EXHIBIT Q
THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

OAR 345-021-0010(1)(q) and OAR 345-022-0070

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FIGURE

Q.1 INTRODUCTION

OAR 345-021-0010(1)(q) requires the following:

Information about threatened and endangered plant and animal species that may be affected by the proposed facility, providing evidence to support a finding by the Council as required by OAR 345-022-0070.

OAR 345-022-0070 requires the following:

"[T]he 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:

> *(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."

Q.1.1 Analysis Area

The analysis area, for purposes of Exhibit Q, includes the area within the Madras Solar Energy Facility (Facility) site boundary and the area within 5 miles of the site boundary per OAR 345-001-0010(2) and (59), as shown on Figure Q-1.

Q.1.2 Agency Consultation

Madras PV1, LLC (Applicant) has consulted with Oregon Department of Fish and Wildlife (ODFW) and U.S. Fish and Wildlife Service (USFWS) personnel regarding fish and wildlife habitat and species that could be affected by the Facility. Consultations began in November 2018 and are ongoing. The following meetings are described in additional detail in Exhibit P, Section P.3.2.2 and Attachment P-1 (Agency Correspondence Record):

- Preliminary discussion introducing the project and a summary of wildlife and habitat within the site boundary with ODFW staff, Greg Jackle and USFWS staff, Matt Stuber—November 13, 2018
- Site visit with ODFW biologist, Greg Jackle and Oregon Department of Energy (ODOE) staff, Chase McVeigh-Walker—July 23, 2019
- Site visit with Matt Stuber and Emily Weidner of USFWS—July 23, 2019

Q.2 THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

OAR 345-021-0010(1)(q)(A) *Based on appropriate literature and field study, identification of all threatened or endangered species listed under ORS 496.172(2) and ORS 564.105(2) that may be affected by the proposed facility.*

Response: Sections Q.2.1 and Q.2.2 summarize the literature and field studies completed to identify threatened or endangered species that may be affected by the proposed Facility. Further details are provided in the *Critical Issues Analysis* located in Attachment P-2 to Exhibit P (note that Attachment P-2 is submitted separately under confidential cover).

The information review included the site boundary and a 5-mile buffer for federal and state special-status species within Jefferson County, Oregon.

Q.2.1 Information Review

A USFWS Information for Planning and Conservation (IPaC) Trust Resources Report was generated for federal special-status species within the site boundary and 5 miles of the Facility (USFWS, 2019a). In addition, the Oregon Biodiversity Information Center (ORBIC) database was queried for records of state and federal special-status species within the site boundary and within 5 miles of the Facility (ORBIC, 2019). The USFWS report and ORBIC database query results are included in Exhibit P as Attachment P-3. Note that the ORBIC database query results are submitted separately under confidential cover.

Based on results of the USFWS report and ORBIC database query, two federal threatened fish and one federal proposed threatened mammal species were identified as occurring or potentially occurring within the site boundary or the 5-mile buffer area. These species are listed in Table Q-1 and described further in this Exhibit. No state-listed species were identified within the site boundary or 5-mile buffer area. State sensitive and federal species of concern are addressed in Exhibit P. Table P-1 (Exhibit P) and Table Q-1 were used to design the field surveys described in Sections P.3.2 and Q.2.2.

Based on the Oregon Department of Agriculture (ODA) *Oregon Listed Plants by County* (ODA, 2019) and the USFWS IPaC report (USFWS, 2019a), no federally or state-listed plants are documented to occur in Jefferson County, Oregon.

To help make a determination on whether there is suitable habitat within the site boundary and potential for impacts within the analysis area for species identified in Table Q-1, additional sources were consulted to supplement the USFWS report and ORBIC database query. ORBIC does not represent a comprehensive survey effort and relies on voluntary reporting. The following sources provided additional information on species that potentially occur in the analysis area and includes critical information such as habitat preferences, morphological characteristics, phonologic development timelines, and species ranges:

- 2011 National Land Cover Database (Homer et al., 2015)
- The National Map (U.S. Geological Survey [USGS], 2019)
- Bull Trout General Information and Life History (USFWS, 2019b)
- Bull Trout Revised Critical Habitat Designation (USFWS, 2010)
- Bull Trout Final Rule Determining Threatened Status (USFWS, 1998)
- Fisher General Information and Life History (USFWS, 2019c)
- Steelhead General Information and Life History (USFWS, 2019d)
- Oregon Department of Agriculture [ODA] Plant Conservation Program (ODA, 2019)

Table Q-1. Federal and State Threatened and Endangered Species with Potential to Occur within 5 Miles of the Facility Site Boundary – State of Oregon

Species	Scientific Name	State Status[a,b]	Federal Status[a,b]	Potential Habitat within the Facility Site Boundary	Potential Impact within the 5-mile Analysis Area
Mammals					
Fisher	*Pekania pennanti*	SC	PT	No suitable habitat; no suitable forest or riparian habitat present within the site boundary	Yes
Fish					
Bull trout	*Salvelinus confluentus*	SC	T, CH	No suitable habitat; nearest habitat is Deschutes River located 900 feet from the site boundary	Yes
Steelhead (Middle Columbia River ESU)	*Oncorhynchus mykiss*	SC	T, CH	No suitable habitat; nearest habitat is Deschutes River located 900 feet from the site boundary	Yes

[a] ORBIC, 2019; ODFW, 2018; USFWS, 2019a; USFWS, 2019b; USFWS, 2019c; USFWS, 2019d

[b] Status Definitions

-- = No status.

PT = Proposed Threatened.

Table Q-1. Federal and State Threatened and Endangered Species with Potential to Occur within 5 Miles of the Facility Site Boundary – State of Oregon

Species	Scientific Name	State Status[a,b]	Federal Status[a,b]	Potential Habitat within the Facility Site Boundary	Potential Impact within the 5-mile Analysis Area

T = Threatened.

SC = Oregon state sensitive-critical; listing as threatened or endangered is pending or may be appropriate if immediate conservation actions are not taken.

CH = Federal dedicated critical habitat.

Q.2.2 Field Surveys

Q.2.2.1 Summary of Field Survey Methods

Table Q-2 summarizes field surveys that have been conducted, as well as ongoing and future planned investigations. Further information on the completed, ongoing, and planned biological investigations is provided in Section Q.2.2.2 and Attachment P-4 to Exhibit P.

Table Q-2. Summary of Field Surveys for Madras Solar Energy Facility

Date	Description
October 9, 2018	Habitat Categorization and Wildlife Survey
October 30, 2018	Wetland Delineation
May 15, 2019	Raptor and Eagle Nest Survey
June 13, 2019	Raptor and Eagle Nest Survey
June 15, 2019	Raptor and Eagle Nest Survey
July 1, 2019	Raptor and Eagle Nest Survey
July 23, 2019	Agency Site Visit

Q.2.2.2 Site Visits

A site visit was conducted on October 9, 2018, by a Jacobs biologist. The visit focused on identifying the potential presence of special-status species and potentially suitable habitats for fish, wildlife, and plants. The Madras site was viewed from vehicle and on foot, with special targeting of wildlife and habitats (e.g., aquatic resources and vegetation communities with potential to provide suitable habitat for special-status species) that had been identified during the initial desktop mapping conducted prior to the site visit. Meandering transects were walked by the Jacobs biologist at a minimum spacing of 660 feet. Observations of wildlife and wildlife signs (e.g., prints, scat, burrows, nests, hair, and feathers) were recorded.

Ground and helicopter site visits were conducted on May 15, June 13, June 15, and July 1, 2019, by West, Inc., biologists to identify nesting raptors. The site visits focused on documented eagle nests located north of the site boundary. Further information on the site visit results can be found in Exhibit P.

A site visit was conducted on July 23, 2019, by Jacobs and West biologists, USFWS and ODFW biologists, and ODOE staff. The visit focused on the potential presence of special-status species and potentially suitable habitats for fish, wildlife, and plants. The Madras site was viewed from vehicle and on foot in areas with the highest potential to support special-status species. No federally or state-listed threatened or endangered species or their sign (e.g., prints, scat, burrows, nests, hair, and feathers) were identified during the site visit. No suitable habitat for federally or state-listed threatened or endangered species identified during the desktop review as potentially occurring within 5 miles of the Facility site boundary was identified.

Q.2.2.3 Habitat Categorization

Biologists familiar with Blue Mountains ecoregion habitat types and wildlife used a combination of historical land cover data (Homer et al., 2015), color aerial image interpretation (ESRI, 2019), topographic information (USGS, 2019), and onsite verification to characterize habitat types

present within the site boundary from the perspective of wildlife use, both general (for species assemblages [e.g., shrub-steppe obligates]) and specific (for individual taxa [e.g., special-status species]).

On October 9, 2018, a Jacobs biologist familiar with regional flora and fauna conducted a site visit to ground-truth habitat occurrence and quality. During the visit, habitat boundaries were then delineated and distinct habitats were categorized according to the habitat definitions in ODFW's Fish and Habitat Mitigation Policy, based on a combination of vegetative structure, habitat functionality, and overall ecological condition for wildlife, in particular for special-status species.

Q.3 NATURE, EXTENT, AND TIMING OF SPECIES OCCURRENCE IN ANALYSIS AREA

OAR 345-021-0010(1)(q)(B) *For each species identified under (A), a description of the nature, extent, locations and timing of its occurrence in the analysis area and how the facility might adversely affect it.*

Response: The literature review identified a total of three federal threatened and proposed threatened species that could occur within 5 miles of the site boundary in Oregon (listed in Table Q-1). Based on the absence of suitable habitat and no documented occurrences for these species, listed species are not expected to occur within the Facility site boundary. There is designated critical habitat for bull trout (*Salvelinus confluentus*) and steelhead (*Oncorhynchus mykiss*) and potentially suitable habitat for fisher within 5 miles of the Facility site boundary. Accordingly, these three species are discussed in this section.

Q.3.1 Fisher

The USFWS report showed one terrestrial species, the fisher (*Pekania pennanti*), proposed for listing as threatened, as occurring within 5 miles of the site boundary (USFWS, 2019a). In the Western United States, this species occurs only at mid- to lower elevations in mature conifer and mixed conifer/hardwood forests, characterized by dense canopies and abundant large trees, snags, and logs (Powell and Zielinski, 1994). No such habitat is present within the site boundary. Therefore, no suitable habitat for this species is present within the site boundary and the species is not expected to occur in or near the Facility site boundary.

Q.3.2 Bull Trout

Bull trout is a federal threatened species. Final critical habitat for bull trout was designated by USFWS in 2010 (USFWS, 2010). Additionally, a recovery plan was published in 2015 (USFWS, 2015). Although the Facility site boundary is not located within the designated critical habitat, the analysis area includes a portion of the Deschutes River that is included in Unit 6 – Lower Deschutes River critical habitat (NOAA, 2010).

Bull trout requirements include streams with cold, unpolluted water, clean gravel and cobble substrate, and gentle stream slopes. Many spawning areas are associated with cold water springs or areas where stream flow is influenced by groundwater. In Oregon, bull trout have a variety of life history strategies that include highly migratory and nonmigratory populations. Usually, juvenile bull trout feed on insects until they are large enough to transition their diet to fish. Adult bull trout primarily feed on fish (USFWS, 2007).

The ORBIC database had record of bull trout in the Deschutes River and its tributaries located within 5 miles of the Facility (ORBIC, 2019). The Facility will obtain a 1200-C Construction Stormwater National Pollution Discharge Elimination System (NPDES) Permit (Exhibit I, Attachment I-1). With erosion and sediment control measures in place, no adverse impacts are anticipated from construction to the Deschutes River and associated species. Therefore, the Facility is not expected to affect bull trout.

Q.3.3 Steelhead

The Middle Columbia River population of steelhead is a federal threatened species, and the summer run is considered state sensitive-critical. Final critical habitat for this population was designated in 2005 (NOAA, 2005). Additionally, a recovery plan was published in 2009 (NOAA, 2009). Although the Facility site boundary is not located within the designated critical habitat, the analysis area includes portions of the Deschutes River and its tributaries that are included in the

Middle Columbia – Lower Deschutes Subbasin critical habitat area (NOAA, 2010), and the ORBIC database did have record of the summer run steelhead in the Deschutes River within the 5-mile analysis area (ORBIC, 2019).

As stated above, the Facility site boundary does not include the Deschutes River. The Facility will obtain a 1200-C Construction Stormwater NPDES Permit (Exhibit I, Attachment I-1). With erosion and sediment control measures in place, no adverse construction impacts are anticipated to the Deschutes River and associated species. Therefore, the Facility is not expected to affect steelhead.

Q.4 MEASURES TO AVOID OR REDUCE ADVERSE IMPACTS

OAR 345-021-0010(1)(q)(C) *For each species identified under (A), a description of measures proposed by the applicant, if any, to avoid or reduce adverse impact.*

Response: No federally or state-listed threatened or endangered species are likely to occur within the analysis area (refer to Sections Q.2 and Q.3). Therefore, the Applicant does not propose measures to avoid or reduce adverse impacts.

Q.5 PLANT DISTURBANCES

Q.5.1 Plant Species with an ODA Protection and Conservation Program

OAR 345-021-0010(1)(q)(D) *For each plant species identified under (A), a description of how the proposed facility, including any mitigation measures, complies with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3).*

Response: Protection and Conservation Programs are prepared by ODA for selected plant species listed as threatened or endangered under the Oregon Endangered Species Act and selected locations within the state. There is no plant protection and conservation program applicable to the site. Therefore, no additional information is required under this provision and OAR 345-022-0070(1)(a) does not apply.

Q.5.2 Plant Species without an ODA Protection and Conservation Program

OAR 345-021-0010(1)(q)(E) *For each plant species identified under paragraph (A), if the Oregon Department of Agriculture has not adopted a protection and conservation program under ORS 564.105(3), a description of significant potential impacts of the proposed facility on the continued existence of the species and on the critical habitat of such species and evidence that the proposed facility, including any mitigation measures, is not likely to cause a significant reduction in the likelihood of survival or recovery of the species.*

Response: No federally or state-listed plant species are expected to occur within the site boundary, as described in Sections Q.2 and Q.3. Therefore, the Applicant does not propose any mitigation measures. The Facility is not likely to cause a significant reduction in the likelihood of survival or recovery of any plant species.

Q.6 ANIMAL DISTURBANCES

OAR 345-021-0010(1)(q)(F) *For each animal species identified under (A), a description of significant potential impacts of the proposed facility on the continued existence of such species and on the critical habitat of such species and evidence that the proposed facility, including any mitigation measures, is not likely to cause a significant reduction in the likelihood of survival or recovery of the species.*

Response: Given that the three listed animal species in the analysis area are expected to be absent from the site boundary, as explained in Sections Q.2 and Q.3, no mitigation measures will be employed. The Facility is not likely to cause a significant reduction in the likelihood of survival or recovery of any listed animal species.

Q.7 MONITORING PROGRAM

(G) The applicant's proposed monitoring program, if any, for impacts to threatened and endangered species.

Response: No federally or state-listed threatened or endangered species are likely to occur within the analysis area, as explained in Sections Q.2 and Q.3. Therefore, the Applicant does not propose a monitoring program for listed species.

Q.8 REFERENCES

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Figure

121°20'W

121°10'W

44°40'N

Warm Springs Hwy US Hwy 26

NW Hwy 26

Deschutes River

Jefferson County

Pelton Regulating Reservoir

NW Warm Springs Hwy

The Dalles-California Hwy

US Hwy 97

NE US Hwy 97

NE Hwy 97

Lake Simtustus

Oregon

SW Culver Hwy

SW US Hwy 97

SW Hwy 26

SE Madras-Prineville Hwy

State Hwy 361

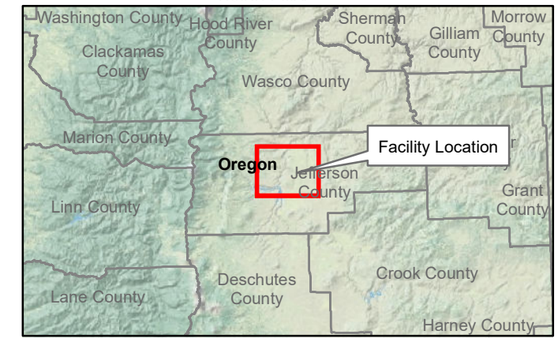
US Hwy 97 Bus

Metolius River

Lake Billy Chinook

Deschutes River

VICINITY MAP



LEGEND

- Madras Solar Energy Facility Site Boundary
- 5-mile Threatened and Endangered Species Analysis Area
- Major Highway
- Existing Road
- Watercourse
- Waterbody

Coordinate System: NAD 1983 UTM Zone 10N

Data Sources: Site Boundary, City Limits, Urban Growth Boundary: Jefferson County 2018; National Forest/Grassland: US Forest Service 2013; National Wilderness Area: Wilderness Connect; Watercourse: NRI 1996; Waterbody: BLM; ESRI ArcGIS online; Airport: US Dept of Transportation;

N

0 1 2
Miles

1 inch equals 1.5 miles

Figure Q-1
Threatened and Endangered Species Analysis Area
Application for Site Certificate
Madras Solar Energy Facility
Jefferson County, OR

JACOBS