to the Property Owner and Applicant.

The monitoring reports will document remedial actions take to date, additional remedial actions planned for areas that are not apparently trending toward success, and the anticipated dates of completion of each of these actions. Remedial actions may include additional juniper treatments (as described below in Section 4.0: Juniper Encroachment), weed treatment, and re-seeding, to correct deficiencies or shortcomings. Remedial actions will be implemented as needed. The nature of the remedial action will depend on the specific issues that arise.

4.0 SUCCESS CRITERIA

Given the Facility's location in ODFW-mapped Big Game Winter Range, Applicant must meet Category 2 mitigation goal of "no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality." The mitigation measures presented in this draft HMP ensure that the Facility's permanent and temporary impacts will not result in a net loss of habitat quantity or quality and result in a net benefit of habitat quality. Applicant will

measure success during its monitoring periods and success will be based on the following indicators:

- Juniper Encroachment. Because juniper will be left in most of the polygons, some amount of juniper encroachment will occur in the forage polygons within the life of the Facility. A juniper treatment will be considered successful if encroachment does not exceed 10 stems per acre over a majority of the treatment area as determined by the monitoring described in the Juniper Treatment Plan. When the results of monitoring indicate that juniper encroachment has exceeded 10 stems/acre over a majority of a polygon then encroaching juniper will be cut using treatment 1 as described in the Juniper Treatment Plan.
- ~~Increase in herbaceous cover within the WLIP treatment areas, compared to reference sites, based on soil characteristics, precipitation regimes, native plant association prior to juniper encroachment, historical fire regime, and desired future condition using *Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions: U.S. Geological Circular 1321*, Miller et al. (2007);~~
- ~~Maintenance of a specified percent juniper overstory within the Juniper Treatment Areas (to be specified in the applicable Juniper Treatment Plan after the Pre-Treatment Survey has been completed);~~
- ~~Response of sage brush and/or bitter brush as measured by the leader growth in the cut areas within a Juniper Treatment Unit compared to areas without cutting in the Juniper Treatment Unit; and~~
- Successful weed control (weed monitoring and treatment) within the WLIP sites for the life of the Facility. The success criteria for noxious weed control will be based on qualitative observations to attempt to comply with Lake County and ODA recommended actions in each category of noxious weed. Consistent with Applicant's Revegetation and Noxious Weed Control Plan (Appendix P-3), unless otherwise instructed to use other criteria by ODA or Lake County, Applicant will consider weed control successful when State- or County-listed noxious weeds are absent or constitute less than 1 percent of vegetation otherwise dominated by native or desirable non-native species, unless the noxious weeds present are similar to pre-disturbance conditions or adjacent undisturbed areas.

~~Success criteria may be further refined in the Juniper Treatment Plans depending on Applicant's juniper contractor recommendations, the Pre-Treatment Survey, and other site-specific conditions for the treatment area within the WLIP. Applicant is mitigating primarily for impacts to sagebrush shrubland, which was preliminarily identified as Category 3 habitat based on vegetative characteristics observed during field habitat assessments, but was designated as Category 2 because of the ODFW mapped Big Game Winter Range overlay. As a result, habitat within the WLIP sites will only need to be enhanced to the extent it provides the quality of habitat impacted by the Facility.~~

5.0 PRE-CONSTRUCTION COMPLIANCE

The final HMP applies to the entirety of permanent and temporary Category 2 habitat impacts.⁷ This draft HMP contains ~~numerous~~ pre-construction requirements to which Applicant must comply. As described throughout this plan, prior to construction of the Facility, Applicant shall:

- ~~Develop and submit a habitat assessment protocol for the Facility site boundary and the WLIP sites for review and approval by ODOE in consultation with ODFW;~~
- Identify the total number of permanent and temporary habitat acres to be impacted, based on permanent facility components within the perimeter fence line and temporary impacts outside of the fence line, including any important assumptions or calculations;
- Executed WLIP ~~Agreements~~ landowner agreements, with an opportunity for review and concurrence by ODOE if agreements contain termination or amendment clauses;
- ~~Finalize Draft~~ Juniper Treatment Plan(s) ~~(for the Juniper Treatment Units commensurate in size to the initial construction area);~~ including maps of treatment areas; treatment plans and methods, pre- and post-documentation protocols, monitoring and reporting protocols.

6.0 AMENDMENTS TO THE HMP

The HMP may be amended from time to time upon approval by EFSC, who may delegate its authority to review and authorize amendments to ODOE. ODOE must notify EFSC of all amendments and EFSC retains the authority to approve, reject, or modify any amendments to this HMP agreed to by ODOE.

⁷ Applicant began construction in 2019 on two solar projects located on land within the Facility site boundary under Lake County Permit No. 19-027-CUP and Lake County Permit No. 19-028-CUP. Applicant is implementing mitigation measures for each project under the respective CUP approvals. Applicant will terminate Lake County Permit No. 19-027-CUP and Lake County Permit No. 19-028-CUP once Applicant has demonstrated compliance with the Facility site certificate's pre-construction conditions of approval, at which point the solar development previously approved under the County CUPs will become subject to EFSC jurisdiction. Applicant proposes a condition of approval requiring an HMP status report to ODOE prior to construction confirming that mitigation conducted under the two county permits meets and will continue to meet the mitigation requirements under this HMP.

7.0 REFERENCES

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Appendix 1 Working Lands Improvement (WLIP) Agreement

WORKING LANDS IMPROVEMENT AGREEMENT

This Working Lands Improvement Agreement (“Agreement”) is entered into this _____ day of _____, 2020, (“Effective Date”), between _____, (“Property Owner”), and Obsidian Solar Center, LLC, an Oregon limited liability company (“Obsidian”).

Recitals

- A. Obsidian is developing a solar photovoltaic energy facility on approximately 3,900 acres of rangeland in northern Lake County, Oregon (“Facility”).
- B. The Facility is subject to review and approval by the Oregon Energy Facility Siting Council (“EFSC”). As a part of the EFSC permitting process, Obsidian is required to develop a Habitat Mitigation Plan (“HMP”) to mitigate for impacts to habitat, including area mapped by the Oregon Department of Fish and Wildlife (“ODFW”) as big game winter range.
- C. The HMP requires Obsidian to secure land in proximity to the Facility and implement the mitigation measures described in the HMP, which include a Working Lands Improvement Program (“WLIP”). The WLIP is a western juniper (*Juniperus occidentalis*) treatment and management program on working rangeland and involves juniper removal and thinning, controlling encroaching junipers by chipping or cutting for firewood, and maintaining pre-settlement juniper stands and juniper trees with old-age characteristics, which are important nesting habitat for birds and other wildlife.
- D. The purpose of the WLIP is to ensure that there is no net loss in quantity or quality of habitat for the life of the Facility and there is a net benefit of habitat quality for the life of the Facility.
- E. This Lease facilitates Obsidian’s implementation of the WLIP under the HMP and obligates Property Owner to manage and operate the Property (as defined below) consistent with the goals of the WLIP for the life of the Facility as described herein.

NOW THEREFORE, for good and adequate consideration, the parties agree as follows:

1. **Description of Property.** Property Owner grants Obsidian the non-exclusive right to use approximately 1,870 acres of working rangeland in north Lake County, as further described in Exhibit A and shown in Exhibit B (“Property”), for the purposes described herein and subject to the restrictive covenants described herein. Property Owner grants Obsidian a non-exclusive license of ingress and egress to and from the Property over the routes and easements historically and customarily used or hereafter constructed or useful to access the Property. The Agreement excludes oil and gas rights and the improvements consisting of barns, shops, residence, all of which are reserved for the continued use of Property Owner and excluded from the Property. Property Owner is responsible for maintaining all existing improvements on the Property.

2. **Term of Agreement.** The initial term of this Agreement shall be 30 years, commencing on _____ and expiring on _____ (“Initial Term”). Obsidian will have two (individually, an “Option”) options to renew this Agreement for five years (individually, a “Renewal Term”) at the end of the Term or Renewal Term by providing written notice to Property Owner at least 60 days prior to the then-current expiration of the Term or Renewal Term. The duration of the Initial Term and Renewal Term will be for the life of the Facility’s construction and operation.
3. **Rent.** Obsidian agrees to pay Property Owner cash rent in the amount and on the terms set forth in Exhibit C, which shall be redacted in the recorded version of this Agreement. Rent for any partial year shall be prorated based upon the number of days in which this Agreement was effective during such year.
4. **Binding Nature of Agreement.** The terms of this Agreement shall be binding upon the heirs, executors, administrators, successors and assigns of both Property Owner and Obsidian in like manner as upon the original parties. If the Property Owner should sell or otherwise transfer title to the Property, it will do so subject to the terms and conditions of this Agreement. At any time during the Term of this Agreement or any Renewal Term should the Property be transferred, sold or conveyed, be subject to foreclosure, bankruptcy or transferred by any other means whatsoever, the Property Owner, sponsor or administrator shall immediately notify Obsidian in writing.
5. **WLIP Restrictions.** Property Owner covenants and agrees that it will not use the Property in a manner that is likely to undermine the effectiveness or is otherwise contrary to the Obsidian’s habitat mitigation and enhancement activities performed on the Property pursuant to the HMP, as may be amended from time to time, set forth in Exhibit D, which shall be redacted in the recorded version of this Agreement.
 - a. The following activities are specifically permitted on the Property without violating the terms and conditions of this Agreement: (i) hunting, fishing, hiking, or passive recreation; (ii) fencing to prohibit entrance of livestock and trespassers; (iii) posting of signs; (iv) building or remodeling a primary residence, agricultural building, or similar structure to serve ongoing agricultural operations so long as the total such use does not exceed five (5) acres; (vi) current use of land under existing grazing management plans; and (vii) implementation of approved conservation and wildlife management plans consistent with the HMP.
 - b. The following activities are specifically prohibited on the Property under this Agreement: (i) increased grazing above levels approved under existing grazing management plans unless otherwise approved in writing by ODFW; (ii) all nonagricultural uses unless otherwise specified in Section 5(a) above; (iii) grading, mowing, blading, or expansion of impervious surfaces or access road networks; and (iv) divisions of the Property.

c. Activities not specifically permitted or specifically prohibited may be allowed subject to consultation with and prior approval of the Obsidian and ODFW.

e.d. Property Owner and Obsidian will complete a baseline inventory showing existing development on the Property, identifying any future development area under Section 5(a)(iv), and providing a summary of the existing grazing management plans. The baseline inventory will be included in Exhibit E.

6. **Alterations by Obsidian.** Property Owner acknowledges that the Obsidian intends to use the Property to implement the WLIP and meet its corresponding mitigation obligations described in the HMP. Except as set forth in a written juniper treatment plan or weed control plan developed pursuant to the HMP and provided to Property Owner, Obsidian will make no improvements or alterations on the Property of any kind without first obtaining Property Owner's written consent,. Any alteration will be made in a good and workman-like manner, and in compliance with applicable laws and building codes.
7. **Coordination with Property Owner.** To implement the WLIP, Obsidian will hire one or more contractors (locally, to the extent possible). Obsidian will provide Property Owner written notice of the name and contact information of any contractor engaged by Obsidian to perform work on the Property. Obsidian will provide written notice at least five (5) days prior to the first day of the scheduled work. Such work may include but is not limited to juniper treatment, juniper removal, monitoring, and weed treatment. Property Owner will coordinate with Obsidian if undertaking any activities described in Section 5 above by providing reasonable written notice to ensure that such activities will be performed consistent with the mitigation goals of the HMP. Property Owner also grants limited access rights to ODFW and the Oregon Department of Energy ("ODOE") to access the Property upon prior reasonable written notice to Property Owner and Obsidian for the purposes of inspecting the mitigation work.
8. **Juniper Disposal Methods.** Depending on the local site conditions, the capabilities of the contractor(s), and Property Owner's preferences, cut juniper may be burned onsite, hauled offsite, or some combination of disposal methods may be used. Obsidian will coordinate the selection of the disposal method for cut juniper and slash with Property Owner. If the disposal method is burning, Obsidian or its contractor will obtain all necessary burn permits and coordinate the burn date with Property Owner. To the extent practicable, commercially valuable juniper will be salvaged and hauled offsite and any proceeds will first go to offset rent payments within the last 12 months and then go to the Property Owner.
9. **No Encumbrances or Liens.** Obsidian shall not cause, suffer or permit to be filed against all or any portion of the Property any mechanic's or similar lien for any work done or materials supplied to the Property by or at the request of Obsidian or its authorized agent ("Lien"). If any Lien shall be filed against all or any portion of the Property (i) Obsidian

shall give notice thereof to Property Owner within five business days after the date on which Obsidian first becomes aware of such Lien, and (ii) within 30 days after first becoming aware of such filing and prior to any foreclosure, Obsidian, at its sole cost and expense, shall cause the Lien to be discharged of record or bonded over, failing which Property Owner shall have the right, but shall not be obligated, to discharge the Lien without investigating the validity or amount thereof. Obsidian shall reimburse Property Owner on demand for any amounts so paid or incurred by Property Owner, including reasonable expenses and attorneys' fees. .

10. **Taxes.** Property Owner shall pay when due all real property taxes on the Property and the improvements located on the Property.

11. **Insurance by Obsidian.** From and after the Effective Date, Obsidian, at its sole cost and expense, shall obtain and maintain the following insurance during the Term:

- a. Commercial general public liability insurance against any and all claims arising out of liability for personal injury, including illness and death, with limits of not less than \$2,000,000 per occurrence, and property damage in and about the Property and otherwise resulting from any acts or operations of Obsidian, with a combined single limit of \$2,000,000 per occurrence;
- b. Property insurance coverage Obsidian's personal property protecting against risk of physical loss or damage in an amount not less than the actual replacement cost thereof; and
- c. Workers' compensation and employer's liability insurance as required by applicable law.

Obsidian is not responsible for paying or maintaining fire and property damage insurance. Any additional insurance coverage for the Property shall be the responsibility of the Property Owner.

12. **Release and Waiver of Subrogation.** The parties hereto release each other, and their respective agents and employees, from any liability for injury to any person or damage to property that is caused by or results from any risk insured against under the insurance policies required to be carried by either of the parties, which policies shall contain a waiver of subrogation by the insurer that provides that the insurer waives all right of recovery by way of subrogation against the other party and its agents and employees in connection with any injury or damage covered by such policy.

13. **Indemnification.** Each party hereby agrees to indemnify, defend and hold harmless the other party and their respective directors, employees and agents from and against any and all third party claims, actions, demands, liabilities, expenses and/or losses, including reasonable legal expenses and reasonable attorneys' fees ("Losses") the extent such Losses result from any, but except to the extent caused by the negligence or misconduct of the other party: (a) breach

of warranty by the indemnifying party contained in this Agreement; (b) breach of this Agreement by the indemnifying party; or (c) negligence or willful misconduct of the indemnifying party or their respective directors, employees, and agents in the performance of this Agreement.

14. **Hazardous Materials.** Neither Obsidian nor any of its employees or contractors (each a “Obsidian Party”) shall use, store, deposit, handle, transport, release, or dispose of Hazardous Materials in, on or about the Property in violation of any federal, state or municipal law, decision, statute, rule, ordinance or regulation currently in existence or hereafter enacted or rendered. Obsidian shall indemnify, defend and hold Property Owner harmless from and against any claims, penalties, fines, liabilities, settlements or damages (but excluding consequential damages) arising out of: (1) the release, use, storage, treatment, transportation, transfer, handling or disposal of any Hazardous Materials, on, over, under, from or affecting the Property (a “Release”) caused by Obsidian or a Obsidian Party, or (2) any violation of or liability pursuant to environmental laws which is based upon or in any way related to such Release, in each case except (a) those matters to the extent resulting from the negligence or misconduct of Property Owner, its successors and assigns, and their respective directors, officers, employees, contractors and agents, (b) matters that result from Pre-Existing Environmental Conditions unless and only to the extent exacerbated by the gross negligence or willful misconduct of Obsidian or any Obsidian Party, or (c) matters that result from the actions of third parties, including but not limited to the migration of Hazardous Materials to the Property from an offsite source. The indemnity provided in this Section shall survive the termination of this Agreement.

As used herein, the term “Hazardous Materials” shall mean and be defined as any and all toxic or hazardous substances, chemicals, materials or pollutants, of any kind or nature, which are regulated, governed, restricted or prohibited by any federal, state or local law, decision, statute, rule, or ordinance currently in existence or hereafter enacted or rendered, and shall include (without limitation), all oil, gasoline and petroleum based substances asbestos, toxic molds and per- and polyfluoroalkyl substances (“PFAS”). As used herein, the term “Pre-Existing Environmental Condition” means presence of: (i) Hazardous Materials in soil, groundwater, soil vapor, ambient air or surface water on or about the Property in amounts, concentrations or levels that meet or exceed Environmental Requirements, including cleanup or other standards applicable to Hazardous Materials or which otherwise require remedial action under Environmental Requirements, which first existed or first occurred prior to the Effective Date; or (ii) any other environmental condition which first existed or first occurred prior to the Effective Date. “Environmental Requirements”, as used herein, shall mean all applicable federal, state, and local government laws (including common law), rules, regulations, statutes, codes, ordinances, directives, guidance documents, cleanup or other standards, and any other governmental requirements or standards which pertain to, regulate, or impose liability or standards of conduct concerning the use, storage, human exposure to, handling, transportation, release, cleanup, remediation or disposal of Hazardous Materials.

15. **Subordination and Non-Disturbance.** If any mortgage, deed of trust, deed to secure debt or similar instrument encumbers Property Owner's interest in the Property ("Fee Mortgage") and is senior in priority to the Agreement, Property Owner agrees to obtain a nondisturbance agreement in form reasonably satisfactory to Obsidian pursuant to which holder of such Fee Mortgage agrees not to disturb the possession of the Obsidian and its successors and assigns so long as Obsidian and its successors and assigns comply with this Agreement. In the event of foreclosure of any Fee Mortgage by voluntary agreement or otherwise, or the commencement of any judicial action seeking such foreclosure, Obsidian will become the Obsidian of and recognize such lender or purchaser in foreclosure as Obsidian's landlord under this Agreement without change in the provisions of this Agreement. Upon request by such successor in interest, Obsidian will execute and deliver an instrument confirming such attornment, which will recognize this Agreement and the rights of Obsidian set forth herein and shall provide that such successor in interest will not disturb Obsidian in its use of the Property in accordance with this Agreement unless Obsidian fails to comply with this Agreement.
16. **Compliance with Laws.** Obsidian shall comply with all applicable laws concerning Obsidian's specific use, occupancy, and activities in the Property. Property Owner will give prompt notice to Obsidian of any notice it receives of the violation of any law or requirement of any public authority with respect to the Property or the use or occupancy thereof.
17. **Quiet Enjoyment.** Property Owner covenants, represents and warrants to Obsidian that (i) Property Owner is the owner of the Property free and clear of (a) any prior encumbrance inconsistent with Obsidian's rights under this Agreement and (b) any prior mortgage or lien, (ii) Property Owner has the right to lease the Property, (iii) Property Owner shall not cause or allow any activity or use of the Property or Property Owner's adjacent property to interfere with Obsidian's use and enjoyment of the Property or the rights granted to Obsidian under this Agreement, (iv) nothing contained in any easement, covenants, conditions, declarations, limitations, or restrictions now or hereafter of record which are (or shall be) applicable to the Property shall prevent Obsidian from operating in the Property or require Obsidian to make any alterations, repairs modification or installments to the Property or require Obsidian to make any payment or perform any obligations not expressly required by Obsidian under this Agreement, and (v) Obsidian shall be entitled to quiet enjoyment of the Property and to the rights and privileges of Obsidian under this Agreement during the Term.
18. **Notices.** Any notice required or permitted to be given under this Agreement shall be deemed given if delivered personally to an officer or general partner of the party to be notified or sent by (a) United States registered or certified mail, postage prepaid, return receipt requested, or (b) overnight courier service and addressed as follows:

If to Property Owner: _____

If to Obsidian: Obsidian Solar Center, LLC
 Attn: David Brown
 5 Centerpointe Dr #350
 Lake Oswego, OR 97035

With a copy to: Davis Wright Tremaine LLP
 Attn: Elaine Albrich
 1300 SW Fifth Avenue, Suite 2400
 Portland, OR 97201

or such other address as may be designated by either party by written notice to the other. Except as otherwise provided in this Agreement, every notice, demand, request or other communication hereunder shall be deemed to have been given or served upon actual receipt thereof. Accordingly, a notice shall not be effective until actually received. Notwithstanding the foregoing, any notice mailed to the last designated address of any person or party to which a notice may be or is required to be delivered pursuant to this Agreement shall not be deemed ineffective if actual delivery cannot be made due to a change of address of the party or party to which the notice is directed or the failure or refusal of such person or party to accept delivery of the notice.

19. **No Partnership of Joint Venture.** Property Owner shall not, by virtue of this Agreement, in any way or for any purpose, be deemed to be a partner of Obsidian in the conduct of Obsidian's business upon within or from the Property or otherwise, or a joint venturer or a member of a joint enterprise with Obsidian.
20. **Entire Agreement.** This Agreement contains the entire agreement between the parties and, except as otherwise provided herein, can only be changed, modified, amended or terminated by an instrument in writing executed by the parties.
21. **Severability.** If any provision of this Agreement shall be deemed to be invalid, it shall be considered deleted therefrom and shall not invalidate the remaining provisions of this Agreement.
22. **Applicable Law.** This Agreement shall be governed by, and construed in accordance with the laws of the State of Oregon.
23. **Recordation of Memorandum of Agreement.** On the Effective Date, Property Owner will execute, acknowledge, and deliver to Obsidian a memorandum substantially similar to the memorandum attached hereto as Exhibit FD, documenting the existence of this Agreement.

24. **Counterparts.** This Agreement may be executed in counterparts by the parties hereto and each shall be considered an original, but all such counterparts shall be construed together and constitute one Agreement between the parties hereto.

[signatures on next page]

IN WITNESS WHEREOF, the parties hereunto affixed their signatures the day and year first above written.

Property Owner:

Obsidian:

OBSIDIAN SOLAR CENTER, LLC

By: _____

By: _____

Name: _____

Name: _____

Its: _____

Its: _____

Exhibit A

Legal Description of Property

Exhibit B

Depiction of Property

Exhibit C

Rent

Exhibit D

Habitat Mitigation Plan

Exhibit E

Baseline Inventory

Exhibit F

Memorandum of Agreement

This document was prepared by and
after recording should be returned to:

Davis Wright Tremaine LLP
1300 SW Fifth Avenue, Suite 2400
Portland, Oregon 97201
Attn: Elaine Albrich

(space above reserved for recorder's use)

Memorandum of Agreement

This Memorandum of Agreement ("Memorandum") is made as of _____, 2____, by and among _____ ("Property Owner"), and **OBSIDIAN SOLAR CENTER, LLC**, an Oregon limited liability company ("Obsidian").

1. **Premises**. Property Owner leases to Obsidian that certain real property located at _____, Oregon and legally described and shown on the attached Exhibit A ("Premises") upon the terms and conditions of that certain Working Lands Improvement Agreement between the parties dated _____, 20__ ("Agreement"), which is incorporated herein by reference.
2. **Term**. The initial term of the Agreement will expire on _____. Obsidian has the option to extend the term for two addition five-year periods, according to the conditions set forth in the Agreement.
3. **Purpose of Memorandum**. This Memorandum is prepared for the purpose of recordation to give notice of the Agreement. This Memorandum shall not constitute an amendment or modification of the Agreement, and in the event of any conflict between the terms of this Memorandum and the Agreement, the terms of the Agreement shall control.

IN WITNESS WHEREOF, the parties hereto have caused this Memorandum to be duly executed as of the Effective Date.

PROPERTY OWNER:

By: _____

Name:

Its:

OBSIDIAN:

OBSIDIAN SOLAR CENTER, LLC,

an Oregon limited liability company

By: _____

Name: _____

Its: _____

STATE OF OREGON)

) ss.

County of _____)

This instrument was acknowledged before me on this ____ day of _____, 20__, by
_____ in his/her capacity as _____ of Obsidian Solar Center
LLC and acknowledged that he/she is authorized on behalf of the company to execute the same.

Notary Public for Oregon

My Commission Expires: _____

STATE OF OREGON)

) ss.

County of _____)

This instrument was acknowledged before me on this ____ day of _____, 20__, by
_____ in his/her capacity as _____ of
_____ and acknowledged that he/she is authorized on behalf of the company
to execute the same.

Notary Public for Oregon

My Commission Expires: _____

EXHIBIT A
LEGAL DESCRIPTION OF PREMISES

Juniper Treatment Plan
(Appendix 2 to the Habitat Mitigation Plan)

Prepared For:
Obsidian Solar Center LLC
5 Center Point Drive, Suite 250
Lake Oswego, OR, 97035

Prepared By:
Fosters Natural Resource Contracting
16981 Highway 395, Lakeview, OR, 97630.
541-219-0252
fostersnrc@gmail.com.

Introduction

Obsidian Solar Center LLC (Obsidian) is applying for a site certificate from the Oregon Energy Facilities Siting Council (EFSC) to build and operate the Obsidian Solar Facility in the Fort Rock Valley of Lake County, Oregon (Facility). A condition of the site certificate will require Obsidian to mitigate for the Facility's impacts to Category 2 big game winter range habitat. Obsidian has developed a Habitat Mitigation Plan (HMP). The HMP proposes to establish a Working Lands Improvement Program (WLIP – [Appendix 1 to the HMP](#)) on portions of two properties, totaling 6,534 acres in the Fort Rock Valley (HMP [is included as](#) Attachment [P-1 to the Final Order](#)³). The total acreage enrolled in the WLIP will depend on the permanent footprint from the Facility's final design. The WLIP is two-fold: it involves habitat protection under a WLIP landowner agreement, and big game winter habitat enhancement using a juniper treatment program. The HMP identifies 5 steps to implement the juniper treatment and management program (HMP Section 3.3, page 8). Steps 1 and 2 involves completing a pre-treatment juniper (*Juniperus occidentalis*) field survey and developing a juniper treatment plan for the two properties. The purpose of this document is to present the juniper treatment plan (Step 2).

The goal of the WLIP is to provide mitigation by maintaining and improving big game winter habitat on the mitigation properties. Winter range will be maintained by establishing a WLIP agreement with the landowners. Big game winter range will be improved by providing a mosaic of vegetation associations designed to provide big game cover and forage areas across the properties. Juniper encroachment into shrub steppe habitats results in reduced forage quality and quantity due its ability to out compete shrubs and bunchgrass (Vaitkas and Eddleman 1987, Miller and Rose 1999, Miller et al. 2005, Davies et al. 2011). Forest vegetation associations are an important habitat component for wintering big game as they provide both thermal and hiding cover (Leckenby and Adams 1986, Boyce et al. 2003, Coe et al. 2018). Juniper woodlands are the primary forest habitat available during winter in the Fort Rock Valley (Coe et al. 2018). Therefore, actions under the HMP are not designed to just cut juniper, but are intended to provide quality winter habitat on the properties.

Pre-treatment juniper field surveys were completed during the first 2 weeks of April and the second week of May, 2020 (Appendix 1), using the Obsidian habitat assessment protocol (Appendix 2) approved by Oregon Department of Energy (ODOE) in consultation with Oregon Department of Fish and Wildlife (ODFW). Information collected during those surveys along with suggestions provided in Miller et al. (2007) and Barrett (2007) were used to develop the juniper treatment plan for improving habitat conditions on big game winter range.

Juniper Treatment Plan

The purpose of this mitigation is to improve big game winter range by developing a mosaic of forage and cover areas. This will be accomplished by maintaining the quality of forage areas by

removing juniper in phase 1 and 2 stands in order to retard juniper encroachment and its effect on understory vegetation, and retain juniper in pre-settlement and/or late phase 2 or phase 3 stands to provide cover.

Juniper treatments selected are shown in Tables 1 through 4 and Figures 1; 1a and b; 2; 2a-d. Vegetation associations were defined based on phase of juniper stands, understory vegetation present and land management practices which would affect treatment decisions. For example, polygon 26 on Nine Peaks Ranch has a low density stand of Phase 1 juniper and two understory plant associations (Table 2). The polygon is being treated to maintain forage. Juniper density and age are similar across the polygon, and treatment would not be different between the two understory plant associations. Similarly, there are areas of phase 1 and early phase 2 juniper within some cover polygons which were not identified for treatment in order to recruit future cover values (e.g. phase 1 and 2 inclusions between pre-settlement juniper in polygon 22 (Fig. 1b) on Nine Peaks Ranch). Finally, some of the pre-settlement or late phase juniper stands have encroachment of younger juniper (<60 years old) dense enough to provide fuel connectivity and put the stand at risk in the event of a wildfire (e.g. polygon 60, Morrison Ranch, Fig. 2c). Removing some or all of the younger juniper would be beneficial in terms of stand retention but this was weighed against the impact to cover value or potential impact to rock or lava structure and understory vegetation if machinery is used for treatment.

Treatments 1 through 3 below are designed to reduce juniper encroachment into vegetation associations managed for forage areas. Treatments 4 and 5 are designed to recruit or maintain vegetation associations managed for cover.

Methods Common to all Treatment Options

Irrespective of juniper phase or treatment prescription all pre-settlement juniper and ponderosa pine will not be cut. In the pre-settlement or late phase 2 or phase 3 stands which are designated for cover all post settlement juniper that have open trunks will not be cut. Open trunks mean the juniper has no live limbs from ground level up approximately 4 feet (Figure 3). In areas with post-settlement encroachment scattered individual juniper, or if available, clumps of juniper with open trunks will be retained for big game cover and/or livestock shade trees. In areas with high densities of these types of juniper it may be necessary to mark juniper to be retained.

Small isolated rock out crops or lava eruptions occur in many of the polygons. These outcrops have old individual juniper trees and provide unique wildlife habitat (Figure 4). All juniper on these small out crops will not be cut.

Juniper treatment on private lands in Oregon require a permit issued by Oregon Department of Forestry. The reason for this permit is to ensure treatment activities do not result in excessive fuel loading which in the event of a wildfire would compromise suppression efforts. There is no cost to secure a permit but the permit needs to be approved before juniper cutting begins. Permits are issued to the property owner and approved for one year. Permits need to be re-issued annually if treatment activities continue for more than a year. Failure to secure a permit results in the landowner being liable for wildfire suppression costs if it is determined that the juniper

treatment resulted in excessive untreated fuel loading which in the event of a wildfire exacerbated suppression efforts.

During the first land surveys in Oregon section and quarter section corner marks were blazed into trees. These marks are now more than 100 years old and have antiquities value. Although we are not cutting any pre-settlement trees the Lake County Surveyor requires juniper treatment plans be reviewed for potential impact to these trees and if necessary, the Surveyor will visit the treatment areas, record the location of these trees and mark them for retention.

Table 1. Nine Peaks Ranch, Fort Rock Valley, OR						
Characteristics of Vegetation Associations and Juniper Treatment Prescriptions						
			Post-settlement			
		Juniper	Juniper	Dominant	Dominant	Juniper
Polygon	Acres	Phase	Stems/Ac.	Shrubs	Grasses	Treatment
1	183	PIPO/JUOC	22	PUTR/ARTRV	FEID	2
2	61	PIPO/JUOC	27	PUTR/ARTRV	FEID	5
3	87	PIPO	<5	PUTR/ARTRV	FEID	5
4	92	1	17	ARTRW/PUTR	FEID	2
5	24	2	75	ARTRW/PUTR	FEID	5
6	58	2	27	ARTRW/PUTR	FEID	5
7	18	2	37	ARTRW/PUTR	FEID	5
8	26	late 2	40	ARTRW/ERNA	Native Mix	5
9	162	1	<5	ARTRW/ERNA	Native Mix	1
10	120	1	<5	ARTRW/ERNA	Native Mix	1
11	132	1/early2	10 W, 20E	ARTRW/ERNA	Native Mix	2
12	156	2	50	ARTRW/ERNA	Native Mix	5
13	42	late 2	40	ARTRW/ERNA	Native /AGCR	5
14	177	none	0	ERNA/CHVI	Native Mix	5
15	149	1	20	ARTRW/ERNA	Native /AGCR	1
16	16	2	42	ARTRW	Native Mix	5
17	14	2	40	ARTRW	Native Mix	5
18	32	early 2	30	ARTRW	Native Mix	5
19	154	1	<5	ERNA/CHVI	Native /AGCR	1
20	296	1	7	ERNA/ARTRW	Native /AGCR	2
21	11	2	32	ARTRW	Native Mix	5
22	420	2	60	ARTRW	Native Mix	5
23	11	Pre	10	ARTRW	Native Mix	5
24	7	Pre	10	ARTRW	Native Mix	5
25	499	1/early 2	25	ARTRW	Native Mix	3
26	221	1	10	ERNA/ARTRW	Native /AGCR	2
27	19	1	10	ARTRW/ERNA	Native Mix	5
28	63	1	10	ARTRW/ERNA	Native Mix	5
29	46	Pre	35	ARTRW	Native Mix	4
30	47	Lava	35	ARTRW	Native Mix	5
31	757	1	10	ERNA/ARTRW	Native /AGCR	1
32	34	2	52	ARTRW/ERNA	Native Mix	5
33	451	early 2	17	ARTRW/ERNA	Native /AGCR	2
34	8	Pre	10	ARTRW	Native Mix	5
Shrub Abbreviations: ARTRT-basin big sagebrush, ARTRV-mountain big sagebrush, ARTRW- Wyoming big sagebrush,						
ERNA-Gray Rabbitbrush, CHVI-Green Rabbitbrush, PUTR-bitterbrush						
Grass Abbreviations: AGCR-crested wheatgrass, FEID-Idaho fescue						
Species in Native Mix: Idaho fescue, blue bunch wheatgrass, Thurber's needlegrass, squirrel tail grass, Sandberg's bluegrass, Indian ricegrass						

Table 2. Nine Peaks Ranch, Fort Rock Valley, OR								
Vegetation Association Polygon Comments								
Polygon	Comments							
1	Juniper mixed with PIPO - PIPO density decreases going south							
2	Juniper codominant with PIPO - substantial number of older trees both species							
3	PIPO stand with a few juniper							
4	Open JUOC/PIPO codominant stand							
5	Rocky ridge							
6	Scattered pre-settlement juniper on rock out crops							
7	Scattered pre-settlement juniper on rock out crops							
11	West leg of polygon has 10 stems/ac; East leg has 20 stems/ac							
12	Juniper distribution patchy. Pockets of late 2 and pre-settlement							
13	Mixed pre and older post settlement on very rocky soils							
17	Rock out crops with scattered pre-settlement							
18	Variable juniper density, leave for cover recruitment							
20	Areas with better soil converted to AGCR with CHNA encroaching							
	Areas with rocky soils are ARTRW with Native Mix							
21	Phase 3 on rock out crops							
22	Pre-settlement or late phase 2/phase 3 on rock outcrops							
	Areas of better soil have early phase 2 juniper @ 25 stems/ac							
23	Degraded lava outcrop							
24	Degraded lava outcrop							
25	Pockets of phase 1 throughout with ~10 stems/ac							
26	Areas with better soil converted to AGCR with CHNA encroaching							
	Areas with rocky soils are ARTRW with Native Mix							
27	Most of polygon burned in wildfire. Shrubs limited							
28	Most of polygon burned in wildfire. Pre-settlement remains on rock outcrops							
29	Swath on west end that was chained years ago phase 2 with CHNA/ARTRW							
30	Aspen clone on east end with very little juniper in aspen							
31	Areas with better soil converted to AGCR with CHNA encroaching							
	Areas with rocky soils are ARTRW with Native Mix							
32	Pre-Settlement JUOC scattered throughout							
33	Flatter areas chained years ago and seeded to AGCR, CHNA encroaching							
	Remainder of polygon ARTRW with Native bunchgrass mix.							
34	Degraded lava outcrop							

Table 3. Morrison Ranch, Fort Rock Valley, OR.							
Characteristics of Vegetation Associations and Juniper Treatment Prescriptions							
			Post-settlement				
		Juniper	Juniper	Dominant	Dominant	Juniper	
Polygon	Acres	Phase	Stems/Ac.	Shrubs	Grasses	Treatment	
35	12					5	
36	29	early 2	50	ERNA	AGCR	3	
37b	19	late 2/3	10	ERNA/ARTRW	FEID/AGCR	5	
38	44	Pre	10	ARTRW/ERNA	Native Mix	5	
39b	22	late 2/3	27	ARTRW/ERNA	Native Mix	5	
40b	104	1	12	ERNA/CHVI	AGCR	1	
41	39	Pre	10	ERNA/CHVI	Native Mix	5	
42	99	1	<5	ERNA/CHVI	Native Mix	1	
43	106	Pre	5	ERNA/CHVI	Native Mix	5	
44	233	Pre	<5	ERNA/CHVI	Native Mix	5	
45	140	Pre	25	ARTRW/ARTRT	Native Mix	4	
46	30	2	17	ARTRW/ERNA	Native Mix	3	
47	111	1	12	ARTRW/ERNA	Native/AGCR	2	
48	34	Pre	<5	ERNA/ARTRW	Native/AGCR	4	
49	48	1	15	ERNA/CHVI	AGCR	2	
50	103	1	20	ERNA/ARTRW	AGCR	1	
51	174	1	<5	ERNA/ARTRW	AGCR	1	
52	20	1	15	ARTRW/ERNA	Native Mix	2	
53	24	1	22	ARTRW/ERNA	FEID	2	
54	7	1	20	ARTRW/ERNA	FEID	2	
55	4	1	15	ARTRW/ERNA	Native Mix	2	
56	28	1	15	ARTRW/ERNA	Native Mix	2	
57	5	Pre	17	ERNA/ARTRW	Native Mix	5	
58	50	Pre	17	ERNA/ARTRW	Native Mix	4	
59	10	Pre	15	ERNA/ARTRW	Native Mix	5	
60	179	Pre	5	ERNA/ARTRW	Native Mix	4	
61	208	Pre	27	ARTRW/ERNA	Native Mix	4	
62	46	early 2	17	ARTRW/ERNA	Native Mix	3	
63	44	1	7	ARTRW/ERNA	Native Mix	2	
64	27	early 2	55	ARTRW/ERNA	Native Mix	3	
Shrub Abbreviations: ARTRT-basin big sagebrush, ARTRV-mountain big sagebrush, ARTRW- Wyoming big sagebrush,							
ERNA-Gray Rabbitbrush, CHVI-Green Rabbitbrush							
Grass Abbreviations: AGCR-crested wheatgrass, FEID-Idaho fescue							
Species in Native Mix: Idaho fescue, blue bunch wheatgrass, Thurber's needlegrass, squirrel tail grass, Sandberg's bluegrass, Indian ricegrass							

Table 4. Morrison Ranch, Fort Rock Valley, OR.							
Vegetation Association Polygon Comments							
Polygon	Comments						
35	Cinder Pit						
37b	Scattered pre-settlement throughout. Probably was a pre-settlement stand but ~ 100 years ago most trees cut - being replaced with older Post-settlement trees						
	Polygon 37a is 22 acres						
38	Post settlement trees are 10/ac of trees ~80 years old and <5/ac of trees ~20 years old						
39b	Scattered pre-settlement throughout. Polygon 39a is 4 acres						
40b	Juniper distribution patchy- large areas of <5 stems/ac. Polygon 40a is 60 acres.						
41	Within winter feed lot. Shrubs very sparse.						
42	Within winter feed lot. Shrubs very sparse.						
43	Denser stand of Pre-settlement and old Post-settlement trees. JUOC <40 years are <5/ac.						
	Within winter feed lot. Shrubs very sparse.						
44	Sparse stand of pre-settlement. Post-settlement trees ~ 20 yrs old and <5/ac						
45	A portion of the area west of the road was an old feed lot. In this area						
	post settlement <5/ac. Shrubs CHNA/CHVI.						
46	Scattered Pre-settlement throughout.						
47	Scattered Pre-settlement throughout.						
49	Scattered Pre-settlement throughout.						
50	Old rye hay field converted to AGCR ~ 40 years ago						
51	Old rye hay field converted to AGCR ~ 40 years ago						
52	Ward Well #1 on tablet pictures						
53	Shallow draw bottom between degrading lava flows. Ward Well #4 on tablet pictures						
54	Shallow draw bottom between degrading lava flows.						
55	Better soil inclusion in degraded lava flow						
56	Shallow draw between degraded lava flows. Juniper density increases south to north						
57	Degraded lava. Inclusions of sandy loam soils which have the most post settlement						
58	Degraded lava. Inclusions of sandy loam soils which have the most post settlement						
59	Degraded lava. Inclusions of sandy loam soils which have the most post settlement						
60	Degraded lava. Inclusions of sandy loam soils which have the most post settlement						
62	Scattered Pre-settlement throughout.						
63	Scattered Pre-settlement throughout.						
64	Scattered Pre-settlement throughout.						

Figure 1. Pre Treatment Juniper Survey Polygons Nine Peaks Ranch, Fort Rock Valley, OR.

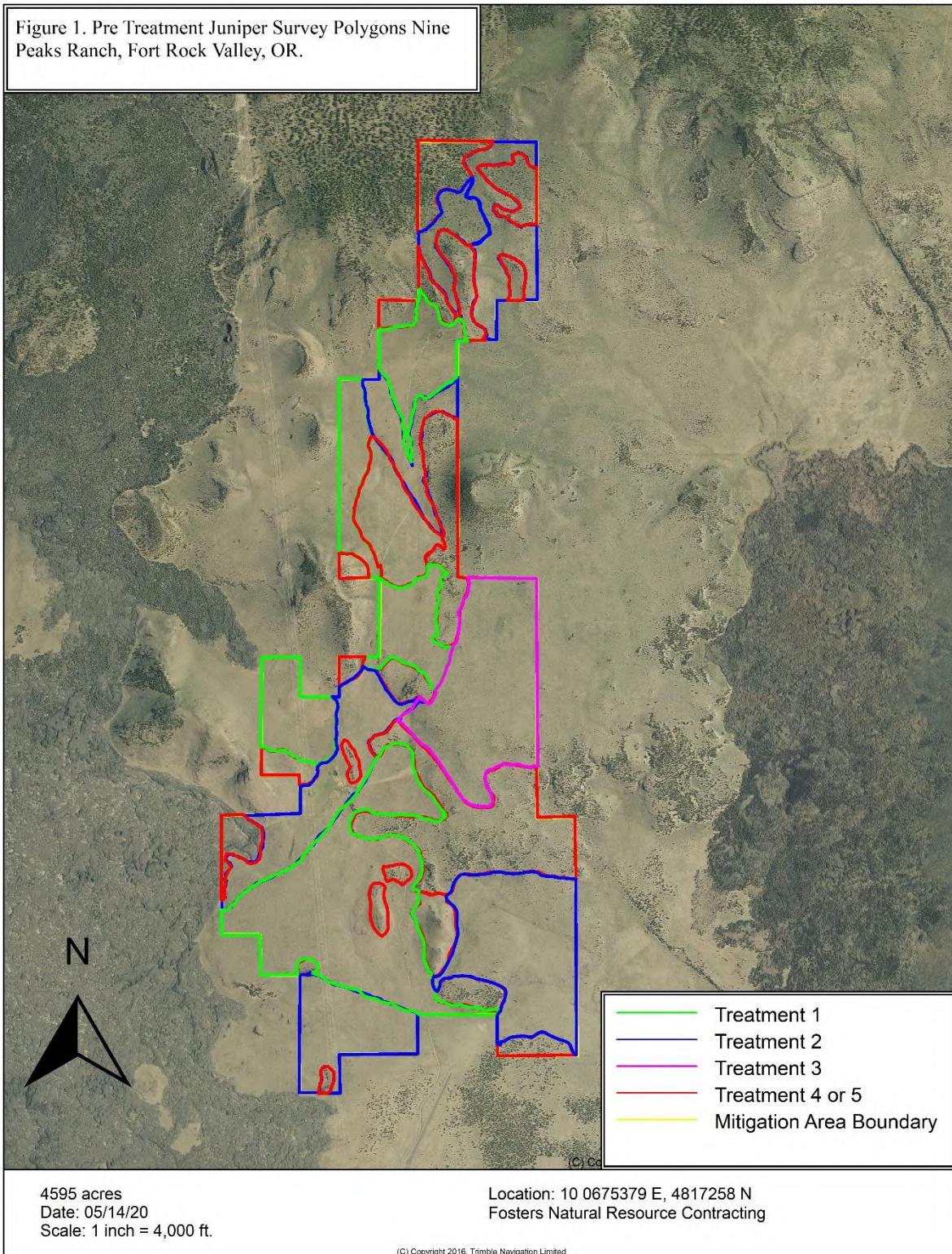


Figure 1a. Pre Treatment Juniper Survey Polygons 1-17, 25
Nine Peaks Ranch, Fort Rock Valley, OR.

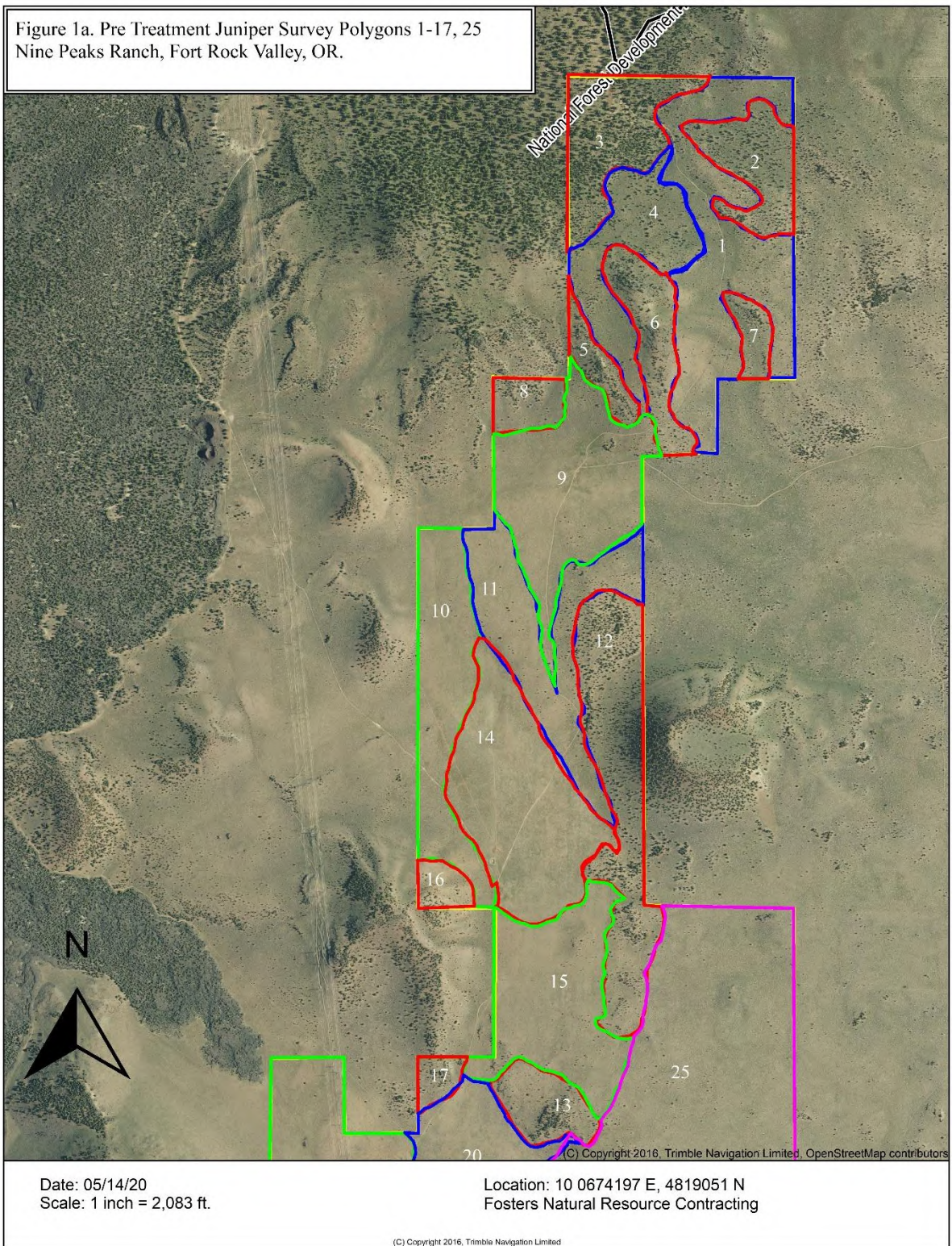


Figure 1b. Pre Treatment Juniper Survey Polygons 13, 15-34 Nine Peaks Ranch, Fort Rock Valley, OR.

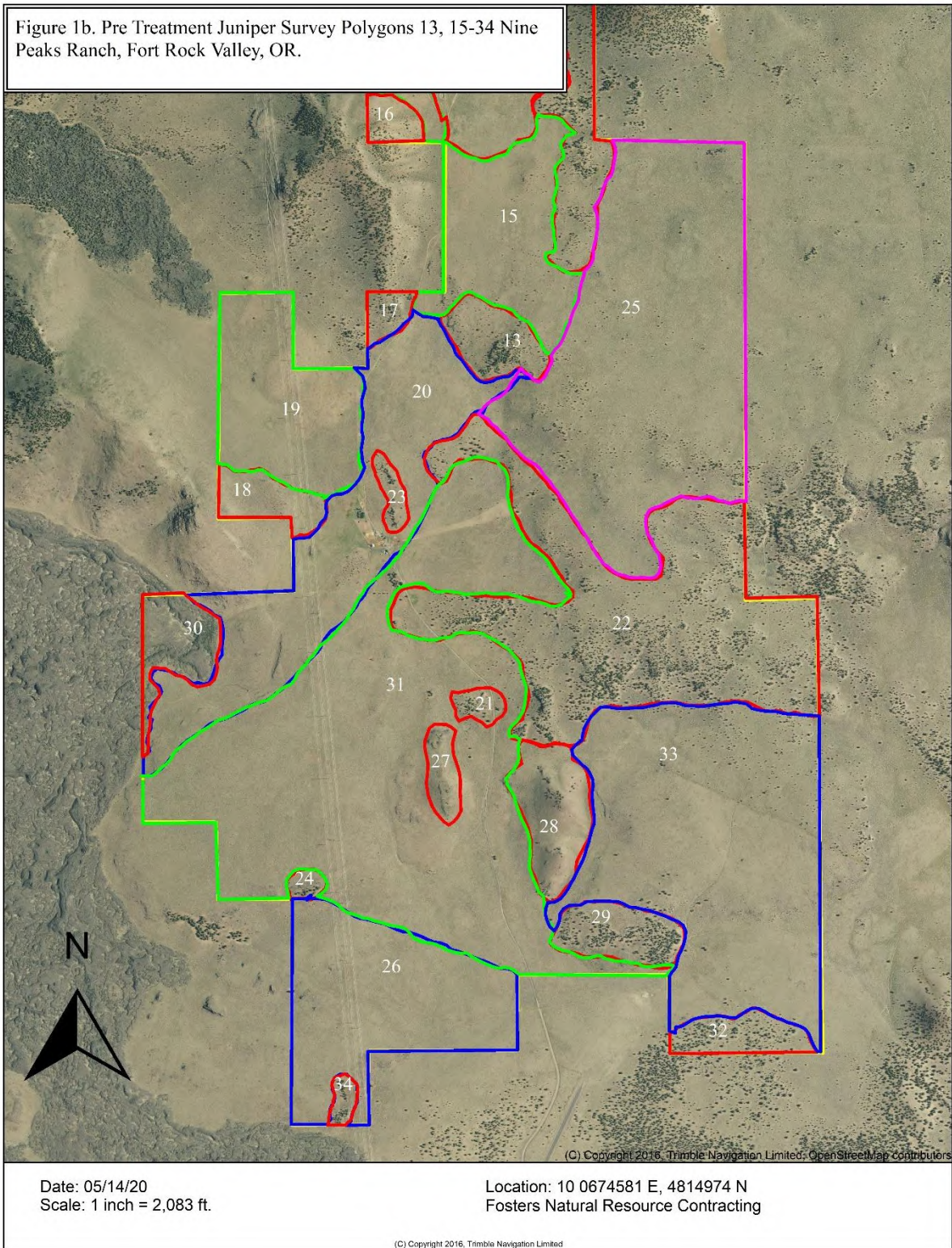


Figure 2. Pre Treatment Juniper Survey Polygons
Morrison Ranch, Fort Rock Valley, OR.

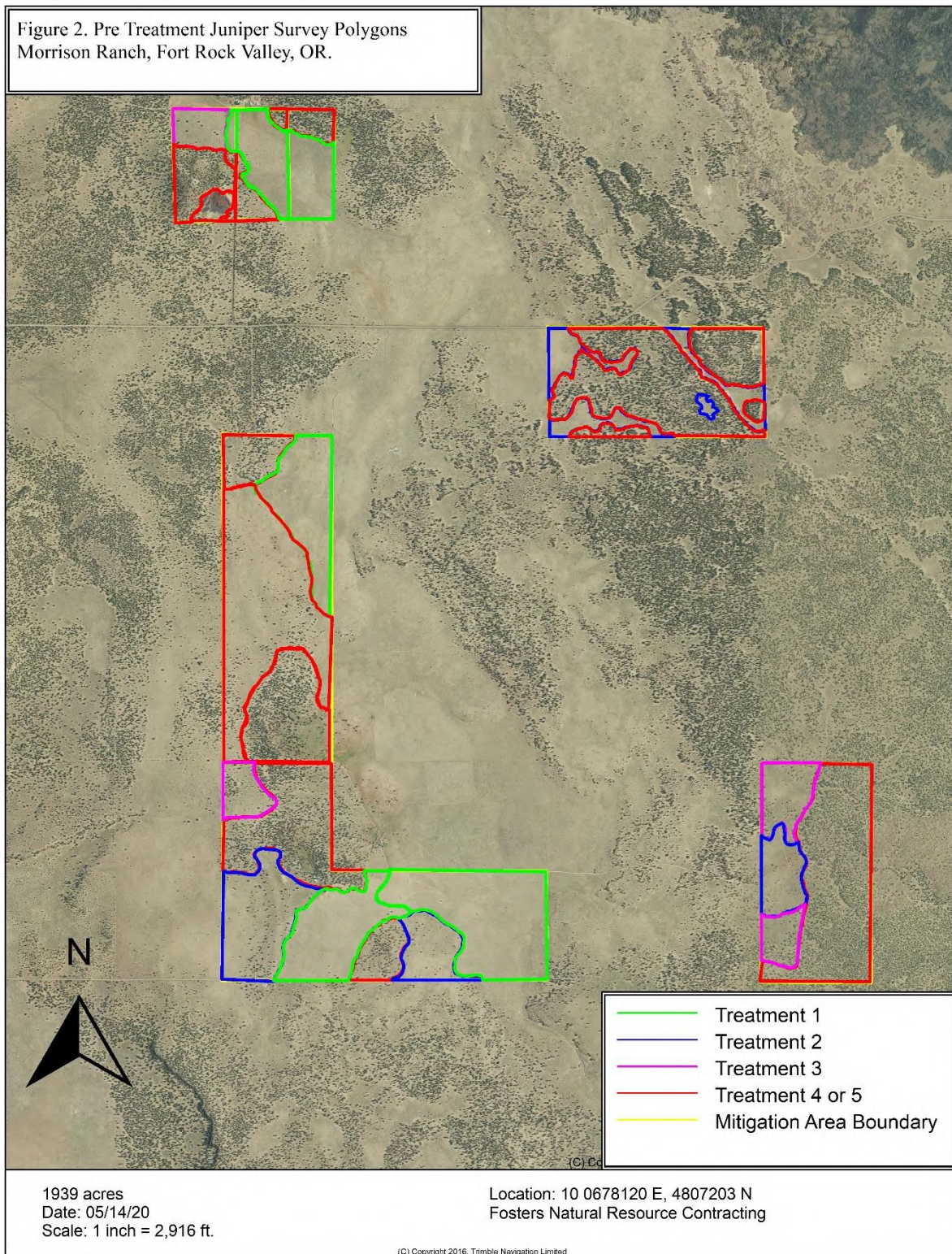


Figure 2a. Pre Treatment Juniper Survey Polygons 35-40
Morrison Ranch, Fort Rock Valley, OR.

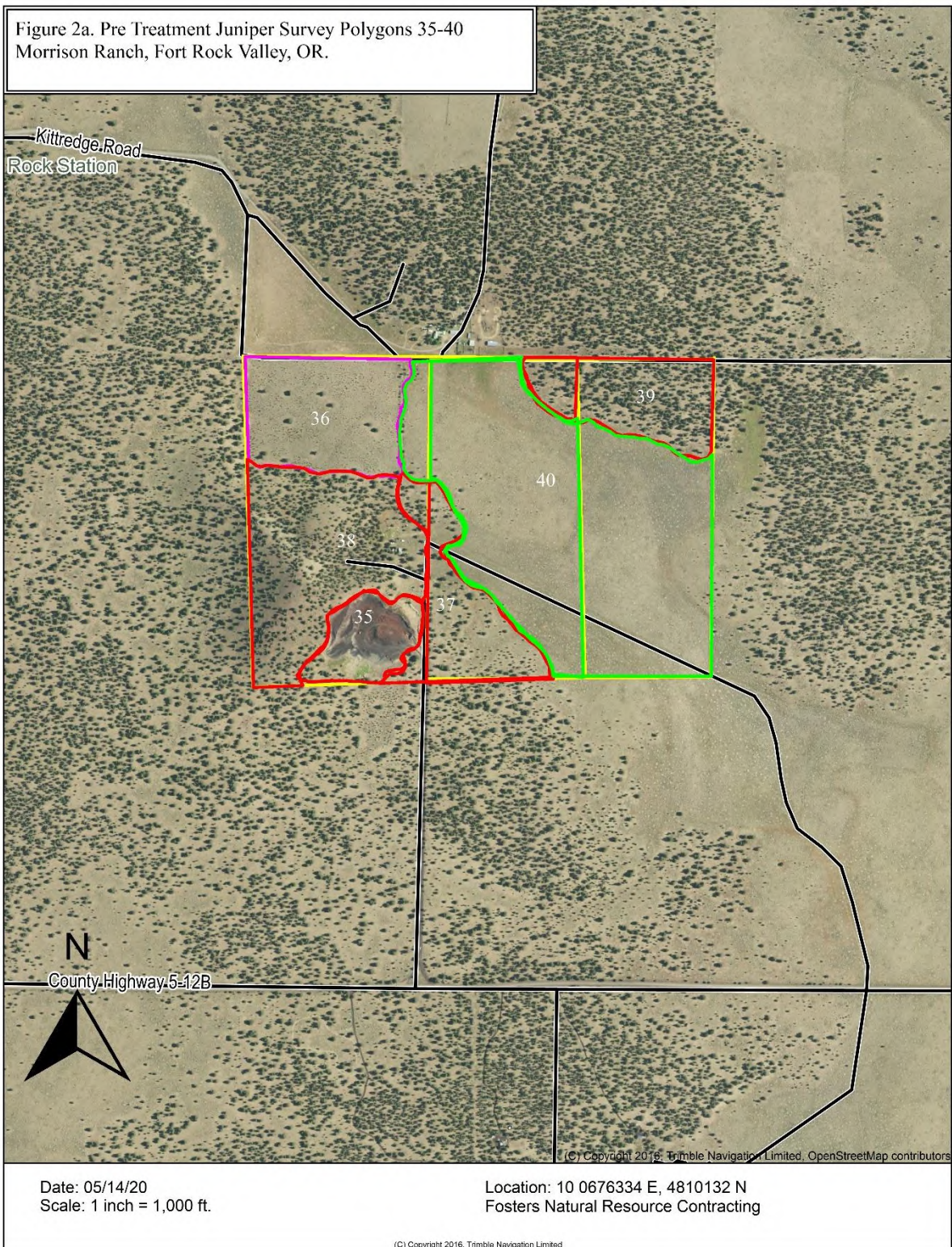


Figure 2b. Pre Treatment Juniper Survey Polygons 41-51
Morrison Ranch, Fort Rock Valley, OR.

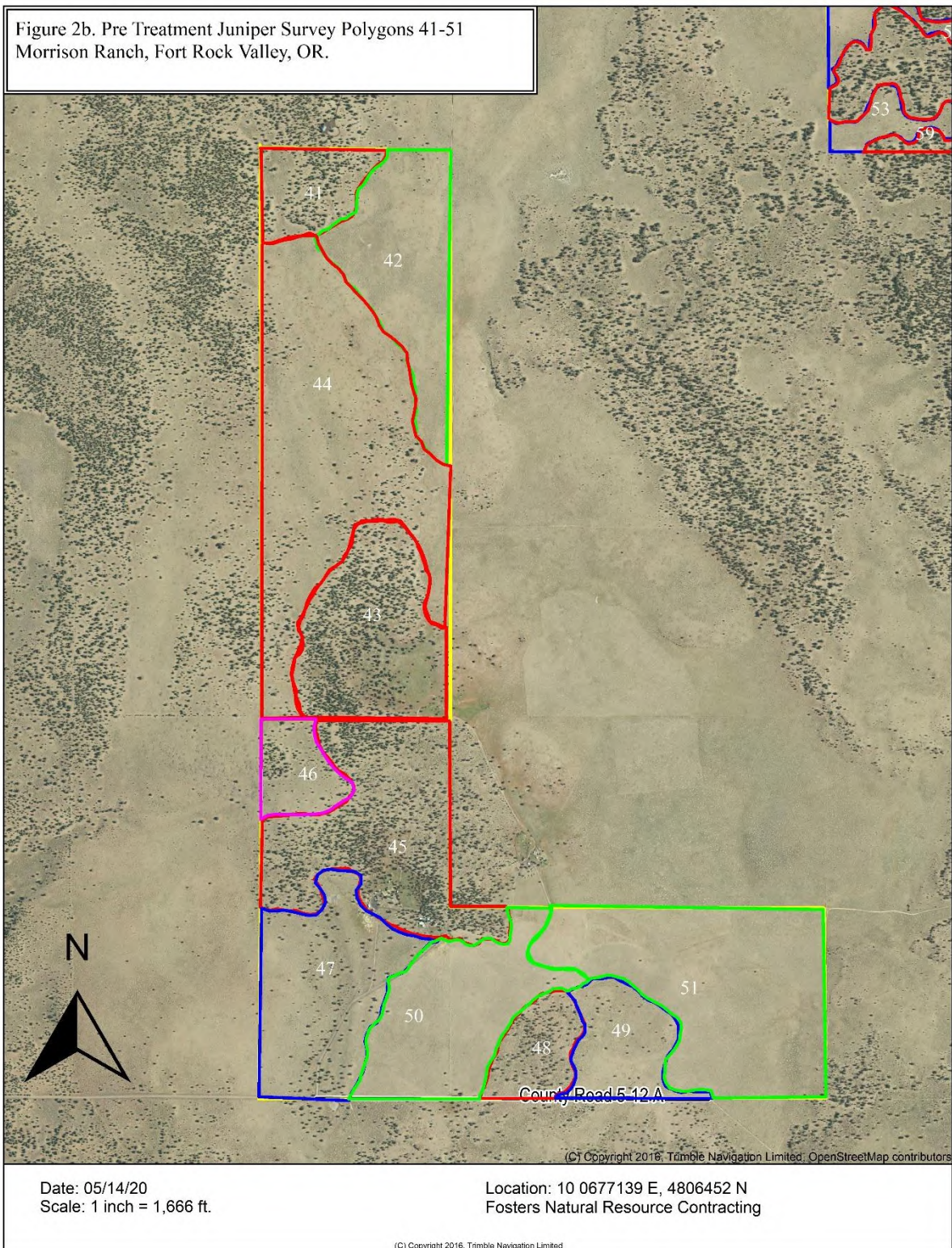


Figure 2c. Pre Treatment Juniper Survey Polygons 52-60
Morrison Ranch, Fort Rock Valley, OR.

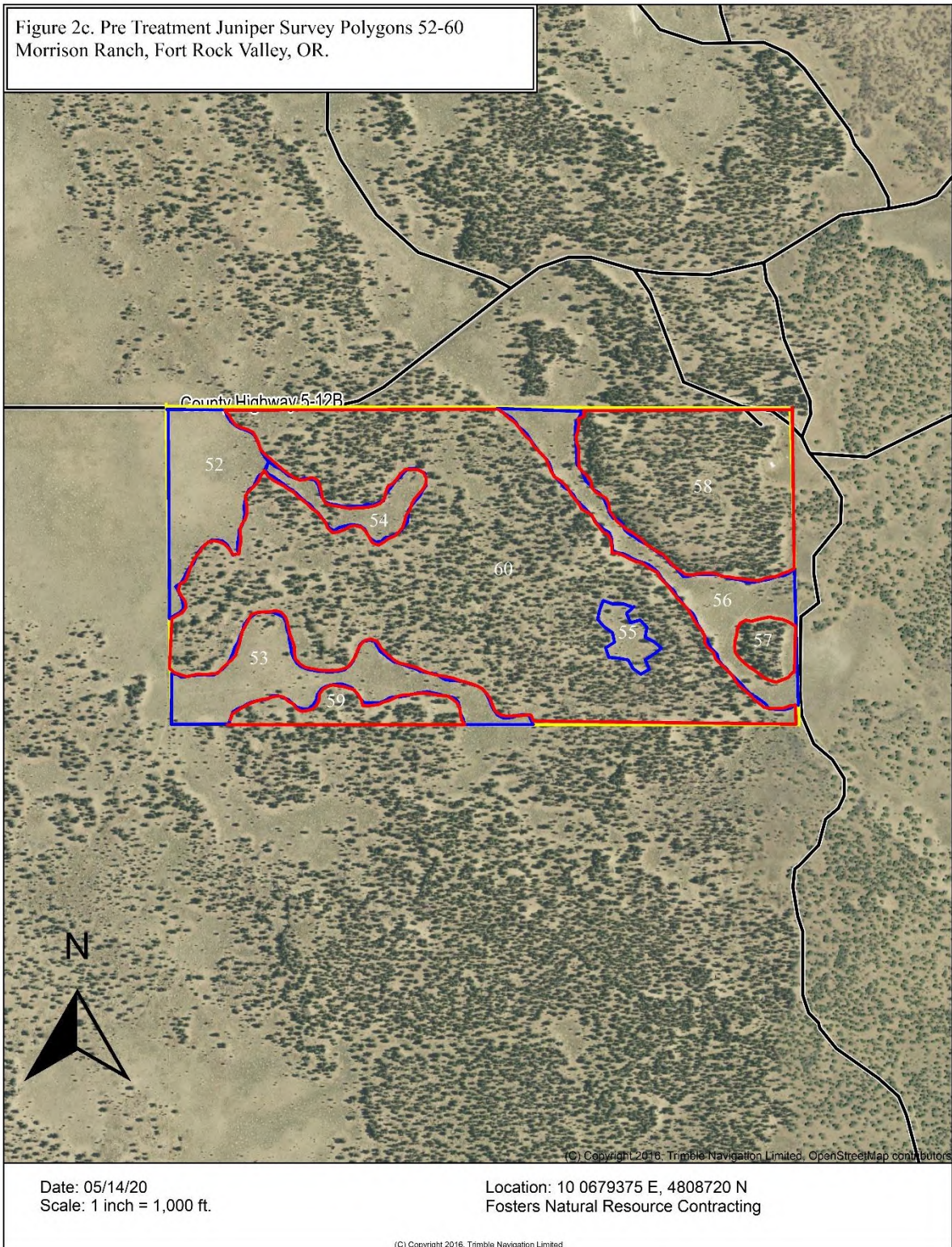


Figure 2d. Pre Treatment Juniper Survey Polygons 61-64
Morrison Ranch, Fort Rock Valley, OR.

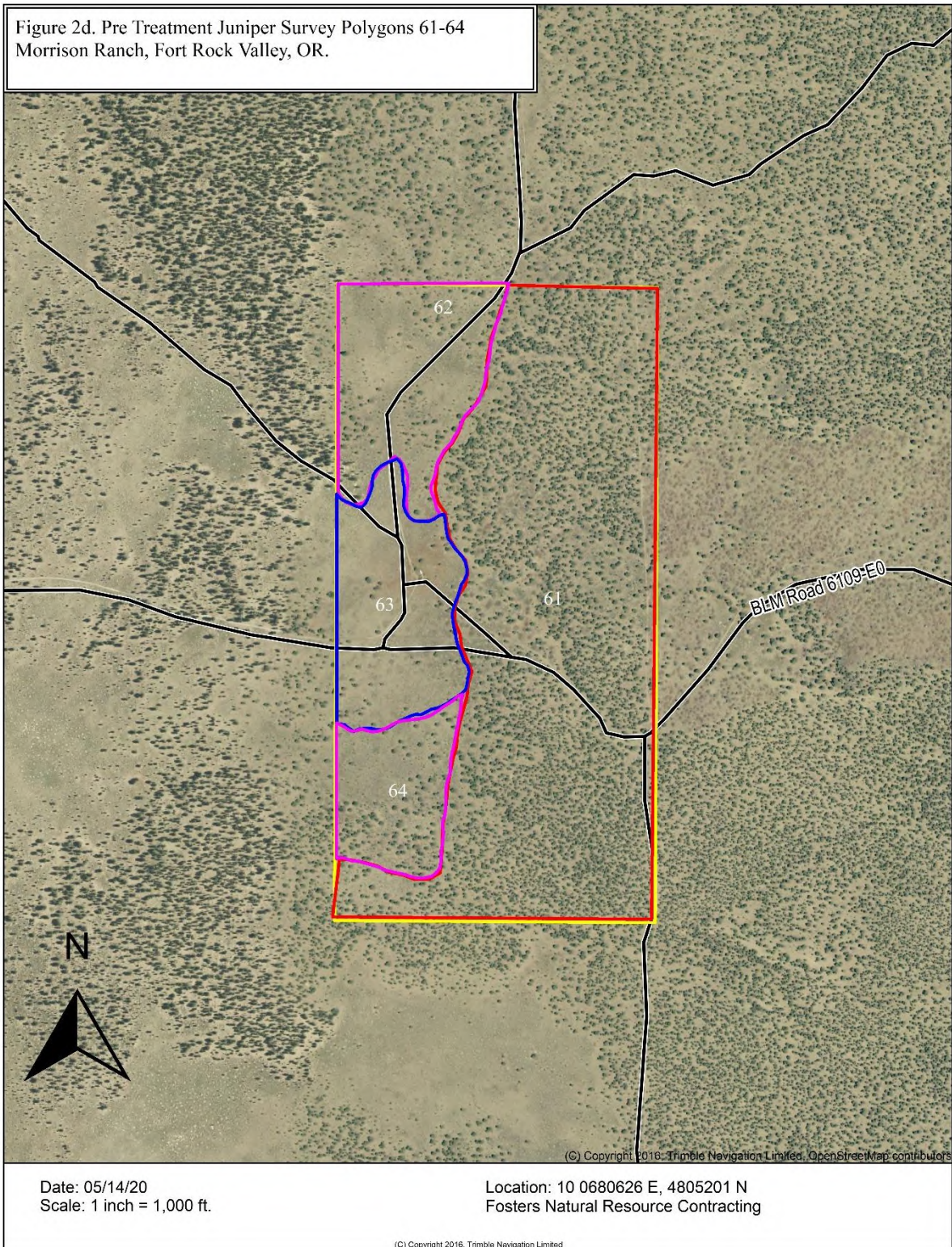




Figure 3. Older pre settlement and late post settlement juniper with open trunk, and young juniper less than 8 feet tall with live limbs to ground level. Morrison Ranch, Fort Rock Valley, OR. April, 2020.



Figure 4. Rock out crop with juniper Fort Rock Valley, OR. April 2020.

Treatment 1

Hand cut or pull and leave all juniper less than 5 feet tall. For juniper more than 5 feet tall, cut or pull, then lop and scatter limbs and trunks.

This treatment will be applied to phase 1 juniper stands (Figure 5). Polygons in Figures 1 and 2 with this treatment are outlined in green. Lop and scatter of slash from larger phase 1 trees serves two purposes. First it breaks dry fuel continuity. Second it reduces the potential for weed infestations due to smothering of understory vegetation by fine limbs and needles of cut juniper (Bates and Svejcar, 2009).



Figure 5. Low density phase 1 juniper. Treatment 1. Fort Rock Valley, OR, April, 2020.

Treatment 2

Hand cut or pull and leave all juniper less than 5 feet tall. Juniper over 5 feet tall will be cut or pulled and the slash will be piled and covered. Piles will be burned 12 to 24 months after piling during the winter or early spring when soils are either frozen or saturated from melting winter snow. The timing of the burn is important to reduce the chance of fire spreading to understory vegetation surrounding the piles. Seed the burned spots with a grass/legume mix after the fires are out but within 30 days after pile burning.

This treatment will be applied to phase 1 stands with higher juniper densities and early phase 2 stands (Figure 6). Polygons in Figures 1 and 2 with this treatment are outlined in blue. The purpose of covering piles is to keep the center of the pile dry which improves consumption of the slash and lengthens the burn window when piles can be effectively ignited. Covers need to be made of waterproof material, approximately 4 feet X 4 feet and placed on top of the piles then held down by other pieces of slash so they don't blow away.



Figure 6. Higher density early phase 2 juniper. Ponderosa pine will not be cut. Treatment 2. Fort Rock Valley, OR, April, 2020.

Treatment 3

Cut or pull juniper then pile and cover the slash. See treatment 2 for timing of pile burning and seeding.

This treatment will be applied to phase 2 and early phase 2 stands with juniper dense enough that using treatments 1 or 2 would result in excessive fuel loading or impact animal movement and understory recruitment (Figure 7). Polygons in Figures 1 and 2 with this treatment are outlined in magenta. See treatment 2 for purpose and description of covering slash.



Figure 7. Phase 2 juniper. Treatment 3. Fort Rock Valley, OR, April, 2020.

Treatment 4

Hand cut juniper that have closed trunks (i.e. live limbs to ground level) and are less than 8 feet tall. Pile slash in openings making an effort to minimize fire effect to live juniper retained in the stand. Cover piles and seed blackened areas after pile burning. See treatment 2 for timing of pile burning and seeding, and purpose of covering slash piles. In order to protect the lava structure common to several of the pre-settlement stands on the Morrison Ranch young juniper should not be pulled and piled using machinery, rather juniper should be hand cut and piled.

The purpose of this treatment is to break fuel continuity in pre-settlement stands (Figure 8). Polygons in Figures 1 and 2 with this treatment are outlined in red. The purpose of this treatment is to protect pre-settlement juniper stands from the effect of wildfire by breaking fuel connectivity. It is intended to protect the big game cover values provided by the stand as well as the intrinsic value of the pre-settlement juniper.



Figure 8. Pre-settlement juniper with young juniper. Treatment 4. Fort Rock Valley, OR, April, 2020.

Treatment 5

No juniper treatment. Polygons in Figures 1 and 2 with this treatment are outlined in red. The reason for selecting this treatment varied. 1.) Some polygons had no juniper (e.g. polygon 14, figure 1a). 2.) Young post settlement juniper targeted in treatment 4 were not dense enough in cover polygons to warrant treatment (e.g. polygon 43, figure 2b). 3.) The prescription for the polygon was to recruit juniper in order to provide future cover (Polygon 18, figure1b). 4.) Most of the soil substrate within the polygon is rock outcrop or degraded lava, the presence of which will protect the stand from all but the most severe wildfire event (polygon 57 figure 2c).

Cost Estimate

Table 5 presents estimated costs for the treatments identified in tables 1 and 3. These estimates were determined using 2020 costs for similar juniper treatment projects in Lake County.

Table 5. Estimated cost of juniper treatment selected on Obsidian Solar Center						
Mitigation Properties in the Fort Rock Valley, Oregon using 2020 average prices						
for similar treatments in Lake County Oregon.						
	Nine Peaks	Morrison		Estimated		
	Ranch	Ranch	Estimated ^b	Total		
	(acres)	(acres) ^a	(cost/acre)	(cost/acre)		
Treatment 1	1342	480	\$ 30	\$ 54,660		
Treatment 2	1375	286	\$ 110	\$ 182,710		
Treatment 3	499	132	\$ 280	\$ 176,680		
Treatment 4	46	611	\$ 160	\$ 105,120		
Treatment 5	1331	490	0	\$ -		
Total	4593	1999		\$ 519,170		
^a acres on Morrison ranch will decrease by ~ 60 acres when location of cinder pit parcel is determined						
^b cost includes cost of juniper treatment plus \$10/ac (treatments 2 and 4) or \$20/ac (treatment 3) for seeding						

Weed Management

As noted in the pre-treatment juniper field survey (Appendix 1) no noxious weed infestations were found on either mitigation property. There is potential to cause establishment of noxious weeds through the ground disturbing activities of juniper treatment. The following best management practices will be used to guard against introducing noxious weeds to the mitigation properties:

1. All equipment used for juniper treatment will be required to be cleaned at an approved weed wash out station immediately prior to starting mitigation treatments. If the equipment is removed from the treatment area to work at another location it will be cleaned again immediately prior to continuing juniper treatments.
2. As stated in the juniper treatment descriptions all pile areas burned for slash treatment will be reseeded with a grass/legume mix after the fires have gone out but within 30 days of the piles being burned. Seed mixes will be determined in consultation with the Lake County Cooperative Weed Management Area and ODFW.
3. Monitor the burned areas for noxious weed establishment annually for 3 years following reseeded. If noxious weeds are detected work within the weed contract already established with the Lake County Cooperative Weed Management Area to effectively treat the infestation.

Monitoring

Monitoring is designed to measure that juniper treatments in forage polygons were successful at removing the effect of juniper encroachment on understory vegetation; and that treatments, or no treatment in cover polygons, was successful and maintaining cover quality for wintering big game.

At least one permanent photo point will be randomly selected in each polygon (Barrett 2007). Polygons larger than 200 acres will have 2 permanent photo points established. The polygons with 2 photo points will be stratified so that one point is in the northern 1/3rd of the polygon and one is in the southern 1/3rd. The three transect layout suggested by Barrett (2007) will be modified so each transect is 100 X 20 yards (0.4 acres) and in addition to qualitative monitoring of understory vegetation using photos, all juniper within the transect will be counted to measure juniper density pre and post treatment.

Because mitigation treatments will be implemented on a rolling schedule, which is tied to the rolling schedule of solar development, monitoring will occur as the polygons are scheduled for treatment. Establishment of photo points and pretreatment monitoring will be completed within 6 months prior to a polygon being scheduled for treatment. The first post treatment monitoring will occur within 1 year after treatment is completed. Polygons within which no treatment is planned (Treatment 5) will be monitored when neighboring polygons with a common boundary are scheduled for treatment. Each photo point and associated transects will be re-monitored every 10 years after completion of the first post treatment monitoring for the life of the project (but the burned areas for noxious weed establishment will be monitored annually for 3 years following reseeding.)

For those areas that have been seeded following disturbance, monitoring will include collection of the following information:

- Confirmation that all disturbance areas requiring active re-vegetation have been re-seeded;
- Visual estimates of:
 - Percent of total vegetative ground cover of individual plant species in two categories (grasses/forbs and shrubs), and
 - Percentage bare soil
- Presence of noxious weeds species (including density and geographical extent of populations); and
- Presence of windblow or water erosion problems that require additional measures.

Success Criteria Maintenance

Juniper Encroachment. Because juniper will be left in most of the polygons, some amount of juniper encroachment will occur in the forage polygons within the life of the Facility. A juniper treatment will be considered successful if encroachment does not exceed 10 stems per acre over a majority of the treatment area as determined by the monitoring described above. When the results of monitoring indicate that juniper encroachment has exceeded 10 stems/acre over a majority of a polygon then encroaching juniper will be cut using treatment 1. This maintenance commitment is for the duration of the Facility life pursuant to the HMP.

Revegetation and Weed Control.

The success criteria for seeding and noxious weed control will be based on qualitative observations to attempt to comply with Lake County and ODA recommended actions in each category of noxious weed. Consistent with Applicant's Revegetation and Noxious Weed Control Plan (Appendix P-3), unless otherwise instructed to use other criteria by ODA or Lake County, Applicant will consider weed control successful when State- or County-listed noxious weeds are absent or constitute less than 1 percent of vegetation otherwise dominated by native or desirable non-native species, unless the noxious weeds present are similar to pre-disturbance conditions or adjacent undisturbed areas.

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Pre-Treatment Juniper Field Survey Report

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Introduction

Obsidian Solar Center LLC (Obsidian) is applying for a site certificate from the Oregon Energy Facilities Siting Council (EFSC) to build and operate the Obsidian Solar Facility in the Fort Rock Valley of Lake County, Oregon (Facility). A condition of the site certificate will require Obsidian to mitigate for the Facility's impacts to Category 2 big game winter range habitat. Obsidian has developed a Habitat Mitigation Plan (HMP). The HMP proposes to establish a Working Lands Improvement Program (WLIP) on portions of two properties, totaling 6,534 acres in the Fort Rock Valley ([the HMP in included as Attachment P-1 to the Final Order3](#)). The total acreage enrolled in the WLIP will depend on the permanent footprint from the Facility's final design. The WLIP is two-fold: it involves habitat protection under a WLIP landowner agreement, and big game winter habitat enhancement using a juniper treatment program. The HMP identifies 5 steps to implement the juniper treatment and management program (HMP Section 3.3, page 8). Steps 1 and 2 involves completing a pre-treatment juniper (*Juniperus occidentalis*) field survey and developing a juniper treatment plan for the two properties. The purpose of this document is to present results of the juniper field survey (Step 1).

The goal of the WLIP is to provide mitigation by maintaining and improving big game winter habitat on the mitigation properties. Winter range will be maintained by establishing a WLIP agreement with the landowners. Big game winter range will be improved by providing a mosaic of vegetation associations designed to provide big game cover and forage areas across the properties. Juniper encroachment into shrub steppe habitats results in reduced forage quality and quantity due its ability to out compete shrubs and bunchgrass (Vaitkas and Eddleman 1987, Miller and Rose 1999, Miller et al. 2005, Davies et al. 2011). Forest vegetation associations are an important habitat component for wintering big game as they provide both thermal and hiding cover (Leckenby and Adams 1986, Boyce et al. 2003, Coe et al. 2018). Juniper woodlands are the primary forest habitat available during winter in the Fort Rock Valley (Coe et al. 2018). Therefore, actions under the HMP are not designed to just cut juniper, but are intended to provide quality winter habitat on the properties.

Pre-Treatment Juniper Survey

Juniper surveys were completed during the first 2 weeks of April and the second week of May, 2020 using the Obsidian habitat assessment protocol (Appendix 1) approved by Oregon Department of Energy (ODOE) in consultation with Oregon Department of Fish and Wildlife (ODFW). As directed in the habitat assessment protocol field surveys for noxious weeds were conducted while completing the juniper surveys.

Nine Peaks Ranch

Field surveys were conducted on approximately 4,595 acres in a single parcel of the Nine Peaks Ranch. Results of the juniper survey are presented in Tables 1 and 2, and Figures 1, 1a and 1b. Juniper densities shown in Table 1 were measured using one or more 100 yard X 20 yard (0.4 acre) transects per vegetation association polygon.

Soils are generally sandy to ashy loams with varying amounts of rock. Rock ranges from none in areas with gentle slopes to ridges with significant cobble or large stone. Basalt outcrops and degraded lava flows are common. Average annual precipitation is 12 inches, most of which falls as snow in the winter. The Nine Peaks parcel lies within the Paulina wildlife management unit (WMU) on big game winter range designated in the Lake County Comprehensive Land Use Plan. In addition to its importance as winter range, the Nine Peaks property is located between the Devils Garden and East Lava Field and is a significant migration corridor for mule deer moving to and from other winter areas in the Paulina and Fort Rock WMUs (Coe et. al, 2018).

The property has been managed as a working livestock operation since at least the early 1900's. Valley bottoms with sandy or ashy loam soils were converted to rye (*Secale cereale*) hay fields, then in the 1970's or 1980's those fields were seeded to crested wheatgrass (*Agropyron cristatum*). Gray rabbitbrush (*Ericameria nauseosus*) has established in the crested wheatgrass seedings. Cattle are grazed using a rest rotation system.

Past management actions or wildfire have resulted in most of the juniper stands on sandy to ashy loam soils being in phase 1 or early phase 2 condition. Pre-settlement or mixed pre-settlement/late phase 2-phase 3 stands are common and occur on cobble to rocky soils, degraded lava eruptions or rock outcrops.

Elevations range from 5200 feet on the north end of the property to 4500 feet on the south, with the majority of the property being below 4900 feet. Areas above 5000 feet elevation are ponderosa pine (*Pinus ponderosa*) forest stands with a bitterbrush (*Purshia tridentata*)/ Idaho fescue (*Festuca idahoensis*) understory. Between 5000 and 4900 feet, ponderosa pine and juniper are codominant, shrubs are bitterbrush and mountain big sagebrush (*Artemisia tridentata vasyeana*), and Idaho fescue is the dominant grass. Below 4900 feet vegetation associations are variable with areas not converted to crested wheatgrass dominated by Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) and gray rabbitbrush with a mix of native bunchgrass including: Idaho fescue, blue bunch wheatgrass (*Pseudoroegneria spicatum*), Thurbers needlegrass (*Achnatherum thurberianum*), Indian rice grass (*Achnatherum hymenoides*), squirrel tail grass (*Elymus elymoides*) and Sandberg's blue grass (*Poa sandbergii*).

No weed species of concern (Table 1, Attachment 2) were found on either property. Cheatgrass (*Bromus tectorum*), is widely distributed across both properties. Tumble mustard (*Sysimbrium altissimum*) and tansy mustard (*Descurania spp.*) are common in disturbed sites. Although these species are non-native and invasive, they are widely naturalized throughout North America and should not be a specific target of weed control on big game winter range.

Table 1. Nine Peaks Ranch, Fort Rock Valley, OR							
Characteristics of Vegetation Association Polygons Deliniated during Pre-treatment Juniper Suvey							
			Post-settlement				
		Juniper	Juniper	Dominant	Dominant		
Polygon	Acres	Phase	Stems/Ac.	Shrubs	Grasses		
1	183	PIPO/JUOC	22	PUTR/ARTRV	FEID		
2	61	PIPO/JUOC	27	PUTR/ARTRV	FEID		
3	87	PIPO	<5	PUTR/ARTRV	FEID		
4	92	1	17	ARTRW/PUTR	FEID		
5	24	2	75	ARTRW/PUTR	FEID		
6	58	2	27	ARTRW/PUTR	FEID		
7	18	2	37	ARTRW/PUTR	FEID		
8	26	late 2	40	ARTRW/ERNA	Native Mix		
9	162	1	<5	ARTRW/ERNA	Native Mix		
10	120	1	<5	ARTRW/ERNA	Native Mix		
11	132	1/early2	10 W, 20E	ARTRW/ERNA	Native Mix		
12	156	2	50	ARTRW/ERNA	Native Mix		
13	42	late 2	40	ARTRW/ERNA	Native /AGCR		
14	177	none	0	ERNA/CHVI	Native Mix		
15	149	1	20	ARTRW/ERNA	Native /AGCR		
16	16	2	42	ARTRW	Native Mix		
17	14	2	40	ARTRW	Native Mix		
18	32	early 2	30	ARTRW	Native Mix		
19	154	1	<5	ERNA/CHVI	Native /AGCR		
20	296	1	7	ERNA/ARTRW	Native /AGCR		
21	11	2	32	ARTRW	Native Mix		
22	420	2	60	ARTRW	Native Mix		
23	11	Pre	10	ARTRW	Native Mix		
24	7	Pre	10	ARTRW	Native Mix		
25	499	1/early 2	25	ARTRW	Native Mix		
26	221	1	10	ERNA/ARTRW	Native /AGCR		
27	19	1	10	ARTRW/ERNA	Native Mix		
28	63	1	10	ARTRW/ERNA	Native Mix		
29	46	Pre	35	ARTRW	Native Mix		
30	47	Lava	35	ARTRW	Native Mix		
31	757	1	10	ERNA/ARTRW	Native /AGCR		
32	34	2	52	ARTRW/ERNA	Native Mix		
33	451	early 2	17	ARTRW/ERNA	Native /AGCR		
34	8	Pre	10	ARTRW	Native Mix		
Shrub Abbreviations: ARTRT-basin big sagebrush, ARTRV-mountain big sagebrush, ARTRW- Wyoming big sagebrush,							
ERNA-Gray Rabbitbrush, CHVI-Green Rabbitbrush, PUTR-bitterbrush							
Grass Abbreviations: AGCR-crested wheatgrass, FEID-Idaho fescue							
Species in Native Mix: Idaho fescue, blue bunch wheatgrass, Thurber's needlegrass, squirrel tail grass, Sandberg's bluegrass, Indian ricegrass							

Table 2. Nine Peaks Ranch, Fort Rock Valley, OR								
Vegetation Association Polygon Comments								
Polygon	Comments							
1	Juniper mixed with PIPO - PIPO density decreases going south							
2	Juniper codominant with PIPO - substantial number of older trees both species							
3	PIPO stand with a few juniper							
4	Open JUOC/PIPO codominant stand							
5	Rocky ridge							
6	Scattered pre-settlement juniper on rock out crops							
7	Scattered pre-settlement juniper on rock out crops							
11	West leg of polygon has 10 stems/ac; East leg has 20 stems/ac							
12	Juniper distribution patchy. Pockets of late 2 and pre-settlement							
13	Mixed pre and older post settlement on very rocky soils							
17	Rock out crops with scattered pre-settlement							
18	Variable juniper density, leave for cover recruitment							
20	Areas with better soil converted to AGCR with CHNA encroaching							
	Areas with rocky soils are ARTRW with Native Mix							
21	Phase 3 on rock out crops							
22	Pre-settlement or late phase 2/phase 3 on rock outcrops							
	Areas of better soil have early phase 2 juniper @ 25 stems/ac							
23	Degraded lava outcrop							
24	Degraded lava outcrop							
25	Pockets of phase 1 throughout with ~10 stems/ac							
26	Areas with better soil converted to AGCR with CHNA encroaching							
	Areas with rocky soils are ARTRW with Native Mix							
27	Most of polygon burned in wildfire. Shrubs limited							
28	Most of polygon burned in wildfire. Pre-settlement remains on rock outcrops							
29	Swath on west end that was chained years ago phase 2 with CHNA/ARTRW							
30	Aspen clone on east end with very little juniper in aspen							
31	Areas with better soil converted to AGCR with CHNA encroaching							
	Areas with rocky soils are ARTRW with Native Mix							
32	Pre-Settlement JUOC scattered throughout							
33	Flatter areas chained years ago and seeded to AGCR, CHNA encroaching							
	Remainder of polygon ARTRW with Native bunchgrass mix.							
34	Degraded lava outcrop							

Figure 1. Pre Treatment Juniper Survey Polygons Nine Peaks Ranch, Fort Rock Valley, OR.

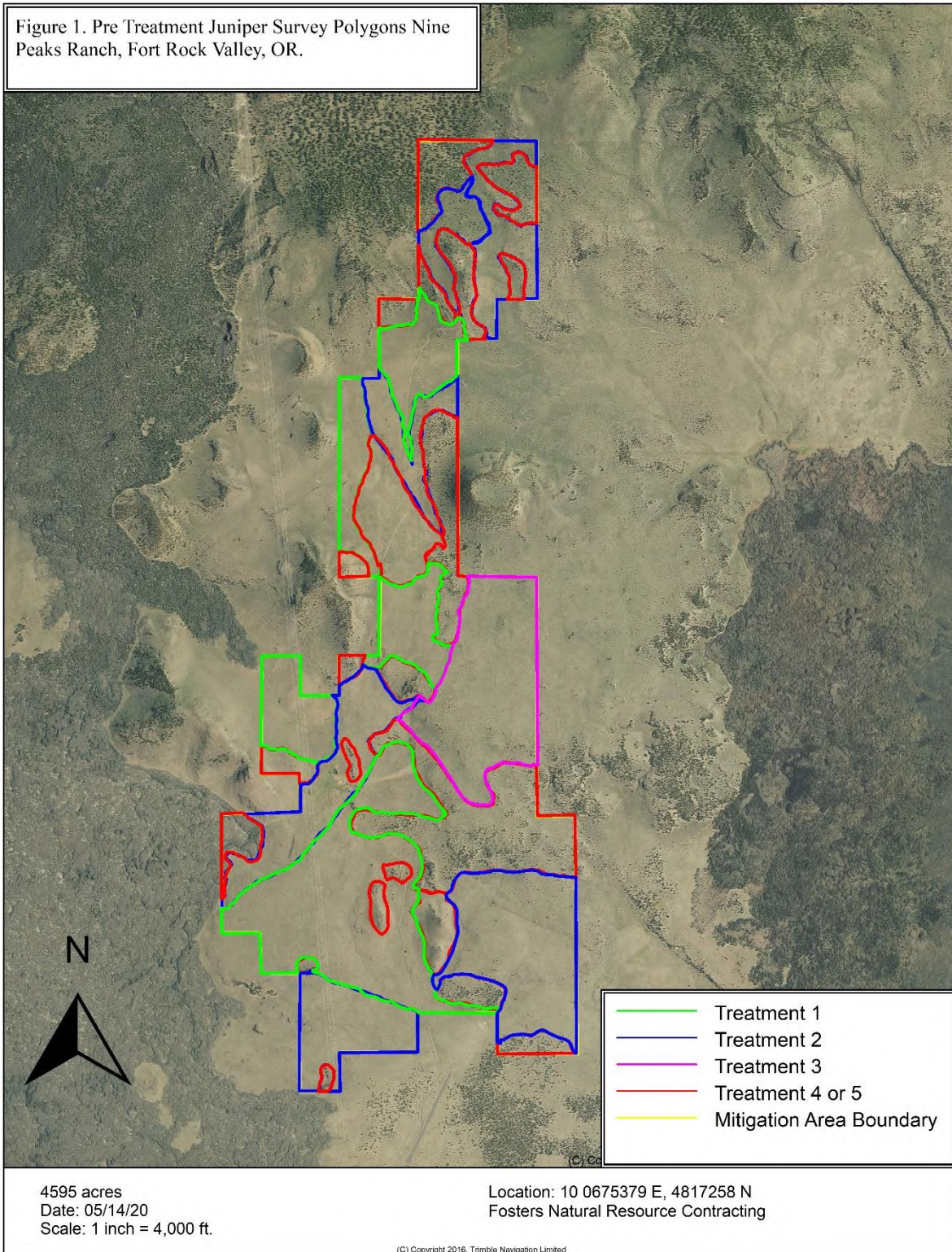


Figure 1a. Pre Treatment Juniper Survey Polygons 1-17, 25
Nine Peaks Ranch, Fort Rock Valley, OR.

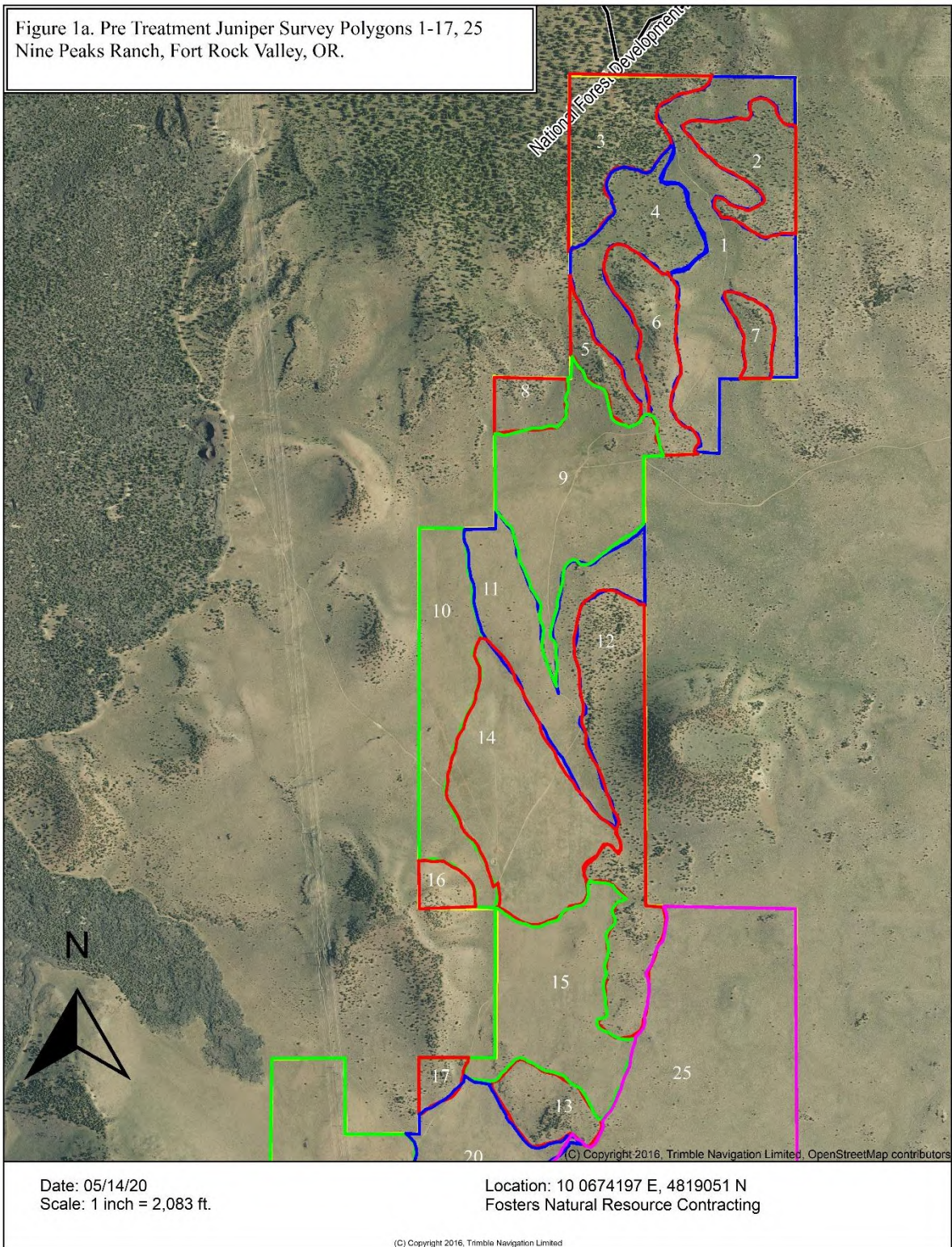
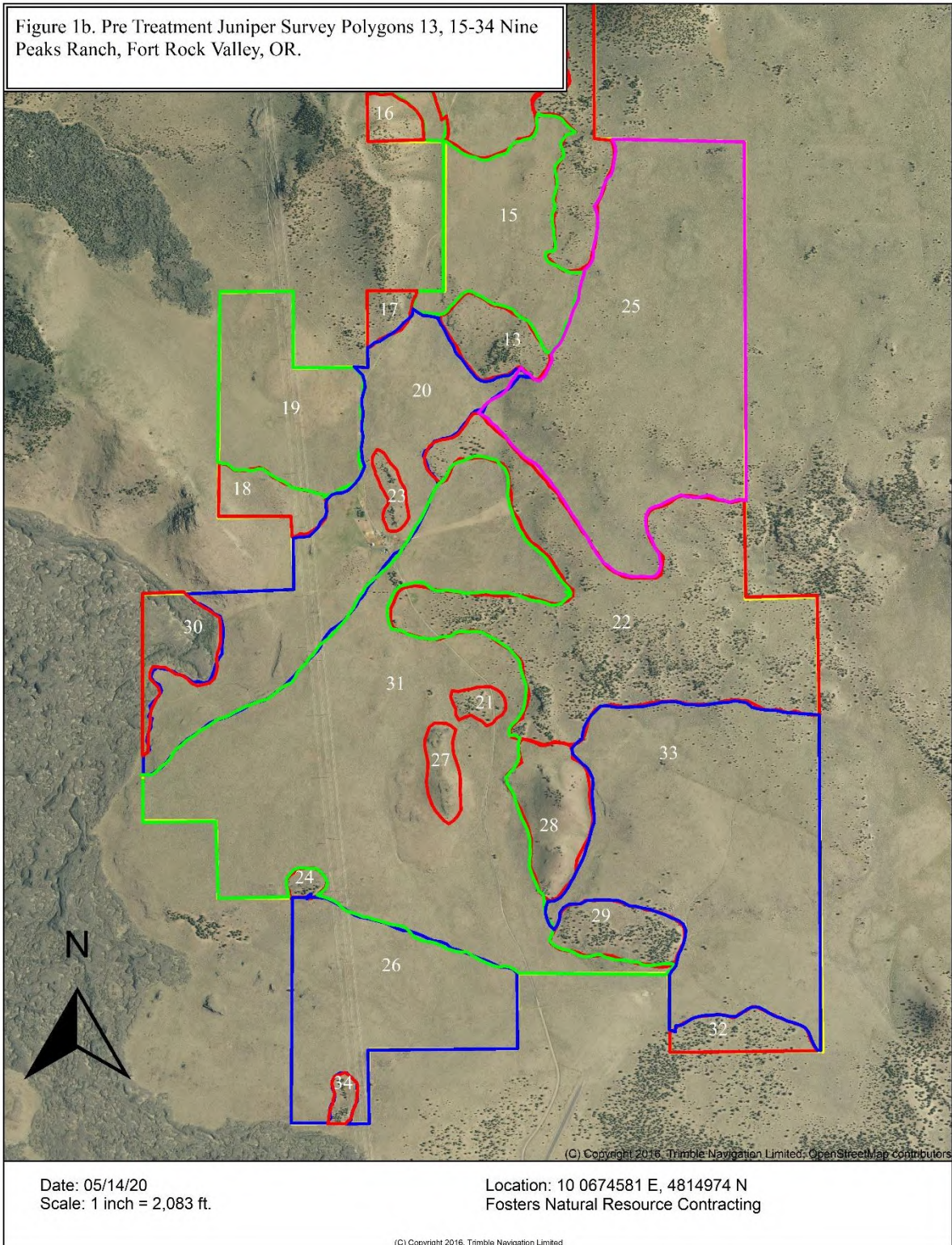


Figure 1b. Pre Treatment Juniper Survey Polygons 13, 15-34 Nine Peaks Ranch, Fort Rock Valley, OR.



Morrison Ranch

Field surveys were completed on approximately 1,939 acres in four parcels of the Morrison ranch. Results of the juniper survey are presented in Tables 3 and 4, and Figures 2 and 2a-d. Juniper densities shown in Table 3 were measured using one or more 100 yard X 20 yard (0.4 acre) transects per vegetation association polygon.

Soils are generally sandy to ashy loams with varying amounts of rock. Basalt outcrops and degraded lava flows make up a larger proportion of the Morrison mitigation area than are found on Nine Peaks Ranch. Average annual precipitation is 12 inches, most of which falls as snow in the winter. The Morrison parcels lie within the Paulina wildlife management unit (WMU) on big game winter range designated in the Lake County Comprehensive Land Use Plan.

The property has been managed as a working livestock operation since at least the early 1900's. Valley bottoms with sandy or ashy loam soils were converted to rye (*Secale cereale*) hay fields, then in the 1970's or 1980's those fields were seeded to crested wheatgrass (*Agropyron cristatum*). Gray rabbitbrush (*Ericameria nauseosus*) has established in the crested wheatgrass seedings. Cattle are grazed using a rest rotation system with the exception of the area made up of polygons 41 through 44 (Figure 2b). This area is used as a winter feed area for cattle.

Past management actions or wildfire have resulted in most of the juniper stands on sandy to ashy loam soils being in phase 1 or early phase 2 condition. Pre-settlement or mixed pre-settlement/late phase 2-phase 3 stands are common and occur on degraded lava flows or rock outcrops.

Elevations range from 4750 to 4450 feet. Dominant shrubs are Wyoming big sagebrush and gray rabbitbrush. Native bunch grasses are Idaho fescue, blue bunch wheatgrass, Thurber's needlegrass, Indian rice grass, squirrel tail grass and Sandberg's blue grass. Individual pre-settlement juniper is scattered throughout all vegetation associations that have not been converted to crested wheatgrass.

No weed species of concern (Table 1, Attachment 2) were found on either property. Cheatgrass (*Bromus tectorum*), is widely distributed across both properties. Tumble mustard (*Sysimbrium altissimum*) and tansy mustard (*Descurania spp.*) are common in disturbed sites. Although these species are non-native and invasive, they are widely naturalized throughout North America and should not be a specific target of weed control on big game winter range.

Table 3. Morrison Ranch, Fort Rock Valley, OR.							
Characteristics of Vegetation Association Polygons Delinated during Pre-treatment Juniper Suvey							
			Post-settlement				
		Juniper	Juniper	Dominant	Dominant		
Polygon	Acres	Phase	Stems/Ac.	Shrubs	Grasses		
35	12						
36	29	early 2	50	ERNA	AGCR		
37b	19	late 2/3	10	ERNA/ARTRW	FEID/AGCR		
38	44	Pre	10	ARTRW/ERNA	Native Mix		
39b	22	late 2/3	27	ARTRW/ERNA	Native Mix		
40b	104	1	12	ERNA/CHVI	AGCR		
41	39	Pre	10	ERNA/CHVI	Native Mix		
42	99	1	<5	ERNA/CHVI	Native Mix		
43	106	Pre	5	ERNA/CHVI	Native Mix		
44	233	Pre	<5	ERNA/CHVI	Native Mix		
45	140	Pre	25	ARTRW/ARTRT	Native Mix		
46	30	2	17	ARTRW/ERNA	Native Mix		
47	111	1	12	ARTRW/ERNA	Native/AGCR		
48	34	Pre	<5	ERNA/ARTRW	Native/AGCR		
49	48	1	15	ERNA/CHVI	AGCR		
50	103	1	20	ERNA/ARTRW	AGCR		
51	174	1	<5	ERNA/ARTRW	AGCR		
52	20	1	15	ARTRW/ERNA	Native Mix		
53	24	1	22	ARTRW/ERNA	FEID		
54	7	1	20	ARTRW/ERNA	FEID		
55	4	1	15	ARTRW/ERNA	Native Mix		
56	28	1	15	ARTRW/ERNA	Native Mix		
57	5	Pre	17	ERNA/ARTRW	Native Mix		
58	50	Pre	17	ERNA/ARTRW	Native Mix		
59	10	Pre	15	ERNA/ARTRW	Native Mix		
60	179	Pre	5	ERNA/ARTRW	Native Mix		
61	208	Pre	27	ARTRW/ERNA	Native Mix		
62	46	early 2	17	ARTRW/ERNA	Native Mix		
63	44	1	7	ARTRW/ERNA	Native Mix		
64	27	early 2	55	ARTRW/ERNA	Native Mix		
Shrub Abbreviations: ARTRT-basin big sagebrush, ARTRV-mountain big sagebrush, ARTRW- Wyoming big sagebrush,							
ERNA-Gray Rabbitbrush, CHVI-Green Rabbitbrush							
Grass Abbreviations: AGCR-crested wheatgrass, FEID-Idaho fescue							
Species in Native Mix: Idaho fescue, blue bunch wheatgrass, Thurber's needlegrass, squirrel tail grass, Sandberg's bluegrass, Indian ricegrass							

Table 4. Morrison Ranch, Fort Rock Valley, OR.									
Vegetation Association Polygon Comments									
Polygon	Comments								
35	Cinder Pit								
37b	Scattered pre-settlement throughout. Probably was a pre-settlement stand but ~ 100 years ago most trees cut - being replaced with older Post-settlement trees								
	Polygon 37a is 22 acres								
38	Post settlement trees are 10/ac of trees ~80 years old and <5/ac of trees ~20 years old								
39b	Scattered pre-settlement throughout. Polygon 39a is 4 acres								
40b	Juniper distribution patchy- large areas of <5 stems/ac. Polygon 40a is 60 acres.								
41	Within winter feed lot. Shrubs very sparse.								
42	Within winter feed lot. Shrubs very sparse.								
43	Denser stand of Pre-settlement and old Post-settlement trees. JUOC <40 years are <5/ac.								
	Within winter feed lot. Shrubs very sparse.								
44	Sparse stand of pre-settlement. Post-settlement trees ~ 20 yrs old and <5/ac								
45	A portion of the area west of the road was an old feed lot. In this area post settlement <5/ac. Shrubs CHNA/CHVI.								
46	Scattered Pre-settlement throughout.								
47	Scattered Pre-settlement throughout.								
49	Scattered Pre-settlement throughout.								
50	Old rye hay field converted to AGCR ~ 40 years ago								
51	Old rye hay field converted to AGCR ~ 40 years ago								
52	Ward Well #1 on tablet pictures								
53	Shallow draw bottom between degrading lava flows. Ward Well #4 on tablet pictures								
54	Shallow draw bottom between degrading lava flows.								
55	Better soil inclusion in degraded lava flow								
56	Shallow draw between degraded lava flows. Juniper density increases south to north								
57	Degraded lava. Inclusions of sandy loam soils which have the most post settlement								
58	Degraded lava. Inclusions of sandy loam soils which have the most post settlement								
59	Degraded lava. Inclusions of sandy loam soils which have the most post settlement								
60	Degraded lava. Inclusions of sandy loam soils which have the most post settlement								
62	Scattered Pre-settlement throughout.								
63	Scattered Pre-settlement throughout.								
64	Scattered Pre-settlement throughout.								

Figure 2. Pre Treatment Juniper Survey Polygons
Morrison Ranch, Fort Rock Valley, OR.

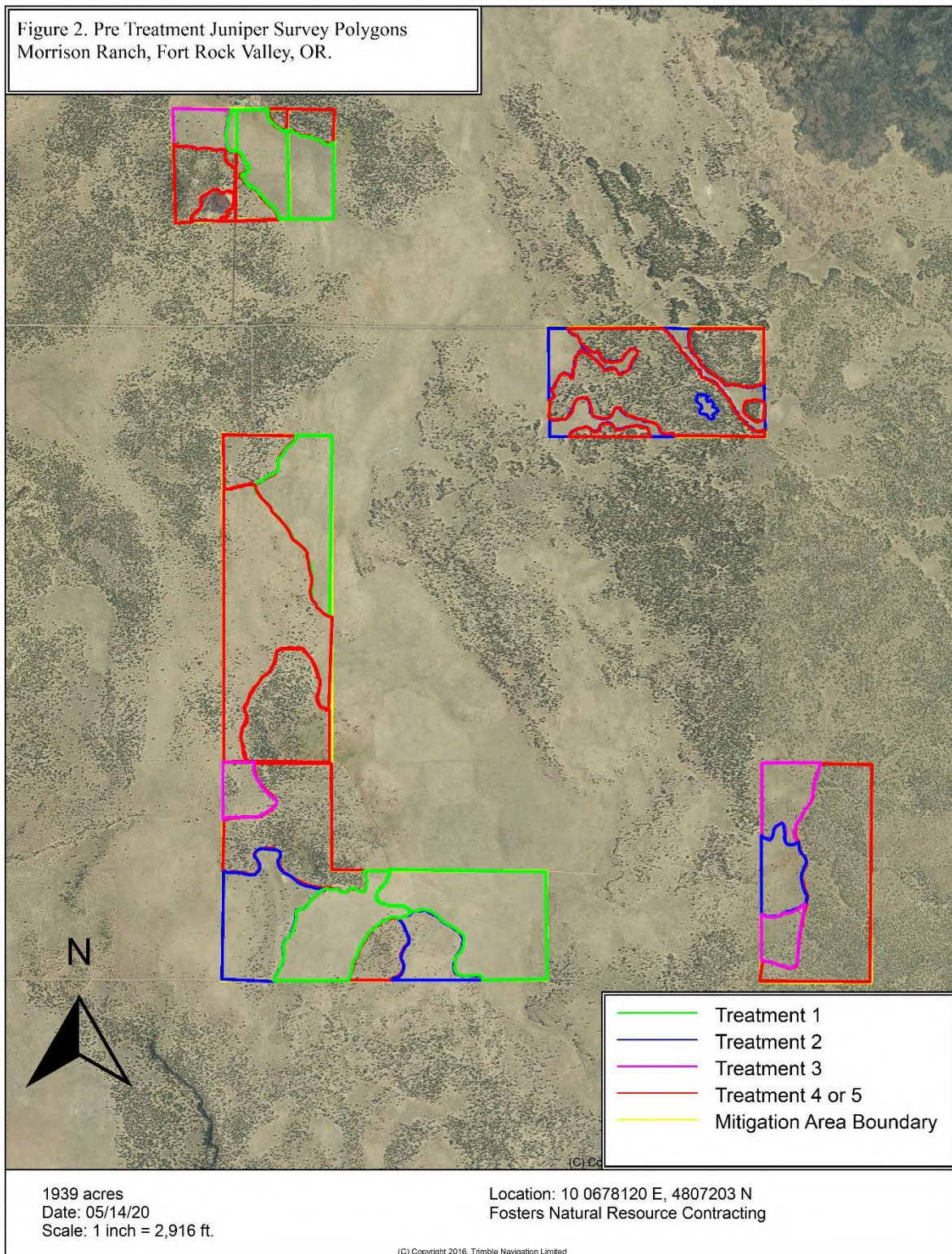


Figure 2a. Pre Treatment Juniper Survey Polygons 35-40
Morrison Ranch, Fort Rock Valley, OR.

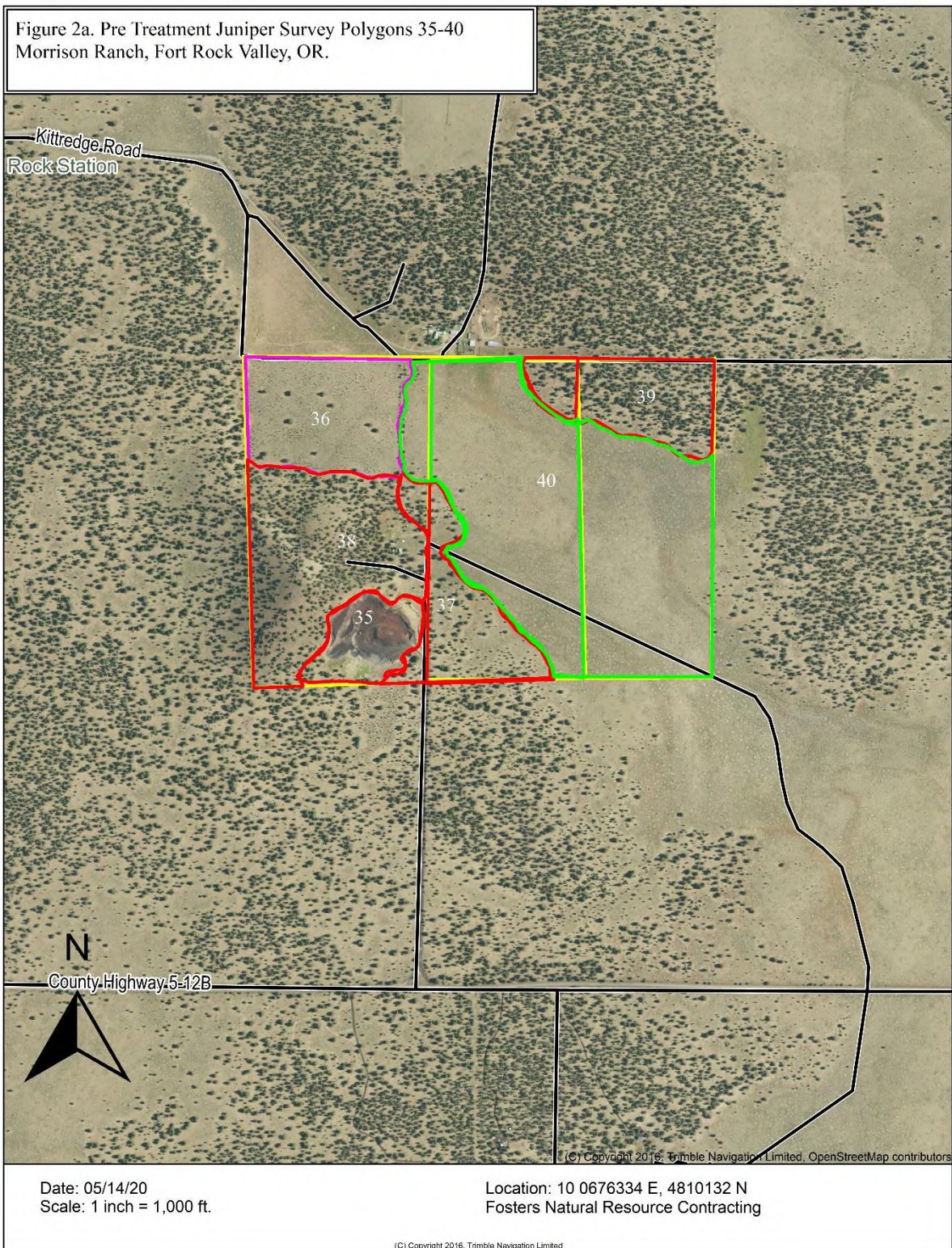


Figure 2b. Pre Treatment Juniper Survey Polygons 41-51
Morrison Ranch, Fort Rock Valley, OR.

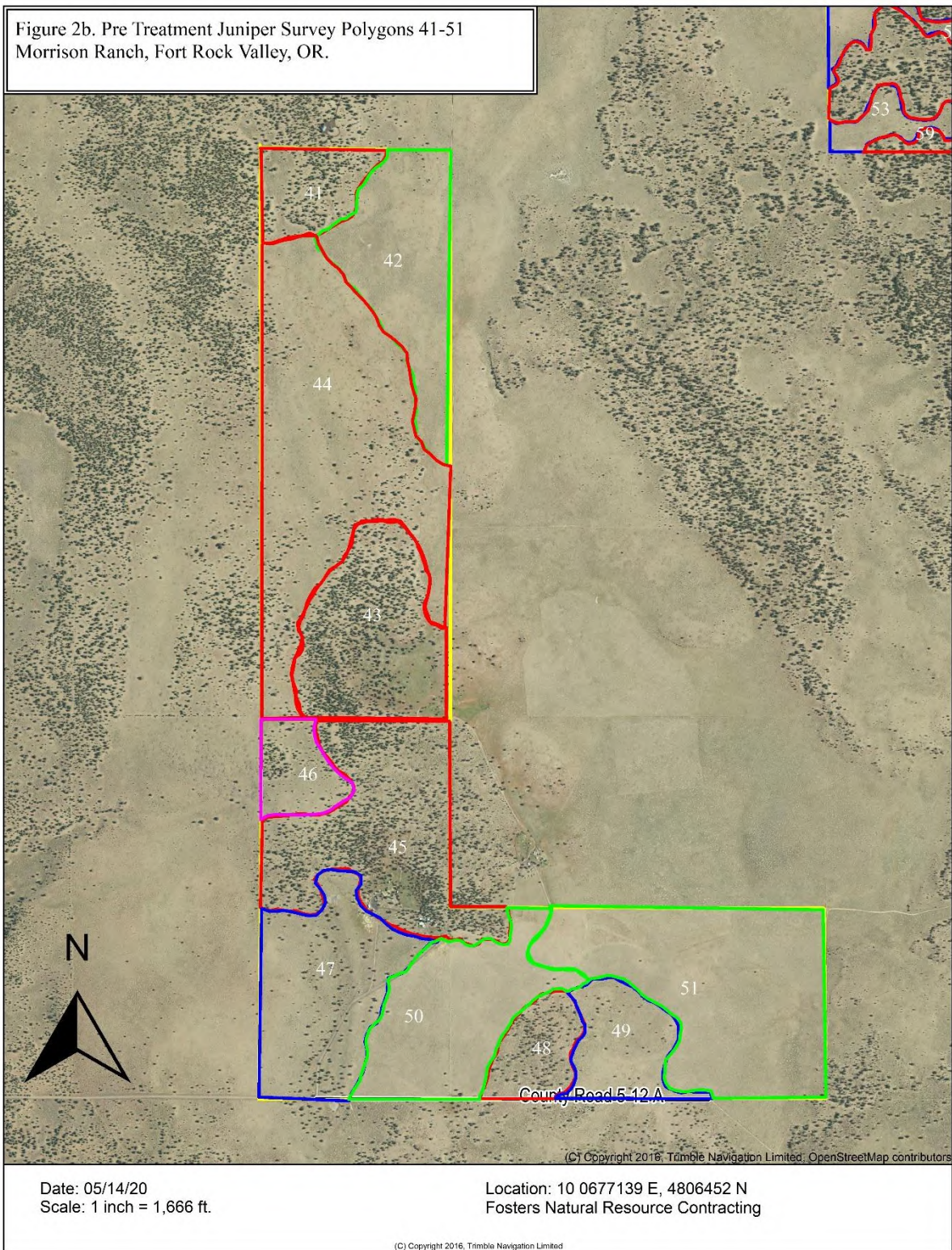


Figure 2c. Pre Treatment Juniper Survey Polygons 52-60
Morrison Ranch, Fort Rock Valley, OR.

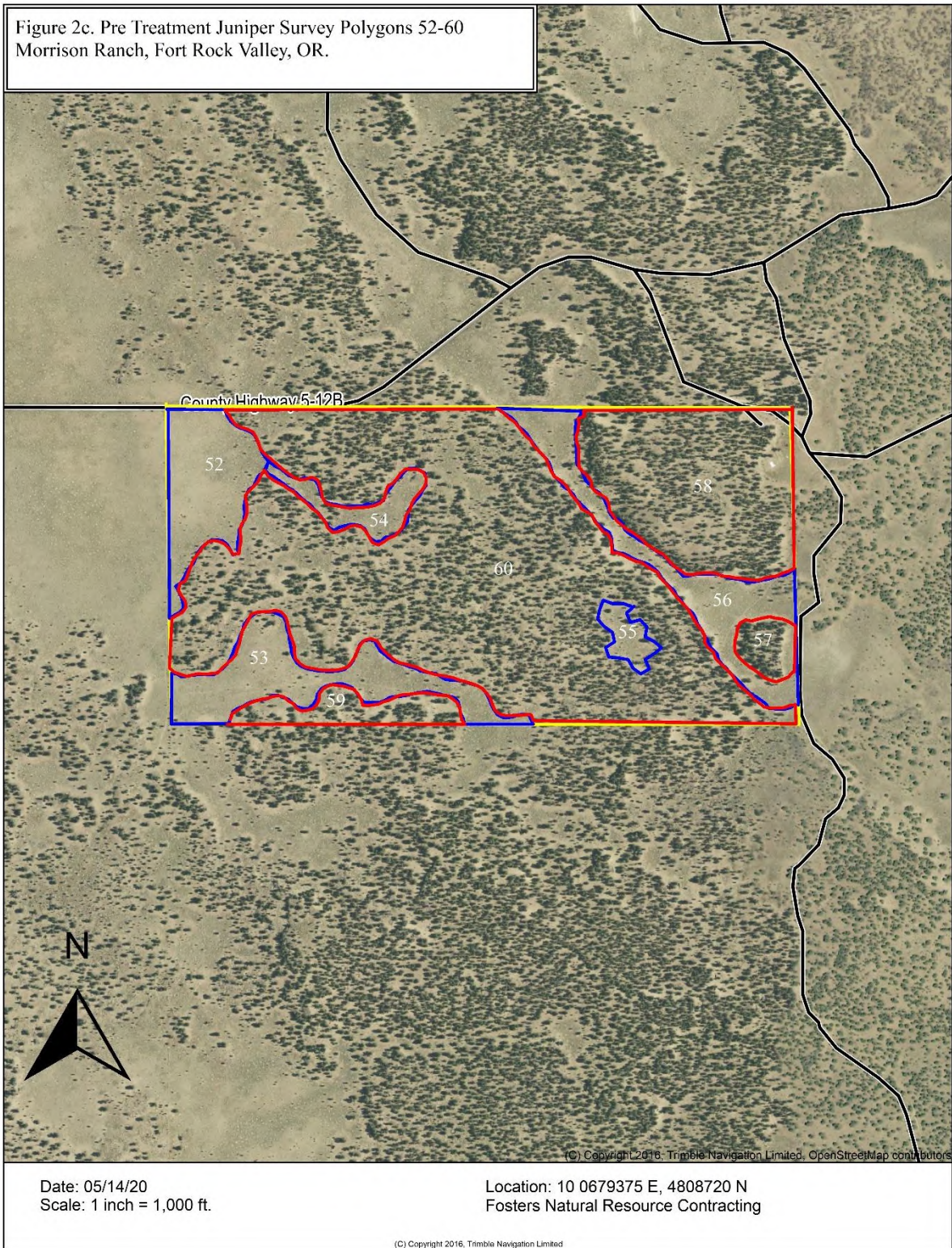
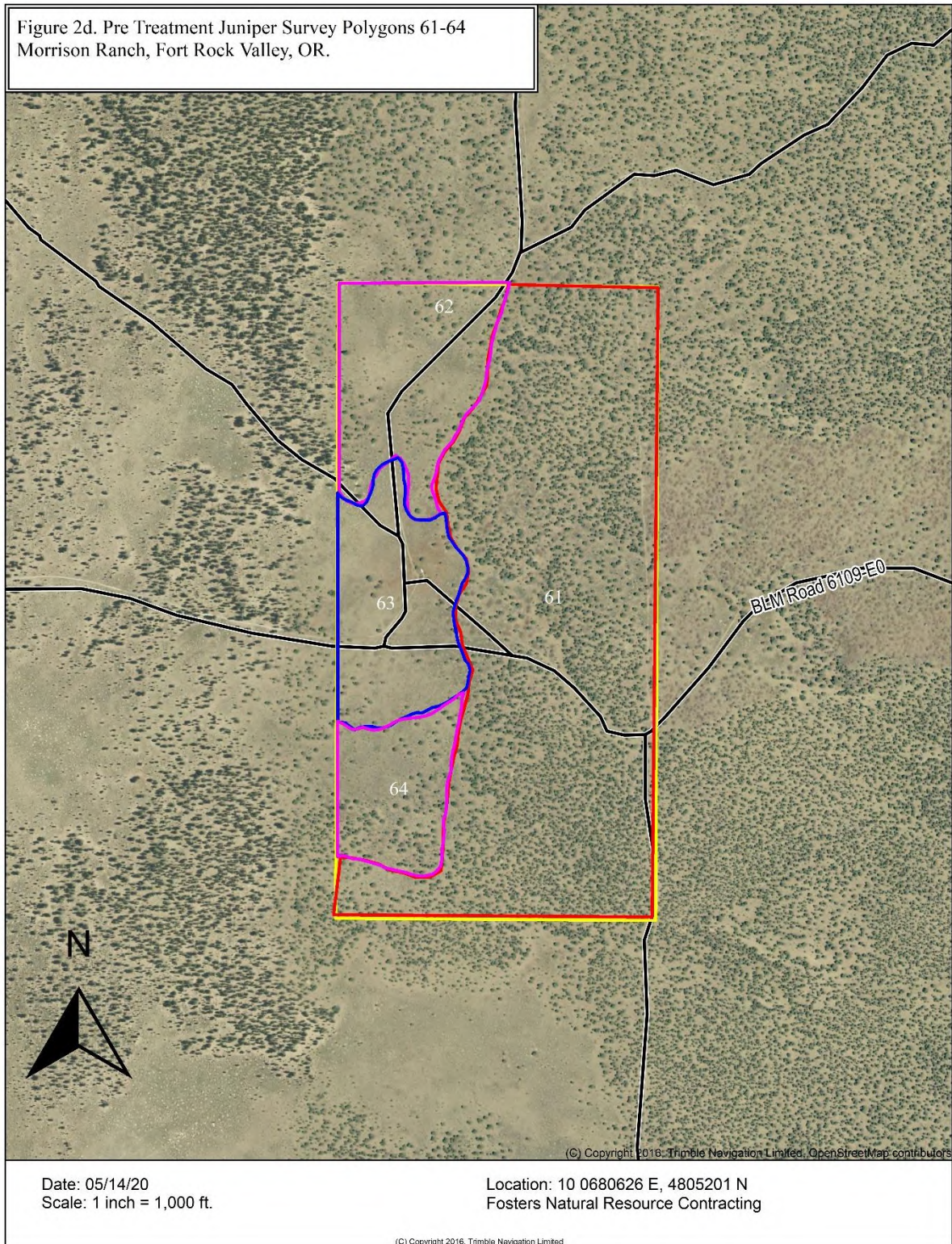


Figure 2d. Pre Treatment Juniper Survey Polygons 61-64
Morrison Ranch, Fort Rock Valley, OR.



Conclusions

In their existing condition the mitigation properties have a better mosaic of forage and cover areas for big game winter range than what is available on the Facility. Vegetation associations on the Facility are 95% sagebrush shrubland and the remaining 5% does not include forest vegetation associations. The mitigation properties currently have a forage:cover ratio of 62:38 (Nine Peaks 70:30, Morrison 45:55). However, juniper encroachment into the forage areas, if left unchecked will reduce forage quality and quantity. Juniper treatments in the mitigation area are designed to reduce juniper encroachment in sagebrush shrubland vegetation associations, and recruit or protect cover values in the forest vegetation associations which will maintain and improve habitat values for wintering big game.

Literature Cited

- Boyce, M.S., M.G. Turner, J. Fryxell, P. Turchin. 2003. Scale and heterogeneity in habitat selection by elk in Yellowstone National Park. *EcoScience*. 10(4), 421-431.
- Coe, P.K., D.A. Clark, R.M. Nelson, S.C. Gregory, J.B. Cupples, M.J. Hedrick, B.K. Johnson, D.H. Jackson. 2018. Multiscale models of habitat use by mule deer in winter. *J. Wildl. Manage.* 10.1002/jwmg.21484.
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Appendix 2

WLIP Site Habitat Assessment Protocol

Prepared For:

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Prepared By:

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Introduction

Obsidian Solar Center LLC (Obsidian) is applying for a Site Certificate from the Oregon Energy Facilities Siting Council to build and operate the Obsidian Solar Facility in the Fort Rock Valley of Lake County, Oregon. A condition of the certificate will require Obsidian to mitigate for the facility's impacts to Category 2 big game winter range habitat and they have submitted a draft Habitat Mitigation Plan (HMP) for review and approval ([Final Order Attachment P-1](#)). The HMP proposes establishment of a Working Lands Improvement Program (WLIP) on two properties totaling 6,534 acres in the Fort Rock Valley (HMP [Attachment 3 Appendix 1](#)). The HMP identifies 5 steps to establish the WLIP (HMP Section 3.3, page 8). The purpose of this document is to describe the methods to complete a general habitat assessment of big game winter range and a pre-treatment inventory of juniper stands and weeds on the WLIP properties.

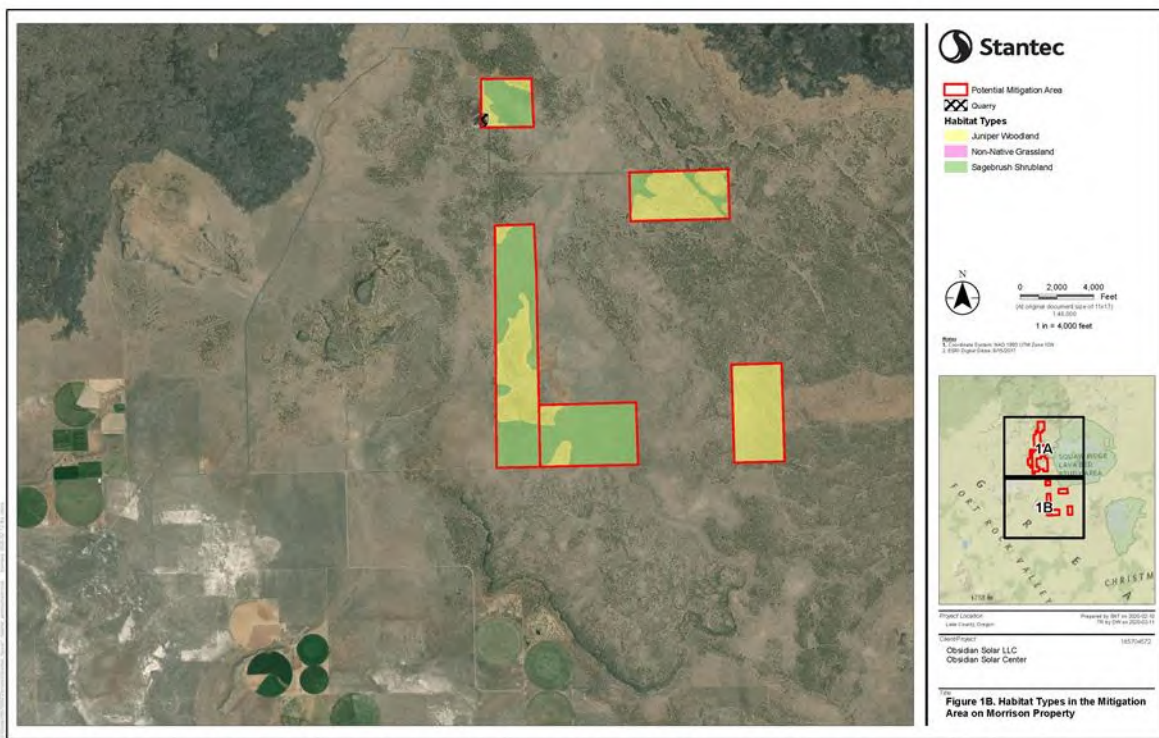
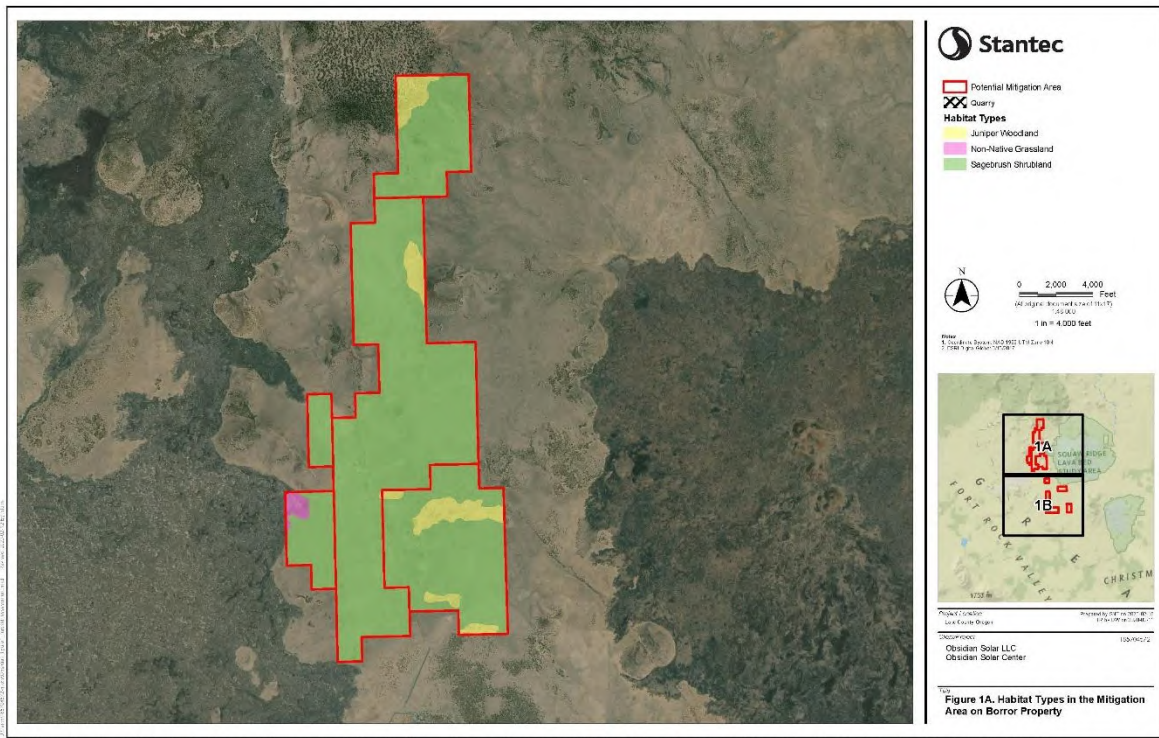
Habitat Assessment Protocol

Figures 1a and 1b from the HMP ([Final Order Attachment P-1](#)) identifies juniper woodland, non-native grassland and sagebrush shrubland as the vegetative types on the WLIP properties. It is very difficult to differentiate grass and shrub species from a desk top classification using photo imagery. The purpose of the habitat assessment is to better define plant associations and delineate their boundaries. The assessment will focus on forage and cover conditions for big game species, specifically mule deer (*Odocoileus hemionus*) and rocky mountain elk (*Cervus elaphus nelsoni*), by walking variable width transects throughout the 6,534 acres within the various plant associations to determine species present and vegetative condition. Transect width needs to be determined by the vegetative condition present at the time of inventory (e.g. delineating the boundary of a noxious weed infestation will require substantially tighter transect lines than determining the size and condition of a crested wheatgrass seeding), which will be conducted in Spring (April – May). The habitat assessment may be conducted in Summer or Fall, if completed by individuals experienced in plant identification when desiccated.

A biological assessment (Obsidian Solar, Biological Assessment, 2018 Unpubl. Report) of the solar development properties determined the primary impact to big game winter habitat was loss of forage. The primary forage species available in the Fort Rock Valley are sage brush, bitterbrush and perennial forbs for deer, and those species plus native and non-native grass for elk. Coe et al. (2017) reported that juniper stands are selected for winter habitat by deer and numerous studies have shown the importance of winter cover for elk. Cover availability will be determined during the juniper inventory.

Assessment of the non-native grassland association will identify: Dominate species and condition of grass, and perennial forbs. Dominate species and condition of shrubs (if any). Level of juniper encroachment. Assessment of the sagebrush shrubland association will identify: Dominate species and condition of shrubs. Level of juniper encroachment. Presence and species

of native grasses and forbs. Boundaries of vegetation associations will be delineated using GPS and mapped.



Juniper Inventory

Juniper stands will be classified to Phase. Age of juniper within the stands will be defined as either pre or post settlement (Miller et al., 2007). Below is the juniper Phase classification which will be used.

Phase 1 stands are defined as having post-settlement juniper that are either not abundant or old enough to compete with shrubs as indicated by the majority of the shrubs in the stand being robust with few or no dead limbs. Perennial herbaceous vegetation is abundant and bare soil is > 50%

Phase 2 stands have post-settlement juniper that are abundant and old enough to impact shrub growth, and shrub or herbaceous species establishment, which usually results in greater than 50% bare soil. Phase 2 stands are further defined as being early or late: Shrubs in early Phase 2 stands are still relatively abundant but dead limbs within individual plants are common. Skeletons of dead shrubs are common throughout the stand and seedling shrubs are uncommon. Shrubs in late Phase 2 stands are common but there are more dead than live limbs within individual plants. Skeletons of dead shrubs are common throughout the stand and seedling shrubs are absent or restricted to a few individual plants.

Phase 3 stands have pre and/or post-settlement juniper that are abundant and old enough to have out competed most of the shrubs in the understory. Shrubs remaining are stunted with few live limbs and bare soil usually exceeds 70%, unless nonnative annual grasses have encroached into the stand. Skeletons of dead shrubs are generally uncommon because they have already broken down.

Pre-settlement juniper are older than 200 years and established prior to or at the approximate time of European settlement of the western U.S. Within the Fort Rock Valley, they occur as individual trees within a younger stand or as distinct stands of juniper dominated by pre-settlement trees.

Boundaries of juniper stands will be delineated using GPS and mapped. If individual pre-settlement juniper trees are found their location will be recorded so they can be retained in any scheduled treatment.

Noxious Weed Inventory

A noxious weed inventory will be conducted on the WLIP properties. All disturbed sites, roads and areas near water will be surveyed for noxious weeds (Table 1), medusa head rye (*Taeniatherum caput-medusae*) and ventenata (*Ventenata dubia*). The location and boundaries of any infestations found will be recorded using GPS and mapped. Additionally, the location and boundaries of all infestation found during the habitat assessment and juniper inventory will be recorded using GPS and mapped, (Bartz, 2006).

Table 1: Weed Species of Concern

Weed Species Common Name	Scientific Name	Threat Level
Canada Thistle	<i>Cirsium arvense</i>	3
Common Reed	<i>Phragmites australis</i> , ssp. <i>Australis</i>	0
Cutleaf teasel	<i>Dipsacus Laciniatus</i>	1
Dalmatian toadflax	<i>Linaria dalmatica</i>	2
Diffuse knapweed	<i>Centaurea diffusa</i>	1
Dyer's Woad	<i>Isatis tinctoria</i>	3
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	0
Field Bindweed	<i>Convolvulus arvensis</i>	1
Hoary Cress (whitetop)	<i>Lepidium draba</i> , <i>Lepidium et. Al</i>	2
Kochia	<i>Kochia scoparia</i>	3
Leafy Spurge	<i>Euphorbia esula</i>	0
Mediterranean sage	<i>Salvia aethiopis</i>	3
Medusahead rye	<i>Taeniatherum caput-medusae</i>	3
Musk thistle	<i>Carduus nutans</i>	2
Myrtle Spurge	<i>Euphorbia myrsinites</i>	2
Perennial Pepperweed	<i>Lipidium latifolium</i>	1
Puncturevine	<i>Tribulus terrestris</i>	2
Purple loosestrife	<i>Lythrum salicari</i>	1
Rush Skeletonweed	<i>Chondrilla juncea</i>	0
Russian knapweed	<i>Acroptilon repens</i>	1
Saltceder	<i>Tamarix ramosissima</i>	1
Scotch broom	<i>Cytisus scoparius</i>	0
Scotch thistle	<i>Onopordum acanthium</i>	3
Spotted Knapweed	<i>Centaurea stoebe (c.maculosa)</i>	2
Spinny Cocklebur	<i>Xanthium spinosum</i>	3
Summer Pheasant eye	<i>Adonis vernailis</i>	2
Sulfur cinquefoil	<i>Potentilla recta</i>	2
Yellow Starthistle	<i>Centaurea solstitialis</i>	1
Yellow Toadflax	<i>Linaria vulgaris</i>	3

Threat key

- 0 Watch For
- 1 Establishing
- 2 Controllable
- 3 Widespread
- x Not detected

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~~Attachment 1~~

~~Obsidian Solar Center Habitat Mitigation Plan
(Provided Under Separate Attachment)~~

~~Attachment 2~~

~~Obsidian Solar Center
2018 Habitat Assessment and Biological Resources Field Report
(Provided Under Separate Attachment)~~

Attachment 3
Supplemental Evidence for Success of Juniper Removal

- Boyce, M.S., M.G. Turner, J. Fryxell, P. Turchin. 2003. Scale and heterogeneity in habitat selection by elk in Yellowstone National Park. *EcoScience*. 10(4), 421-431.
- Coe, P.K., D.A. Clark, R.M. Nelson, S.C. Gregory, J.B. Cupples, M.J. Hedrick, B.K. Johnson, D.H. Jackson. 2018. Multiscale models of habitat use by mule deer in winter. *J. Wildl. Manage.* 10.1002/jwmg.21484.
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Juniper Phase Mapping Technical

To:	Michelle Slater and Laurie Hutchinson	From:	Ilja Nieuwenhuizen
	Obsidian Solar Center LLC		Stantec Consulting Services Inc
File:	obsidian_juniperphasesmemo_01162020	Date:	January 16, 2020

Reference: Preliminary Juniper Woodland Succession Phases

Stantec Consulting Services Inc. (Stantec) prepared a preliminary map of juniper woodland succession phases within the approximately 22,722-acre Working Lands Improvement Program area (WLIP area) for the Obsidian Solar Center Project. Stantec also provided general guidance for selecting a mitigation site within the WLIP area for western juniper (*Juniperus occidentalis*) removal. The map and guidance are based on desktop analysis only; no field visit was conducted as part of this effort.

Stantec used aerial imagery and guidance provided in *Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions* (Miller et al. 2007) to delineate the program area into three phases of juniper succession. The delineations are estimates based on a review of aerial imagery. A summary of the phase characteristics is provided below and a figure showing the WLIP area and the three phases is attached to this letter.

Phase 1 (13,554 acres): Early woodland succession, with the tree canopy open and actively expanding. The tree canopy cover is less than 10 percent and the shrub layer is intact.

Phase 2 (3,935 acres): Mid woodland succession, with the tree canopy actively expanding. The tree canopy cover is 10 to 30 percent, and the shrub layer is nearly intact to significant thinning.

Phase 3 (3,905 acres): Late woodland succession, with the tree canopy expansion nearly stable. The tree canopy cover is more than 30 percent and the shrub layer is more than 75% dead or absent.

A 1,328-acre portion of the WLIP area does not occur in the three juniper succession phases because juniper trees are not present or present only in very small numbers or the area is unsuitable for juniper mitigation. Sagebrush shrubland habitat totals 1,168 acres in the WLIP area. Stantec classified this habitat based on aerial photography review and our familiarity with the landscape. We presume big sagebrush (*Artemisia tridentata* ssp. *tridentata*) is a major component of the sagebrush shrubland, as well as other shrubs commonly associated with big sagebrush, including other sagebrush species, rubber rabbitbrush (*Ericameria nauseosa*), and antelope brush (*Purshia tridentata*). Based on aerial imagery review, it appears no juniper trees are present in the mapped sagebrush shrubland habitat; however, a field review would be required to confirm their absence.

Lava beds compose 148 acres of the WLIP area and are likely not suitable for mitigation purposes because of the low percent cover of understory species and the rocky substrate. According to Miller et al. (2007), sites with low percent cover of understory species typically do not respond well to juniper removal and are not prime sites for mitigation. A small quarry (approximately 12 acres) is also present in the WLIP area, as seen on aerial photography.

January 16, 2020

Michelle Slater and Laurie Hutchinson

Page 2 of 2

Reference: Preliminary Juniper Woodland Succession Phases

Stantec Consulting Services Inc.



Sarah Tona

Associate Biologist

Phone: 530 222 5347 x136

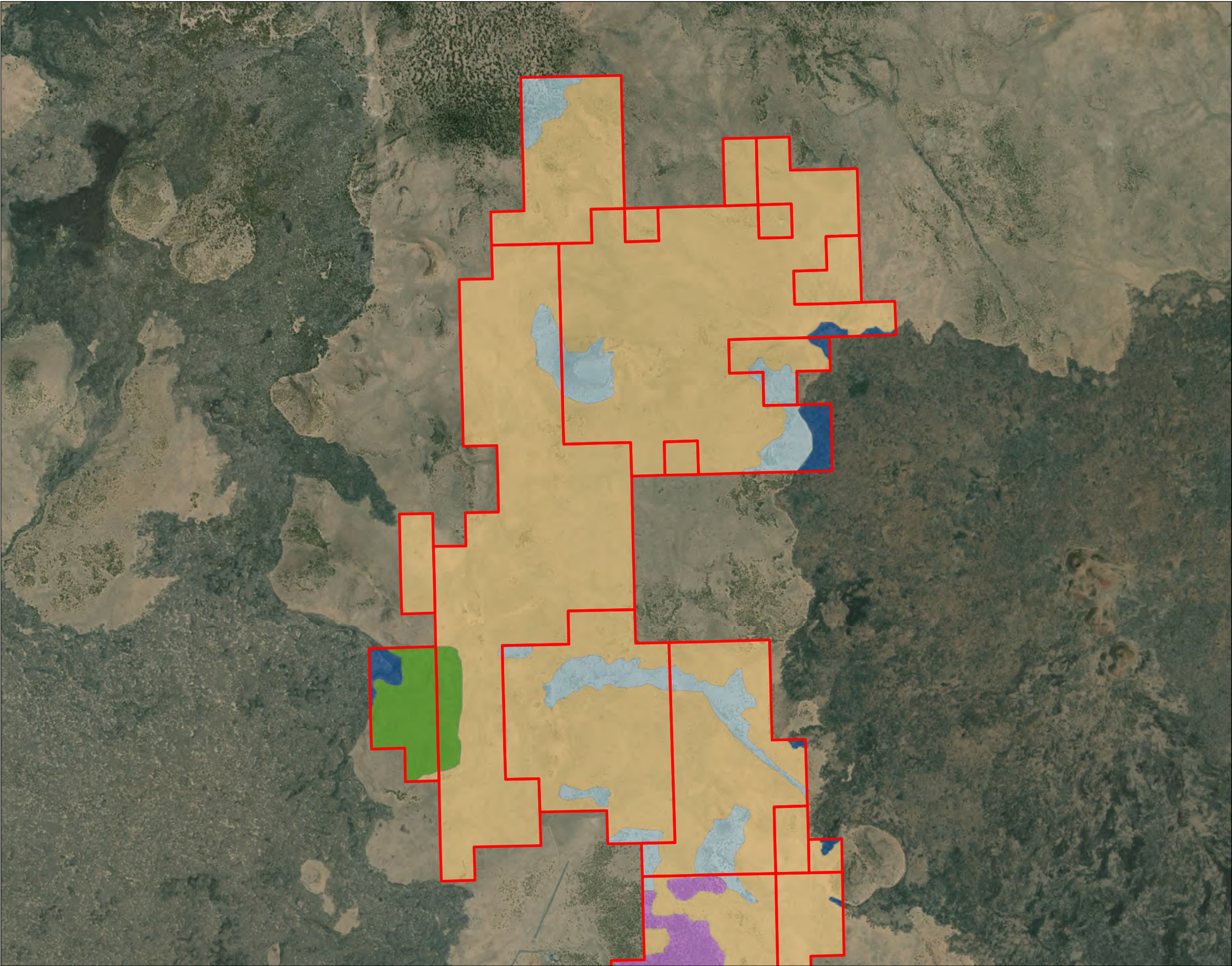
sarah.tona@stantec.com

Attachment: Preliminary Juniper Woodland Succession Phases Map.

Reference

Miller, R.F., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2007. Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions: U.S. Geological Circular 1321, 61 p.

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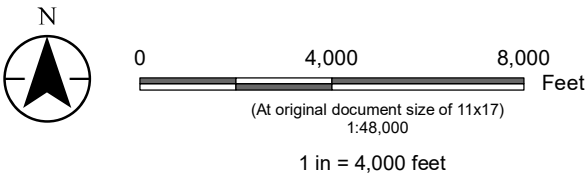


- Working Lands Improvement Program (WLIP) Area
- Non-WLIP Area
- Lava Bed
- Quarry
- Sagebrush Shrubland

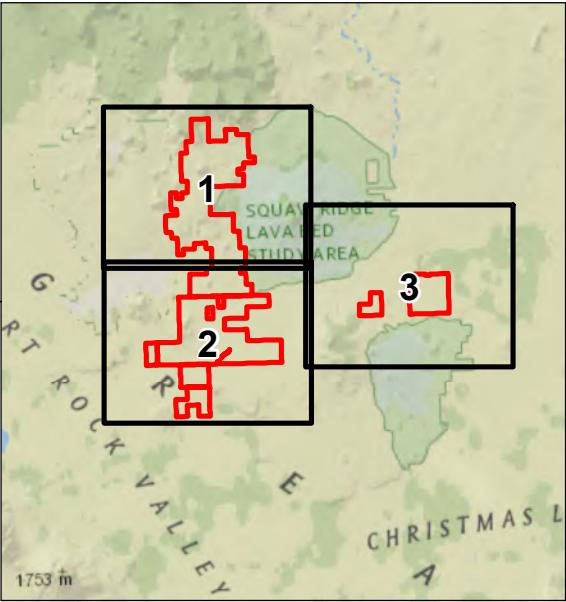
Juniper Woodland Succession Phases

- Phase 1 (Juniper Subordinate)
- Phase 2 (Juniper and Shrubs Co-Dominant)
- Phase 3 (Juniper Dominant)

Note: mapping based on desktop interpretation of aerial imagery



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. ESRI Digital Globe: 8/15/2017
3. Woodland succession phases follow guidance provided in "Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions" (Miller et al. 2007).



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Lake County, Oregon

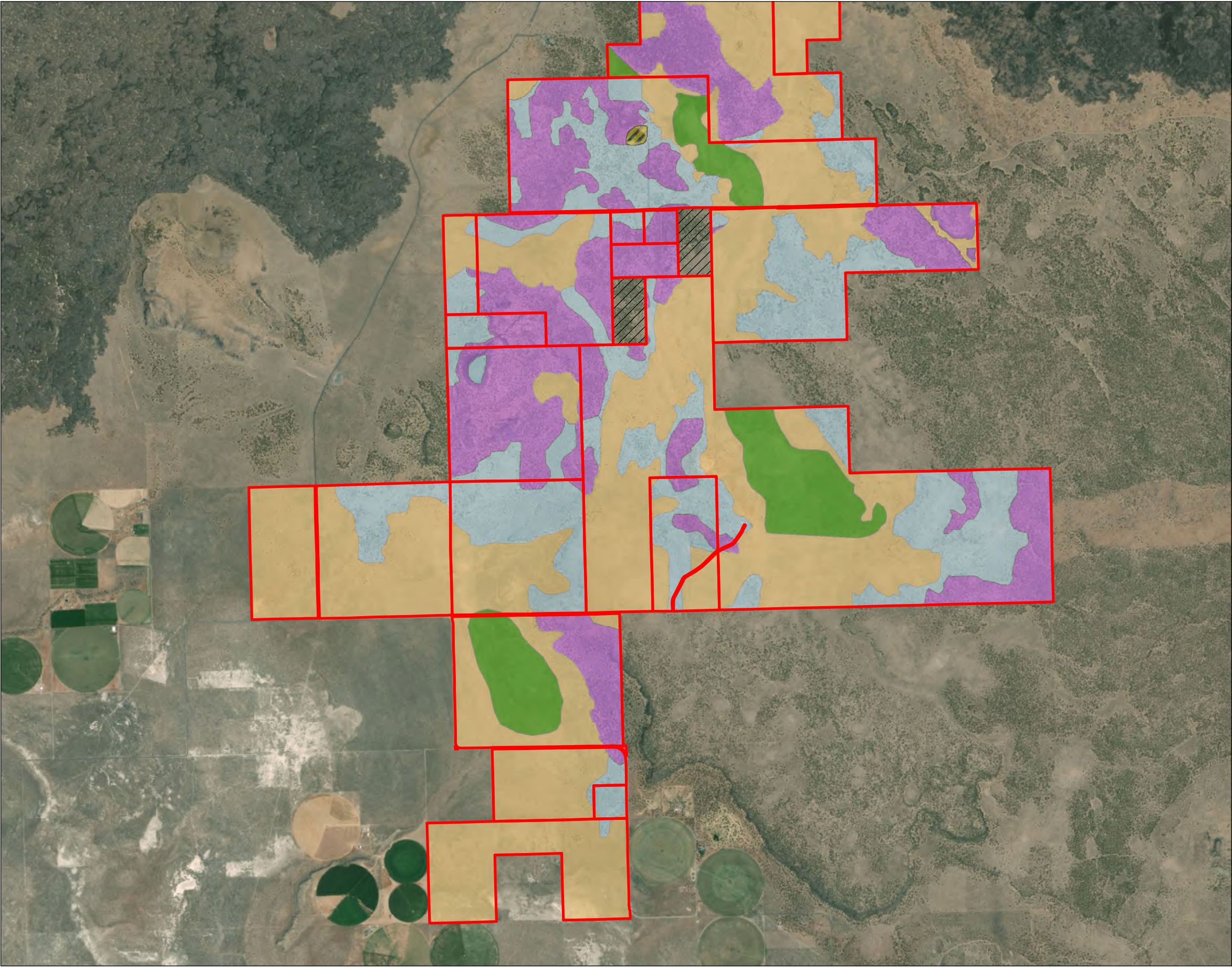
Prepared by SNT on 2020-01-16
TR by DW on 2020-01-16

Client/Project
Obsidian Solar LLC
Obsidian Solar Center

185704572 REVA

Title
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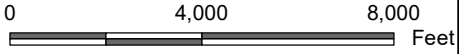


- Working Lands Improvement Program (WLIP) Area
- Non-WLIP Area
- Lava Bed
- Quarry
- Sagebrush Shrubland

Juniper Woodland Succession Phases

- Phase 1 (Juniper Subordinate)
- Phase 2 (Juniper and Shrubs Co-Dominant)
- Phase 3 (Juniper Dominant)

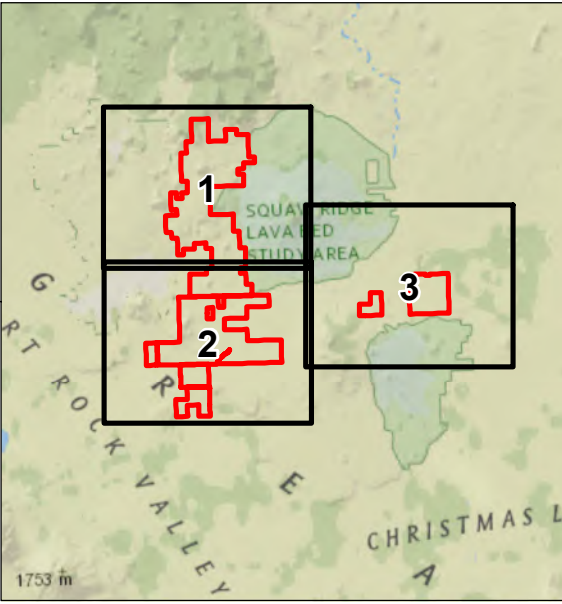
Note: mapping based on desktop interpretation of aerial imagery



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- Notes**
- 1. Coordinate System: NAD 1983 UTM Zone 10N
 - 2. ESRI Digital Globe: 8/15/2017
 - 3. Woodland succession phases follow guidance provided in "Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions" (Miller et al. 2007).



Project Location
Lake County, Oregon

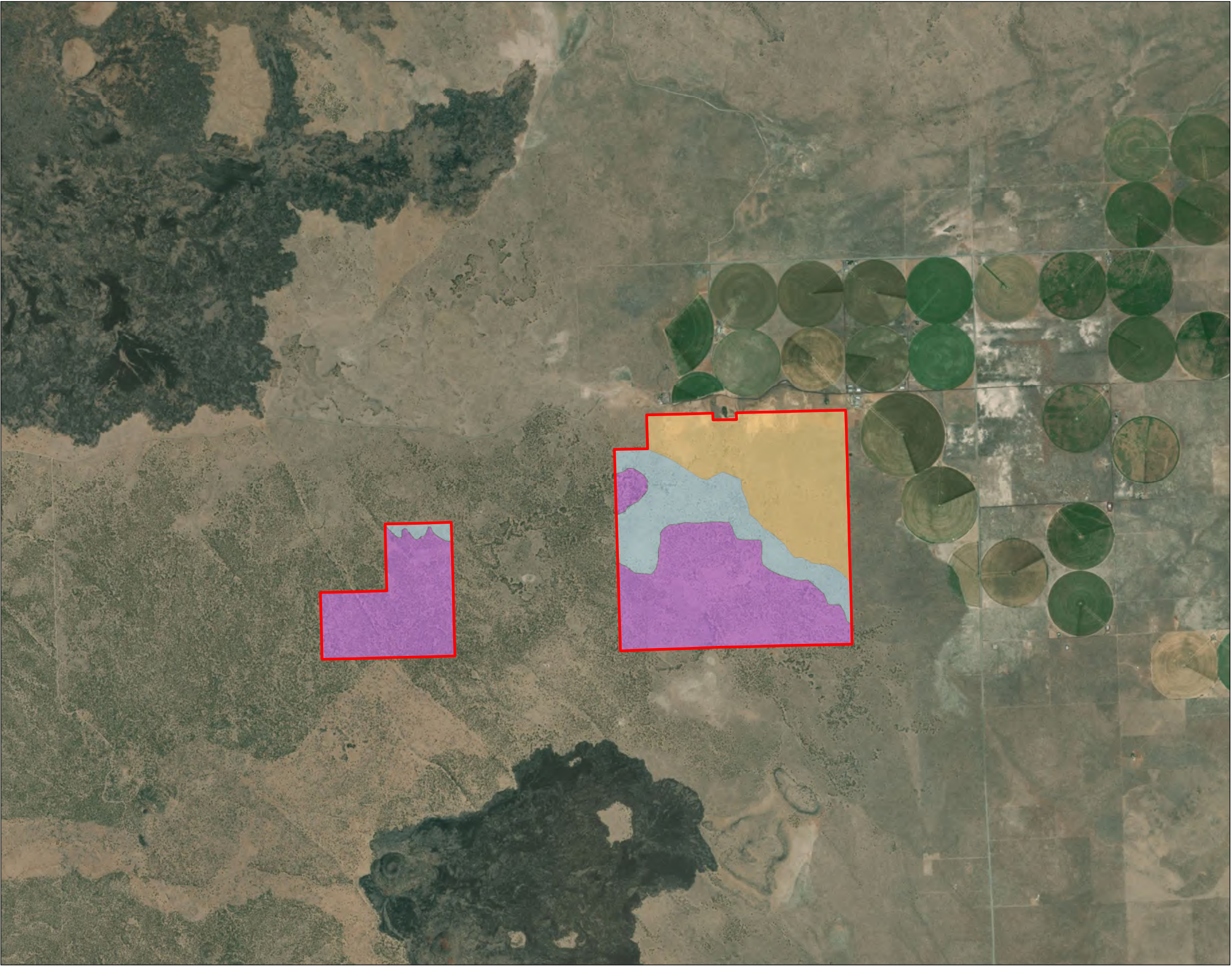
Prepared by SNT on 2020-01-16
TR by DW on 2020-01-16

Client/Project
Obsidian Solar LLC
Obsidian Solar Center

185704572 REV A

Title
Preliminary Juniper Woodland Succession Phases

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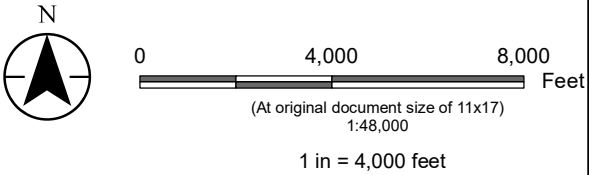


- Working Lands Improvement Program (WLIP) Area
- Non-WLIP Area
- Lava Bed
- Quarry
- Sagebrush Shrubland

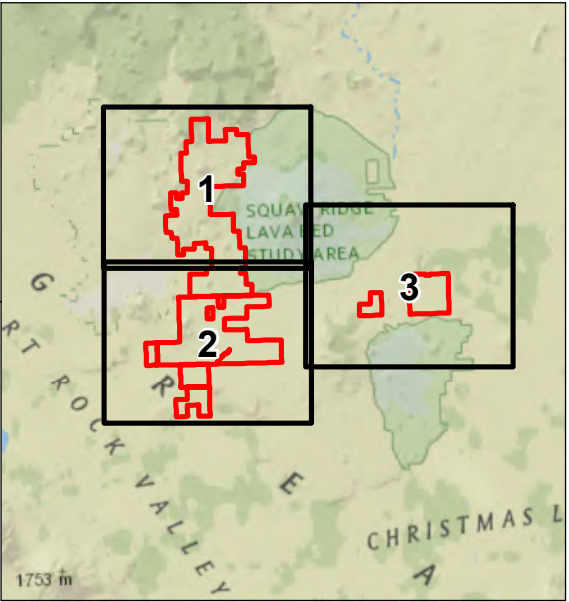
Juniper Woodland Succession Phases

- Phase 1 (Juniper Subordinate)
- Phase 2 (Juniper and Shrubs Co-Dominant)
- Phase 3 (Juniper Dominant)

Note: mapping based on desktop interpretation of aerial imagery



Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. ESRI Digital Globe: 8/15/2017
3. Woodland succession phases follow guidance provided in "Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions" (Miller et al. 2007).



Project Location
Lake County, Oregon

Client/Project
Obsidian Solar LLC
Obsidian Solar Center

Prepared by SNT on 2020-01-16
TR by DW on 2020-01-16

185704572 REVA

Title
Preliminary Juniper Woodland Succession Phases

~~Attachment 3~~Appendix 4

Desktop Habitat Mapping Technical
Memorandum

To:	Michelle Slater and Laurie Hutchinson	From:	Ilja Nieuwenhuizen
	Obsidian Solar Center LLC		Stantec Consulting Services Inc
Reference:	Habitat Assessment of the Obsidian Solar Center Project Potential Mitigation Area	Date:	February 13, 2020

Introduction

Stantec Consulting Services Inc. (Stantec) prepared a desktop-based habitat assessment within approximately 6,534 acres of potential mitigation lands for the Obsidian Solar Center Project (proposed project). This includes all or portions of parcels in two general locations: 1) a northern area on Nine Peaks Ranch owned by Aaron and Rebecca Borror that consists of approximately 4,595 acres (Figure 1A), and 2) a southern area on the Morrison Ranch owned by Morrison Family Revocable Liv Trust that consists of approximately 1,939 acres (Figure 1B).¹ These two mitigation areas are within approximately 2 to 20 miles of the proposed project site. The proposed project site, the Nine Peaks Ranch, and the Morrison Ranch are all located within the Oregon Department of Fish and Wildlife (ODFW)-mapped elk (*Cervus canadensis*) winter range and mule deer (*Odocoileus hemionus*) winter range (referred to as ODFW Big Game Winter Range). The purpose of this habitat assessment is to help inform the suitability of these areas for mitigation, which includes removing western juniper (*Juniperus occidentalis*) trees as habitat mitigation for the proposed project.

Stantec used aerial imagery and general knowledge of the area obtained from past nearby field efforts to delineate and describe habitat types in the potential mitigation areas. Past field efforts include a habitat assessment performed on the proposed project in March and June of 2018 (Ecology and Environment 2018) and a pre-treatment western juniper inventory performed for a 15-acre parcel within the southern area in the potential mitigation area in December 2019 (Stantec 2019).

Stantec used a modified version of the dichotomous key developed for the proposed project's *2018 Habitat Assessment and Biological Resources Field Report* to delineate habitat types in the potential mitigation area (Ecology and Environment 2018). Ecology and Environment, Inc., integrated vegetation characteristics of the region with the Natural Vegetation Classification Standard, Version 2 (Federal Geographic Data Committee 2008) to create the dichotomous key (Ecology and Environment 2018).

Dichotomous Key to Determine Habitat Types

Determining the Vegetation Stratum

1a) Tree canopy cover >10%= Part A: Forest or Woodland, lead 4a

1b) Tree canopy cover <10%, lead 2a.

2a) Shrub canopy cover >10%= Part B: Shrubland, lead 5a.

¹ The GIS data show the mitigation area acreage as slightly larger than the tax lot acres. The GIS data show the Nine Acres Ranch mitigation area at approximately 4,595 acres and the Morrison Ranch mitigation area at approximately 1,939 acres, rather than 4,500 and 1,870 acres, respectively. Stantec disregards this minor acreage discrepancy for purposes of this analysis.

Reference: **Habitat Assessment of the Obsidian Solar Center Project Potential Mitigation Areas**

2b) Shrub canopy cover <10%, lead 3a

3a) Herbaceous cover >5%= Part C: Herbaceous Vegetation, lead 6a

3b) Herbaceous cover <5% = **Barren**

Identifying the Habitat Type

Part A: Forest or Woodland

4a) Tree canopy cover dominated by western juniper = **Juniper Woodland**

4b) Tree canopy cover not dominated by western juniper = **Non-juniper Woodland or Forest**

Part B: Shrubland

5a) Shrub cover includes robust sagebrush (*Artemisia* spp.) component = **Sagebrush Shrubland**

5b) Shrub cover does not include robust sagebrush component = **Non-sagebrush Shrubland**

Part C: Herbaceous Vegetation

6a) Graminoids predominantly native species = **Native Grassland**

6b) Graminoids predominantly non-native species = **Non-native Grassland**

Mapped Habitat Types

Stantec mapped the following habitat types in the potential mitigation area: juniper woodland, sagebrush shrubland, and non-native grassland (Figure 1). A quarry approximately 6 acres in size is in the southern mitigation area on the Morrison Ranch and constitutes a lack of habitat due to the absence of vegetation and the disturbed nature of the quarry (Figure 1B).

The text below describes each habitat type in the mitigation areas and their associated juniper succession phase(s), according to Miller et al. (2007). Attachment 1 to this memo describes and evaluates juniper succession phases of land previously evaluated for participation in Obsidian's Working Lands Improvement Program, including the mitigation areas on Nine Peaks Ranch and Morrison Ranch. For all habitat types, the percentage cover of vegetation within each stratum is expected to vary considerably depending on unique characteristics of each location, including aspect, hydrology, soils, and disturbances. The descriptions below are based on the desktop methods described above and will be field verified at a later date (except for the 15-acre parcel that was assessed in the field in December 2019).

Juniper Woodland (1,291 acres): Juniper woodland contains greater than 10 percent cover of western juniper. Western juniper trees and saplings likely range from ground level to about 30 feet tall in the mitigation area. The percentage of mature trees versus new sapling recruitment would vary depending on the location in the mitigation area.

Reference: Habitat Assessment of the Obsidian Solar Center Project Potential Mitigation Areas

In areas with dense juniper, the understory is expected to be minimal to bare. These areas would constitute phase 3 of juniper encroachment, which includes areas where tree canopy expansion is nearly stable, and the shrub layer is more than 75 percent dead or absent (see Attachment 1). Where juniper trees have a lower cover, the understory is expected to be dominated by a variety of shrub species, including big sagebrush (*Artemisia tridentata* ssp. *tridentata*), rubber rabbitbrush (*Ericameria nauseosa*), and yellow rabbitbrush (*Chrysothamnus viscidiflorus*). These areas would constitute phase 2 of juniper encroachment where the tree canopy is actively expanding, and the shrub layer has a varied cover ranging from intact to thinning (Attachment 1). The shrubs likely vary in height and would generally fall between 2 and 7 feet tall. Herbaceous species present may include perennial bunch grasses, including but not limited to crested wheatgrass (*Agropyron cristatum*), bottlebrush (*Elymus elymoides*), and fescues (*Festuca* spp.). Cheatgrass (*Bromus tectorum*), an invasive annual grass, are expected to occur throughout the habitat type at varying percent cover. Other shrub, grass, and forb species may also dominate the habitat type in the mitigation area.

Nine Peaks Ranch Mitigation Area: 330 acres of Juniper Woodland

Morrison Ranch Mitigation Area: 961 acres of Juniper Woodland

Sagebrush Shrubland (5,196 acres): Sagebrush shrubland contains less than 10 percent tree cover, or trees are absent in some areas, and greater than 10 percent shrub cover. Stantec expects that the shrub cover in the potential mitigation areas includes a robust sagebrush component, and we delineated all shrubland areas as sagebrush shrubland. A field-based assessment may determine that other shrubs are dominant in portions of this habitat type, in which case, these areas would need to be mapped as non-sagebrush shrubland.

Areas with no juniper trees present constitute no juniper encroachment, while areas with some juniper trees constitute phase 1 of juniper encroachment (Attachment 1). The shrub layer varies in percentage cover throughout the habitat type and is likely dominated by big sagebrush with rubber rabbitbrush and yellow rabbitbrush occurring to lesser extents. The shrubs likely range between 2 and 7 feet in height. Herbaceous cover also likely varies and may contain perennial bunch grasses, including crested wheatgrass, bottlebrush, and fescues. Cheatgrass is also expected to occur at varying degrees throughout the site. Other shrub, grass, and forb species may also dominate the habitat type in the mitigation area. Bare ground between shrubs is expected to be a major component in a portion of the habitat.

Nine Peaks Ranch Mitigation Area: 4,225 acres of Sagebrush Shrubland

Morrison Ranch Mitigation Area: 971 acres of Sagebrush Shrubland

Non-Native Grassland (41 acres): This habitat type occurs in an area where historical lava flows have resulted in a substrate dominated by coarse volcanic gravel and rock. From aerial imagery interpretation, it appears that shrub and tree cover are both less than 10 percent, making the habitat type herbaceous. Stantec expects that the herbaceous layer is dominated by non-native grasses, including cheatgrass. Non-native grassland does not correspond to a juniper encroachment phase since juniper trees are not expected to be present. All 41 acres of this habitat type occurs on the Nine Peaks Ranch.

Quarry (6 acres): This developed/disturbed area consists of an active rock quarry with little to no vegetation. All six acres of this developed area are on the Morrison Ranch.

February 13, 2020

Michelle Slater and Laurie Hutchinson

Page 4 of 4

Reference: **Habitat Assessment of the Obsidian Solar Center Project Potential Mitigation Areas**

Comparison of Mitigation and Project Habitat Types

The primary habitat type within the proposed project area is sagebrush shrubland, which is the most common habitat type in the mitigation areas. Based on incidental observations of nearby areas made during the western juniper field inventory of the 15-acre parcel conducted in December 2019 (Stantec 2019), as well as other incidental observations made in this area in the last several years, the sagebrush shrubland habitat in the mitigation areas is similar to the sagebrush shrubland habitat documented in the proposed project area in that it is likely dominated by big sagebrush, rubber rabbitbrush, and yellow rabbitbrush. Mitigation areas also likely have similar dominant herbaceous species to the proposed project area, primarily perennial bunch grasses invasive cheatgrass. The main difference between the mitigation and proposed project areas lies in western juniper cover. There are few western junipers in the proposed project area, while the mitigation areas contain some juniper woodland habitats and the sagebrush shrublands exhibit varying degrees of juniper encroachment. Most of the sagebrush shrubland habitats in the mitigation areas are undergoing some degree of western juniper encroachment or are under threat of encroachment; however, due to the apparent prevalence of big sagebrush and perennial bunch grasses in the understory in most juniper woodland habitats in the mitigation area, the historical habitat type in the mitigation area was likely sagebrush shrubland. Areas with juniper encroachment phases 1 and 2 would be good candidates for western juniper removal to restore to historical sagebrush shrubland conditions, based on the preliminary desktop analysis.

Stantec Consulting Services Inc.



Sarah Tona

Associate Biologist

Phone: 530 222 5347 x136

sarah.tona@stantec.com

Attachments: Figures
Preliminary Juniper Woodland Succession Phases – December 2019

References

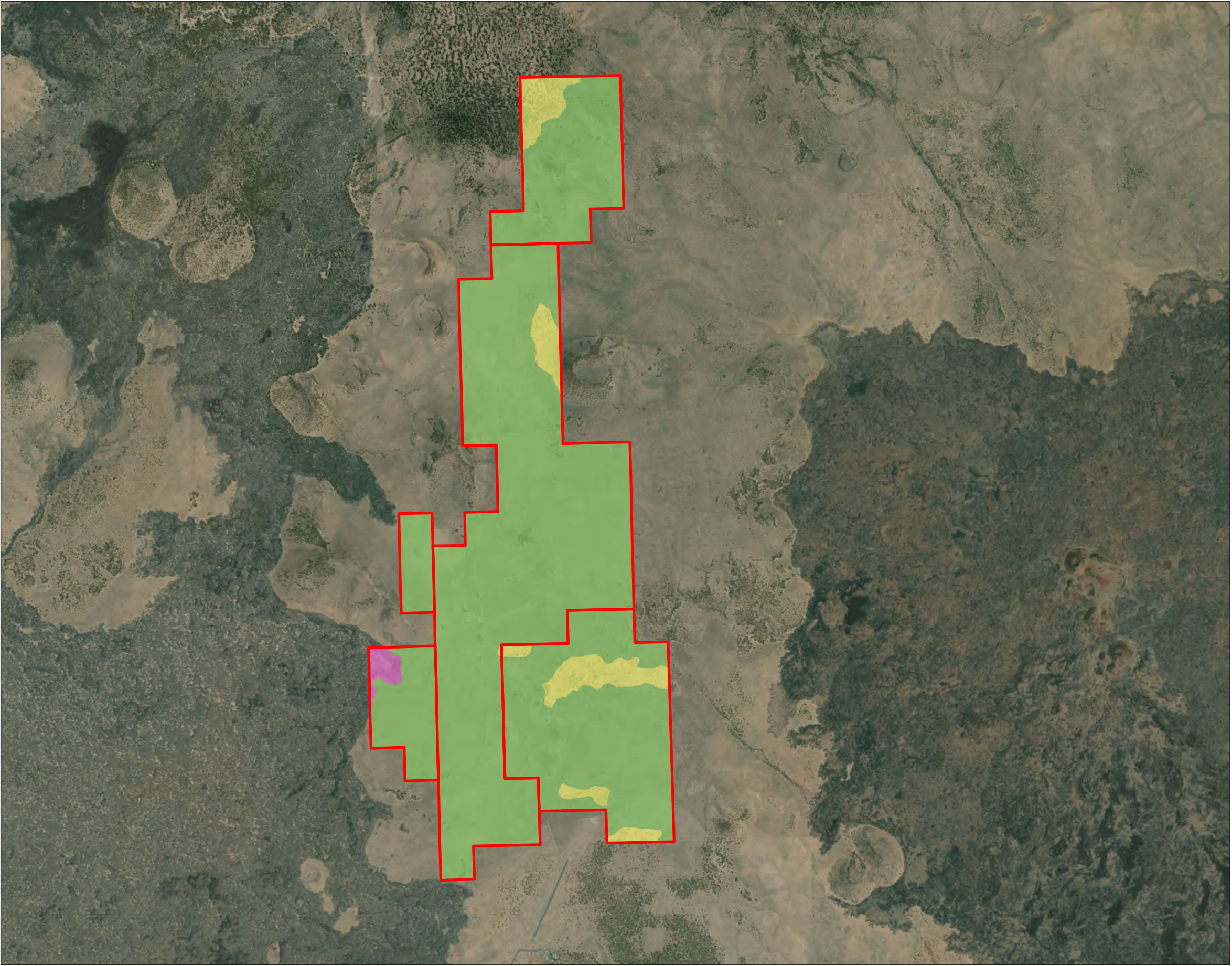
Ecology and Environment, Inc. 2018. *Obsidian Solar Center 2018 Habitat Assessment and Biological Resources Field Report. In Application for Site Certificate for Obsidian Solar Center*, October 2019, Exhibit P, Appendix P-1.

Federal Geographic Data Committee. 2008. Natural Vegetation Classification Standard, Version 2. FGDC-STD-005-2008. Federal Geographic Data Committee Secretariat. U.S. Geological Survey. Reston, Virginia. Available at: https://www.fgdc.gov/standards/projects/vegetation/NVCS_V2_FINAL_2008-02.pdf. Accessed: February 10, 2020.

Miller, R.F., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2007. Western Juniper Field Guide: Asking the Right Questions to Select Appropriate Management Actions: U.S. Geological Circular 1321, 61 p

Stantec Consulting Services Inc. (Stantec). 2019. Pre-Treatment Inventory for Western Juniper Mitigation. Unpublished technical memorandum prepared for Obsidian Solar Center LLC. December 2019.


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 Mitigation Area

 Quarry

Habitat Types

 Juniper Woodland

 Non-Native Grassland

 Sagebrush Shrubland

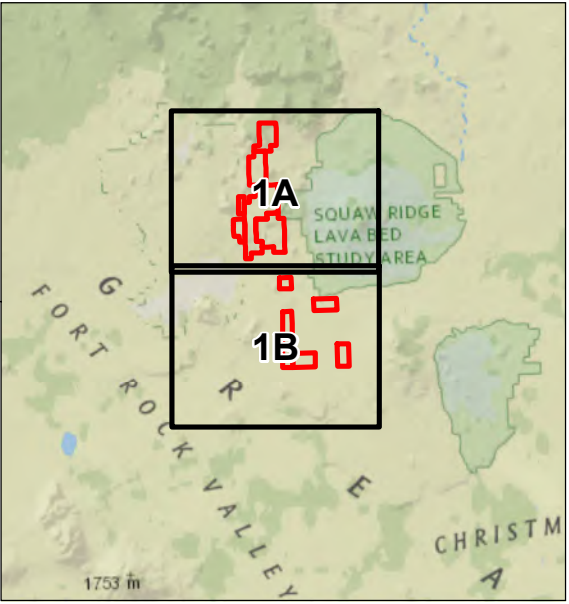


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Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. ESRI Digital Globe: 8/15/2017



Project Location
Lake County, Oregon

Prepared by SNT on 2020-02-10
TR by DW on 2020-02-11

Client/Project
Obsidian Solar LLC
Obsidian Solar Center

185704572

Title
Figure 1A. Habitat Types in the Mitigation Area on Borror Property

Attachment P-2 Wildlife Monitoring Plan

Obsidian Solar Center Wildlife Monitoring Plan

February 2020

As amended by the Oregon Department of Energy October 2020

Obsidian Solar Center LLC

5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

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Acronyms and Abbreviations

Applicant	Obsidian Solar Center LLC
ASC	Application for Site Certificate
EFSC or the Council	Energy Facility Siting Council
Facility	Obsidian Solar Center
gen-tie	generation tie
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
PV	photovoltaic
USFWS	U.S. Fish and Wildlife Service
WMP	Wildlife Monitoring Plan

1.0 INTRODUCTION

This draft Wildlife Monitoring Plan (“WMP”) describes how Obsidian Solar Center LLC (“Applicant”) will avoid or reduce impacts on wildlife from the Obsidian Solar Center (“Facility”) located in Lake County, Oregon. This WMP describes the avoidance and minimization measures Applicant undertook in Facility design, the best management practices Applicant will implement during pre-construction and construction, as well as the post-construction monitoring at the Facility.

2.0 AVOIDANCE AND MINIMIZATION MEASURES

Applicant avoided or minimized impacts on wildlife habitat by taking the following Facility siting actions, which reduce the initial development area under consideration from about 7,000 acres to the current design of less than 4,000 acres:

- (a) Elimination of Area B from the site boundary (approximately 3,080 acres);
- (b) Elimination of Area C from the site boundary (approximately 440 acres);
- (c) Avoiding an active pygmy rabbit burrow complex totaling 0.36 acres; and
- (d) Avoiding a 10.47-acre area of sagebrush shrubland, dune, and playa habitats that includes two active pygmy rabbit burrow complexes, which will provide connectivity between the complexes and to adjacent sagebrush shrubland habitats on federal lands.

With respect to pygmy rabbits, Applicant removed Area B from consideration for development due, in part, to the large amount of suitable pygmy rabbit habitat (i.e., sagebrush shrubland) within the parcel (refer to Exhibit B of the Application for Site Certificate (“ASC”) for further discussion of the removal of Area B from development plans). Applicant will avoid construction in the areas of three active pygmy rabbit burrow complexes (refer to Section P.2.3 and Figure P-1 in Exhibit P of the ASC for burrow complex descriptions and locations). These avoidance areas, in combination with adjacent cultural avoidance areas and other avoidance areas, will maintain habitat connectivity between the two larger of the three burrow complexes. In addition, the smallest, easternmost burrow complex will be outside the eastern site boundary fence and the two larger complexes will be outside the northern site boundary fence and will be connected to sagebrush shrubland habitat outside of the site boundary.

3.0 POST-CONSTRUCTION BIRD AND BAT MORTALITY MONITORING

Applicant will adhere to the following post-construction mortality monitoring and reporting protocols designed to provide information to ODFW regarding the estimated bird and bat fatality rates at the Facility during four seasons in the first year of operations:

- Monitoring Period. Post-construction monitoring will take place beginning after the commencement of operation of the Facility (or, if development in phases, after commencement of at least 200 megawatts alternating current of average generating capacity and will continue for a period of 12 months thereafter.
- Monitoring Frequency. Surveys will be conducted monthly on a statistically valid subset of the total site acres, which is estimated to be 500 acres.
- Distance Sampling. Post-construction monitoring at the Facility will involve standardized distance-sampling based carcass searches. The layout of a photovoltaic (“PV”) solar energy facility is well-suited to a distance sampling approach, which involves searching transect lines and assumes that searcher efficiency decreases as a function of distance from the observer but is ideally suited to situation in which animals (or carcasses) are sparsely distributed across a landscape (Buckland et al. 1993).
- Searcher Qualifications. Searchers will be trained to conduct carcass searches and will be familiar with and able to accurately identify bird and bat species likely to be found in the Facility area. Any unknown birds or bats or suspected state or Endangered Species Act-listed species discovered during carcass searches will be reported to a qualified biologist for positive identification.
- Data Collection. For each carcass found, the following data will be recorded:
 - Photos of the carcass and including a size-referencing object
 - Date and time
 - Initial species identification
 - Global Positioning System location

- Nearest Facility component (PV array, control house, storage unit, other)
- Distance of carcass to nearest PV panel
- Description of substrate/ground cover conditions
- Condition of specimen (alive, no sign of physical trauma, dead and intact, dismembered, feather spot) (at least two or more primary feathers, five or more tail feathers, or 10 or more feathers, injured)
- Carcass condition (fresh/dry, intact/scavenged)

Searchers will not collect or handle carcasses so neither state nor federal collecting/salvaging permits will be acquired for this study.

- **Reporting.** The monitor will record all observations of bird or bat mortalities along the survey rows and between rows. Applicant will provide a summary report to ODFW within two months of completion of the year-long (four-season) monitoring effort. Incidental observations of bird or bat mortalities (e.g., outside of the abovementioned standardized mortality monitoring efforts) will be documented for the first five years of operations and will be compiled and reported annually. Mortality observations of State Sensitive Species will be reported to ODFW within two weeks of the finding.

4.0 LANDOWNER NOTIFICATION FOR ELK DAMAGE PROGRAMS

Prior to and during any year of construction, the certificate holder shall provide notification to the record owner of any land within and extending 500-feet of the property of which the site boundary is located of existing programs available through the Oregon Department of Fish and Wildlife (ODFW) intended to mitigate big game related property damage. At a minimum, notification should provide information, including agency contact information, on ODFW's Elk Damage Hunt Program and the Landowner Damage Program (ORS 498.012; ORS 496.158; OAR 635-075-0011).

The certificate holder shall provide a copy of the notice, landowner mailing list and confirmation of issuance to the Department as evidence of compliance in the pre-construction Compliance Plan and in any subsequent semi-annual reports throughout construction (OAR 345-026-0048; OAR 345-026-0080(1)(a)).

5.0 AMENDMENT

The WMP may be amended from time to time upon approval by Energy Facility Siting Council ("EFSC"), who may delegate its authority to review and authorize amendments to Oregon Department of Energy ("ODOE"). ODOE must notify EFSC of all amendments and EFSC retains the authority to approve, reject, or modify any amendments to this WMP agreed to by ODOE.

6.0 REFERENCES

Buckland, S.T., Anderson, D.R., Burnham, K.P. and Laake, J.L. 1993. *Distance Sampling: Estimating Abundance of Biological Populations*. Chapman and Hall, London. 446pp.

Attachment P-3 Draft Revegetation and Noxious Weed Control Plan

Appendix P-3

Revegetation and Noxious Weed Control Plan

Obsidian Solar Center Revegetation and Noxious Weed Control Plan

**Prepared by:
Obsidian Solar Center LLC**

5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

~~October~~ July ~~20~~2019

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Acronyms and Abbreviations

Applicant	Obsidian Solar Center LLC
CWMA	Cooperative Weed Management Area
EPA	U.S. Environmental Protection Agency
Facility	Obsidian Solar Center
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy

1.0 INTRODUCTION

Obsidian Solar Center LLC (Applicant) proposes to construct the Obsidian Solar Center (Facility) in Lake County, Oregon, which would have alternating current generating capacity of up to 400 megawatts and may include battery storage technology. The Facility will be located approximately 8 miles southeast of Fort Rock, Oregon, in the Christmas Valley portion of northern Lake County.

The site boundary contains about 3,921 acres, but approximately 331 acres will not be developed in order to avoid impacts on sensitive resources, or because these areas fall within unused portions of the generation-tie transmission line corridor. Construction of the Facility will disturb approximately 3,590 acres of vegetation within the site boundary, comprising sagebrush shrubland (95.3 percent), sand dune (3.0 percent), non-native forb (1.2 percent), and playa (0.5 percent).

This Revegetation and Noxious Weed Control Plan outlines the objectives, methods, and success criteria that Applicant will use to direct revegetation efforts in areas of soil disturbance not associated with permanent Facility components, and to control noxious weeds on the Facility site. Applicant is coordinating with the Oregon Department of Fish and Wildlife (ODFW) to develop an approach to mitigating permanent habitat impacts on the majority of the area within the site boundary (refer to Exhibit P for details). Applicant's two primary goals are (1) encouraging revegetation within the site boundary to reduce the potential for windblown and water erosion by reestablishing vegetation ground cover and root structure, and (2) avoiding or controlling the introduction and spread of noxious weeds. With the exception of controlling noxious weeds, Applicant is not required to meet specific restoration standards, such as meeting specific success criteria, except as they pertain to Facility permit conditions (e.g., 1200-C Construction Stormwater permit), or conditions of approval to the Site Certificate. However, to help promote use by native wildlife species after construction, Applicant will focus on revegetating with mostly native plant species, to the extent practicable.

Applicant consulted Lake County and the Cooperative Weed Management Area (CWMA) program in developing this plan. Lake County works closely with private landowners and the CWMA to control noxious weeds in Lake County. Section 3.0 provides details of correspondence with the CWMA.

2.0 REVEGETATION METHODS

Applicant will not mow vegetation in most areas within the site boundary prior to starting other construction activities. In some areas, vegetation will be smashed by trucks driving over it, and in other areas where trenching or grading will occur, vegetation will be removed either entirely or to within several inches of the ground. Vegetation root structures and topsoil seed bases will

be preserved in most Facility areas, and additional soil management measures, such as topsoil stripping and segregation, will not be required. In most of these areas, Applicant will allow vegetation to restore “passively,” i.e., without re-seeding. Noxious weed prevention and control will be necessary within the site boundary.

Soil disturbances at permanent Facility components, such as inverter pad and substation footprints, will not be restored. However, in other areas with soil disturbance, such as trenches for underground cable installation, “active” restoration, i.e., with re-seeding, may be necessary to ensure timely recovery of vegetation, control erosion, and prevent the establishment and spread of noxious weeds. The following subsections describe the measures and practices that Applicant will employ to actively restore vegetation in areas of soil disturbance, with the exception of noxious weed control.

2.1 Soil Management

Soil management measures will begin at the start of construction. Construction crews will adhere to the soil management measures and practices listed below. Applicant will maintain these measures and practices until the affected areas meet the success criteria detailed in Section 4.2.

- Establish stable surface and drainage conditions and use standard erosion control devices and techniques to minimize soil erosion and sedimentation, including the installation of silt fencing, straw bales, mulch, straw wattle, erosion control fabric, and slope breakers, as appropriate. Applicant will use certified weed-free straw bales, straw mulch, hydromulch, and/or other appropriate weed-free mulch materials.
- Due to the limited extent of grading during construction, and due the relatively narrow areas (approximately 3 feet wide) where trenching will occur, Applicant does not foresee the need to strip and segregate topsoil. However, if large areas of soil disturbance (e.g., 50 by 50 feet or larger) that require revegetation are identified during construction, Applicant may implement topsoil stripping and segregation to preserve topsoil. In such instances, Applicant would strip topsoil (generally defined as the upper 6 to 12 inches of soil) from subsoil, segregate it into stockpiles, and then reapply the topsoil to its original location after construction.

2.2 Revegetation

Applicant will initiate revegetation measures (i.e., re-seeding) in construction disturbance areas that create gaps in vegetation, as soon as appropriate after activities in work areas are completed. For example, Applicant expects to install solar modules on approximately 60-acre portions of the Facility at a time. Therefore, any necessary reseedling would occur in the next approved seeding window (refer to Section 2.2.1) after construction activities in each 60-acre area are complete. Applicant may delay some revegetation activities based on seasonal considerations or weather conditions. Areas that require re-seeding that cannot be done so promptly will be stabilized with

mulch or otherwise treated to minimize erosion, if necessary, until seeding can be conducted. Applicant will implement measures to prevent the establishment and spread of noxious weeds (refer to Section 3.0) in conjunction with re-seeding efforts.

2.2.1 Seed Mixture

Applicant will consult the ODFW to develop a final seed mixture appropriate for revegetation efforts on the Facility site. Table 1 provides Applicant’s preliminary proposed revegetation seed mixture developed by consulting the Natural Resources Conservation Service office in Lakeview, Oregon (Corning 2019) and the Lake County CWMA (Jaeger 2019). Applicant may modify this preliminary seed mixture ahead of revegetation at the request of landowners, Lake County, or further coordination with the CWMA or ODFW. The seed mixture may be modified in consultation with ODFW and LCCWA if nonnative seeds (like Crested Wheatgrass and/or Covar sheep fescue) may be needed to more aggressively respond to noxious weeds. The preliminary seed mixture uses four native and one non-native species that are adapted to the conditions of the Facility site to help ensure the greatest probability of germination and long-term survival. All plant materials shall meet the following requirements:

- Seeds will be “source identified.” The original source for the seed mixture(s) should be the Northern Basin and Range ecoregion. The seed should be a locally adapted biotype, adapted to conditions similar to the Facility site.
- Seed will be certified “weed-free.”
- Seed application rates presented in Table 1 assume that drill seeding methods will be employed. If broadcast seeding methods are used, the seed application rates in Table 1 will be doubled.

Table 1 Preliminary Revegetation Seed Mixture

Common Name	Latin Name	Variety	Pure Live Seed Pounds per Acre ¹	Purpose
Bluebunch wheatgrass	<i>Pseudoregneria spicata</i>	Secar	4	(N) (EC)
Thickspike wheatgrass	<i>Elymus lanceolatus</i>	Critana	4	(N) (EC)
Indian ricegrass	<i>Achnatherum hymenoides</i>	Nezpar	3	(N) (EC)
Basin wildrye	<i>Elymus cinereus</i>	Magnar	4	(N) (EC)
Crested Wheatgrass	<i>Agropyron desertorum</i>	Hycrest	4	(I) (EC)
TOTALS			19	

Notes to Table 1:

¹ assume drill seeding methods will be employed. If broadcast seeding methods are used, the seed application rates in Table 1 will be doubled.

Key: (N) = Native, (I) = Introduced, NA = not applicable, (EC) = Erosion Control

2.2.2 Seed Planting Methods and Schedule

Applicant will apply the proposed seed mixture (Table 1) at an approximate rate of 19 pounds per acre (for drill rate; double the rate for broadcast or hydroseeding). Applicant may employ a combination of broadcast seeding, drill seeding, and hydroseeding, depending on slope and other site conditions. Applicant may apply straw mulch, hydromulch, and/or other appropriate weed-free mulch material, as needed, immediately after seeding. When hydroseeding, Applicant will add green-dyed, wood-fiber mulch to the slurry mixture at a rate of 1,000 pounds per acre. In addition to serving as a carrying agent for the seed, the biodegradable green mulch serves as a tracer for visually checking distribution to ensure uniform coverage of the disturbed areas.

Applicant will attempt to conduct re-seeding efforts in November to early March in order to take advantage of soil moisture needed for germination by April. Reseeding may occur in February to early April, depending on weather conditions, for construction activities completed during the winter. In areas where crews complete construction activities from mid-April to early November, re-seeding will occur in October or early November. If construction crews complete activities during time periods that do not allow for prompt re-seeding, the affected areas will be stabilized with mulch or otherwise treated to minimize erosion, if necessary, until seeding can be conducted.

3.0 NOXIOUS WEEDS

Invasive, non-native plants are opportunistic, may readily colonize disturbed areas, and can inhibit native plant species from re-establishing. Invasive plants may have significant adverse impacts on agricultural operations and on natural resources, including wildlife habitat. Lake County and the State of Oregon designate certain invasive plant species with elevated economic or environmental concerns as noxious weeds and prioritize these species during weed management planning and operations.

The Oregon Department of Agriculture designates three categories of noxious weeds: “A” list species, “B” list species, and “T” species (ODA 2018). A-listed weeds are economically important and occur in the state in small enough infestations to make eradication or containment possible, or are rare species not known to occur in the state but have a presence in neighboring states, making future occurrence imminent. B-listed weeds are economically important and regionally abundant, but may have limited distribution in some counties. T-designated weeds are selected by the Oregon State Weed Board to be the focus for prevention and control by the Noxious Weed Control Program. T-designated noxious weeds are species selected from either

the A or B lists. Refer to ODA’s 2018 Noxious Weed Policy and Classification System for a list

of state-designated noxious weeds. In addition, Lake County maintains a list that designates three categories of Noxious Weeds: “A,” “B,” and “C” (Lake County 2018). The County’s “A” and “B” designations are similar to ODA’s definitions, and the “C” category denotes species that are of economic importance and are abundant county-wide and in neighboring counties. Note that there is only partial overlap between the ODA’s and the County’s weed designations for each species (e.g., a species may have one designation per the ODA and another per the county).

Applicant consulted Lake County and the CWMA program in developing this plan. Lake County works closely with private landowners and the CWMA to control noxious weeds in Lake County (Johnson 2018). Applicant provided draft noxious weed measures for the Facility to the CWMA program contact, who provided feedback. The CWMA’s primary concern is to prevent the spread of noxious weeds to adjacent agricultural areas. With regards to specific noxious weed species, the CMWA is most concerned about the introduction and spread of diffuse knapweed (*Centaurea diffusa*) and spotted knapweed (*Centaurea maculosa*) (Jaeger 2018, 2019). Although diffuse knapweed is a category “B” on the state list, Lake County considers this species to be category “A.” The CWMA offered to coordinate with Applicant to further refine noxious weed control approaches for the Facility during construction and operation (Jaeger 2018).

Applicant intends for the measures described in this section to meet the requirements of Lake County, prevent the introduction of new noxious weed species to the Facility site, and control existing populations of noxious weeds, where feasible.

3.1 Prevention and Control Measures

Applicant will implement noxious weed control measures in accordance with existing state and Lake County regulations. Applicant will attempt to prevent and eradicate new populations of noxious weeds that are identified during construction or operation, and that are caused by the Facility. Applicant’s consultants did not document noxious weed populations during habitat mapping efforts and other field surveys within the site boundary (refer to Exhibit P, Appendix P-1). Should noxious weeds be identified within the site boundary prior to, during, or after construction, the goal will be to prevent further spread, unless eradication is feasible.

Applicant will implement the following measures, as appropriate:

- **Environmental training:** Conduct environmental awareness and sensitivity training before soil and vegetation disturbance activities to educate all personnel regarding environmental concerns and requirements, including weed identification (particularly diffuse knapweed), prevention, and control methods. Qualified personnel will conduct this training.
- **Pre-construction surveys:** Conduct surveys for designated noxious weeds within proposed Facility disturbance areas concurrently with other pre-construction surveys, such as pre-construction surveys for migratory bird nests.
- **Signage:** Demarcate any problem noxious weeds areas on the site (e.g., infestations of

ODA or Lake County category A species, or potentially large but well-defined areas of ODA or Lake County category B, C, or T species) with signs, as appropriate.

- **Pretreatment:** Prior to vegetation or soil disturbance, Applicant may treat areas of known noxious weeds with herbicides or manually remove them, if practicable.
- **Treatment during construction:** During construction, Applicant may treat identified new noxious weed populations, as necessary. Treatment methods and timing will be based on species-specific and area-specific conditions (e.g., proximity to water, agricultural areas, topography, land use, and time of year) and will be coordinated with and follow requirements and guidelines of Lake County or the ODA.
- **Clean vehicles/equipment:** Personnel will thoroughly clean all vehicles and equipment of soil and plant material before mobilizing to the Facility site, and will clean all clearing and grading equipment prior to leaving any identified noxious weed sites.
- **Cleaning station:** If some vehicles or equipment cannot be cleaned prior to mobilization to the Facility site, and pre-construction surveys have identified multiple problem noxious weed areas, Applicant will construct a fixed water cleaning station at the point of Facility site entry for construction equipment and vehicles. The Facility environmental inspectors and management staff will determine the need for a fixed water cleaning station, taking the findings of pre-construction surveys into consideration. The water cleaning station will use high-pressure water over a non-permeable synthetic fabric so that the soil and plant material from the cleaning operation can be removed and disposed of without contaminating the underlying soil. Cleaning efforts will be concentrated on tracks, feet, or tires and on the undercarriage, with special emphasis on axles, frames, cross members, motor mounts, the underside of running boards, and front bumper/brush guard assemblies.
- **Mobile cleaning stations:** As needed, construction crews will clean seeds, roots, and rhizomes off equipment and vehicles used to move vegetation and topsoil in identified noxious weed-infested areas during the clearing phases before proceeding to other parts of the Facility site. In most infestation locations, personnel will clean vehicles with compressed air.
- **Weed-free straw bales:** The contractor will ensure that all straw bales used for sediment and erosion controls, mulch distribution, and restoration seed mixes—if used—are certified as weed-free from the supplier.
- **Post-construction monitoring:** After construction, during operation, Facility staff will monitor for noxious weeds and treat weeds, as appropriate. If needed, a state-licensed weed control contractor will be used to treat noxious weeds.

3.2 Treatment Methods

Noxious weed treatment methods typically include manual methods (e.g., pulling plants by hand or clipping seed heads), mechanical methods (e.g., mowing or burning), chemical methods (i.e.,

application of herbicides), or biological methods (e.g., introduction of insects for biological control). For construction and operation of the Facility, Applicant expects to utilize manual or chemical weed control methods only. Applicant will coordinate with Lake County and the CWMA to determine appropriate treatment methods and schedules. The decision to use either manual or chemical methods will depend on a variety of factors, including the species of the noxious weed population, the density and geographic extent of the population, and the location of the population in relation to other sensitive resources (e.g., proximity to waters or sensitive crops).

If manual control methods are used, any removed plant parts, including seeds, roots, and rhizomes, will be removed from the Facility site and disposed of properly. If herbicide treatment is necessary, Applicant will only use herbicides that are approved for use in the state of Oregon by the U.S. Environmental Protection Agency (EPA) and the ODA. Applicant will notify landowners of the herbicide proposed for use on their lands and obtain approval prior to application. Applicant will apply herbicides to treatable noxious weed populations as described below.

Applicant will hire a state-licensed weed control contractor to apply herbicides according to EPA and ODA standards. In general, herbicide application will not occur when the following conditions exist:

- Wind velocity exceeds 15 miles per hour for granular application or 10 miles per hour for liquid applications;
- Snow or ice covers the foliage of target species; or
- Adverse weather conditions are forecasted in the next few days.

The weed control contractor will use vehicle-mounted sprayers (e.g., handgun, boom, and injector) mainly in open areas that are readily accessible by vehicle. They may use hand application methods (e.g., backpack spraying) in areas not accessible by vehicle. Equipment will be calibrated prior to spraying and periodically during spraying to ensure proper application rates.

The state-licensed weed control contractor will follow all applicable state requirements and guidelines in effect at the time.

4.0 MONITORING, SUCCESS CRITERIA, AND REPORTING

As stated above, after construction of the Facility Applicant will comply with the requirements of specific Facility permit conditions, including the 1200-C Construction Stormwater permit, and of any applicable conditions of approval to the Site Certificate. In addition, Applicant will comply with state and county requirements to control noxious weeds. Applicant's primary goals for post-construction monitoring are (1) meet the Oregon Department of Environmental

Quality's final vegetative stabilization measures, as will be described in the 1200-C Construction Stormwater permit, and (2) avoid the introduction to or spread from the Facility of noxious weeds. Applicant will include mostly native plant species within the seed mixture to revegetate the Facility site to help promote use by native wildlife species after construction.

4.1 Monitoring

Applicant will conduct revegetation and noxious weed monitoring. The purpose of monitoring is to evaluate soil stability, vegetation composition and cover, and occurrence of noxious weeds within areas of construction-related soil disturbance.

Vegetation will be allowed to reestablish on most portions of the Facility. The monitors will inspect and record general (visual) observations of revegetation success across the entire Facility site. More detailed observations may be recorded in portions of the Facility site boundary where Applicant conducted reseeding activities.

The monitors will survey a representative sample of Facility areas (including both revegetated and undisturbed areas) annually to gauge revegetation success and noxious weed control needs. In addition, monitors will survey for noxious weeds along all perimeter and main internal access roads.

Monitoring will begin in the first year following initial revegetation of disturbance areas and continue until the revegetation areas meet the success criteria (refer to Section 4.2). If areas do not meet success criteria within five years, Applicant will coordinate additional monitoring with Lake County and notify the Oregon Department of Energy (ODOE).

During revegetation monitoring surveys, monitors will collect the information listed below from representative monitoring locations, including along main access roads and areas of especially heavy disturbance, as well as at sample plots across the Facility site (one sample plot per quarter-section, or 160 acres). One sample plot will be randomly selected from a grid of 10 square 16-acre (approximately 0.025 square miles) plots within each quarter-section. The sample plots will be compared with reference sample plots in undisturbed areas of the same habitat type within the site boundary (i.e., avoidance areas).

- Confirmation that all disturbance areas requiring active revegetation have been re-seeded;
- Visual estimates of:
 - Percentage of total vegetative ground cover of individual plant species in two categories (grasses/forbs and shrubs), and
 - Percentage of bare soil;
- Presence of noxious weeds species (including density and geographical extent of populations); and

- Presence of windblown or water erosion problems that require additional measures.

Applicant will maintain records of monitoring results and assess the progress of vegetation establishment. If the field observations indicate that the revegetation efforts are not trending toward success, the monitors will describe remedial measures—including additional re-seeding—to correct deficiencies or shortcomings. Following each monitoring event, Applicant will implement remedial measures, as needed. The nature of the remedial actions will depend on the specific issues that arise. Applicant will report recommended remedial action in an annual report to ODOE (refer to Section 4.2). Applicant will implement warranted remedial actions promptly, taking into account the season, weather conditions, and other site-dependent constraints.

4.2 Success Criteria and Reporting

The success criteria for revegetation efforts will largely be driven by the Oregon Department of Environmental Quality's requirements in the 1200-C Construction Stormwater permit. The success criteria for noxious weed control will be based on qualitative observations to attempt to comply with Lake County and ODA recommended actions to control each category of noxious weed (ODA 2018; Lake County 2018).

Applicant will use the following criteria to determine success of revegetation efforts, unless instructed to use other criteria by Lake County or ODA:

1. The vegetation percent cover (both seeded and naturally recruited) is approximately 70 percent or more, or not substantially less than the percent vegetation cover of surrounding undisturbed areas.
2. State- or County-listed noxious weeds are absent or constitute only a very small percentage (e.g., less than 1%) of vegetation otherwise dominated by native or desirable non-native species, unless the noxious weeds present are similar to pre-construction conditions or adjacent undisturbed areas.
3. The percentage of bare soil in the sample plot is not substantially greater than the percentage of bare soil in surrounding undisturbed areas.

In general, Applicant will consider restoration successful when the restored areas are similar to surrounding undisturbed areas in vegetation percent cover and erosion potential, and noxious weeds are not dominant in the plant community (or the noxious weeds present are similar to pre-construction conditions).

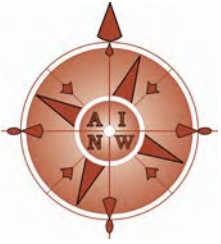
Applicant will prepare a Revegetation and Noxious Weed Control Monitoring Report annually, following the initial re-seeding effort until success criteria are achieved. Each annual report will be submitted to ODOE and will summarize field data collected during field visits and assess

whether revegetation efforts are meeting the success criteria. The reports will also document remedial actions taken to date, additional remedial actions planned for areas that are not trending toward success, and the anticipated dates of completion of each of these actions. Once Applicant determines that revegetation and noxious weed control is successful, it will report this in the relevant annual report. Upon reaching success, Applicant will have no further obligation to monitor revegetation of the Facility site. Noxious weed control will continue for the life of the Facility, as required by county and state regulations.

5.0 REFERENCES

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Attachment S-1 Archaeological Testing and Excavation Methodologies Plan



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Obsidian Solar Center

Archeological Testing and Excavation Methodologies Plan

This Archeological Testing and Excavation Methodologies Plan document confirms the testing and excavation methodologies (Methodologies") agreed upon by Obsidian Solar Center LLC ("Obsidian") and the Oregon State Historic Preservation Office ("SHPO") to address archeological permits and mitigation for potential impacts to identified archaeological isolates and sites for the development of solar energy facility in northern Lake County, Oregon on approximately 3,900 acres ("Project").

RECITALS

1. The provisions below are based on currently available information from previous archaeological work associated with the Project.
2. The Klamath Tribes, Burns Paiute Tribe, and Confederated Tribes of Warm Springs have been contacted, and provided the opportunity to comment and participate in Project planning as it relates to tribal cultural interests.
3. The Methodologies treat the recorded archaeological sites and isolates as a district and focuses on Project-related impacts.
4. The Methodologies do not address instances if human remains, burials, sacred objects, or objects of cultural patrimony are encountered (ORS 97.740-760 items). In the event any are encountered at any time, all work must stop, the area must be protected, and the Inadvertent Discovery Plan (IDP) and Tribal Position Paper on the Treatment of Human Remains followed.

Methodologies

1. Archaeological Site Boundaries

Without a full horizontal and vertical understanding of previously recorded archaeological sites in the project area, Oregon SHPO and Obsidian agree to place a 30-meter (m) buffer around each site. The buffer will constitute the archaeological site boundary in terms of assessing Project-related effects. Any previously recorded isolate within a buffered site, will become part of the larger site. In such cases, the buffer will need to be extended out from the isolate. If an additional isolate is within the new buffer, the process will be repeated. Per SHPO Guidelines, testing may still be conducted to determine site boundaries if preferred to determine whether the 30-meter buffer may be removed.

In the event of discoveries that demonstrate a continuous distribution of artifacts (lacking gaps of at least 30 m) between two or more previously recorded archaeological sites, the sites will be combined into a single archaeological site. The site record forms will be revised and submitted to SHPO to document the new site boundaries. If the combined sites are classified in two different categories (High-Density versus Low-Density), then the original separate site areas will be treated according to their original classifications and the

intervening newly identified site area will be treated in intermediate fashion. That is, archaeological excavation interval spacing will be 20 m for the original High-Density area, 40 m for the original Low-Density area, and 30 m for the intervening area. This applies to both construction trenching and construction (non-archaeological) excavation in Sections 4 and 5 below.

2. Definitions

Artifact Cluster	A high density of artifacts equivalent to 50 or more per square meter on the ground surface or 200 or more per cubic meter in archaeological excavations using ¼-inch screening or 800 or more per cubic meter in archaeological excavations using 1/8-inch screening.
Excavation	As used herein the term “Excavation” means the use of a backhoe, bulldozer, shovel, excavator, trencher or earthmoving equipment in order to install building foundations or concrete footers; but does not include pile driving, traversing the land, or material or equipment laydown.
Inadvertent Discovery Plan	The plan that addresses protocols to be used if previously unidentified archaeological resources are found during construction. This document is attached to the Final Order on the Project Site Certificate issued by the Oregon Energy Facility Siting Council and implemented during Project construction.
Half Test Unit (HTU)	Archaeological excavation measuring 50 centimeters by one meter (rectangle)
High-Density Site	A site identified on Exhibit A as a high-density site, generally determined by developer’s consultant to be potentially eligible or eligible for listing on the National Register of Historic Places.
Low-Density Site	A site identified on Exhibit A as a low-density site, generally determined by developer’s consultant to be likely not eligible for listing on the National Register of Historic Places, an isolate that becomes a site after testing as prescribed in this Methodologies plan.
Monitoring Agreement	An agreement between developer and an interested tribe pursuant to which the tribe has the right to assign one or more cultural monitors to the Project.

Quarter Test Unit (QTU)	Archaeological excavation measuring 50 centimeters by 50 centimeters (square).
Shovel Probe (SP)	Archaeological excavation measuring 30 centimeters in diameter (round).
Test Unit (TU)	Archaeological excavation measuring one meter by one meter (square).
Trenching	Excavation for the purpose of creating trenches in which to place electrical cables connecting the solar panels, collector boxes, inverter skids, and transformers, as applicable.
Tribal Monitor	A person assigned to monitoring the Project under a monitoring agreement entered into between the applicable tribe and the developer or its designee.

3. Archaeological Testing at Isolates

- A. Isolates with three or fewer artifacts will require no archaeological testing.
- B. Locations where four to nine artifacts have been previously recorded as an isolate and that will be impacted by Project-related Excavation or Trenching will require archaeological investigation.
- C. For the purposes of assessing Project effects, isolates that have previously been recorded as having from four to nine artifacts will include a 10 m buffer.
- D. At each isolate location with four to nine artifacts that will be impacted by Project Excavation or Trenching (including buffer), a minimum of one 30-centimeter (cm) diameter shovel probe to be excavated, following SHPO Field Guidelines (minimum depth of 50 cm), and terminated after 20 cm of culturally sterile sediments. Sediments will be screened through either 1/4" or 1/8" wire mesh.
 - a. If, after the shovel probes, the total number of artifacts at the isolate site is less than ten (including the original isolate total), and a feature is not encountered, no further archaeological work is necessary aside from any agreed upon project construction archaeological monitoring.
 - b. If the total number of artifacts is eight or nine, for example, and consists of any combination of chipped stone debitage, tools, groundstone, fire cracked rock (e.g.), suggesting more than one activity, the archaeologist may choose to excavate an additional probe(s), or decide based on professional opinion, that the isolate constitutes an archaeological site. The archaeologist should also consider whether excavation of a second probe, would produce additional artifacts resulting in a site.
 - c. If the excavation of a probe(s) results in ten or more artifacts (including the original total) or a feature, the isolate will be recorded as an archaeological site (on a State of Oregon Archaeological Site Record) and will be treated as a low density site under this Agreement.

- E. All archaeological sites recorded as a result of testing at isolates will require the placement of a 30-m buffer.
- F. If previously recorded isolates (with a 10-meter diameter buffer) can be avoided by the project, there is no need to excavate any archaeological probes at those locations.

4. Trenching within a Recorded Archaeological Site

Any Trenching that will impact a recorded archaeological site (including 30-m buffer) will require archaeological investigation to assess if features, artifact concentrations, or potential ORS 97.740-760 items exist.

A. Trenching Impacts Buffer Only

- a. If the Trenching would impact only the buffer area and not the area within the existing site boundary, then shovel probes will be used to establish whether archaeological deposits are present within the proposed trench line.
- b. For Low-Density Sites, the shovel probe interval will be 40 m along the proposed trench line within the buffer area. For High-Density Sites, the shovel probe interval will be 20 m along the proposed trench line within the buffer area.
- c. If artifacts are identified in the shovel probes or on the ground surface during the shovel probe excavations, the site boundaries will be extended to include the identified artifacts and the methods described below will be used.

B. Trenching Impacts Low Density Site

- a. Any Trenching within the archaeological sites identified as low-density sites on Exhibit A will require excavation of 50x50 cm quarter test units ("QTUs") (adhering to SHPO Field Guidelines).
 - A. The number of QTUs to be excavated at each of these "low density" sites will be calculated on the basis of QTU spacing at 40-m intervals (within the trenching corridor through the site, excluding the buffer). At least one QTU will be excavated. The archaeologist directing the fieldwork will be allowed to place the calculated number of QTUs at locations outside of the trench line or at irregular intervals along the trench line in order to sample locations judged to be most productive for site evaluation. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - B. If as a result of QTU excavations at the "low density" sites, a feature or Artifact Cluster is encountered, the QTU will be expanded to a 0.5 x 1 m half test unit (HTU).

C. Trenching Impacts High-Density Site

- a. Any Trenching within the following archaeological sites identified as high-density sites on Exhibit A will involve excavation of 50x50 cm QTUs (adhering to SHPO Field Guidelines).
 - A. One QTU per every 20 meters (rounding down as necessary) of the high-density site that will be trenched (e.g., if 100 m will be trenched, then five QTUs; if 33 m will be trenched, then one QTU).
 - B. Additional QTUs may be necessary near or as an expansion to an excavated QTU, if a feature or Artifact Cluster is encountered.

- b. Placement of QTUs will be at the discretion of the archaeologist in the field. Placement does not need to be within the area to be trenched, but wherever the archaeologist feels important information about the site can be obtained. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - c. If archaeological sites are avoided by project trenching, additional excavation is not necessary, aside from excavations that may need to be conducted with respect to monitoring and inadvertent discoveries.
- D. **Monitoring Trenching.** All Trenching within recorded archaeological sites (including buffers) will be monitored by one or more tribal monitors. If during monitoring, a feature or Artifact Cluster is encountered, project work will stop and a QTU, HTU, or TU (depending on the size and configuration of the artifact cluster or feature) will be excavated within the feature or cluster (inside or outside the trench) according to SHPO Field Guidelines to collect information on the feature/cluster.
 - a. Non-diagnostic isolated artifacts identified during monitoring will not require work stoppages.
 - b. Diagnostic artifacts identified during monitoring may be collected and turned over to the Klamath Tribes for curation (except for those found on Department of State Lands property) or other appropriate treatment as the Tribes determine, at the discretion of the monitors and archaeological field director.

5. Testing at Project Related (non-archaeological) Excavation

Any Project related non-archaeological Excavation within a site will first require archaeological investigation.

- A. **Excavation Impacting Low-Density Sites.** Any Project-related Excavation within a Low-Density Site will involve archaeological excavation of QTUs.
 - a. The number of QTUs to be excavated at each impacted Low-Density Site will be determined by overlying a 40-m grid within the Excavation area, excluding the site buffer, and counting the number of grid line intersections that occur.
 - b. If the Excavation area within the site is smaller than 40 m square, at least one QTU will be excavated.
 - c. The archaeological field director will determine placement of the required number of QTUs in order to sample locations judged by her or him to be most productive for site evaluation. Locations outside of the Excavation area or irregular spacing may be used at the discretion of the archaeological field director. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - d. Additional QTUs may be excavated at the discretion of the archaeologist.
 - e. If as a result of QTU excavations, a feature or Artifact Cluster is encountered the QTU may be expanded to an HTU if needed to recover important information contained within the archaeological deposit.
- B. **Excavation Impacting High-Density Sites.** Any Project-related Excavation within a High-Density Site will involve archaeological excavation of QTUs (adhering to SHPO Field Guidelines).
 - a. The number of QTUs to be excavated at each impacted High-Density Site will be determined by overlying a 20-m grid within the Excavation area, excluding the site buffer, and counting the number of grid line intersections that occur.
 - b. If the Excavation area within the site is smaller than 20 m square, at least one QTU will be excavated.

- c. The archaeological field director will determine placement of the required number of QTUs in order to sample locations judged by her or him to be most productive for site evaluation. Locations outside of the Excavation area or irregular spacing may be used at the discretion of the archaeological field director. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - d. Additional QTUs, HTUs, or TUs may be excavated at the discretion of the archaeologist.
 - e. If as a result of QTU excavations, a feature or Artifact Cluster is encountered the QTU will be expanded to an HTU if needed to recover important information contained within the archaeological deposit.
- C. All Project-related Excavation will be monitored by one or more tribal monitors will be available as a tribal archaeologist as needed.

6. Historical and Multicomponent Archaeological Sites

- A. Historical archaeological sites (FRA-H1, FRA-H2, FRA-H3, FRA-H4, FRA-H5, FRA-H6, FRA-H8, FRA-H10, FRA-H11, FRA-H12, and FRA-H13) that are impacted by Project-related Excavation will require additional archaeological investigations.
- B. For multi component sites (historic and precontact assemblages, FRA-P/H1, FRA-P/H2, FRA-P/H3, FRA-P/H4, FRA-P/H5) impacted historical components will be addressed based on the information below, and precontact components based on the information in previous sections above.
- C. For historical sites and components impacted by Project-related Excavation or Trenching, the following shall occur:
 - a. Direct sensing using a push rod at homesteads (FRA-H1, FRA-H3, FRA-H13, FRA-P/H3[P52/H7], FRA-P/H4[H9], and FRA-P/H5[H14]) to locate privies (with one QTU archaeological testing at any anomaly).
 - b. Additional background research to more fully establish historic context (e.g., review *The Oregon Desert* (E. R. Jackman and R. A Long 1965) for information on Loma Vista and like towns of the same time period.
 - c. More description of artifact types (e.g., barbed wire, vent hole cans (measurements), (if not in site forms).
 - d. Excavation of at least one QTU within root cellars or other subterranean structures.
 - e. Construction/building debris (such as brick, wood, window glass, etc.), that is non-diagnostic and redundant may be noted but not collected.
- D. Following completion of the work described in this Section 6(A)-(C) for the historical and multicomponent archeological sites, no further mitigation or testing of these sites will be required prior to disturbance.

7. Artifact Analysis

Certain analyses on artifacts recovered during the above-mentioned testing and from previous surface recording will assist with understanding patterns of human land use in the Fort Rock Basin. Specifically, obsidian source characterization, obsidian hydration, and residue analyses on certain artifacts will provide data that can relate to travel or trade networks, temporal affiliation, and diet. The information obtained will also address a portion of mitigation requirements.

- A. A total of 51 obsidian artifacts will be selected for source characterization and hydration analysis.
- B. A total of 10 artifacts will be selected for residue analysis using the cross-over immunoelectrophoresis method.
- C. The specific artifacts to sample for these analyses will be selected by an archaeologist in order to maximize the efficacy of the results for interpreting the significance of archaeological deposits studied according to this plan.
- D. Representative samples of lithic tools and debitage recovered from the excavations described in this plan will be analyzed for information on lithic reduction technologies in order to characterize the stone tool manufacturing and use activities represented by these materials.

8. Reporting

Following completion of the Project, a supplemental report will be submitted to SHPO with any added background research, methods, analyses and results based on the information provided in this Methodologies plan.

9. Archaeological Permit

This Methodologies plan provides the research design to support issuance of the requested archeological permit for the Project. This Methodologies plan also provides all of the mitigation for impacts to archaeological resources planned for the Project. Once the archaeological treatments identified herein are completed, further consideration of cultural resources is not needed, with the exception of tribal monitoring during construction and barring discovery of human remains, burials, or funerary objects. The latter are further addressed in the Inadvertent Discovery Plan. If exceptionally important archaeological materials or deposits, unlike those found to-date, are identified, the project archaeologist will recommend additional consideration or mitigation. Exceptionally important archaeological materials or deposits might include a pre-contact house pit or intact storage feature, Pleistocene-age diagnostic artifacts, a biface cache, or other rare and unusual artifacts or features.

- The maximum number of shovel probes to be excavated under this permit is 500.
- The maximum area of square unit excavations (QTUs, HTUs, and TUs) is 100 square meters.
- Sediments from archaeological excavations will be screened through nested screens with mesh size of ¼ inch on top and ⅛ inch below.
- All archaeological excavations will be terminated after 20 centimeters of sterile (non-artifact bearing) deposits.
- Surface collections are not anticipated but will be made when artifacts are found that would contribute to the analyses identified in this plan.
- The private landowners plan to donate artifact collections to the Klamath Tribes.

Exhibit A

Low -Density Sites:

FRA-P3, FRA-P6, FRA-P7, FRA-P8, FRA-P9, FRA-P12, FRA-P14, FRA-P15, FRA-P16, FRA-P17, FRA-P18, FRA-P19, FRA-P20, FRA-P21, FRA-P 22, FRA-P 23, FRA-P 24, FRA-P 25, FRA-P 29, FRA-P 31, FRA-P 32, FRA-P 33, FRA-P 34, FRA-P 35, FRA-P 36, FRA-P 37, FRA-P 38, FRA-P 39, FRA-P 40, FRA-P-41, FRA-P42, FRA-P43, FRA-P44, FRA-P45, FRA-P46, FRA-P47, FRA-P50, FRA-P51, FRA-P54, FRA-P56, FRA-P58, FRA-P 62, FRA-P 63, FRA-P 64, FRA-P 65, FRA-P 66, FRA-P 67, FRA-P 69, FRA-P 70, FRA-P 72, FRA-P 74, FRA-P 75, FRA-P 76, FRA-P 77, FRA-P 80, FRA-P 81, FRA-P 83, FRA-P 84, FRA-P 85, FRA-P 87, FRA-P 89, FRA-P 93, FRA-P 95, FRA-P 96, FRA-P 97, FRA-P 98, FRA-P 99, FRA-P101, FRA-P102, and FRA-P/H2, including any former isolate that has been probed and documented as a site

High Density Sites:

FRA-P1, FRA-P2, FRA-P10, FRA-P11, FRA-P13, FRA-P26, FRA-P27, FRA-P28, FRA-P30, FRA-P48, FRA-P49, FRA-P53, FRA-P55, FRA-P57, FRA-P59, FRA-P60, FRA-P61, FRA-P68, FRA-P71, FRA-P73/90, FRA-P78, FRA-P79, FRA-P82, FRA-P86, FRA-P88, FRA-P91, FRA-P92, FRA-P94, FRA-P100, FRA-P/H1, FRA-P/H3, FRA-P/H4, and FRA-P/H5

Department of State Lands Archaeological Sites

Historic: H6, H8, H10

Low Density Precontact: P43, P46, P54, P56, P58, P62, P63, P65, P70, P72

High Density Precontact: P53, P59, P60, P71

Avoided under Klamath Tribes agreement: H1, P55, P57, P61, P64, P66, P67, P68, P69, PH3, PH4

Attachment S- 2 Inadvertent Discovery Plan

Inadvertent Discovery Plan for Cultural Resources, Obsidian Solar Center, Lake County, Oregon

Obsidian Solar Center LLC (Applicant) proposes to construct a photovoltaic solar power generation facility in Lake County, Oregon. The project will consist of photovoltaic panels, inverters, mounting infrastructure, electrical collection system, substation(s), battery storage, operation and maintenance building(s), access roads, transmission line(s) and fencing. **This Inadvertent Discovery Plan should be followed if cultural materials, including human remains, are encountered during construction.**

Protocol for coordination in the event of inadvertent discovery:

In the event of an inadvertent discovery of possible cultural materials, including human remains, all work will stop immediately in the vicinity of the find. A 30-meter buffer should be placed around the discovery with work being able to proceed outside of this buffered area unless additional cultural materials are encountered.

- The area will be secured and protected.
- The project manager/land manager will be notified. The project/land manager will notify the State Historic Preservation Office (SHPO) and the Oregon Department of Energy (ODOE). If possible, human remains are encountered, the Oregon State Police, Commission on Indian Services (LCIS), SHPO, ODOE, and appropriate Tribes will also be notified.
- Oregon State Police: 503-731-4717
- LCIS: 503- 986-1067
- SHPO: 503-986-0690, Fax: 503-986-0793
- ODOE Siting Division: 503-378-4040
- Appropriate Tribes: As designated by LCIS
- No work may resume in the area of discovery until consultation with the SHPO has occurred and a professional archaeologist is able to assess the discovery.
- If human remains are encountered, do not disturb them in any way. *Do not call 911*. Do not speak with the media. Secure the location. Do not take Photos. The location should be secured and work will not resume in the area of discovery until all parties involved agree upon a course of action.

- A professional archaeologist may be needed to assess the discovery and they will consult with SHPO and appropriate Tribal Governments to determine an appropriate course of action.
- Archaeological excavations may be required. This is handled on a case by case basis by the professional archaeologist and project manager, in consultation with SHPO and appropriate Tribes.

When to stop work:

Construction work may uncover previously unidentified Native American or Euro-American artifacts. This may occur for a variety of reasons, but may be associated with deeply buried cultural material, access restrictions during project development, or if the area contains impervious surfaces throughout most of the project area which would have prevented standard archaeological site discovery methods.

Work must stop when the following types of artifacts and/or features are encountered:

- *Native American artifacts may include (but are not limited to):*
- Flaked stone tools (arrowheads, knives scrapers etc.);
- Waste flakes that resulted from the construction of flaked stone tools; Ground stone tools like mortars and pestles;
- Layers (strata) of discolored earth resulting from fire hearths. May be black, red or mottled brown and often contain discolored cracked rocks or dark soil with broken shell;

Human remains;

- Any bones that are on the ground surface or buried. They may be accompanied by burial objects such as stone bowls, stone tools or beads but not limited to those items. If there are multiple instances of human remains found on the site, Obsidian will consider appropriate design changes aimed at avoiding the subject area.
- Structural remains- wooden beams, post holes, fish weirs.

Euro-American artifacts may include (but are not limited to):

- Glass (from bottles, vessels, windows etc.);
- Ceramic (from dinnerware, vessels etc.);
- Metal (nails, drink/food cans, tobacco tins, industrial parts etc.);

- Building materials (bricks, shingles etc.);
- Building remains (foundations, architectural components etc.);
- Old Wooden Posts, pilings, or planks (these may be encountered above or below water);
- Remains of ships or sea-going vessels, marine hardware etc.;
- Old farm equipment may indicate historic resources in the area.
- Even what looks to be old garbage could very well be an important archaeological resource.

When human remains are discovered, if it appears that more than one set of remains are uncovered or there has been more than one set of remains discovered on the surface of the ground. All work must stop in the area and consultation and a concurrence must occur with the effected Tribes to protect the burial ground.

When in doubt, call it in!

Proceeding with Construction

- Construction can proceed only after the proper archaeological inspections have occurred and Environmental clearances are obtained. This requires close coordination with SHPO and the Tribes.
- After an inadvertent discovery, some areas may be specified for close monitoring or ‘no work zones.’ Any such areas will be identified by the professional archaeologist to the Project Manager, effected Tribes and appropriate Contractor personnel.
- In coordination with the SHPO, the Project Manager will verify these identified areas and be sure that the areas are clearly demarcated in the field, as needed.

Attachment S-3 Cultural Mitigation and Monitoring Plan

Cultural Mitigation and Monitoring Plan (CMMP)

I. INTRODUCTION

This Cultural Mitigation and Monitoring Plan (CMMP) describes how Obsidian Solar Center LLC (Applicant) will avoid, minimize, mitigate, and monitor for impacts to cultural resources from the Obsidian Solar Center (Facility) located in Lake County, Oregon. The CMMP was developed in consultation with the Oregon Department of Energy (ODOE), the Oregon State Historic Preservation Office (SHPO), the Klamath Tribes, Burns Paiute Tribe, and Confederated Tribes of Warm Springs. Applicant will implement this CMMP during Facility construction.

Prior to and during construction, the applicant shall implement the Archeological Testing and Excavation Methodologies Plan during excavation and ground disturbing activities, included as Attachment S-1 to the Final Order.

II. AVOIDANCE AND MINIMIZATION MEASURES

ASC Exhibit S:

~~The below information is preliminary and shall be updated when finalizing this Cultural Mitigation and Monitoring Plan based on the pre-construction surveys defined in Final Order on ASC, Attachment S-1: Archeological Testing and Excavation Methodologies Plan, and SHPO and Tribal coordination.~~

Applicant ~~will~~ has taken the following measures to prevent destruction of historical, cultural and archaeological resources, ~~all with the agreement of the Klamath Tribes and in accordance with the CMMP:~~

- Eliminated 2,430 acres originally included in the Facility site boundary after it was determined that approximately 850 acres may contain eligible or potentially eligible resources.
- Revised site layout to avoid archeological sites on ~~Excluding isolated finds, eligible or potentially eligible sites cover approximately 202.24 acres within the site boundary.~~ Applicant will avoid approximately 156 acres within Area A – represents more than three quarters of the areas identified with archeological resources. Including revisions to the site layout to avoid topographical features (specifically, an area of sandy dune ridges), identified by the Klamath Tribes as an area of particular concern that human remains may be uncovered during construction, which amounts to almost 80% of the total acres not accounting for appropriate buffers. ~~1 To help offset any disturbance of sites or potential sites not being avoided, Obsidian also agreed to eliminate 2,430 acres originally included in the area studied for potential development after it was determined that approximately 850 acres may contain eligible or potentially eligible resources. In addition, construction will be subject to the Inadvertent Discovery Plan (see Attachment S.5.3.3) and the Tribal Monitoring Agreement, both components of the CMMP.~~
- Prepared Inadvertent Discovery Plan (IDP) included as Attachment S-2 to the Final Order

to implement during Facility during construction. See Section IV below for the IDP requirements.

- ~~• To further avoid and minimize impacts to historic, cultural and archeological resources, Applicant has revised its proposed site layout to avoid topographical features (specifically, an area of sandy dune ridges), identified by the Klamath Tribes as an area of particular concern that human remains may be uncovered during construction. Applicant's revised site layout avoids this area.~~
- ~~• Four of the five multicomponent archeological areas recorded within the site boundary described in the pASC have been preliminarily classified as eligible or potentially eligible resources. Applicant has agreed to avoid all four areas.~~
- ~~• There are three areas with a preliminary designation of "potentially eligible historical site." Applicant has agreed with the Klamath Tribes that Applicant will avoid approximately 9.5 acres (1 site) and may impact approximately 2 acres (2 sites) in this category.~~
- ~~• There are 29 areas with a preliminary designation of "eligible prehistoric site" or "potentially eligible prehistoric site" and, of the approximately 157 acres in this category, Applicants has agreed with the Klamath Tribes that Applicant will avoid approximately 132 acres (14 sites) and may impact just over 25 acres (15 sites).~~
- ~~• In its agreement with the Klamath Tribes, all areas and resources not identified in the CMMP as being avoided may be impacted and the Tribes have agreed that the total mitigation measures described in the CMMP, which include the Tribal Monitoring Agreement and the Inadvertent Discovery Plan, each described below, are adequate to offset for and mitigate against resulting impacts. (Moved to Section III, below. Comment provided for proposed order only and may be removed prior to finalization)~~

III. MITIGATION MEASURES

- Implement Inadvertent Discovery Plan (IDP) included as Attachment S-2 to the Final Order during Facility during construction. See Section IV below for the IDP requirements.
- Obtain and comply with SHPO archeological permits issued as a part of the Facility site certificate and included as Attachment S-4 to the Final Order during Facility construction. See Section V below for SHPO archeological permit requirements.
- Comply with the mitigation obligations agreed to by Applicant and the Klamath Tribes, as confirmed in a letter from the Klamath Tribes Tribal Council to the Department dated June 18, 2019 and to SHPO, dated August 8, 2019.¹ The obligations include the avoidance areas listed in Section III, above, which would also be located within the perimeter fence of the Facility. In its agreement with the Klamath Tribes, all areas and resources not identified in the CMMP as being avoided may be impacted and the Tribes have agreed that the mitigation measures described in the CMMP, which include the Tribal Monitoring Agreement and the Inadvertent Discovery Plan, each described below, are adequate to offset for and mitigate against resulting impacts.

¹ The Department does not have a copy of the letter provided to SHPO.

IV. INADVERTENT DISCOVERY PLAN AND CONSTRUCTION MONITORING AND REPORTING

Applicant will implement the IDP included as Attachment S-1 to the Final Order and have monitors onsite during Facility construction as described in the following sections.

A. Inadvertent Discovery Plan

Applicant will adhere to the Inadvertent Discovery Plan, included as Attachment S-2 to the Final Order, during Facility construction. The Inadvertent Discovery Plan outlines protocols to be followed, including notification of SHPO, Tribal Governments and the Department, if previously unidentified cultural resources or human remains are encountered during construction of the Facility. The primary function of the Inadvertent Discovery Plan is to prevent impacts to human remains or exceptionally important archaeological materials.

B. Monitoring During Construction

The professionally qualified tribal monitor leads will provide weekly reports describing work activities and any findings. This information will be compiled in a monitoring report to be distributed to the area tribes, ODOE, SHPO, and as appropriate the Oregon Department of State Lands (DSL), at the completion Facility construction. The certificate holder shall submit the weekly reports provided by the tribal monitor to the Department in its Semiannual construction report under OAR 345-026-0080(1)(a) and discussed in Final Order Section IV.A. *General Standard of Review*. Submissions with sensitive historic, cultural and archaeological resource information not subject to public records disclosure, shall be submitted separately, clearly marked as “confidential,” and shall request the Department and Council keep the information confidential to the extent permitted by law.

C. Tribal Monitoring Agreements

Applicant will enter into monitoring agreements Klamath Tribes and the Burns Paiute Tribe. The monitoring agreements provide an opportunity for the Tribes to have monitors onsite during ground disturbing activities. These agreements contain notification and reporting obligations, and outline terms for compensation, reimbursement, and monitoring protocols.

V. SHPO ARCHAEOLOGICAL PERMITS

Applicant sought archeological permits under ORS 390.235 through the EFSC process because Facility construction would occur in an area of known archeological objects and sites. In addition to EFSC review, SHPO circulated the archeological permit applications for review and comment pursuant to OAR 736-051-0080 and OAR 736-051-0090. Comments received under OAR 736-051-0080 and OAR 736-051-0090 were incorporated as comments into the EFSC record and formed the basis of conditions contained in the archeological permits.

Four (one for each landowner) SHPO archaeological permits (AP2816, AP2817, AP2818, and AP2819) and their respective conditions are included and governed by the EFSC site certificate. Complete application materials and the four permits, along with their conditions, can be found in

the Final Order on ASC, Attachment S-1: Archeological Testing and Excavation Methodologies Plan. The archaeological permits allow for archaeological excavations where construction impacts to archaeological sites are expected. The archaeological excavations serve as mitigation for those expected construction impacts. The permits also provide for construction monitoring by the Klamath Tribes and the Burns Paiute Tribe, as described above.

The following outlines the archeological permit conditions Applicant must comply with during Facility construction:

- Applicant will enter into a monitoring agreement with Klamath Tribes as described in Section IV above.
- Applicant will enter into a monitoring agreement with the Burns Paiute Tribe as described in Section IV above.
- Diagnostic artifacts identified during monitoring may be collected. The landowner will provide artifacts collected from privately owned land to the Klamath Tribes for curation. On public lands, the artifacts will be sent to an appropriate repository.
- Applicant will implement the Archeological Testing and Excavation Methodologies Plan prior to and during Facility construction (Attachment S-1 to the Final Order) and implement the Inadvertent Discovery Plan (Attachment S-2 to the Final Order).
- Applicant will provide copies of all reports for monitoring and discoveries within the Facility site boundary to ODOE, SHPO, the Klamath Tribes, and the Burns Paiute Tribe. Applicant will also provide copies of all reports for monitoring and discoveries within Section 16 of the Facility site boundary to the Oregon Department of State Lands.

VI. AMENDMENT OF CMMP

This CMMP may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council (“Council”). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the Department.

PROPOSED MONITORING PROGRAM

ASC Exhibit S:

OAR 345-021-0010(1)(s)(E) *~~The applicant’s proposed monitoring program, if any, for impacts to historic, cultural and archaeological resources during construction and operation of the proposed facility.~~*

Response. ~~An archeological monitor will be on site during Facility construction activities. The monitor will provide weekly reports describing work activities and any findings. This~~

information will be compiled in a monitoring report to be distributed to the area tribes, SHPO and the Oregon Department of Energy at the completion Facility construction. The monitor(s) will follow the monitoring plan, which will be finalized between Applicant and the Klamath Tribes, with the following agreed-upon material terms:

- The Director of Culture and Heritage Department or other designee, will be the primary point of contact and will assign up to 2 cultural monitors during the Facility construction (or such greater number as may be appropriate given the rate and schedule of construction). The Director, along with the Cultural Resource Protection Specialist, if applicable, will be reimbursed for their time spent on the project overseeing the monitors and responding to reports as necessary. In order to be reimbursed detailed invoices showing time and activities must be submitted to Applicant in a timely manner.
- Monitors will be paid hourly for each hour of on-site observation and will be entitled to a per diem payment each day on site for observation. It is expected that the construction schedule will consist of 4 ten-hour work days per week and, depending on construction phases, may last up to two years. Cultural monitors will be paid on the terms and frequency agreed upon by the parties.

- ~~To the extent that the cultural monitors are required to travel more than 75 miles from their homes to the facility site, Obsidian will reimburse a specified amount per night for lodging, provided that the monitors are responsible for securing their own reservations or make other arrangements. This lodging stipend is in addition to the per diem.~~
- ~~Monitors will be responsible for providing their own transportation to and from the site. For transportation around the site, the monitors will be provided with two four-wheel-drive pick-up trucks (only crew members that have been cleared by the Klamath Tribe Administration policies through the Culture and Heritage Department will be allowed to operate any vehicle). Fuel costs for monitoring on this project will be a reimbursable expense.~~
- ~~In order to work on the site, Monitors will be required to have steel tipped boots, hard hats, reflective vests, GPS units, digital cameras, cell phones, ear and eye protection, and first aid kits.~~
- ~~The cultural monitors will be expected to attend all safety meetings and follow all safety and other instructions of the EPC contractor. Cultural monitors will be expected to be on site to observe all excavation work. The cultural monitors will coordinate their daily activities with Applicant's construction contractor and Applicant's archeologist, if applicable, and provide written weekly summary reports to Applicant describing observed items or issues.~~
- ~~The Tribes may employ a professional archaeologist to support the monitoring and archaeological work being conducted in connection with construction of the facility. Applicant will reimburse the Tribes for the actual direct costs of hiring the archaeologist incurred by the Tribes provided the Tribes submit a reasonably detailed invoice to Applicant. The archaeologist will provide guidance on various archaeological matters throughout the term of the project. The archaeologist will work closely with representatives of the Applicant on behalf of the Klamath Tribes.~~
- ~~The Tribes may incur legal costs in association with entering into the Monitoring Agreement. Obsidian has agreed to reimburse the Tribes for a portion of such costs.~~

~~In advance of construction, all monitors and others involved in construction activities will have received appropriate training regarding the types of resources that may be present below the ground surface and appropriate actions to take in case of a find. In the case of a post-review discovery, the archeological monitor will follow the Inadvertent Discovery Plan protocol described in Appendix S05 to this Supplement to Exhibit S.~~

~~SHPO ARCHAEOLOGICAL PERMIT CONDITIONS~~

~~SHPO Archaeological Permits~~

~~The following conditions are included in the SHPO Archaeological Permits included and governed by the EFSC site certificate. Permit ID's: AP2816, AP2817, AP2818, and AP2819.~~

Klamath Tribes

The Klamath Tribes will have our employed Archaeologist onsite for review of work related to this permit and will be overseeing the Klamath Tribes interests.

- Definitions; Monitoring Agreement, the Klamath Tribes may have Tribal Monitor(s) onsite during all excavation activities under this permit. A notification of at least 24 hour must be given to the Klamath Tribes, Culture and Heritage Department or Tribal Archaeologist, before the starting of work.
- Trenching within a Recorded Archaeological Site; D. (b) Diagnostic artifacts identified during monitoring may be collected and turned over to the archaeological field director for curation. If lands held by Oregon Department of State Lands, at a later time became property of Obsidian Solar Center LLC. The Klamath Tribes request that artifacts collected would be given to the Klamath Tribes, Culture and Heritage Department for curation.
- Testing at Project Related (non archaeological) Excavation; C. All Project related Excavation will be monitored by one or more tribal monitors as the tribal archaeologist sees appropriate. A 24 hour notification must be given to the Klamath Tribes, Culture and Heritage Department or Tribes Archaeologist from; Swinerton, Dog Lake Construction or Obsidian Solar Center. Before non archaeological work related to ground disturbing activities on the project is started.
- Artifact Analysis; A. a total of 51 obsidian artifact will be selected for source characterization and hydration analysis on the project. That No Destructive analysis will be performed on collected artifacts, rather a debitage flake from the sample area selected will be used for hydration analysis. B. a total of 10 artifacts will be selected for residue analysis. The Klamath Tribes, Culture and Heritage Department, concurs with this method to be used for residue analysis.
- Reporting. That The Klamath Tribes, Culture and Heritage Department also request a copy of the report of finding from the testing phase of the project.
- Archaeological Permit; This Methodologies plan provides the archaeological mitigation for impact to archaeological resources for the planned project. However, the Klamath Tribes, Culture and Heritage Department reserve the request that more mitigation may be needed for other (new) cultural/archaeological resources unearthed during; the testing phase of the permit and construction related activities.

Burns Paiute Tribe

- We request the ability to have a Burns Paiute tribal cultural monitor on-site for all or part of the excavations at the Burns Paiute Tribe's discretion.
- We would like the ability to review and potentially comment on the draft report generated as a result of the excavation.
- We request a bound copy of the final report.

- ~~We reserve the right to review the collected cultural items prior to their permanent curation. If cultural items are taken from private lands we ask that the private land owner consider gifting the cultural items to the Burns Paiute Tribe so that we may take care of them in a culturally appropriate manner.~~
- ~~We would also like an executed copy of the inadvertent discovery plan prior to initiation of ground disturbing activities, and we want to be listed as one of the primary contacts for inadvertent discoveries.~~

~~Oregon Department of State Lands (DSL-- Landowner)~~

~~DSL requests:~~

- ~~A copy of the of the Final Report that addresses the survey & testing done on Section 16 of DSLs land and;~~
- ~~A copy of the GIS shape files that identifies the areas surveyed & the location of the Sites & Isolates documented on section 16 of DSL Land.~~

Attachment S-4 SHPO Archaeological Permits (Redacted)



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



STATE OF OREGON ARCHAEOLOGICAL EXCAVATION PERMIT NO. AP-2816

The State of Oregon, acting by and through its Parks and Recreation Department, hereinafter called STATE, under authority of ORS 390.235, hereby grants to Terry L Ozbun, hereinafter called PERMITTEE, a permit for purposes of excavation and removal of archaeological, historical, prehistoric, or anthropological materials. This permit is granted subject to the following terms and conditions.

1. **Term** PERMITTEE may conduct survey, excavation, and collection work from date of signature to one year from date of signature provided that reasonable supervision, as provided hereinafter, is exercised.
2. **Location** This permit shall apply to lands owned by the State of Oregon, a city, county, district, or municipal corporation in Oregon, or private property, more particularly described as follows:
3. **Supervision** The design and work in connection with the survey or excavation, including exploratory excavation and collection, shall be personally supervised by John L. Fagan, Eva Hulse, Terry L Ozbun, Jo Reese, Nicholas Smits, Lucie Tisdale, Maureen Zehendner, Jason Cowan, Kristen Fuld, Karla Hotze, Kelley Martinez, Marci Monaco, Carmen Sarjeant, Ryan W Swanson, Alexandra Williams-Larson.
4. **Compliance** PERMITTEE shall comply with all applicable federal, state and local laws, rules, regulations and ordinances.
5. **Exploration shall consist of:**
See attached.
6. **Indemnification** PERMITTEE agrees to defend and hold STATE, its officers, agents, and employees harmless, and shall require its contractors to do the same, from any and all claims, damages, or expenses of any kind suffered or alleged to be suffered on the lands described in paragraph 2 or arising out of or in connection with the activities of PERMITTEE or its contractors pursuant to this Permit.
7. **Insurance** PERMITTEE shall obtain at PERMITTEE's expense, and keep in effect during the term of the Permit, comprehensive or commercial general liability insurance covering personal injury and property damage. This insurance shall include contractual liability coverage for the indemnification provided under this Permit. Coverage limits shall not be less than the limits of liability set forth in the provisions of ORS 30.270(1) as now in effect or as hereinafter amended. Such provisions now require that the coverage limits not less than \$500,000 combined single limit per occurrence. The insurance shall be in a form and with compliance acceptable to STATE. Such insurance may be evidenced by certificates or copies of policies. Such evidence shall be provided to STATE prior to the commencement of any operations or activities under this Permit.
8. **Records** PERMITTEE shall submit a final excavation report by two years from signature to the State Historic Preservation Office and the Oregon State Museum of Anthropology. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, then PERMITTEE shall also submit copies of the Final Report to the Commission on Indian Services and

the following tribe(s):

Burns Paiute Tribe

Confederated Tribes of the Warm Springs Reservation

Klamath Tribes

Klamath Tribes

9. Custody

All archaeological, historical, prehistoric, or anthropological materials recovered under this permit shall remain under the stewardship of the State of Oregon and shall be curated by UOMNCH. Any change in custody must be approved by the Oregon State Museum of Anthropology in accordance with ORS 390.235. Prior to submitting the materials to the permanent curation facility, the appropriate tribe(s) must be given 30 days to view all archaeological materials to ensure that funerary objects, sacred objects, and objects of cultural patrimony are returned to tribal ownership per state law (ORS 97.740).

10. Notification

- a. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall notify in writing the most appropriate Indian tribe. The notification shall include:
 - i. The location and schedule of the forthcoming excavation;
 - ii. A description of the nature of the investigation; and
- b. Upon discovery of an archaeological object which is demonstrably revered by any ethnic group, religious group, or Indian tribe as holy, which object was or is used in connection with a religious or spiritual service or worship of a deity or spirit power, i.e., a "sacred object", PERMITTEE shall notify in writing:
 - i. The State Historic Preservation Office; and
 - ii. The appropriate ethnic group, religious group, or Indian tribe with which the sacred object is associated.

- 11. Consultation** If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall consult with a representative of the appropriate tribe to establish a procedure for handling sacred objects recovered during the excavation.

12. Conditions:

Gary A. Curtis, Oregon Department of State Lands (Landowner)

RPA Archaeologist Gary Curtis requests on behalf of the DSL 1). a copy of the of the Final Report that addresses the survey & testing done on [REDACTED] DSLs land and 2). a copy of the GIS shape files that identifies the areas surveyed & the location of the Sites & Isolates documented on [REDACTED] DSL Land!
Thank you, Gary

Klamath Tribes

Requests, The Klamath Tribes will have our employed Archaeologist onsite for review of work related to this permit and will be overseeing the Klamath Tribes interests.

- 2. Definitions; Monitoring Agreement, the Klamath Tribes may have Tribal Monitor(s) onsite during all excavation activities under this permit. A notification of at least 24 hour must be given to the Klamath Tribes, Culture and Heritage Department or Tribal Archaeologist, before the starting of work.
- 4. Trenching within a Recorded Archaeological Site; D. (b) Diagnostic artifacts identified during monitoring may be collected and turned over to the archaeological field director for curation. If lands held by Oregon Department of State Lands, at a later time became property of Obsidian Solar Center LLC. The Klamath Tribes request that artifacts collected would be given to the Klamath Tribes, Culture and Heritage Department for curation.
- 5. Testing at Project Related (non-archaeological) Excavation; C. All Project-related Excavation will be monitored by one or more tribal monitors as the tribal archaeologist sees appropriate. A 24 hour notification must be given to the Klamath Tribes, Culture and Heritage Department or Tribes Archaeologist from; Swinerton, Dog Lake Construction or Obsidian Solar Center. Before non-archaeological work related to ground disturbing activities on the project is started.
- 7. Artifact Analysis; A. [REDACTED]
[REDACTED] That No Destructive analysis will be performed on collected artifacts, rather a debitage flake from the sample area selected will be used for hydration analysis. B. [REDACTED]
[REDACTED] The Klamath Tribes, Culture and Heritage Department, concurs with this method to be used for residue analysis.
- 8. Reporting. That The Klamath Tribes, Culture and Heritage Department also request a copy of the report of finding from the testing phase of the project.
- 9. Archaeological Permit; This Methodologies plan provides the archaeological mitigation for impact to archaeological resources for the planned project. However, the Klamath Tribes, Culture and Heritage Department reserve the request that more mitigation may be needed for other (new) cultural/archaeological resources unearthed during; the testing phase of the permit and construction related activities.

Burns Paiute Tribe

We request the ability to have a Burns Paiute tribal cultural monitor on-site for all or part of the excavations-at the Burns Paiute Tribe's discretion. We would like the ability to review and potentially comment on the draft report generated as a result of the excavation. We request a bound copy of the final report. We reserve the right to review the collected cultural items prior to their permanent curation. If cultural items are taken from private lands we ask that the private land owner consider gifting the cultural items to the Burns Paiute Tribe so that we may take care of them in a culturally appropriate manner. We would also like an executed copy of the inadvertent discovery plan prior to initiation of ground disturbing activities, and we want to be listed as one of the primary contacts for inadvertent discoveries. Thank you!

13. **Revocation** Failure to comply with all terms of this Permit, in addition to any agreed upon conditions, may lead to its immediate revocation.

OREGON PARKS AND RECREATION DEPARTMENT



Christine Curran
Deputy State Historic Preservation Officer

Date:

State of Oregon Archaeological Permit Application

<p>AP</p> <p>(Completed by SHPO)</p>	<p>Applications may be printed and mailed to:</p> <p style="text-align: center;">Oregon SHPO, 725 Summer Street NE, Suite C, Salem OR 97301-1266</p> <p style="text-align: center;">Submit electronic applications to: Arch.Permits@Oregon.gov</p> <p style="text-align: center;">(Electronic submissions are preferred. Please be sure to submit only one application [printed and mailed or electronic])</p>												
<p>All Information must be completed before the application will be processed. Attach separate sheets for project map and research design or for any fields that require additional information. The permit will be circulated with a 30 day comment period from the date of mailing. Applications submitted to SHPO staff email addresses (via To: CC: BCC: Forward) will not be processed.</p>													
<table style="width: 100%; border: none;"> <tr> <td style="width: 45%;">Applicant:</td> <td style="width: 15%;">Institution:</td> <td style="width: 15%;">State:</td> <td style="width: 25%;">Zip:</td> </tr> <tr> <td>Address:</td> <td>City:</td> <td></td> <td></td> </tr> <tr> <td>Email:</td> <td></td> <td></td> <td></td> </tr> </table> <p>Applicants must be included on the “Qualified Archaeologist” (per ORS 390.235) list on file at SHPO. Applicants must have a letter supporting their ability to initiate, conduct, and complete the proposed work, including evidence of logistical support and laboratory facilities on file at SHPO.</p>		Applicant:	Institution:	State:	Zip:	Address:	City:			Email:			
Applicant:	Institution:	State:	Zip:										
Address:	City:												
Email:													
<p>Project Name and Location Description</p> <p>Attach a 7.5' USGS topographic map that clearly shows the location of the proposed archaeological investigation.</p> <p>If more than one County is involved, separate permits (for each county) will be required.</p>	<p>Project Name:</p> <p>Site Trinomial:</p> <div style="background-color: black; width: 100%; height: 150px; margin-top: 10px;"></div> <p style="font-size: small; text-align: center;">* If more fields are needed, please attach a separate sheet to the permit application.</p>												
<p>Surface Owner</p> <p>A signed landowner agreement that excavation can take place on private land must be submitted with this form (ORS 358.920[5]).</p> <p>Additional permits will be necessary for investigations covering properties with multiple landowners (one permit per landowner).</p>	<p>Owner:</p> <p>Representative:</p> <p>Address:</p> <p>City: State: Zip:</p> <p>Telephone: Fax:</p> <p>Email:</p> <p style="font-size: small;">** Owner or Representative must be a person.</p>												
<p>Agency that has management control over the project</p> <p>Attach a letter of agreement for the proposed work from the land manager. The letter must include evidence/authorization of sufficient funding to cover excavation, analysis, final report, and curation.</p>	<p>Institution:</p> <p>Name:</p> <p>Address:</p> <p>City: State: Zip:</p> <p>Telephone: Fax:</p> <p>Email:</p>												
<p>Qualified Archaeologist(s) in the field who has direct charge of excavation (must include the applicant and each individual listed must be on the SHPO “Qualified Archaeologist” list)</p>	<p>Name(s):</p>												

Fieldwork	Estimated Starting Date of Fieldwork: Estimated Date of Fieldwork Completion:
Attach a Research Design, per OAR 736-051-0080(4)(C) & 736-051-0090 (3)(A) (For additional assistance, please refer to the SHPO Research Design document) Approval of a permit application by SHPO does not indicate project or undertaking approval	According to OAR 736-051-0080(C) , A Research Design “explicitly develops the rationale behind the proposed research, giving the theoretical orientation, justification for problem selection, logic and procedures for the research strategy. The design must define the universe of study, establish realistic minimal expectations and a realistic schedule of research and provide justified recovery procedures.”
Ancillary plan for reporting results if applicable (i.e., in addition to the final report submitted to SHPO, UOMNCH, LCIS, and appropriate tribes)	Publisher: Conference: Other:
Curation (ORS 358.920[4][a], 390.235[3]) The University of Oregon Museum of Natural and Cultural History (UOMNCH) requires a signed landowner agreement for curation of artifacts for private property that clearly shows the landowner had the option to retain or donate to UOMNCH or another facility. Curation of artifact collections at UOMNCH must meet museum guidelines. For collections being given to landowners a complete collection of field and lab records and digital photos needs to be sent to UOMNCH. If an alternative curatorial facility is selected (other than SOULA, OSU or The Dalles Discovery Center), a Letter of Agreement from UOMNCH approving the facility and a Letter of Agreement from the selected curation facility stating their willingness to accept the collection needs to be included in the permit application.	Temporary Curatorial Lab or Facility: Name: Address: City: State: Zip: Telephone: Fax: Permanent Curatorial Facility: The landowner will retain the artifacts, per signed letter (attached), and all field records, lab records, and photos will be sent to UOMNCH. <u>or</u> Name: Address: City: State: Zip: Telephone: Fax:
Tribal Notification If the excavation is associated with a prehistoric or historic American Indian archaeological site, refer to ORS 358.950 . Consultation should occur during the 30-day review period. Applicants will be notified of the most appropriate tribes in a letter during the 30-day permit review period	

Planning Department:

Where feasible, a copy of the application is submitted to the Legislative Commission on Indian Services (LCIS) within two days of receipt, requesting the most appropriate tribe(s). The application will not be circulated unless it is complete and accompanied with the extra documentation requirements. Copies of this form and attachments are then sent to the landowner, local planning department, UOMNCH, LCIS and appropriate tribe(s). SHPO gives reviewers 30 calendar days to return their comments. If no objections are received, the permit will be issued at the end of the 30-day period or as soon as all reviewers have submitted their approval.

Checklist, Signature and Date (Required)

If the submitted application is not complete, it will not be processed. As such, please take a few minutes to review your application prior to submitting to SHPO. The checklist below is required and intended to assist the applicant with review prior to submission. Taking a few minutes to make sure the items in the checklist are included in the application will hopefully decrease any processing delays.

As the Applicant, I have reviewed the permit application prior to submitting to SHPO and can attest that it contains:

One listed applicant

The appropriate Township(s), Range(s) and Section(s)

A USGS 7.5 minute map(s) depicting the location of the proposed investigations

The required letters (landowner permission, funding, curation) as applicable

The appropriate local planning department (City or County)

Excavation methods (in the Research Design) that include (at a minimum):

The maximum number and size of excavation units or probes

The excavation levels (e.g., 10 cm arbitrary)

The screen size

A description of unit/probe termination (e.g., 50 cm and two sterile levels, bedrock, etc.)

A research design consistent with [OAR 736-051-0080\(C\)](#) and the [SHPO Research Design](#)

A landowner letter (as applicable) regarding disposition of artifacts that correlates to the Permanent Curatorial Facility section in the application

Surface collection methods (as applicable)

I further attest that I or one of the Qualified Archaeologists listed in the application will be in the field at all times during the course of the permitted investigation;

and that I have read and understand the process outlined in the [Tribal Position Paper on Human Remains](#)

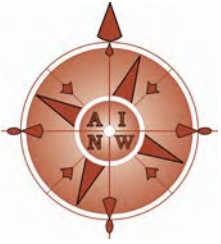
I understand that if submitted electronically, I will use arch.permits@oregon.gov and not SHPO staff emails (including CC, BCC or Forward);

and that SHPO processing of an archaeological permit application does not constitute project or undertaking consultation nor indicate SHPO approval for a project or undertaking.

Applicant:

Signature:

Date:



Archaeological Investigations Northwest, Inc.

3510 N.E. 122nd Ave. • Portland, Oregon 97230
Phone (503) 761-6605 • Fax (503) 761-6620

Vancouver Phone (360) 696-7473
E-mail: ainw@ainw.com
Web: www.ainw.com

Obsidian Solar Center

Archeological Testing and Excavation Methodologies Plan

This Archeological Testing and Excavation Methodologies Plan document confirms the testing and excavation methodologies (Methodologies") agreed upon by Obsidian Solar Center LLC ("Obsidian") and the Oregon State Historic Preservation Office ("SHPO") to address archeological permits and mitigation for potential impacts to identified archaeological isolates and sites for the development of solar energy facility in northern Lake County, Oregon on approximately 3,900 acres ("Project").

RECITALS

1. The provisions below are based on currently available information from previous archaeological work associated with the Project.
2. The Klamath Tribes, Burns Paiute Tribe, and Confederated Tribes of Warm Springs have been contacted, and provided the opportunity to comment and participate in Project planning as it relates to tribal cultural interests.
3. The Methodologies treat the recorded archaeological sites and isolates as a district and focuses on Project-related impacts.
4. The Methodologies do not address instances if human remains, burials, sacred objects, or objects of cultural patrimony are encountered (ORS 97.740-760 items). In the event any are encountered at any time, all work must stop, the area must be protected, and the Inadvertent Discovery Plan (IDP) and Tribal Position Paper on the Treatment of Human Remains followed.

Methodologies

1. Archaeological Site Boundaries

Without a full horizontal and vertical understanding of previously recorded archaeological sites in the project area, Oregon SHPO and Obsidian agree to place a 30-meter (m) buffer around each site. The buffer will constitute the archaeological site boundary in terms of assessing Project-related effects. Any previously recorded isolate within a buffered site, will become part of the larger site. In such cases, the buffer will need to be extended out from the isolate. If an additional isolate is within the new buffer, the process will be repeated. Per SHPO Guidelines, testing may still be conducted to determine site boundaries if preferred to determine whether the 30-meter buffer may be removed.

In the event of discoveries that demonstrate a continuous distribution of artifacts (lacking gaps of at least 30 m) between two or more previously recorded archaeological sites, the sites will be combined into a single archaeological site. The site record forms will be revised and submitted to SHPO to document the new site boundaries. If the combined sites are classified in two different categories (High-Density versus Low-Density), then the original separate site areas will be treated according to their original classifications and the

intervening newly identified site area will be treated in intermediate fashion. That is, archaeological excavation interval spacing will be 20 m for the original High-Density area, 40 m for the original Low-Density area, and 30 m for the intervening area. This applies to both construction trenching and construction (non-archaeological) excavation in Sections 4 and 5 below.

2. Definitions

Artifact Cluster	A high density of artifacts equivalent to 50 or more per square meter on the ground surface or 200 or more per cubic meter in archaeological excavations using ¼-inch screening or 800 or more per cubic meter in archaeological excavations using 1/8-inch screening.
Excavation	As used herein the term “Excavation” means the use of a backhoe, bulldozer, shovel, excavator, trencher or earthmoving equipment in order to install building foundations or concrete footers; but does not include pile driving, traversing the land, or material or equipment laydown.
Inadvertent Discovery Plan	The plan that addresses protocols to be used if previously unidentified archaeological resources are found during construction. This document is attached to the Final Order on the Project Site Certificate issued by the Oregon Energy Facility Siting Council and implemented during Project construction.
Half Test Unit (HTU)	Archaeological excavation measuring 50 centimeters by one meter (rectangle)
High-Density Site	A site identified on Exhibit A as a high-density site, generally determined by developer’s consultant to be potentially eligible or eligible for listing on the National Register of Historic Places.
Low-Density Site	A site identified on Exhibit A as a low-density site, generally determined by developer’s consultant to be likely not eligible for listing on the National Register of Historic Places, an isolate that becomes a site after testing as prescribed in this Methodologies plan.
Monitoring Agreement	An agreement between developer and an interested tribe pursuant to which the tribe has the right to assign one or more cultural monitors to the Project.

Quarter Test Unit (QTU)	Archaeological excavation measuring 50 centimeters by 50 centimeters (square).
Shovel Probe (SP)	Archaeological excavation measuring 30 centimeters in diameter (round).
Test Unit (TU)	Archaeological excavation measuring one meter by one meter (square).
Trenching	Excavation for the purpose of creating trenches in which to place electrical cables connecting the solar panels, collector boxes, inverter skids, and transformers, as applicable.
Tribal Monitor	A person assigned to monitoring the Project under a monitoring agreement entered into between the applicable tribe and the developer or its designee.

3. Archaeological Testing at Isolates

- A. Isolates with three or fewer artifacts will require no archaeological testing.
- B. Locations where four to nine artifacts have been previously recorded as an isolate and that will be impacted by Project-related Excavation or Trenching will require archaeological investigation.
- C. For the purposes of assessing Project effects, isolates that have previously been recorded as having from four to nine artifacts will include a 10 m buffer.
- D. At each isolate location with four to nine artifacts that will be impacted by Project Excavation or Trenching (including buffer), a minimum of one 30-centimeter (cm) diameter shovel probe to be excavated, following SHPO Field Guidelines (minimum depth of 50 cm), and terminated after 20 cm of culturally sterile sediments. Sediments will be screened through either 1/4" or 1/8" wire mesh.
 - a. If, after the shovel probes, the total number of artifacts at the isolate site is less than ten (including the original isolate total), and a feature is not encountered, no further archaeological work is necessary aside from any agreed upon project construction archaeological monitoring.
 - b. If the total number of artifacts is eight or nine, for example, and consists of any combination of chipped stone debitage, tools, groundstone, fire cracked rock (e.g.), suggesting more than one activity, the archaeologist may choose to excavate an additional probe(s), or decide based on professional opinion, that the isolate constitutes an archaeological site. The archaeologist should also consider whether excavation of a second probe, would produce additional artifacts resulting in a site.
 - c. If the excavation of a probe(s) results in ten or more artifacts (including the original total) or a feature, the isolate will be recorded as an archaeological site (on a State of Oregon Archaeological Site Record) and will be treated as a low density site under this Agreement.

- E. All archaeological sites recorded as a result of testing at isolates will require the placement of a 30-m buffer.
- F. If previously recorded isolates (with a 10-meter diameter buffer) can be avoided by the project, there is no need to excavate any archaeological probes at those locations.

4. Trenching within a Recorded Archaeological Site

Any Trenching that will impact a recorded archaeological site (including 30-m buffer) will require archaeological investigation to assess if features, artifact concentrations, or potential ORS 97.740-760 items exist.

A. Trenching Impacts Buffer Only

- a. If the Trenching would impact only the buffer area and not the area within the existing site boundary, then shovel probes will be used to establish whether archaeological deposits are present within the proposed trench line.
- b. For Low-Density Sites, the shovel probe interval will be 40 m along the proposed trench line within the buffer area. For High-Density Sites, the shovel probe interval will be 20 m along the proposed trench line within the buffer area.
- c. If artifacts are identified in the shovel probes or on the ground surface during the shovel probe excavations, the site boundaries will be extended to include the identified artifacts and the methods described below will be used.

B. Trenching Impacts Low Density Site

- a. Any Trenching within the archaeological sites identified as low-density sites on Exhibit A will require excavation of 50x50 cm quarter test units ("QTUs") (adhering to SHPO Field Guidelines).
 - A. The number of QTUs to be excavated at each of these "low density" sites will be calculated on the basis of QTU spacing at 40-m intervals (within the trenching corridor through the site, excluding the buffer). At least one QTU will be excavated. The archaeologist directing the fieldwork will be allowed to place the calculated number of QTUs at locations outside of the trench line or at irregular intervals along the trench line in order to sample locations judged to be most productive for site evaluation. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - B. If as a result of QTU excavations at the "low density" sites, a feature or Artifact Cluster is encountered, the QTU will be expanded to a 0.5 x 1 m half test unit (HTU).

C. Trenching Impacts High-Density Site

- a. Any Trenching within the following archaeological sites identified as high-density sites on Exhibit A will involve excavation of 50x50 cm QTUs (adhering to SHPO Field Guidelines).
 - A. One QTU per every 20 meters (rounding down as necessary) of the high-density site that will be trenched (e.g., if 100 m will be trenched, then five QTUs; if 33 m will be trenched, then one QTU).
 - B. Additional QTUs may be necessary near or as an expansion to an excavated QTU, if a feature or Artifact Cluster is encountered.

- b. Placement of QTUs will be at the discretion of the archaeologist in the field. Placement does not need to be within the area to be trenched, but wherever the archaeologist feels important information about the site can be obtained. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - c. If archaeological sites are avoided by project trenching, additional excavation is not necessary, aside from excavations that may need to be conducted with respect to monitoring and inadvertent discoveries.
- D. **Monitoring Trenching.** All Trenching within recorded archaeological sites (including buffers) will be monitored by one or more tribal monitors. If during monitoring, a feature or Artifact Cluster is encountered, project work will stop and a QTU, HTU, or TU (depending on the size and configuration of the artifact cluster or feature) will be excavated within the feature or cluster (inside or outside the trench) according to SHPO Field Guidelines to collect information on the feature/cluster.
 - a. Non-diagnostic isolated artifacts identified during monitoring will not require work stoppages.
 - b. Diagnostic artifacts identified during monitoring may be collected and turned over to the Klamath Tribes for curation (except for those found on Department of State Lands property) or other appropriate treatment as the Tribes determine, at the discretion of the monitors and archaeological field director.

5. Testing at Project Related (non-archaeological) Excavation

Any Project related non-archaeological Excavation within a site will first require archaeological investigation.

- A. **Excavation Impacting Low-Density Sites.** Any Project-related Excavation within a Low-Density Site will involve archaeological excavation of QTUs.
 - a. The number of QTUs to be excavated at each impacted Low-Density Site will be determined by overlying a 40-m grid within the Excavation area, excluding the site buffer, and counting the number of grid line intersections that occur.
 - b. If the Excavation area within the site is smaller than 40 m square, at least one QTU will be excavated.
 - c. The archaeological field director will determine placement of the required number of QTUs in order to sample locations judged by her or him to be most productive for site evaluation. Locations outside of the Excavation area or irregular spacing may be used at the discretion of the archaeological field director. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - d. Additional QTUs may be excavated at the discretion of the archaeologist.
 - e. If as a result of QTU excavations, a feature or Artifact Cluster is encountered the QTU may be expanded to an HTU if needed to recover important information contained within the archaeological deposit.
- B. **Excavation Impacting High-Density Sites.** Any Project-related Excavation within a High-Density Site will involve archaeological excavation of QTUs (adhering to SHPO Field Guidelines).
 - a. The number of QTUs to be excavated at each impacted High-Density Site will be determined by overlying a 20-m grid within the Excavation area, excluding the site buffer, and counting the number of grid line intersections that occur.
 - b. If the Excavation area within the site is smaller than 20 m square, at least one QTU will be excavated.

- c. The archaeological field director will determine placement of the required number of QTUs in order to sample locations judged by her or him to be most productive for site evaluation. Locations outside of the Excavation area or irregular spacing may be used at the discretion of the archaeological field director. The rationale for placement of QTUs will be included in the subsequent archaeological report.
 - d. Additional QTUs, HTUs, or TUs may be excavated at the discretion of the archaeologist.
 - e. If as a result of QTU excavations, a feature or Artifact Cluster is encountered the QTU will be expanded to an HTU if needed to recover important information contained within the archaeological deposit.
- C. All Project-related Excavation will be monitored by one or more tribal monitors will be available as a tribal archaeologist as needed.

6. Historical and Multicomponent Archaeological Sites

- A. Historical archaeological sites [REDACTED] that are impacted by Project-related Excavation will require additional archaeological investigations.
- B. For multi component sites (historic and precontact assemblages, [REDACTED] impacted historical components will be addressed based on the information below, and precontact components based on the information in previous sections above.
- C. For historical sites and components impacted by Project-related Excavation or Trenching, the following shall occur:
 - a. Direct sensing using a push rod at homesteads [REDACTED] to locate privies (with one QTU archaeological testing at any anomaly).
 - b. Additional background research to more fully establish historic context (e.g., review *The Oregon Desert* (E. R. Jackman and R. A Long 1965) for information on Loma Vista and like towns of the same time period.
 - c. More description of artifact types (e.g., barbed wire, vent hole cans (measurements), (if not in site forms).
 - d. Excavation of at least one QTU within root cellars or other subterranean structures.
 - e. Construction/building debris (such as brick, wood, window glass, etc.), that is non-diagnostic and redundant may be noted but not collected.
- D. Following completion of the work described in this Section 6(A)-(C) for the historical and multicomponent archeological sites, no further mitigation or testing of these sites will be required prior to disturbance.

7. Artifact Analysis

Certain analyses on artifacts recovered during the above-mentioned testing and from previous surface recording will assist with understanding patterns of human land use in the Fort Rock Basin. Specifically, obsidian source characterization, obsidian hydration, and residue analyses on certain artifacts will provide data that can relate to travel or trade networks, temporal affiliation, and diet. The information obtained will also address a portion of mitigation requirements.

- A. [REDACTED] will be selected for source characterization and hydration analysis.
- B. [REDACTED] will be selected for residue analysis using the cross-over immunoelectrophoresis method.
- C. The specific artifacts to sample for these analyses will be selected by an archaeologist in order to maximize the efficacy of the results for interpreting the significance of archaeological deposits studied according to this plan.
- D. Representative samples of lithic tools and debitage recovered from the excavations described in this plan will be analyzed for information on lithic reduction technologies in order to characterize the stone tool manufacturing and use activities represented by these materials.

8. Reporting

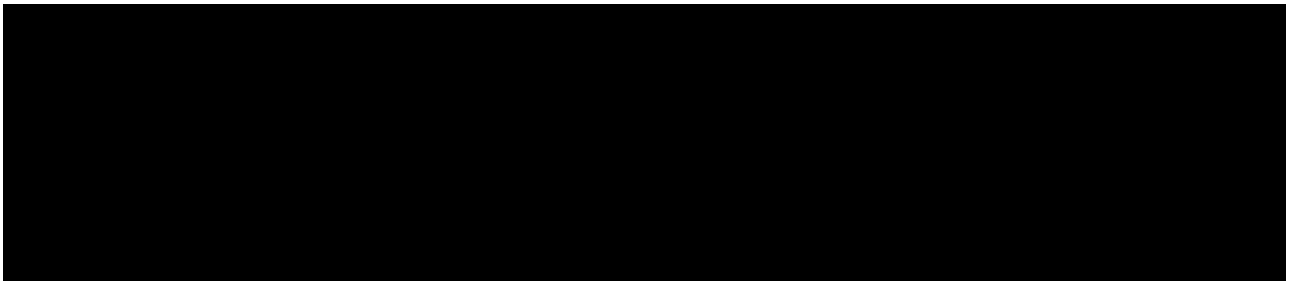
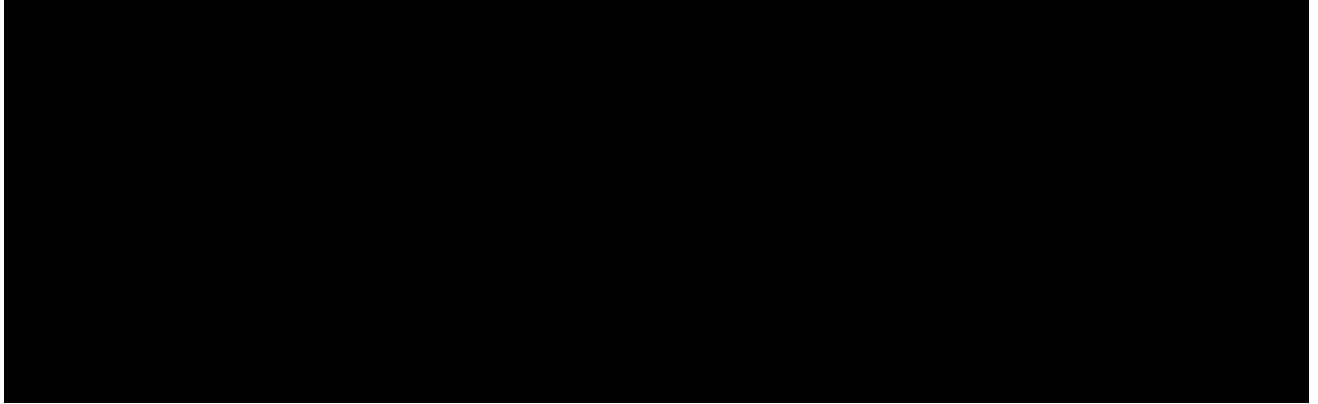
Following completion of the Project, a supplemental report will be submitted to SHPO with any added background research, methods, analyses and results based on the information provided in this Methodologies plan.

9. Archaeological Permit

This Methodologies plan provides the research design to support issuance of the requested archeological permit for the Project. This Methodologies plan also provides all of the mitigation for impacts to archaeological resources planned for the Project. Once the archaeological treatments identified herein are completed, further consideration of cultural resources is not needed, with the exception of tribal monitoring during construction and barring discovery of human remains, burials, or funerary objects. The latter are further addressed in the Inadvertent Discovery Plan. If exceptionally important archaeological materials or deposits, unlike those found to-date, are identified, the project archaeologist will recommend additional consideration or mitigation. Exceptionally important archaeological materials or deposits might include a pre-contact house pit or intact storage feature, Pleistocene-age diagnostic artifacts, a biface cache, or other rare and unusual artifacts or features.

- The maximum number of shovel probes to be excavated under this permit is 500.
- The maximum area of square unit excavations (QTUs, HTUs, and TUs) is 100 square meters.
- Sediments from archaeological excavations will be screened through nested screens with mesh size of ¼ inch on top and ⅛ inch below.
- All archaeological excavations will be terminated after 20 centimeters of sterile (non-artifact bearing) deposits.
- Surface collections are not anticipated but will be made when artifacts are found that would contribute to the analyses identified in this plan.
- The private landowners plan to donate artifact collections to the Klamath Tribes.

Exhibit A



January 2, 2020

Obsidian Solar Center
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

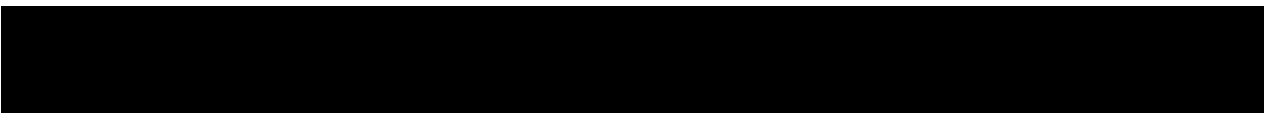
RE: Permission to Conduct Archaeological Investigations

The undersigned, on behalf of the Department of State Lands (DSL), as landowner, hereby grants permission to Obsidian Solar Center, LLC (or its assignee or agent) (OSC) to conduct an archaeological survey and excavation on property owned by the DSL in conjunction with the proposed Obsidian Solar Center project. OSC also has permission under the proposed state archaeological permit to collect artifacts and other cultural materials discovered during fieldwork for laboratory analysis and curation. DSL understands that the DSL will not be held responsible for any injuries or personal damages that may result from OSC's fieldwork.

As required by ORS 390.235, any archaeological materials, with the exception of Indian human remains, funerary objects, sacred objects and objects of cultural patrimony, collected during this work will be under the stewardship of the State of Oregon to be curated by the Oregon Museum of Natural and Cultural History (OMNCH), unless OMNCH, with the approval from the appropriate Indian tribe(s), approves an alternate curatorial facility selected by OSC.

DSL understands that if any human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during the excavation, that OSC will stop all work immediately in the vicinity of the find, establish a 30-meter buffer around the discovery and the area will be secured and protected. Consistent with the existing OSC Inadvertent Discovery Plan, work may continue outside of this buffered area unless additional cultural materials are encountered. In all such cases, the permit applicant will immediately contact the Oregon State Police, the Commission on Indian Services, State Historic Preservation Office, and all appropriate Tribes. No work may resume in the vicinity of the find until consultation with the afore-mentioned agencies and tribes has been completed per Oregon State cultural resource laws (ORS 97.740-760 and ORS 358.940).

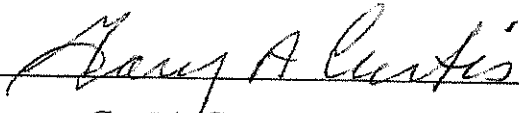
Land Description:



Landowner Name: Department of State Lands.

Agreed to as of : **January 3, 2020**

Signature:

By: 

Name: Gary A. Curtis

Title: DSL Statewide Archaeologist

Obsidian Solar Center
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

January 15, 2020

Mr. John Pouley
State Archaeologist
Oregon State Historic Preservation Office
725 NE Summer Street, Suite C
Salem, OR 97301-1266

Re: Obsidian Solar Center – Archaeological Permit

Ladies and Gentlemen:

This letter is provided in connection with the application by Obsidian Solar Center (Applicant) for an archaeological permit in connection with the development of a photovoltaic solar facility in Lake County, Oregon (the Project). Applicant intends to retain the services of a "Qualified Archaeologist" per ORS 390.235 in connection with the Project and the permit. This letter confirms that Applicant will and is positioned financially to be responsible payment of expenses and costs incurred by it and its Qualified Archaeologist to cover excavation, analysis, final reporting and curation as required by the Permit.

Sincerely,

A handwritten signature in black ink, appearing to read "David W. Brown", with a stylized flourish at the end.

David W. Brown

Map Redacted

1/17/20

RE: Archaeological Permit No. 2816

Reviewer Evaluation

☒ I approve of the permit

☐ I request conditions *(enter conditions below or attach document)*
conditions:

☐ I object to the permit *(enter explanation below or attach document)*
objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:



Date:

27 Jan 2020

Organization:

Lake County Planning Dept.

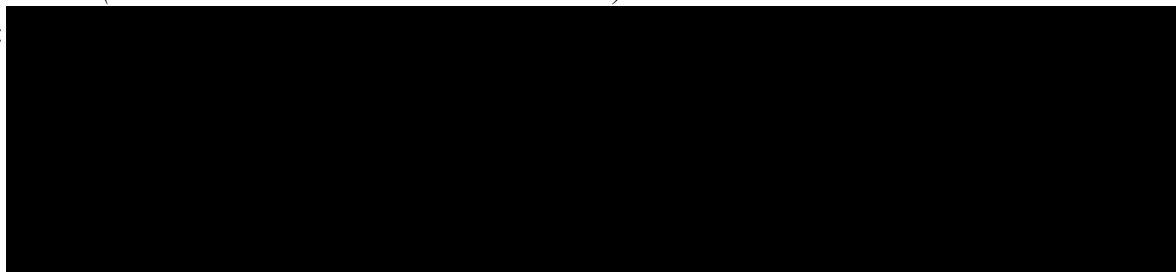
RE:

Reviewer Evaluation

I approve of the permit

I request conditions *(enter conditions below or attach document)*

conditions:



I object to the permit *(enter explanation below or attach document)*

objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:

Date:

Organization:



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



STATE OF OREGON ARCHAEOLOGICAL EXCAVATION PERMIT NO. AP-2817

The State of Oregon, acting by and through its Parks and Recreation Department, hereinafter called STATE, under authority of ORS 390.235, hereby grants to Terry L Ozbun, hereinafter called PERMITTEE, a permit for purposes of excavation and removal of archaeological, historical, prehistoric, or anthropological materials. This permit is granted subject to the following terms and conditions.

1. **Term** PERMITTEE may conduct survey, excavation, and collection work from date of signature to one year from date of signature provided that reasonable supervision, as provided hereinafter, is exercised.
2. **Location** This permit shall apply to lands owned by the State of Oregon, a city, county, district, or municipal corporation in Oregon, or private property, more particularly described as follows:
3. **Supervision** The design and work in connection with the survey or excavation, including exploratory excavation and collection, shall be personally supervised by John L. Fagan, Eva Hulse, Terry L Ozbun, Jo Reese, Nicholas Smits, Lucie Tisdale, Maureen Zehendner, Jason Cowan, Kristen Fuld, Karla Hotze, Kelley Martinez, Marci Monaco, Carmen Sarjeant, Ryan W Swanson, Alexandra Williams-Larson.
4. **Compliance** PERMITTEE shall comply with all applicable federal, state and local laws, rules, regulations and ordinances.
5. **Exploration shall consist of:**
See attached.
6. **Indemnification** PERMITTEE agrees to defend and hold STATE, its officers, agents, and employees harmless, and shall require its contractors to do the same, from any and all claims, damages, or expenses of any kind suffered or alleged to be suffered on the lands described in paragraph 2 or arising out of or in connection with the activities of PERMITTEE or its contractors pursuant to this Permit.
7. **Insurance** PERMITTEE shall obtain at PERMITTEE's expense, and keep in effect during the term of the Permit, comprehensive or commercial general liability insurance covering personal injury and property damage. This insurance shall include contractual liability coverage for the indemnification provided under this Permit. Coverage limits shall not be less than the limits of liability set forth in the provisions of ORS 30.270(1) as now in effect or as hereinafter amended. Such provisions now require that the coverage limits not less than \$500,000 combined single limit per occurrence. The insurance shall be in a form and with compliance acceptable to STATE. Such insurance may be evidenced by certificates or copies of policies. Such evidence shall be provided to STATE prior to the commencement of any operations or activities under this Permit.
8. **Records** PERMITTEE shall submit a final excavation report by two years from signature to the State Historic Preservation Office and the Oregon State Museum of Anthropology. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, then PERMITTEE shall also submit copies of the Final Report to the Commission on Indian Services and the following tribe(s):

Burns Paiute Tribe
Confederated Tribes of the Warm Springs Reservation
Klamath Tribes
Klamath Tribes

9. Custody

Since the private property owner has requested to retain possession of all artifacts, prior to the artifacts being turned over to the landowner, a full archival set of field and laboratory documentation, including digital images of diagnostic artifacts, shall be sent to the University of Oregon's Museum of Natural and Cultural History to be curated at their facility. Also, prior to returning the materials to the land owner, the appropriate tribe(s) must be given 30 days to view all archaeological materials to ensure that funerary objects, sacred objects, and objects of cultural patrimony are returned to tribal ownership per state law (ORS 97.740).

10. Notification

- a. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall notify in writing the most appropriate Indian tribe. The notification shall include:
 - i. The location and schedule of the forthcoming excavation;
 - ii. A description of the nature of the investigation; and
- b. Upon discovery of an archaeological object which is demonstrably revered by any ethnic group, religious group, or Indian tribe as holy, which object was or is used in connection with a religious or spiritual service or worship of a deity or spirit power, i.e., a "sacred object", PERMITTEE shall notify in writing:
 - i. The State Historic Preservation Office; and
 - ii. The appropriate ethnic group, religious group, or Indian tribe with which the sacred object is associated.

11. Consultation If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall consult with a representative of the appropriate tribe to establish a procedure for handling sacred objects recovered during the excavation.

12. Conditions:

Klamath Tribes

Requests, The Klamath Tribes will have our employed Archaeologist onsite for review of work related to this permit and will be overseeing the Klamath Tribes interests.

·2. Definitions; Monitoring Agreement, the Klamath Tribes may have Tribal Monitor(s) onsite during all excavation activities under this permit. A notification of at least 24 hour must be given to the Klamath Tribes, Culture and Heritage Department or Tribal Archaeologist, before the starting of work.

· 4. Trenching within a Recorded Archaeological Site; D. (b) Diagnostic artifacts identified during monitoring may be collected and turned over to the Klamath Tribes for curation. To be given to the Klamath Tribes, Culture and Heritage Staff or Tribes Archaeologist for curation.

·5. Testing at Project Related (non-archaeological) Excavation; C. All Project-related Excavation will be monitored by one or more tribal monitors as the tribal archaeologist sees appropriate. A 24 hour notification must be given to the Klamath Tribes, Culture and Heritage Department or Tribes Archaeologist from; Swinerton, Dog Lake Construction or Obsidian Solar Center. Before non-archaeological work related to ground disturbing activities on the project is started.

·7. Artifact Analysis; [REDACTED]

[REDACTED] That No Destructive analysis will be performed on collected artifacts, rather a debitage flake from the sample area selected will be used for hydration analysis. B. [REDACTED]

[REDACTED] The Klamath Tribes, Culture and Heritage Department, concurs with this method to be used for residue analysis.

·8. Reporting. That The Klamath Tribes, Culture and Heritage Department also request a copy of the report of finding from the testing phase of the project.

·9. Archaeological Permit; This Methodologies plan provides the archaeological mitigation for impact to archaeological resources for the planned project. However, the Klamath Tribes, Culture and Heritage Department reserve the request that more mitigation may be needed for other (new) cultural/archaeological resources unearthed during; the testing phase of the permit and construction related activities.

·PERMISSION TO CONDUCT ARCHAEOLOGICAL INVESTIGATION;

On behalf of Fremont Solar, LLC as landowner of (Fremont) grants permission for Obsidian Solar Center, LLC; as checked, I agree,(Obsidian Renewables, LLC Manager, David W. Brown) that all the archaeological, samples, specimens and artifacts collected during this work will be returned to landowner after analysis has been conducted. The Klamath Tribes, Culture and Heritage Department requests that all artifacts be returned to the Klamath Tribes, Culture and Heritage Department for curation.

Burns Paiute Tribe

We request the ability to have a Burns Paiute tribal cultural monitor on-site for all or part of the excavations-at the Burns Paiute Tribe's discretion. We would like the ability to review and potentially comment on the draft report generated as a result of the excavation. We would like a bound copy of the final report. We reserve the right to review the collected cultural items prior to their permanent curation. If cultural items are taken from private lands we ask that the private land owner consider gifting the cultural items to the Burns Paiute Tribe so that we may take care of them in a culturally appropriate manner. We would also like an executed copy of the inadvertent discovery plan prior to initiation of ground disturbing activities, and we want to be listed as one of the primary contacts for inadvertent discoveries. Thank you!

- 13. Revocation** Failure to comply with all terms of this Permit, in addition to any agreed upon conditions, may lead to its immediate revocation.

OREGON PARKS AND RECREATION DEPARTMENT



Christine Curran
Deputy State Historic Preservation Officer

Date:

State of Oregon Archaeological Permit Application

<p>AP</p> <p>(Completed by SHPO)</p>	<p>Applications may be printed and mailed to:</p> <p style="text-align: center;">Oregon SHPO, 725 Summer Street NE, Suite C, Salem OR 97301-1266</p> <p style="text-align: center;">Submit electronic applications to: Arch.Permits@Oregon.gov</p> <p style="text-align: center;">(Electronic submissions are preferred. Please be sure to submit only one application [printed and mailed or electronic])</p>												
<p>All Information must be completed before the application will be processed. Attach separate sheets for project map and research design or for any fields that require additional information. The permit will be circulated with a 30 day comment period from the date of mailing. Applications submitted to SHPO staff email addresses (via To: CC: BCC: Forward) will not be processed.</p>													
<table style="width: 100%; border: none;"> <tr> <td style="width: 45%;">Applicant:</td> <td style="width: 15%;">Institution:</td> <td style="width: 15%;">State:</td> <td style="width: 25%;">Zip:</td> </tr> <tr> <td>Address:</td> <td>City:</td> <td></td> <td></td> </tr> <tr> <td>Email:</td> <td></td> <td></td> <td></td> </tr> </table>		Applicant:	Institution:	State:	Zip:	Address:	City:			Email:			
Applicant:	Institution:	State:	Zip:										
Address:	City:												
Email:													
<p>Applicants must be included on the “Qualified Archaeologist” (per ORS 390.235) list on file at SHPO. Applicants must have a letter supporting their ability to initiate, conduct, and complete the proposed work, including evidence of logistical support and laboratory facilities on file at SHPO.</p>													
<p>Project Name and Location Description</p> <p>Attach a 7.5' USGS topographic map that clearly shows the location of the proposed archaeological investigation.</p> <p>If more than one County is involved, separate permits (for each county) will be required.</p>	<p>Project Name:</p> <p>Site Trinomial:</p> <div style="background-color: black; height: 150px; width: 100%; margin-top: 10px;"></div> <p style="font-size: small; text-align: center;">* If more fields are needed, please attach a separate sheet to the permit application.</p>												
<p>Surface Owner</p> <p>A signed landowner agreement that excavation can take place on private land must be submitted with this form (ORS 358.920[5]).</p> <p>Additional permits will be necessary for investigations covering properties with multiple landowners (one permit per landowner).</p>	<p>Owner:</p> <p>Representative:</p> <p>Address:</p> <p>City: State: Zip:</p> <p>Telephone: Fax:</p> <p>Email:</p> <p style="font-size: small;">** Owner or Representative must be a person.</p>												
<p>Agency that has management control over the project</p> <p>Attach a letter of agreement for the proposed work from the land manager. The letter must include evidence/authorization of sufficient funding to cover excavation, analysis, final report, and curation.</p>	<p>Institution:</p> <p>Name:</p> <p>Address:</p> <p>City: State: Zip:</p> <p>Telephone: Fax:</p> <p>Email:</p>												
<p>Qualified Archaeologist(s) in the field who has direct charge of excavation (must include the applicant and each individual listed must be on the SHPO “Qualified Archaeologist” list)</p>	<p>Name(s):</p>												

Fieldwork	Estimated Starting Date of Fieldwork: Estimated Date of Fieldwork Completion:
Attach a Research Design, per OAR 736-051-0080(4)(C) & 736-051-0090 (3)(A) (For additional assistance, please refer to the SHPO Research Design document) Approval of a permit application by SHPO does not indicate project or undertaking approval	According to OAR 736-051-0080(C) , A Research Design “explicitly develops the rationale behind the proposed research, giving the theoretical orientation, justification for problem selection, logic and procedures for the research strategy. The design must define the universe of study, establish realistic minimal expectations and a realistic schedule of research and provide justified recovery procedures.”
Ancillary plan for reporting results if applicable (i.e., in addition to the final report submitted to SHPO, UOMNCH, LCIS, and appropriate tribes)	Publisher: Conference: Other:
Curation (ORS 358.920[4][a], 390.235[3]) The University of Oregon Museum of Natural and Cultural History (UOMNCH) requires a signed landowner agreement for curation of artifacts for private property that clearly shows the landowner had the option to retain or donate to UOMNCH or another facility. Curation of artifact collections at UOMNCH must meet museum guidelines. For collections being given to landowners a complete collection of field and lab records and digital photos needs to be sent to UOMNCH. If an alternative curatorial facility is selected (other than SOULA, OSU or The Dalles Discovery Center), a Letter of Agreement from UOMNCH approving the facility and a Letter of Agreement from the selected curation facility stating their willingness to accept the collection needs to be included in the permit application.	Temporary Curatorial Lab or Facility: Name: Address: City: State: Zip: Telephone: Fax: Permanent Curatorial Facility: <div style="text-align: center;"> <p>The landowner will retain the artifacts, per signed letter (attached), and all field records, lab records, and photos will be sent to UOMNCH.</p> <p><u>or</u></p> </div> Name: Address: City: State: Zip: Telephone: Fax:
Tribal Notification If the excavation is associated with a prehistoric or historic American Indian archaeological site, refer to ORS 358.950 . Consultation should occur during the 30-day review period. Applicants will be notified of the most appropriate tribes in a letter during the 30-day permit review period	

Planning Department:

Where feasible, a copy of the application is submitted to the Legislative Commission on Indian Services (LCIS) within two days of receipt, requesting the most appropriate tribe(s). The application will not be circulated unless it is complete and accompanied with the extra documentation requirements. Copies of this form and attachments are then sent to the landowner, local planning department, UOMNCH, LCIS and appropriate tribe(s). SHPO gives reviewers 30 calendar days to return their comments. If no objections are received, the permit will be issued at the end of the 30-day period or as soon as all reviewers have submitted their approval.

Checklist, Signature and Date (Required)

If the submitted application is not complete, it will not be processed. As such, please take a few minutes to review your application prior to submitting to SHPO. The checklist below is required and intended to assist the applicant with review prior to submission. Taking a few minutes to make sure the items in the checklist are included in the application will hopefully decrease any processing delays.

As the Applicant, I have reviewed the permit application prior to submitting to SHPO and can attest that it contains:

One listed applicant

The appropriate Township(s), Range(s) and Section(s)

A USGS 7.5 minute map(s) depicting the location of the proposed investigations

The required letters (landowner permission, funding, curation) as applicable

The appropriate local planning department (City or County)

Excavation methods (in the Research Design) that include (at a minimum):

The maximum number and size of excavation units or probes

The excavation levels (e.g., 10 cm arbitrary)

The screen size

A description of unit/probe termination (e.g., 50 cm and two sterile levels, bedrock, etc.)

A research design consistent with [OAR 736-051-0080\(C\)](#) and the [SHPO Research Design](#)

A landowner letter (as applicable) regarding disposition of artifacts that correlates to the Permanent Curatorial Facility section in the application

Surface collection methods (as applicable)

I further attest that I or one of the Qualified Archaeologists listed in the application will be in the field at all times during the course of the permitted investigation;

and that I have read and understand the process outlined in the [Tribal Position Paper on Human Remains](#)

I understand that if submitted electronically, I will use arch.permits@oregon.gov and not SHPO staff emails (including CC, BCC or Forward);

and that SHPO processing of an archaeological permit application does not constitute project or undertaking consultation nor indicate SHPO approval for a project or undertaking.

Applicant:

Signature:

Date:

PERMISSION TO CONDUCT ARCHAEOLOGICAL INVESTIGATIONS

The undersigned, on behalf of Fremont Solar, LLC (Fremont), as landowner, hereby grants permission for Obsidian Solar Center, LLC (or its assignee or agent) (OSC) to conduct an archaeological survey and excavation on property owned by Fremont in conjunction with the proposed Obsidian Solar Center project. OSC also has permission to collect artifacts and other cultural materials discovered during fieldwork for laboratory analysis and curation. Fremont understands that Fremont will not be responsible for any injuries or personal damages that may result from their work.

☐ I agree that all the archaeological samples, specimens, and artifacts collected during this work will be **donated to the University of Oregon Museum of Natural and Cultural History (UOMNCH)** after the appropriate laboratory analysis has been conducted.

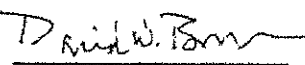
☒ I agree that all the archaeological samples, specimens, and artifacts collected during this work will be ***returned to me, the landowner*** after the appropriate laboratory analysis has been conducted. I understand that I have the option to donate to a museum/institution or tribe.

"I understand that if any human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during excavation that OSC will report the discovery to the appropriate Native American Tribe, the Legislative Commission on Indian Services (LCIS), and the State Historic Preservation Office (SHPO) to arrange for their return to the appropriate Tribe as per state laws (ORS 97.740-.760 and ORS 358.940)."

Signature:

Fremont Solar, LLC

By: Obsidian Renewables, LLC
Its: Manager

By: 
David W. Brown, Manager

Date: January 2, 2020

Obsidian Solar Center
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

January 15, 2020

Mr. John Pouley
State Archaeologist
Oregon State Historic Preservation Office
725 NE Summer Street, Suite C
Salem, OR 97301-1266

Re: Obsidian Solar Center – Archaeological Permit

Ladies and Gentlemen:

This letter is provided in connection with the application by Obsidian Solar Center (Applicant) for an archaeological permit in connection with the development of a photovoltaic solar facility in Lake County, Oregon (the Project). Applicant intends to retain the services of a "Qualified Archaeologist" per ORS 390.235 in connection with the Project and the permit. This letter confirms that Applicant will and is positioned financially to be responsible payment of expenses and costs incurred by it and its Qualified Archaeologist to cover excavation, analysis, final reporting and curation as required by the Permit.

Sincerely,

A handwritten signature in black ink, appearing to read "David W. Brown", with a stylized flourish at the end.

David W. Brown

Map Redacted

1/17/20

RE: Archaeological Permit No. 2817

Reviewer Evaluation

☒ I approve of the permit

☐ I request conditions *(enter conditions below or attach document)*
conditions:

☐ I object to the permit *(enter explanation below or attach document)*
objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:



Date:

27 Jan 2020

Organization:

Lake County Planning Dept

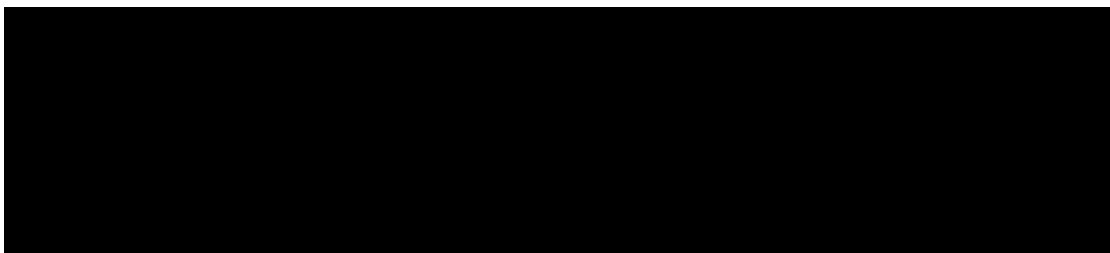
RE:

Reviewer Evaluation

I approve of the permit

I request conditions *(enter conditions below or attach document)*

conditions:

A large black rectangular redaction box covering the area where conditions should be listed.

I object to the permit *(enter explanation below or attach document)*

objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:

Date:

Organization:



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



STATE OF OREGON ARCHAEOLOGICAL EXCAVATION PERMIT NO. AP-2818

The State of Oregon, acting by and through its Parks and Recreation Department, hereinafter called STATE, under authority of ORS 390.235, hereby grants to Terry L Ozbun, hereinafter called PERMITTEE, a permit for purposes of excavation and removal of archaeological, historical, prehistoric, or anthropological materials. This permit is granted subject to the following terms and conditions.

1. **Term** PERMITTEE may conduct survey, excavation, and collection work from date of signature to oneyear from date of signature provided that reasonable supervision, as provided hereinafter, is exercised.
2. **Location** This permit shall apply to lands owned by the State of Oregon, a city, county, district, or municipal corporation in Oregon, or private property, more particularly described as follows:
3. **Supervision** The design and work in connection with the survey or excavation, including exploratory excavation and collection, shall be personally supervised by John L. Fagan, Eva Hulse, Terry L Ozbun, Jo Reese, Nicholas Smits, Lucie Tisdale, Maureen Zehendner, Jason B. Cooper, Andrew Frierson, Karla Hotze, Kelley Martinez, Marci Monaco, Carmen Sarjeant, Ryan W Swanson, Alexandra Williams-Larson.
4. **Compliance** PERMITTEE shall comply with all applicable federal, state and local laws, rules, regulations and ordinances.
5. **Exploration shall consist of:**
See attached Research Design.
6. **Indemnification** PERMITTEE agrees to defend and hold STATE, its officers, agents, and employees harmless, and shall require its contractors to do the same, from any and all claims, damages, or expenses of any kind suffered or alleged to be suffered on the lands described in paragraph 2 or arising out of or in connection with the activities of PERMITTEE or its contractors pursuant to this Permit.
7. **Insurance** PERMITTEE shall obtain at PERMITTEE's expense, and keep in effect during the term of the Permit, comprehensive or commercial general liability insurance covering personal injury and property damage. This insurance shall include contractual liability coverage for the indemnification provided under this Permit. Coverage limits shall not be less than the limits of liability set forth in the provisions of ORS 30.270(1) as now in effect or as hereinafter amended. Such provisions now require that the coverage limits not less than \$500,000 combined single limit per occurrence. The insurance shall be in a form and with compliance acceptable to STATE. Such insurance may be evidenced by certificates or copies of policies. Such evidence shall be provided to STATE prior to the commencement of any operations or activities under this Permit.
8. **Records** PERMITTEE shall submit a final excavation report by two years from signature to the State Historic Preservation Office and the Oregon State Museum of Anthropology. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, then PERMITTEE shall also submit copies of the Final Report to the Commission on Indian Services and

the following tribe(s):

Burns Paiute Tribe

Confederated Tribes of the Warm Springs Reservation

Klamath Tribes

Klamath Tribes

9. Custody

Since the private property owner has requested to retain possession of all artifacts, prior to the artifacts being turned over to the landowner, a full archival set of field and laboratory documentation, including digital images of diagnostic artifacts, shall be sent to the University of Oregon's Museum of Natural and Cultural History to be curated at their facility. Also, prior to returning the materials to the land owner, the appropriate tribe(s) must be given 30 days to view all archaeological materials to ensure that funerary objects, sacred objects, and objects of cultural patrimony are returned to tribal ownership per state law (ORS 97.740).

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- a. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall notify in writing the most appropriate Indian tribe. The notification shall include:
 - i. The location and schedule of the forthcoming excavation;
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- b. Upon discovery of an archaeological object which is demonstrably revered by any ethnic group, religious group, or Indian tribe as holy, which object was or is used in connection with a religious or spiritual service or worship of a deity or spirit power, i.e., a "sacred object", PERMITTEE shall notify in writing:
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Requests, The Klamath Tribes will have our employed Archaeologist onsite for review of work related to this permit and will be overseeing the Klamath Tribes interests.

·2. Definitions; Monitoring Agreement, the Klamath Tribes may have Tribal Monitor(s) onsite during all excavation activities under this permit. A notification of at least 24 hour must be given to the Klamath Tribes, Culture and Heritage Department or Tribal Archaeologist, before the starting of work.

· 4. Trenching within a Recorded Archaeological Site; D. (b) Diagnostic artifacts identified during monitoring may be collected and turned over to the Klamath Tribes for curation. To be given to the Klamath Tribes, Culture and Heritage Staff or Tribes Archaeologist for curation.

·5. Testing at Project Related (non-archaeological) Excavation; C. All Project-related Excavation will be monitored by one or more tribal monitors as the tribal archaeologist sees appropriate. A 24 hour notification must be given to the Klamath Tribes, Culture and Heritage Department or Tribes Archaeologist from; Swinerton, Dog Lake Construction or Obsidian Solar Center. Before non-archaeological work related to ground disturbing activities on the project is started.

·7. Artifact Analysis; A. [REDACTED]

[REDACTED] That No Destructive analysis will be performed on collected artifacts, rather a debitage flake from the sample area selected will be used for hydration analysis. B. [REDACTED]

[REDACTED] The Klamath Tribes, Culture and Heritage Department, concurs with this method to be used for residue analysis.

·8. Reporting. That The Klamath Tribes, Culture and Heritage Department also request a copy of the report of

finding from the testing phase of the project.

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·PERMISSION TO CONDUCT ARCHAEOLOGICAL INVESTIGATION;

On behalf of Fremont Solar, LLC as landowner of (Fremont) grants permission for Obsidian Solar Center, LLC; as checked, I agree,(Obsidian Renewables, LLC Manager, David W. Brown) that all the archaeological, samples, specimens and artifacts collected during this work will be returned to landowner after analysis has been conducted. The Klamath Tribes, Culture and Heritage Department requests that all artifacts be returned to the Klamath Tribes, Culture and Heritage Department for curation.

Burns Paiute Tribe

We request the ability to have a Burns Paiute tribal cultural monitor on-site for all or part of the excavations-at the Burns Paiute Tribe's discretion. We would like the ability to review and potentially comment on the draft report generated as a result of the excavation. We request a bound copy of the final report. We reserve the right to review the collected cultural items prior to their permanent curation. If cultural items are taken from private lands we ask that the private land owner consider gifting the cultural items to the Burns Paiute Tribe so that we may take care of them in a culturally appropriate manner. We would also like an executed copy of the inadvertent discovery plan prior to initiation of ground disturbing activities, and we want to be listed as one of the primary contacts for inadvertent discoveries. Thank you!

- 13. Revocation** Failure to comply with all terms of this Permit, in addition to any agreed upon conditions, may lead to its immediate revocation.

OREGON PARKS AND RECREATION DEPARTMENT



Christine Curran
Deputy State Historic Preservation Officer

Date:

State of Oregon Archaeological Permit Application

<p>AP</p> <p>(Completed by SHPO)</p>	<p>Applications may be printed and mailed to:</p> <p style="text-align: center;">Oregon SHPO, 725 Summer Street NE, Suite C, Salem OR 97301-1266</p> <p style="text-align: center;">Submit electronic applications to: Arch.Permits@Oregon.gov</p> <p style="text-align: center;">(Electronic submissions are preferred. Please be sure to submit only one application [printed and mailed or electronic])</p>												
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<p>Qualified Archaeologist(s) in the field who has direct charge of excavation (must include the applicant and each individual listed must be on the SHPO “Qualified Archaeologist” list)</p>	<p>Name(s):</p>												

Fieldwork	<p>Estimated Starting Date of Fieldwork:</p> <p>Estimated Date of Fieldwork Completion:</p>
<p>Attach a Research Design, per OAR 736-051-0080(4)(C) & 736-051-0090 (3)(A) (For additional assistance, please refer to the SHPO Research Design document) Approval of a permit application by SHPO does not indicate project or undertaking approval</p>	<p>According to OAR 736-051-0080(C), A Research Design “explicitly develops the rationale behind the proposed research, giving the theoretical orientation, justification for problem selection, logic and procedures for the research strategy. The design must define the universe of study, establish realistic minimal expectations and a realistic schedule of research and provide justified recovery procedures.”</p>
<p>Ancillary plan for reporting results if applicable (i.e., in addition to the final report submitted to SHPO, UOMNCH, LCIS, and appropriate tribes)</p>	<p>Publisher:</p> <p>Conference:</p> <p>Other:</p>
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Checklist, Signature and Date (Required)

If the submitted application is not complete, it will not be processed. As such, please take a few minutes to review your application prior to submitting to SHPO. The checklist below is required and intended to assist the applicant with review prior to submission. Taking a few minutes to make sure the items in the checklist are included in the application will hopefully decrease any processing delays.

As the Applicant, I have reviewed the permit application prior to submitting to SHPO and can attest that it contains:

One listed applicant

The appropriate Township(s), Range(s) and Section(s)

A USGS 7.5 minute map(s) depicting the location of the proposed investigations

The required letters (landowner permission, funding, curation) as applicable

The appropriate local planning department (City or County)

Excavation methods (in the Research Design) that include (at a minimum):

The maximum number and size of excavation units or probes

The excavation levels (e.g., 10 cm arbitrary)

The screen size

A description of unit/probe termination (e.g., 50 cm and two sterile levels, bedrock, etc.)

A research design consistent with [OAR 736-051-0080\(C\)](#) and the [SHPO Research Design](#)

A landowner letter (as applicable) regarding disposition of artifacts that correlates to the Permanent Curatorial Facility section in the application

Surface collection methods (as applicable)

I further attest that I or one of the Qualified Archaeologists listed in the application will be in the field at all times during the course of the permitted investigation;

and that I have read and understand the process outlined in the [Tribal Position Paper on Human Remains](#)

I understand that if submitted electronically, I will use arch.permits@oregon.gov and not SHPO staff emails (including CC, BCC or Forward);

and that SHPO processing of an archaeological permit application does not constitute project or undertaking consultation nor indicate SHPO approval for a project or undertaking.

Applicant:

Signature:

Date:

PERMISSION TO CONDUCT ARCHAEOLOGICAL INVESTIGATIONS

The undersigned, on behalf of Obsidian Solar Center, LLC (OSC), as landowner, hereby grants permission for Obsidian Solar Center, LLC (or its assignee or agent) (OSC) to conduct an archaeological survey and excavation on property owned by OSC in conjunction with the proposed Obsidian Solar Center project. OSC also has permission to collect artifacts and other cultural materials discovered during fieldwork for laboratory analysis and curation. OSC understands that OSC will not be responsible for any injuries or personal damages that may result from their work.

☐ I agree that all the archaeological samples, specimens, and artifacts collected during this work will be **donated to the University of Oregon Museum of Natural and Cultural History (UOMNCH)** after the appropriate laboratory analysis has been conducted.

☒ I agree that all the archaeological samples, specimens, and artifacts collected during this work will be ***returned to me, the landowner*** after the appropriate laboratory analysis has been conducted. I understand that I have the option to donate to a museum/institution or tribe.

"I understand that if any human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during excavation that OSC will report the discovery to the appropriate Native American Tribe, the Legislative Commission on Indian Services (LCIS), and the State Historic Preservation Office (SHPO) to arrange for their return to the appropriate Tribe as per state laws (ORS 97.740-.760 and ORS 358.940)."

Signature:

Obsidian Solar Center, LLC

By: Obsidian Renewables, LLC
Its: Manager

By: 
David W. Brown, Manager

Date: January 2, 2020

Obsidian Solar Center
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

January 15, 2020

Mr. John Pouley
State Archaeologist
Oregon State Historic Preservation Office
725 NE Summer Street, Suite C
Salem, OR 97301-1266

Re: Obsidian Solar Center – Archaeological Permit

Ladies and Gentlemen:

This letter is provided in connection with the application by Obsidian Solar Center (Applicant) for an archaeological permit in connection with the development of a photovoltaic solar facility in Lake County, Oregon (the Project). Applicant intends to retain the services of a "Qualified Archaeologist" per ORS 390.235 in connection with the Project and the permit. This letter confirms that Applicant will and is positioned financially to be responsible payment of expenses and costs incurred by it and its Qualified Archaeologist to cover excavation, analysis, final reporting and curation as required by the Permit.

Sincerely,

A handwritten signature in black ink, appearing to read "David W. Brown", with a stylized flourish at the end.

David W. Brown

Map Redacted

1/17/20

RE: Archaeological Permit No. 2818

Reviewer Evaluation


☒ I approve of the permit

☐ I request conditions *(enter conditions below or attach document)*
conditions:

☐ I object to the permit *(enter explanation below or attach document)*
objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:



Date:

27 Jan 2020

Organization:

Leas County Planning Dept

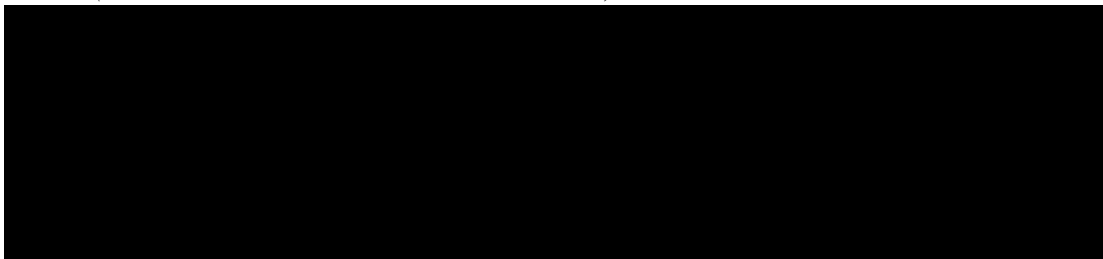
RE:

Reviewer Evaluation

I approve of the permit

I request conditions *(enter conditions below or attach document)*

conditions:

A large black rectangular redaction box covering the area where conditions should be listed.

I object to the permit *(enter explanation below or attach document)*

objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:

Date:

Organization:



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



STATE OF OREGON ARCHAEOLOGICAL EXCAVATION PERMIT NO. AP-2819

The State of Oregon, acting by and through its Parks and Recreation Department, hereinafter called STATE, under authority of ORS 390.235, hereby grants to Terry L Ozbun, hereinafter called PERMITTEE, a permit for purposes of excavation and removal of archaeological, historical, prehistoric, or anthropological materials. This permit is granted subject to the following terms and conditions.

1. **Term** PERMITTEE may conduct survey, excavation, and collection work from date of signature to one year from date of signature provided that reasonable supervision, as provided hereinafter, is exercised.
2. **Location** This permit shall apply to lands owned by the State of Oregon, a city, county, district, or municipal corporation in Oregon, or private property, more particularly described as follows:
3. **Supervision** The design and work in connection with the survey or excavation, including exploratory excavation and collection, shall be personally supervised by John L. Fagan, Eva Hulse, Terry L Ozbun, Jo Reese, Nicholas Smits, Lucie Tisdale, Maureen Zehendner, Jason Cowan, Kristen Fuld, Karla Hotze, Kelley Martinez, Marci Monaco, Carmen Sarjeant, Ryan W Swanson, Alexandra Williams-Larson.
4. **Compliance** PERMITTEE shall comply with all applicable federal, state and local laws, rules, regulations and ordinances.
5. **Exploration shall consist of:**
See attached Research Design.
6. **Indemnification** PERMITTEE agrees to defend and hold STATE, its officers, agents, and employees harmless, and shall require its contractors to do the same, from any and all claims, damages, or expenses of any kind suffered or alleged to be suffered on the lands described in paragraph 2 or arising out of or in connection with the activities of PERMITTEE or its contractors pursuant to this Permit.
7. **Insurance** PERMITTEE shall obtain at PERMITTEE's expense, and keep in effect during the term of the Permit, comprehensive or commercial general liability insurance covering personal injury and property damage. This insurance shall include contractual liability coverage for the indemnification provided under this Permit. Coverage limits shall not be less than the limits of liability set forth in the provisions of ORS 30.270(1) as now in effect or as hereinafter amended. Such provisions now require that the coverage limits not less than \$500,000 combined single limit per occurrence. The insurance shall be in a form and with compliance acceptable to STATE. Such insurance may be evidenced by certificates or copies of policies. Such evidence shall be provided to STATE prior to the commencement of any operations or activities under this Permit.
8. **Records** PERMITTEE shall submit a final excavation report by two years from signature to the State Historic Preservation Office and the Oregon State Museum of Anthropology. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, then PERMITTEE shall also submit copies of the Final Report to the Commission on Indian Services and the following tribe(s):

Burns Paiute Tribe
Confederated Tribes of the Warm Springs Reservation
Klamath Tribes
Klamath Tribes

9. Custody

Since the private property owner has requested to retain possession of all artifacts, prior to the artifacts being turned over to the landowner, a full archival set of field and laboratory documentation, including digital images of diagnostic artifacts, shall be sent to the University of Oregon's Museum of Natural and Cultural History to be curated at their facility. Also, prior to returning the materials to the land owner, the appropriate tribe(s) must be given 30 days to view all archaeological materials to ensure that funerary objects, sacred objects, and objects of cultural patrimony are returned to tribal ownership per state law (ORS 97.740).

10. Notification

- a. If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall notify in writing the most appropriate Indian tribe. The notification shall include:
 - i. The location and schedule of the forthcoming excavation;
 - ii. A description of the nature of the investigation; and
- b. Upon discovery of an archaeological object which is demonstrably revered by any ethnic group, religious group, or Indian tribe as holy, which object was or is used in connection with a religious or spiritual service or worship of a deity or spirit power, i.e., a "sacred object", PERMITTEE shall notify in writing:
 - i. The State Historic Preservation Office; and
 - ii. The appropriate ethnic group, religious group, or Indian tribe with which the sacred object is associated.

- 11. Consultation** If PERMITTEE is conducting an excavation associated with a prehistoric or historic American Indian archaeological site, PERMITTEE shall consult with a representative of the appropriate tribe to establish a procedure for handling sacred objects recovered during the excavation.

12. Conditions:

Burns Paiute Tribe

We request the ability to have a Burns Paiute tribal cultural monitor on-site for all or part of the excavations-at the Burns Paiute Tribe's discretion. We would like the ability to review and potentially comment on the draft report generated as a result of the excavation. We request a bound copy of the final report. We reserve the right to review the collected cultural items prior to their permanent curation. If cultural items are taken from private lands we ask that the private land owner consider gifting the cultural items to the Burns Paiute Tribe so that we may take care of them in a culturally appropriate manner. We would also like an executed copy of the inadvertent discovery plan prior to initiation of ground disturbing activities, and we want to be listed as one of the primary contacts for inadvertent discoveries. Thank you!

Klamath Tribes

Requests, The Klamath Tribes will have our employed Archaeologist onsite for review of work related to this permit and will be overseeing the Klamath Tribes interests.

·2. Definitions; Monitoring Agreement, the Klamath Tribes may have Tribal Monitor(s) onsite during all excavation activities under this permit. A notification of at least 24 hour must be given to the Klamath Tribes, Culture and Heritage Department or Tribal Archaeologist, before the starting of work.

· 4. Trenching within a Recorded Archaeological Site; D. (b) Diagnostic artifacts identified during monitoring may be collected and turned over to the Klamath Tribes for curation. To be given to the Klamath Tribes, Culture and Heritage Staff or Tribes Archaeologist for curation.

·5. Testing at Project Related (non-archaeological) Excavation; C. All Project-related Excavation will be monitored by one or more tribal monitors as the tribal archaeologist sees appropriate. A 24 hour notification must be given to the Klamath Tribes, Culture and Heritage Department or Tribes Archaeologist from; Swinerton, Dog Lake Construction or Obsidian Solar Center. Before non-archaeological work related to ground disturbing activities on the project is started.

·7. Artifact Analysis; A. [REDACTED]

[REDACTED] That No Destructive analysis will be performed on collected artifacts, rather a debitage flake from the sample area selected will be used for hydration analysis. B. [REDACTED]

[REDACTED] The Klamath Tribes, Culture and Heritage Department, concurs with this method to be used for residue analysis.

·8. Reporting. That The Klamath Tribes, Culture and Heritage Department also request a copy of the report of finding from the testing phase of the project.

·9. Archaeological Permit; This Methodologies plan provides the archaeological mitigation for impact to archaeological resources for the planned project. However, the Klamath Tribes, Culture and Heritage Department reserve the request that more mitigation may be needed for other (new) cultural/archaeological resources unearthed during; the testing phase of the permit and construction related activities.

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On behalf of Fremont Solar, LLC as landowner of (Fremont) grants permission for Obsidian Solar Center, LLC; as checked, I agree,(Obsidian Renewables, LLC Manager, David W. Brown) that all the archaeological, samples, specimens and artifacts collected during this work will be returned to landowner after analysis has been conducted. The Klamath Tribes, Culture and Heritage Department requests that all artifacts be returned to the Klamath Tribes, Culture and Heritage Department for curation.

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OREGON PARKS AND RECREATION DEPARTMENT



Christine Curran
Deputy State Historic Preservation Officer

Date:

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The required letters (landowner permission, funding, curation) as applicable

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The screen size

A description of unit/probe termination (e.g., 50 cm and two sterile levels, bedrock, etc.)

A research design consistent with [OAR 736-051-0080\(C\)](#) and the [SHPO Research Design](#)

A landowner letter (as applicable) regarding disposition of artifacts that correlates to the Permanent Curatorial Facility section in the application

Surface collection methods (as applicable)

I further attest that I or one of the Qualified Archaeologists listed in the application will be in the field at all times during the course of the permitted investigation;

and that I have read and understand the process outlined in the [Tribal Position Paper on Human Remains](#)

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Applicant:

Signature:

Date:

PERMISSION TO CONDUCT ARCHAEOLOGICAL INVESTIGATIONS

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Signature:

Obsidian Renewables, LLC

By: David W. Brown
David W. Brown, Principal and Manager

Date: January 14, 2020

Obsidian Solar Center
5 Centerpointe Drive, Suite 250
Lake Oswego, Oregon 97035

January 15, 2020

Mr. John Pouley
State Archaeologist
Oregon State Historic Preservation Office
725 NE Summer Street, Suite C
Salem, OR 97301-1266

Re: Obsidian Solar Center – Archaeological Permit

Ladies and Gentlemen:

This letter is provided in connection with the application by Obsidian Solar Center (Applicant) for an archaeological permit in connection with the development of a photovoltaic solar facility in Lake County, Oregon (the Project). Applicant intends to retain the services of a "Qualified Archaeologist" per ORS 390.235 in connection with the Project and the permit. This letter confirms that Applicant will and is positioned financially to be responsible payment of expenses and costs incurred by it and its Qualified Archaeologist to cover excavation, analysis, final reporting and curation as required by the Permit.

Sincerely,

A handwritten signature in black ink, appearing to read "David W. Brown", with a stylized flourish at the end.

David W. Brown

1/17/20

RE: Archaeological Permit No. 2819

Reviewer Evaluation

☒ I approve of the permit

☐ I request conditions *(enter conditions below or attach document)*
conditions:

☐ I object to the permit *(enter explanation below or attach document)*
objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:



Date:

27 Jan 2020

Organization:

Lake County Planning Dept

Map Redacted

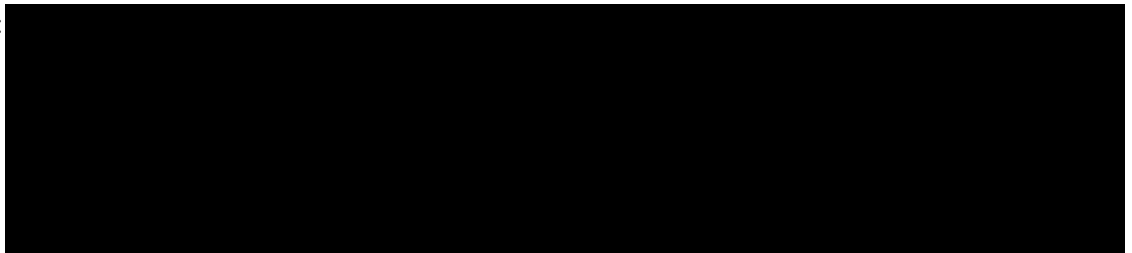
RE:

Reviewer Evaluation

I approve of the permit

I request conditions *(enter conditions below or attach document)*

conditions:

A large black rectangular redaction box covering the area where conditions should be entered.

I object to the permit *(enter explanation below or attach document)*

objection:

Additional comments **not** pertaining to the above conditions and/or objection:

Reviewer Signature:

Date:

Organization:

Appendix U-1

Traffic Memorandum

MEMORANDUM

Date: August 9 2018

Project #: 22328

To: Ilja Nieuwenhuizen, Ecology and Environment, Inc.

From: Matt Kittelson, PE & Jacki Gulczynski

Project: Obsidian Solar Center

Subject: Trip Assignment and Site Access Letter

Oregon Administrative Rule (OAR) 345-022 documents the standard applied for siting of certain energy facilities within the state. As required by OAR 345-022-0110, the Energy Facility Siting Council must be able to find that

“the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, policy and fire protection, health care and schools.”

Per this standard, this memorandum assesses the potential transportation impacts and recommended mitigation measures associated with the proposed Obsidian Solar Center, and up to 4,365-acre solar generation facility in Lake County, Oregon (Facility). The information contained in this memorandum will inform the *Application for Site Certificate* to the Oregon Energy Facility Siting Council (EFSC). The analysis area for traffic safety covered in memorandum includes the Facility site boundary, areas near the proposed site access locations, as well as a high-level review of the transportation network within 15 miles of the facility.

The key findings of this memorandum related to transportation system safety are summarized below.

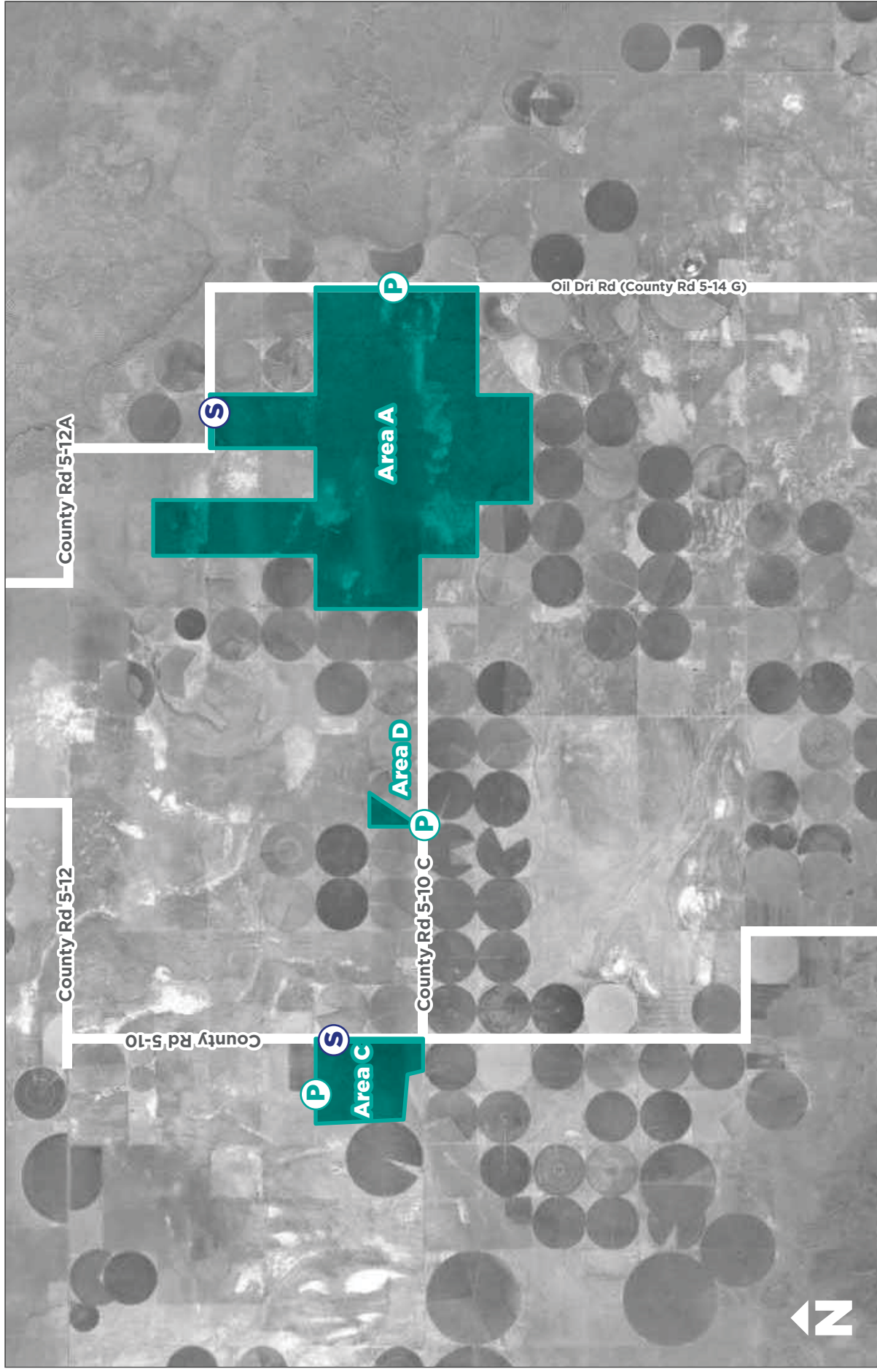
- Construction traffic is anticipated to average 252 vehicle trips per workday over a 2-year period.
- After construction is completed, the facility is anticipated to average ten or fewer vehicle trips per day.
- The anticipated traffic levels associated with both construction and operations of the Facility are within the capacity of the existing roadways within the analysis area. Per the Lake County Transportation System Plan (TSP dated 2016), there are no documented operational or capacity constraints at any roadway segments or intersections in the analysis area through 2035. We conducted a site visit in June 2018 and confirmed this finding related to existing and future capacity.


- Adequate sight lines can be provided at the proposed primary and secondary access points to the Facility. Sight distance and access design should be considered and verified when preparing the final design of the Facility layout.
- The Lake County TSP does not document any safety-related deficiencies at roadways or intersections in the vicinity of proposed site access locations. Per information obtained by the Oregon Department of Transportation (ODOT), no crashes were reported within 300 feet of the proposed site access locations (primary or secondary) over the last five years.
- The intersection of County Road 5-10 (Fort Rock Road)/County Road 5-12 is located on an existing horizontal curve (approximately 2.3 miles north of facility Area C). Three crashes have been reported at this location over the last five years. The Lake County TSP notes the need for further safety investigations along the Fort Rock Road “S” turns. Attachment A includes recommendations for measures to minimize potential impacts associated with the Facility construction traffic at this intersection.
- Larger construction delivery vehicles to Area A should be routed along the secondary access route to limit crossing movements at the County Road 5-10 (Fort Rock Road)/County Road 5-12 intersection.


BACKGROUND & INTRODUCTION

Obsidian Solar Center, LLC (Applicant) proposes to develop the Obsidian Solar Center (Facility), which consists of three main Facility areas (Area A, Area C, and Area D), as shown on Figure 1. These areas collectively comprise approximately 4,365 acres between the communities of Fort Rock and Christmas Valley within Lake County, Oregon. Figure 1 also shows the location of proposed primary and secondary access routes to the various areas. The following provides a brief overview of each Facility area:

- Area A: Located between Country Road 5-10 C and County Road 5-14 G (Oil Dri Road); to contain solar panel arrays.
- Area C: Located west of County Rd 5-10 (Fort Rock Road) just north of County Road 5-10C; to contain solar panel arrays.
- Area D: Located north of Country Road 5-10 C; to contain substation.



-  Primary Access
-  Secondary Access

 Facility Area

Facility Areas and Primary and Secondary Access Points

Figure
1

TRIP GENERATION AND TRIP DISTRIBUTION

Construction of the Facility is anticipated to be completed over a two-year time frame. Based on information supplied by Applicant, a range of 60 to 150 workers will be onsite during various stages of the construction process. Crews would work 10-hour days Monday through Thursday throughout the year. Typical conditions are expected to average 120 workers per day.

Based on their experience at other facilities, Applicant expects an average occupancy rate of 1.25 persons per vehicle for trips to and from the site during construction. Based on these assumptions, the following summarizes expected trips to and from the Facility site:

- **Workers:** During average construction levels, 120 construction employees will be onsite daily with an average vehicle occupancy of 1.25 people per car = 96 vehicle trips to and 96 trips from the site per day on average, for a total of 192 vehicle trips per day during average worker levels. During peak construction levels, 150 construction employees will be on site daily with an average vehicle occupancy of 1.25 people per car = 120 vehicle trip to and 120 trips from the site per day on average, for a total of 240 vehicle trips per day during peak worker levels.
- **Deliveries:** 20 to 40 truckloads to/from the site during the day, 2 to 4 of which are expected per hour throughout the 10-hour workday. On average, this results in 60 truck trips per day (30 in and 30 out of the Facility).

Based on this information, Table 1 summarizes expected average daily and peak hour trip generation to/from the site.

Table 1: Expected Trip Generation During Average Construction Levels

	Daily Trips	Trips During AM Commute Hours	Trips During PM Commute Hours
Worker Trips ¹	192	96	96
Delivery Trips ²	60	30	30
Total	252	126	126

Note: ¹We assume all worker trips would occur during the AM or PM peak commuting hour. However, more spreading may occur based on work schedules.

²Would result in approximately 6 trips per hour between 7 AM – 5 PM, on average.

Trip generation during typical operating conditions are expected to be average of ten or fewer passenger and light truck (pick-up truck) trips per day.

The construction employees are expected to commute to the site from the directions of the La Pine, Silver Lake, and Christmas Valley areas.

EXISTING TRANSPORTATION NETWORK

The transportation network in the vicinity of the Facility site generally consists of rural county-owned roads. Most are paved though some are maintained as gravel surfaces.

A site visit was conducted by a Kittelson and Associates traffic engineers on June 15, 2018. Vehicle traffic in the area was observed to be sparse. Little to no pedestrian and bicycle traffic was observed. These observations are consistent with the Lake Country TSP, which does not identify operational constraints at any intersections or roadway segments in the County through the 2035 horizon year, including those within 15 miles of the Facility site boundary. As such, the anticipated traffic levels associated with both construction and operation of the Facility are within the capacity of the existing roadways within the analysis area.

All roadways in the area are two-lane with minimal shoulder area, consistent with Lake County roadway standards. Table 2 summarizes characteristics of the key roadways in the area.

Table 2: Roadway Network Characteristics

Road	Functional Classification	Notes
County Road 5-10 (Fort Rock Road):	Major Collector	Provides main access to the communities of Fort Rock and Christmas Valley to/from OR 31
Country Road 5-12	Minor Collector	Provides access from La Pine/Fort Rock area to Area A.
County Road 5-12 A	Local Road	Gravel road. Area A would access this facility.
County Road 5-10 C (Connley Lane)	Local Road	Local access road for properties east of Country Road 5-10. Does not provide through connections to Area A.
County Road 5-14 (Christmas Valley Road)	Major Collector	Provides main access to, from and through Christmas Valley.
County Road 5-14 G (Oil Dri Road)	Local Road	Local access road in the vicinity of the Facility site. Provides connection between Christmas Valley Road and Country Road 5-12 A.

SITE ACCESS AND ACCESS ROUTE REVIEW

The general location of primary and secondary access locations to the three Facility areas are shown on Figure 1. Primary and secondary access routes to the areas are shown on Figure 2.

Available sight distance was reviewed at the proposed primary and secondary site access locations during the June 15, 2018 site visit. A summary of this review is provided below.

- Area A
 - Primary Site Access: No observed constraints
 - Secondary Site Access: Access should be located opposite existing unpaved driveway north of County Road 5-12A to create a four-way intersection and limit potential turning conflicts.
- Area C:
 - Primary Site Access: would be constructed off a new road along the northern frontage of the site. This access should be constructed at least 200 feet away (west) from County Road 5-10 (Fort Rock Road).
 - Secondary Site Access: Country Road 5-10 (Fort Rock Road) along the southern portion of the eastern site frontage is generally rolling with minor vertical curves. Because of this, access should be sited to the north to avoid sight constraints from one on the vertical curves. This access should be constructed at least 200 feet south of the new frontage road to be constructed for the Primary Access.
- Area D:
 - Primary Site Access: No observed constraints
 - Secondary Site Access: None proposed

Available sight distance should be documented in engineering plans when final site access location and design is determined.

As shown in Figure 2, the primary and secondary access routes to the Facility areas will generally following major Lake County travel routes. It is noted, however, that the primary access route to Area A for those traveling to/from La Pine would add turning movements to the County Road 5-10 (Fort Rock Road)/County Road 5-12 A intersection. The configuration of this intersection and the route to/from Area A is shown in Figure 3.

As shown on Figure 3, vehicles traveling to/from Area A would need to turn off County Road 5-10 (Fort Rock Road) at the start of a horizontal curve, in order to continue traveling east along County Road 5-12.

To reduce the potential for vehicle conflicts at this intersection during construction, the following are recommended:

- Applicant coordinate with Lake County to define stopping locations and establish clear right-of-way and turning movement priority
- Route larger delivery vehicles to Area A along the secondary access route, as much as possible, to limit turning movements at this location

TRAFFIC SAFETY CONSIDERATIONS

Lake County TSP

The Lake County TSP identifies the need to further investigate the Fort Rock Road “S” Curves south of the Facility. No specific improvements are identified in the TSP.

Crash Data Review

ODOT provided reported crash histories in the analysis area for the period between January 2011 and December 2015. Using the ODOT data, the type and severity of reported crashes in the area was summarized in Figure 4 and Figure 5, respectively. Per the ODOT crash data, no crashes were reported at the proposed primary or secondary access points to the Facility site boundary (refer to Figure 4).

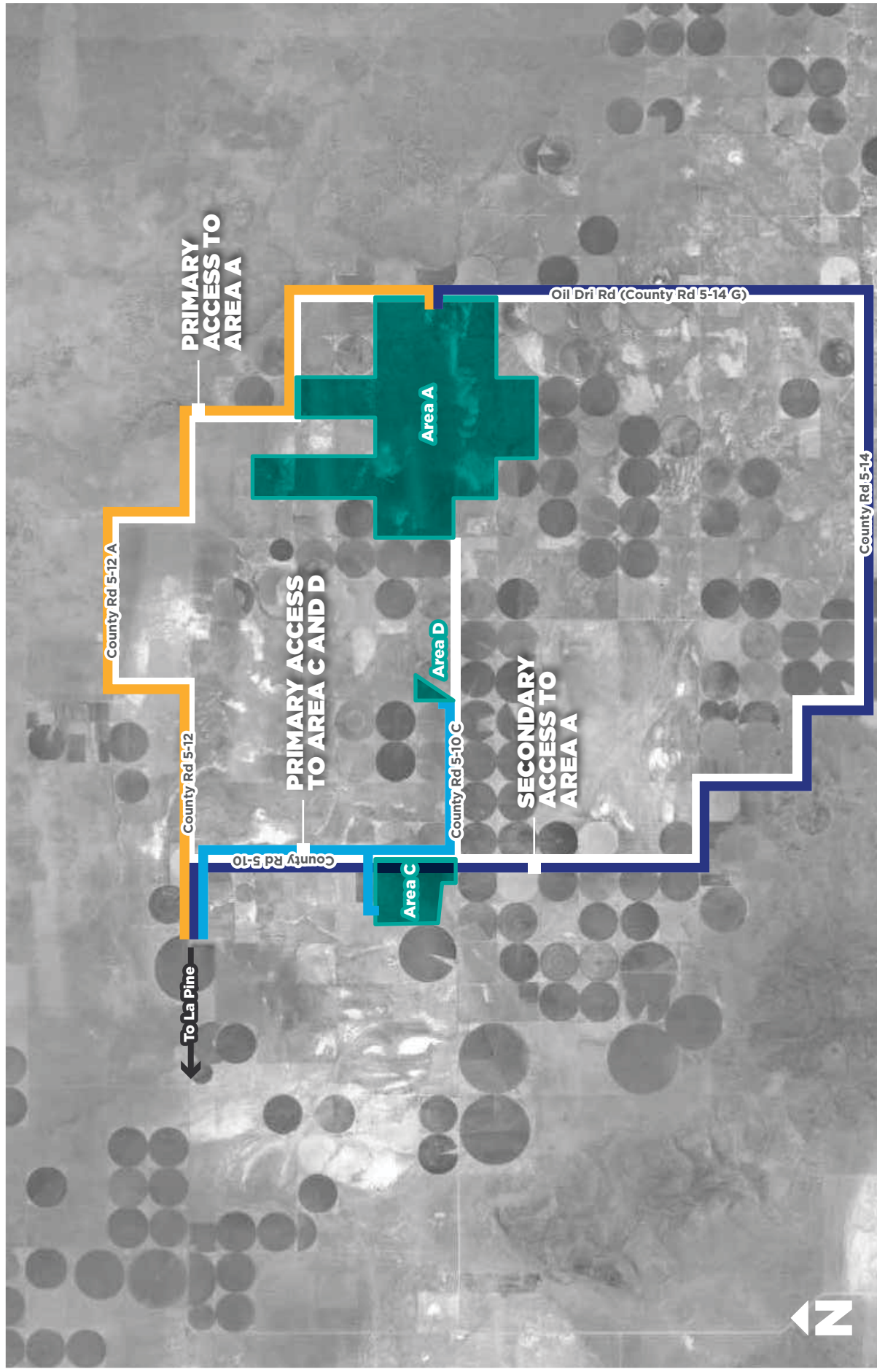
Review of the ODOT crash data identified three reported crashes at the County Road 5-10 (Fort Rock Road)/County Road 5-12 intersection, including two fixed object crashes and one head-on crash. The proposed Facility site boundary does not front or encompass the County Road 5-10 (Fort Rock Road)/County Road 5-12 intersection and no changes to the intersection geometry are proposed in conjunction with Facility development.

CONCLUSION

OAR 345-022-0110 does not define a significance threshold that requires implementation of the potential intersection modifications identified in Figures A-1 and A-2 of Attachment A as part of Facility construction. It is recommended that Applicant and Lake County coordinate on the potential need for the specific improvements recommended as part of this application.

REFERENCES

Lake County Transportation System Plan, 2016



Facility Area

Access Routes from La Pine

Figure
2

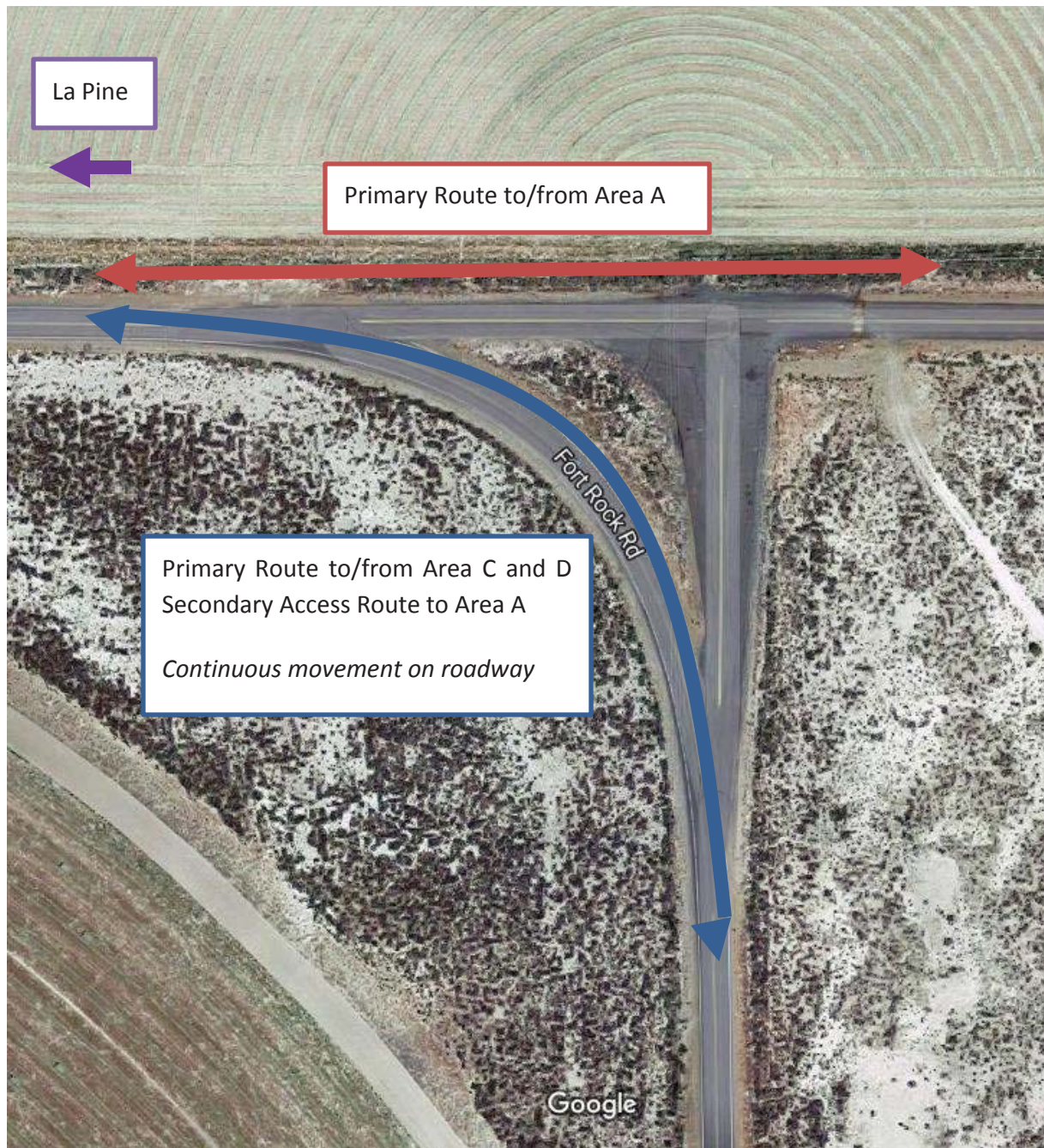
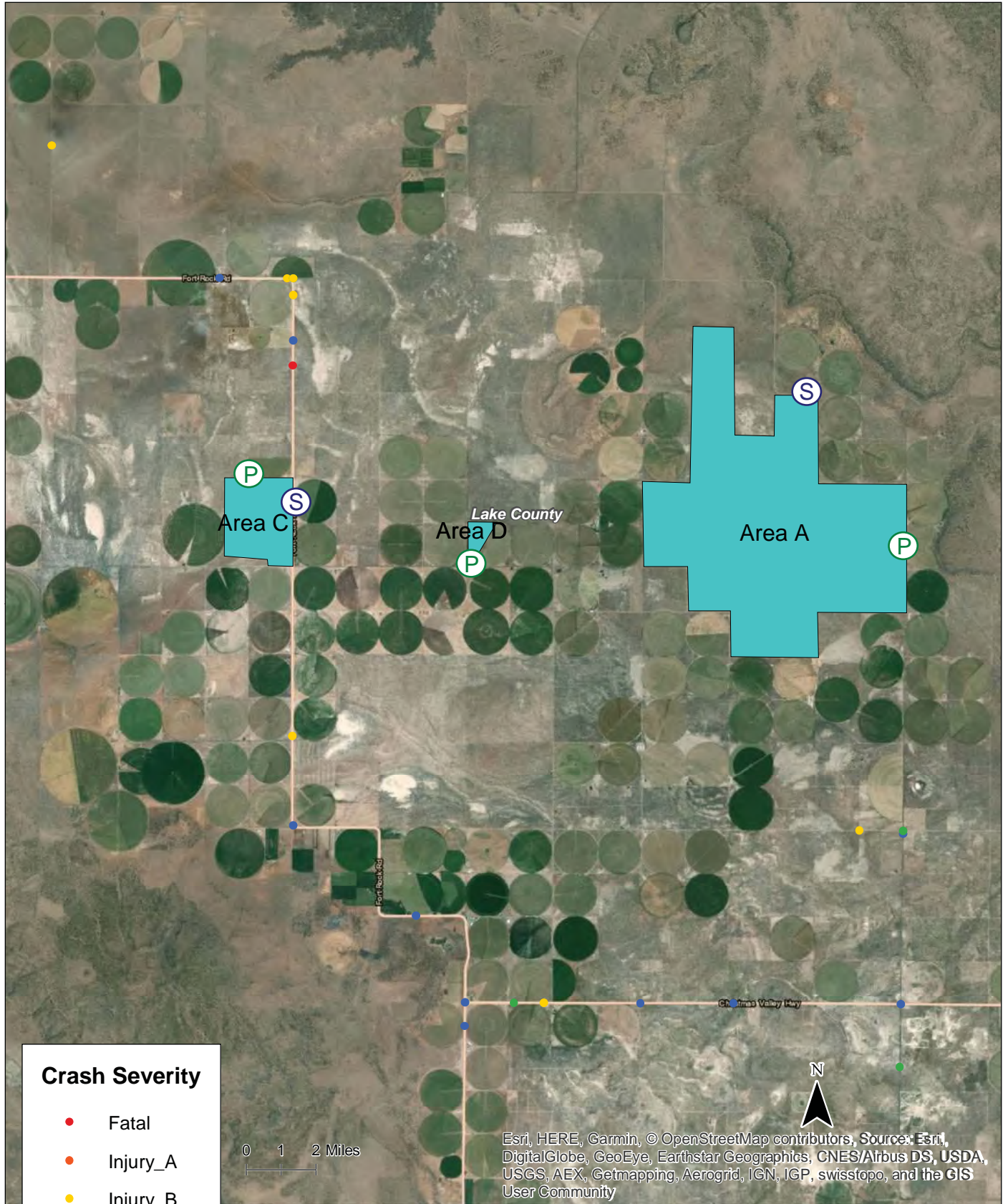


Figure 3: County Road 5-10 (Fort Rock Road)/County Road 5-12 intersection

H:\2022\2328 - Obsidian Solar Farm Facility\gis\crash_severity.mxd - jgulczynski - 1:18 PM 8/1/2018



Crash Severity

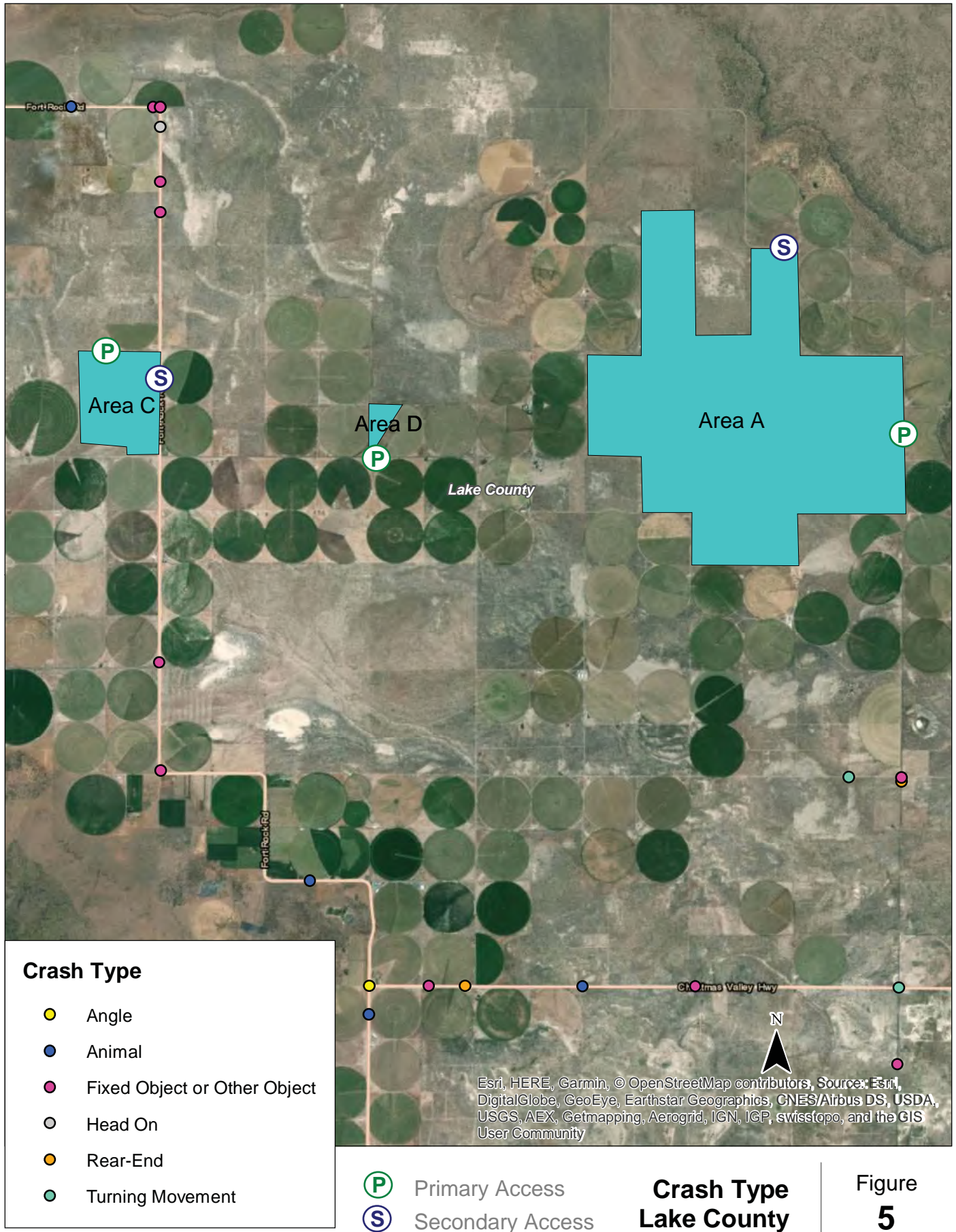
- Fatal
- Injury_A
- Injury_B
- Injury_C
- PDO

P Primary Access
S Secondary Access

Crash Severity Lake County

Figure
4

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Attachment A
Recommended Improvements

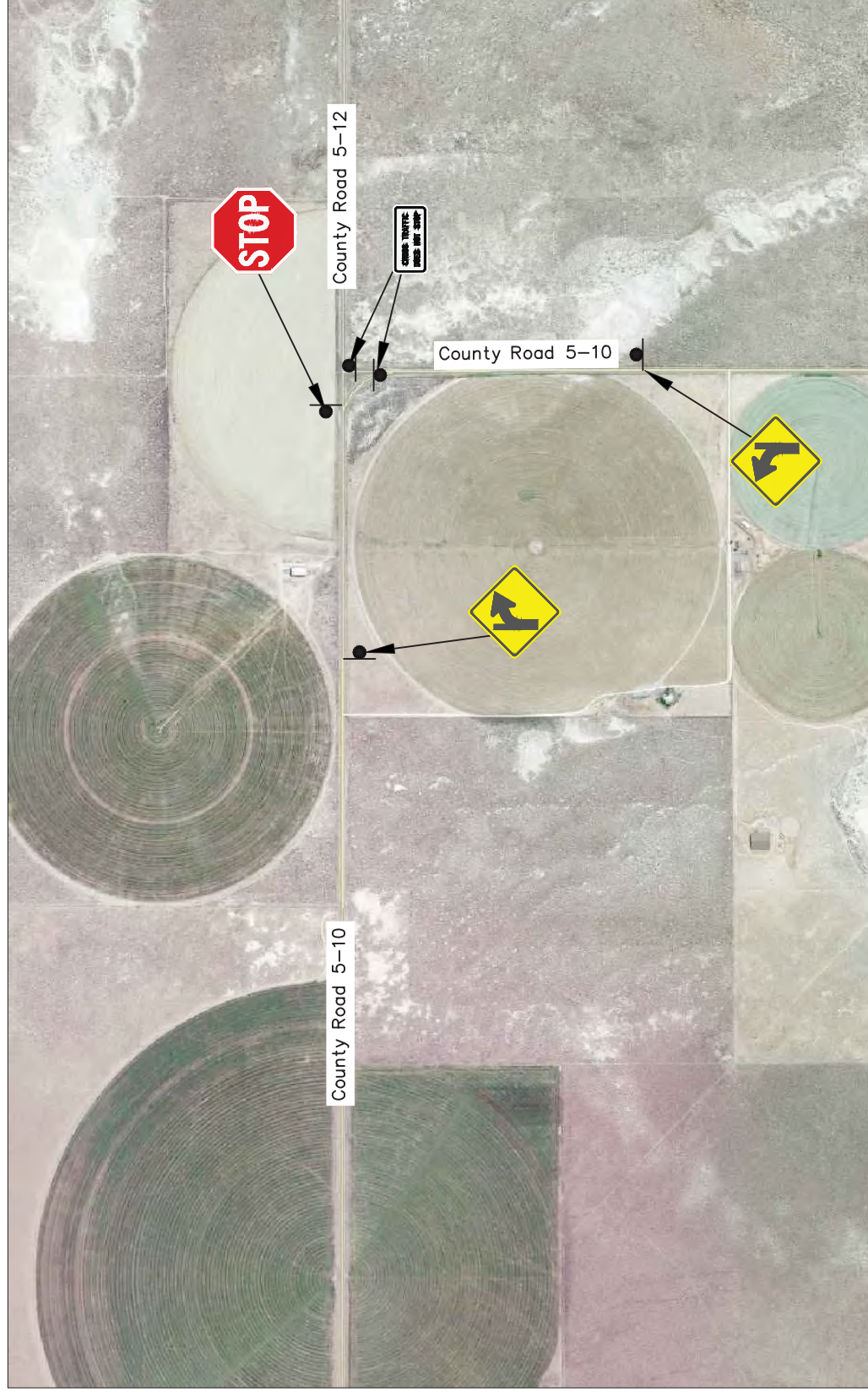


Figure
A1

Recommended Signs
Lake County, OR

● RECOMMENDED SIGNS



● ~~✕~~ RECOMMENDED SIGNS
✕ EXISTING CHEVRON SIGNS

Recommended Signs
Lake County, OR

Attachment U-2: Draft Construction Traffic Management Plan

Draft Construction Traffic Management Plan

Prepared by the Oregon Department of Energy based on information provided in the ASC

March 2020

Contents

1.0 Facility Summary	3
2.0 Best Management Practices to Reduce Traffic Impacts	3
3.0 Coordination with Lake County	4

The Oregon Department of Energy (Department) provides this Draft Construction Traffic Management Plan based on conditions of compliance with the Councils Public Services Standard and on the information presented in the application for site certificate (ASC) for the Obsidian Solar Center.

1.0 Facility Summary

Obsidian Solar LLC (certificate holder), a subsidiary of Obsidian Renewables, LLC, obtained approval for the construction and operation of the Obsidian Solar Center, a 400-megawatt solar photovoltaic energy generation facility (facility) in Lake County, Oregon near the unincorporated communities of Fort Rock and Christmas Valley. The facility is located on private agriculturally zoned lands in a portion of Lake County currently not covered by a rural fire district. The primary transportation routes to the site will be from areas to the west of the analysis area, including La Pine, Bend, and Klamath Falls, using US-97 and State Route 31 to reach the Christmas Valley area. Possible alternative routes to the Christmas Valley area include US-395 from the east, via US-20 to Bend. Construction-related materials will be delivered by haul trucks primarily using US-97 from the Bend and Klamath Falls areas, and State Route 31 from La Pine.

Table 1: Expected Trip Generation During Peak Construction Levels

Trip Description	Daily Trips (round trip)	Trips During AM Commute (one way)	Trips During PM Commute (one way)
Worker Trips	240	120	120
Delivery Trips	160	80	80
Total	400	200	200

2.0 Best Management Practices to Reduce Traffic Impacts

Construction is expected to take up to two years to complete, with up to 250 construction workdays per year. In addition, the applicant expects that dust abatement crews will also work on the remaining 115 days when no other construction is scheduled (i.e., “non-construction days”). Water will be applied daily to areas with unstable soils that are prone to wind-blown erosion via water trucks. During construction, water will primarily be sprayed on disturbed areas for dust abatement in accordance with the NPDES 1200-C Construction Stormwater Permit. Generally, the quantity of water used for dust suppression will range from about 30,000 to 60,000 gallons per day. Best management practices (BMPs) proposed by the applicant in the ASC and in the 1200-C Permit are listed below and would be employed during construction.

BMPs and other avoidance or minimization measures to traffic service providers and surrounding roadways are provided in the Erosion and Sediment Control Plan (ESCP), include, but are not limited to, the following.

- The potential for wind erosion impacting driving visibility will be addressed by limiting direct soil disturbance, spraying water on exposed areas for dust abatement, and re-seeding temporarily disturbed areas.
- Water facility and surrounding access roads for dust suppression, especially during dry months.
- Erosion Control BMPs/Measures: Applicant will use silt fencing, hay bales (certified weed-free), fiber rolls, or other methods to avoid or reduce erosion and sediment transport, as described in the ESCP.
- Speed Limit: Applicant will impose a 15 mile per hour speed limit within the site boundary to reduce dust emissions, maintain safety, and protect wildlife.

3.0 Coordination with Lake County

Consult with Lake County Planning and Road Departments to:

- Establish primary and secondary deliver routes based on road conditions known by the County prior to construction.
- Execute a road use agreement or funding agreement with Lake County Road Department (or County Road Superintendent) to ensure that damage or wear to state or county roads that is caused by facility construction related traffic and road use is repaired by the certificate holder. The road use or funding agreements shall establish and provide financial security regarding county road use, maintenance, and repair from construction-related impacts. Regardless of existing pavement or gravel conditions, the road use or funding agreements shall establish that roadway segments will be reviewed prior to any added construction traffic and establish a system for monitoring safety or degradation to road base or surface prior to and during construction.
- Fund or install permanent new traffic signs (to LCZO specifications) at the intersection of Fort Rock Road and County Road 5-12 and define stopping locations and establish clear right-of-way and turning movement priority. Traffic signs must be consistent with the provisions outlined in Attachment U-1 Kittelson Traffic Impact Assessment, attached to the Final Order, or as agreed to by the Department in consultation with Lake County.
- Locate and place signs for low-speed zones near access points, route intersections and pull-outs to reduce the risk of accidents.

Attachment U-3: Draft Fire Protection and Emergency Response Plan

**Draft Fire Protection and Emergency Response Plan
Obsidian Solar Center**

Prepared by the Oregon Department of Energy based on information provided in the ASC

March 2020

Contents

1.0 Facility Summary	1
2.0 Fire and Emergency Contact List.....	1
3.0 Fire Prevention Measures: Construction and Operation	2
4.0 Emergency Response Measures: Construction and Operation	4

The Oregon Department of Energy (Department) provides this Draft Fire Protection and Emergency Response Plan based on the information presented in the application for site certificate (ASC) for the Obsidian Solar Center.

1.0 Facility Summary

Obsidian Solar LLC (certificate holder), a subsidiary of Obsidian Renewables, LLC, obtained approval for the construction and operation of the Obsidian Solar Center, a 400-megawatt solar photovoltaic energy generation facility (facility) in Lake County, Oregon near the unincorporated communities of Fort Rock and Christmas Valley. The facility is located on private agriculturally zoned lands in a portion of Lake County currently not covered by a rural fire district. Prior to construction of the facility, the certificate holder shall either submit an application for annexation to the Christmas Valley Rural Fire Protection District or shall become a lifetime member of the Rangeland Fire Protection Association, a non-profit volunteer association, to provide fire protection and response to the site, see Section 3.0 for more details.

The facility is located in a high-medium wildfire hazard area of Lake County due to dry, arid environmental conditions. The objective of this draft Fire Protection and Emergency Response Plan (Plan) is to provide the information necessary for facility personnel to maintain a safe workplace, to reduce the risk of fire hazards, and workplace emergencies. This plan applies to the applicant, all facility personnel, contracting employees, contractors, and any other personnel working at the facility.

2.0 Fire and Emergency Contact List

Service Provider (w Notes)	Location/Distance from Facility	Contact Info
Law Enforcement		
Lake County Sheriff's Office – Primary law enforcement provider for the analysis area. Full law enforcement services that operate a 24-hour 911 dispatch center for fire, police, and medical emergencies	Lakeview, Oregon (Main office); Silver Lake, Oregon (Field office); and Christmas Valley, Oregon (annex)	
Oregon State Police – Secondary law enforcement provider for the Facility location	Lakeview and Lapine, Oregon	
Fire Protection		
Christmas Valley Rural Fire Protection District	Christmas Valley, Oregon	

Service Provider (w Notes)	Location/Distance from Facility	Contact Info
High Desert Rangeland Fire Protection Association (RFPA)		
Medical Providers		
North Lake County Emergency Medical Services – Ambulance service to St. Charles Health System Hospital	Christmas Valley, Oregon (11 miles from Facility)	
La Pine Community Health Center – No urgent care available at this facility	Christmas Valley, Oregon (16 miles from Facility)	
St. Charles Health System Hospital – Level II Trauma Center	Bend, Oregon (83 miles from Facility)	
Air Ambulance – Applicant will contract with Air Ambulance for emergency helicopter medical transport. The Air Ambulance is able to utilize the Christmas Valley Airport.	Lands at Christmas Valley Airport	

3.0 Fire Prevention Measures: Construction and Operation

To reduce the risk of fire during construction and operation:

- Personnel will be trained in proper fire prevention and control procedures;
- Personnel will be instructed to not leave vehicles and equipment running when not in use (i.e., no idling);
- Any potential incipient fires during construction or operation will be controlled by trained Facility staff. In most cases, Applicant expects to contain fires (but not extinguish) and let them burn out. If needed, additional fire prevention measures will be coordinated with the local service providers;
- Fire suppression: Although stringent fire prevention measures will be in place during construction, the certificate holder is planning for approximately 1 percent of the total consumed water (up to 343,000 gallons total over two years, assuming worst-case conditions, or 686 gallons per construction workday) to be used for fire suppression during Facility construction activities. If more water is required for fire suppression, the certificate holder will halt other activities and divert water amounts to this activity, as needed.

During construction and operation, facility personnel will follow the SOLV Vegetation Management and Fire Prevention Plan (included below), by SOLV, Swinerton Builder's. Provisions in the SOLV Vegetation Management and Fire Prevention Plan include:

- Before the start of each daily shift, at approximately 07:00 a.m. local time, the Technician in charge will check the fire danger posting by the National Weather Service for any Red Flag Warnings for that day. If there is a Red Flag Warning for that day, all mowing activities done with power mowers using metal blades will be halted. The only vegetation mitigation that is allowed during a Red Flag Warning is that done with a string trimmer using nylon string that won't cause sparks.
- If SOLV is performing light work (eg one to two mowers per site), one operator will be designated to turn off the mower at twenty-minute intervals to perform a visual scan of the area mowed, walking approximately 20 yards in each direction and ensuring nothing is burning.
- If fire breaks out onsite, refer to the pocket card and call SOLV's OCC, they will directly contact the emergency services in the area. Use air horns or other methods to alert site personnel of danger. After assessing personal safety, assess if any countermeasures are safe. For example, use fire extinguisher, must be available, and fire is in the incipient period to mitigate small vegetation fire or small equipment fire.

Through its participation in the High Desert RFP, Applicant will have access to federal excess personal property (FEPP), including excess U.S. Forest Service wildland fire engines and equipment. These are on loan from the federal government for the life of the equipment. Similarly, FFP (fire fighter property) held as excess by the Department of Defense, may be available, potentially modified to suit rangeland needs. Applicant, in consultation with the RFP and RFP members near the Facility, will identify a location for the FEPP and FFP such that it is near a main access road and can be easily accessed by Applicant and other RFP members in the event of fire suppression needs. The most likely location will be at the eastern Facility site access gate just off Oil Dri Road. Alternatively, or perhaps in addition, equipment may be stored just off Connley Lane near the site of the GSU. Or the applicant may apply to be annexed into the jurisdiction of the Christmas Valley Rural Fire Protection District (CVRFPD). Prior to construction of the proposed facility, the certificate holder must provide evidence of its participation in the High Desert RFP or annexation into the CVRFPD to the Department, including the provisions of any agreement and the term of the agreement.

Design features to reduce the risk of fire from and to the facility:

- Facility perimeter roads within the fenceline will be 20 feet wide with a maintained 10-foot vegetation-free buffer zone (30 feet total vegetation free area) to act as fire breaks and help prevent the spread of potential fires to and from neighboring areas, and would allow for access by emergency vehicles.
- Facility internal array access roads within the fenceline will be 12-feet wide and maintained to act as fire breaks and help prevent the spread of potential fires to and from neighboring areas and would allow for access by emergency vehicles.
- Facility electrical equipment will meet all applicable National Electric Code and Institute of Electrical and Electronics Engineers standards to reduce potential fire risk.

- Facility will be electronically monitored through supervisory and data acquisition system. The Facility will have a supervisory control and data acquisition (SCADA) system. Alarming is one of the primary functions of the SCADA. The SCADA HMI software platform will be programmed with various multi-level priority alarms and programming will dictate who receives notice. For a high priority alarm, for example, the software can push a notice through email or SMS (text message) to all operators, operational managers, and asset managers, and perhaps even the Facility owners. Alarms will be provided for electrical hazards, fire, and other operational issues. Facility operator is immediately notified by alerts generated by the monitoring platform when any equipment goes off-line for any reason. This enables immediate safety responses to be initiated in the event the equipment functionality is compromised by fire.
- The Facility will have signage that includes safety information at all entrances to the Facility for emergency responders to identify the location of system disconnects, location of electrical conduit, and the ability to isolate and shutdown electrical power coming from the PV array.

During Facility operation, the site, including the facility components and transmission line, will be inspected periodically consistent with the SOLV Vegetation Management and Fire Prevention Plan (included below), by SOLV, Swinerton Builder's. O&M operator Vegetation and electrical equipment will be inspected (visual inspection and infra-red scanning, as appropriate for the particular area) and vegetation will be managed with mowing and spraying as necessary to avoid any hazardous conditions. SOLV will also be notified via the SCADA system, which provides constant electrical equipment monitoring.

During operations, the system operator will periodically offer training to area firefighters on the system operation and safety practices.

4.0 Emergency Response Measures: Construction and Operation

Prior to construction of the proposed facility, the certificate holder shall contact Lake County Sheriff's Office Annex in Silver Lake and notify them of the facility location, including access roads used, the facility size, estimated staffing on-site daily, and any potential service needs from the Sheriff's Office.

During construction, the certificate holder will retain emergency medical technicians on site and will arrange for medical transport during medical emergencies that occur at the Facility. Patients with minor injuries will be treated on site or transported by vehicle to La Pine Community Health Center in the community of Christmas Valley. Patients with moderate injuries will be transported by vehicle to St. Charles Medical Center in Bend. For severe injuries, the certificate holder may use the services of the Air Ambulance to transport patients to Bend.

Obsidian Solar Center

Fugitive Dust Abatement and Management Plan (Draft)

The objective of the fugitive Dust Abatement and Management Plan (the “DAMP”) is to detail the range of practices and tools designed to address potential impacts from construction and operation of Obsidian Solar Project (the “Facility”). The DAMP provides guidance to construction and field personnel on measures intended to minimize effects during construction activities and adapt management and abatement techniques in real-time from the field to respond to the dynamic environment. It will be the responsibility of the Facility and its contractors, working with designated environmental monitors, to comply with measures identified in this document and to be responsive to current and changing conditions on and around the development site.

The DAMP is intended to supplement and support the Facility’s Erosion and Sediment Control Plan, which will be included in the National Pollution Discharge Elimination System (NPDES) 1200-C Construction Stormwater Permit, together with the required erosion and sediment control best management practices (BMPs).

Dust Control Coordinator

There Facility’s construction contractor shall be the designated fugitive dust control coordinator and shall manage implementation of the DAMP for the Facility and be responsible for implementing the fugitive dust control measures specific in the DAMP during construction. The dust control coordinator shall also:

- Have the DAMP available at the construction site at all times during Facility construction and operation;
- Implement the DAMP and ensure that all employees, workers and subcontractors know their responsibilities regarding dust control;
- Monitor construction activity to ensure compliance with the DAMP;
- Promptly log and respond to reports on the DAMP hotline;
- Identify when reasonably available control measures are not adequate and when standby control measures (e.g., increased watering) shall be implemented.

Fugitive Dust Sources and Reasonable Available Control Measures

Fugitive Dust Source	RACM(s)
General	Contractor will maintain the natural topography and vegetation of the site to the extent possible, including by limited grading and limited establishment of temporary access roads.
	Contractor will turn off equipment when it is not in use.
	Mowing and rolling techniques will be used wherever possible to maintain plant root systems for soil stabilization.

Fugitive Dust Source	RACM(s)
Driving inside the Site	The primary vehicular access roads/driveways within the project site will be stabilized with water for the duration of construction sufficient to eliminate visible and sustained dust from vehicular travel and wind erosion.
	Unless other limitations apply, traffic speeds within the site will be limited to 15 miles per hour with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads within the site as long as such speeds do not create significant visible dust emissions. Traffic speed signs shall be displayed prominently at all site entrances and exits.
Deliveries and Construction Traffic	Unless other limitations apply, construction equipment and vehicles containing construction deliveries will limit their speed on gravel access roads to 25 miles per hour.
	Contractor shall install a minimum of two Dust Control Hotline signs similar to the sample attached as <u>Exhibit A</u> , one on Oil Dri Road and one on the primary access route to the Facility, providing direct access to the dust control coordinator.
	The speed limit for construction vehicles preparing or installing the transmission line between the main project site and the step-up substation site shall be limited to 15 miles per hour except that speeds will be reduced to no more than 10 miles per hour within 200 feet of a residence
	All dirt or gravel vehicular access road(s) used as primary access routes for deliveries of parts, equipment, or personnel to the project site shall be stabilized with water for the duration of construction sufficient to eliminate significant and sustained visible dust from vehicular travel and wind erosion.
	When wind speeds exceed _ miles per hour ¹ , construction contractors will minimize new disturbances to the extent possible and/or mobilize additional water trucks to minimize fugitive dust from exposed surfaces.

¹ This figure will be determined prior to construction following an analysis of available historic wind speed data from the Bureau of Reclamation AgriMet (Cooperative Agricultural Waethe Network) for the Christmas Valley, Oregon weather station; <https://www.usbr.gov/pn/agrimet/webaghrread.html>

Fugitive Dust Source	RACM(s)
Earth Moving Activities	When feasible, use a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes to minimize significant visible dust emissions.
	Minimize disturbance areas to the maximum extent feasible.
	For non-road or parking area earthen surfaces, stabilize surfaces by gravel, chemical or other means to prohibit significant and sustained visible fugitive dust from wind erosion.
Removing and Hauling Sand, Soil or other Loss Materials	Soil load shall be kept below 6 inches of the freeboard of the truck
	Drop heights shall be minimized when loaders dump soil into trucks.
	Gate seals should be tight on dump trucks.
	Haul trucks will be covered with a tarp or other suitable cover.

Standby Control Measures

If, after implementation of the RACMs dust emissions have not been reduced to acceptable levels, standby measures will be immediately implemented. Standby control measures may include additional watering of disturbed areas or soil piles, application or additional applications of soil stabilizers, covering excavated soil piles, temporarily reducing the permitted speed limits, or temporarily suspending the source of the dust emission until wind speed is reduced.

Exhibit A
Dust Control Hotline

