

**EXHIBIT Q**  
**THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES**  
 OAR 345-021-0010(1)(q) and OAR 345-022-0070

**TABLE OF CONTENTS**

	<b>Page</b>
INTRODUCTION.....	1
Q.1.1 Analysis Area.....	1
Q.1.2 Agency Consultation.....	1
Q.2 THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES.....	1
Q.2.1 Surveys.....	2
Q.2.1.1 Summary of Surveys.....	2
Q.2.1.2 Site Characterization Study.....	2
Q.2.1.3 Habitat Categorization.....	3
Q.2.1.4 Wetland Delineation.....	3
Q.2.1.5 Sensitive Species and Raptor Nest Survey.....	3
Q.3 NATURE, EXTENT, AND TIMING OF SPECIES OCCURRENCE IN ANALYSIS AREA.....	4
Q.4 THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES.....	4
Q.5 PLANT DISTURBANCES.....	4
Q.5.1 Plant Species with an ODA Protection and Conservation Program.....	4
Q.5.2 Plant species without an ODA Protection and Conservation Program.....	4
Q.6 ANIMAL DISTURBANCES.....	5
Q.7 MONITORING PROGRAM.....	5
Q.8 REFERENCES.....	5

**TABLES**

TABLE Q-1. SUMMARY OF FIELD SURVEYS.....	Q-2
--	-----

**FIGURE**

Q-1 Threatened and Endangered Species Analysis Area	
---	--



## INTRODUCTION

Archway Solar Energy LLC (Applicant) proposes to construct the Archway Solar Energy Facility (Facility) in Lake County, Oregon, with generating capacity of up to 400 megawatts (MW). The Facility may also contain a battery energy component with storage capacity of up to 400 MW and discharge capacity of up to 1,600 megawatt-hours. This Exhibit Q provides threatened and endangered plant and animal species information as required by Oregon Administrative Rules (OAR) OAR 345-021-0010(1)(q) and OAR 345-022-0070.

**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 Facility site boundary and the area within 5 miles of the site boundary in accordance with OAR 345-001-0010(2) and (59) as shown on Figure Q-1.

### Q.1.2 Agency Consultation

Consultation between Applicant and Oregon Department of Fish and Wildlife (ODFW) personnel regarding fish and wildlife habitat and species that could be affected by the Facility began in August 2018 with desktop review and continued in November-December 2018 with review of the field survey protocol and results in April 2020.

## 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), ORS 564.105(2) or 16 USC Sec. 1533 that may be affected by the proposed facility.*

**Response:** Section Q.2.1 summarizes the information review and the biological and botanical (habitat, wildlife, rare plants) investigations completed for the Facility. These investigations included an initial desktop-level review and field surveys.

Based on results of the surveys, one federal threatened species, a fish known as the shortnose sucker (*Chasmistes brevirostris*), was identified as potentially occurring within the 5-mile analysis area. However, no suitable habitat has been identified within the site boundary and therefore this species is not likely to be impacted, so it is not discussed further in Exhibit Q. Exhibit P focuses on Oregon state sensitive species, and Table P-1 lists the species that could potentially be impacted within the analysis area, based on the desktop-level review. The species list was then used to design the field surveys described in Section P.2.2.

Based on the Oregon Department of Agricultural (ODA) list of plants in Lake County (ODA, 2018) and the USFWS Information for Planning and Consultation (IPaC) report (USFWS, 2018a), no special-status plant species are documented to occur within the site boundary or analysis area.

**Q.2.1 Surveys**

**Q.2.1.1 Summary of Surveys**

Table Q-1 summarizes surveys that have been conducted, their report reference, and summary of findings.

**Table Q-1. Summary of Field Surveys**

Survey Date	Survey	Report Reference	Summary of Findings
June 2018	Site Characterization Study; Habitat Categorization	Jacobs, 2018 (Attachment P-1)	Identified shrub/scrub steppe, grasslands, developed and barren playa habitat and list of special-status species that may occur
May 2019	Wetland Delineation	Jacobs, 2020c (Attachment J-1)	Identified several non-wetland playas, no wetlands or waterbodies present
May 2019	Sensitive Species and Raptor Nest Survey	Jacobs, 2020a (Attachment P-1)	Identified 9 pygmy rabbit complexes and 2 burrowing owl burrows, no raptor nests
October 2020	Sensitive Species Survey	Jacobs, 2020b (Attachment P-1)	No identification of any additional sensitive species

**Q.2.1.2 Site Characterization Study**

A USFWS Information for Planning and Consultation (IPaC) report was generated and the Oregon Biodiversity Information Center (ORBIC) database was queried for records of special-status species within the site boundary and within 5 miles of the Facility (USFWS, 2018a; ORBIC, 2018). The IPaC report is included with Attachment P-1. The ORBIC database query results (*confidential and not for public distribution*) are included with Attachment P-5.

For purposes of the Site Characterization Study, special-status species included state and federal candidate, threatened and endangered species, federal species of concern, bald and golden eagles, Oregon Conservation Strategy species, and Oregon state sensitive species (Jacobs, 2018).

To help make a determination on whether there is suitable habitat within the Facility site boundary and potential for impacts within the analysis area for any threatened or endangered species, additional sources were consulted to supplement the USFWS report and ORBIC database query. These sources provided additional information on species that potentially occur in the analysis area and included critical information such as habitat preferences, morphological characteristics, phonologic development timelines, and species ranges.

- Audubon Society Christmas Bird Counts and Important Bird Areas, and eBird hotspots (Audubon, 2017; Sullivan et al., 2009)
- Aerial imagery (Google Earth, 2018)
- National Land Cover Database (Homer et al., 2015)
- Bald and golden eagle nest locations (Isaacs and Anthony, 2011; Isaacs, 2015; Isaacs, 2017)
- NatureServe web application (NatureServe, 2018)
- ORBIC database of reported species occurrences (ORBIC, 2013)
- ODA list of plants in Lake County (ODA, 2018)
- Greater sage-grouse lek locations (ODFW, 2011; ODFW 2012)
- Deer and Elk Winter Range Maps (ODFW, 2016)
- ODFW compass mapping tool and databases (ODFW, 2018)
- U.S. Geological Survey (USGS) North American Breeding Bird Survey database (Sauer et al., 2017)
- USFWS National Wetlands Inventory (USFWS, 2018b)
- USGS National Land Cover Database (USGS, 2018)

#### **Q.2.1.3 Habitat Categorization**

A field visit was conducted by one biologist on June 4-5, 2018, to evaluate whether there was suitable habitat for biological resources identified in the desktop evaluation. The visit focused on identifying the potential presence of special-status species and potential suitable habitats for fish, wildlife, and plants. The Facility site boundary was viewed from vehicle and on foot, with targeting focus on features (e.g., wetlands) and habitats (e.g., soil types or communities with potential to provide suitable habitat for special-status species).

The biologist delineated habitat boundaries according to the ODFW habitat categories described in Table P-3. Habitat boundaries were delineated based on differences in vegetation, land form and land use. No threatened or endangered plant or wildlife species were observed during the initial 2018 field visit.

#### **Q.2.1.4 Wetland Delineation**

The wetland delineation is described in Exhibit J. No threatened or endangered plant or wildlife species were observed during the wetland delineation.

#### **Q.2.1.5 Sensitive Species and Raptor Nest Survey**

After coordination with ODFW, field surveys were designed focused on pygmy rabbit, white-tailed jackrabbit, burrowing owl and raptors. Study objectives were to document the

presence/absence and spatial occurrence of these sensitive species within areas of suitable habitat located within the Facility boundary. Qualified biologists conducted these protocol level field surveys following methods used by the Bureau of Land Management (BLM) in southeastern Oregon, per the recommendation of ODFW. Further details on methods are provided in the Wildlife Survey Report found in Attachment P-1. No threatened or endangered plant or wildlife species were observed during field surveys.

### **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 Site Characterization Study identified a total of one threatened or endangered species that could occur within 5 miles of the Facility site boundary, the Federally-threatened shortnose sucker (USFWS, 2020). However, based on the absence of any suitable aquatic habitat and no documented occurrences for this species, it is not expected to occur within the Facility site boundary or within the analysis area. Therefore, no adverse effects to threatened or endangered species are expected due to the construction and operation of the Facility.

### **Q.4 THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES**

**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 threatened or endangered wildlife species are expected to occur or be impacted within the Facility site boundary or analysis area, as described in Sections Q.2 and Q.3. Therefore, this provision does not apply and the Applicant does not propose any mitigation measures.

### **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 threatened or endangered plant species are expected to occur or be impacted within the Facility site boundary or analysis area, as described in Sections Q.2 and Q.3. Therefore, this provision does not apply and the Applicant does not propose any mitigation measures.

#### **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 one listed animal species in the analysis area is expected to be absent from the Facility site boundary, 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 threatened or endangered species are expected to be impacted within the Facility site boundary or analysis area, as described in Sections Q.2 and Q.3. Therefore, this provision does not apply and the Applicant does not propose a monitoring program.

#### **Q.8 REFERENCES**

Audubon Society. 2017. 2017 Christmas Bird Count. Accessed April 2018.  
<http://netapp.audubon.org/CBCObservation/CurrentYear/ResultsByCount.aspx>.

Google Earth. 2018. Google Earth Pro Aerial Imagery. Accessed April 2018.  
<https://www.google.com/earth/>.

Homer, C. G., J. A. Dewitz, L. Yang, S. Jin, P. Danielson, G. Xian, J. Coulston, N. D. Herold, J. D. Wickham, and K. Megown. 2015. "Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information." *Photogrammetric Engineering and Remote Sensing*. Vol. 81, No. 5. pp. 345-354. [https://cfpub.epa.gov/si/si\\_public\\_record\\_report.cfm?dirEntryId=309950](https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=309950).

Isaacs, F.B. 2015. *Golden Eagles (Aquila chrysaetos) Nesting in Oregon, 2011-2014: Final Annual Report*. Oregon Eagle Foundation, Inc., Klamath Falls, Oregon. February 10.

Isaacs, F. B. 2017. Golden eagle observations database. Oregon Eagle Foundation, Inc., Klamath Falls, Oregon. 2017.

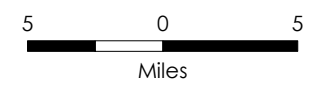
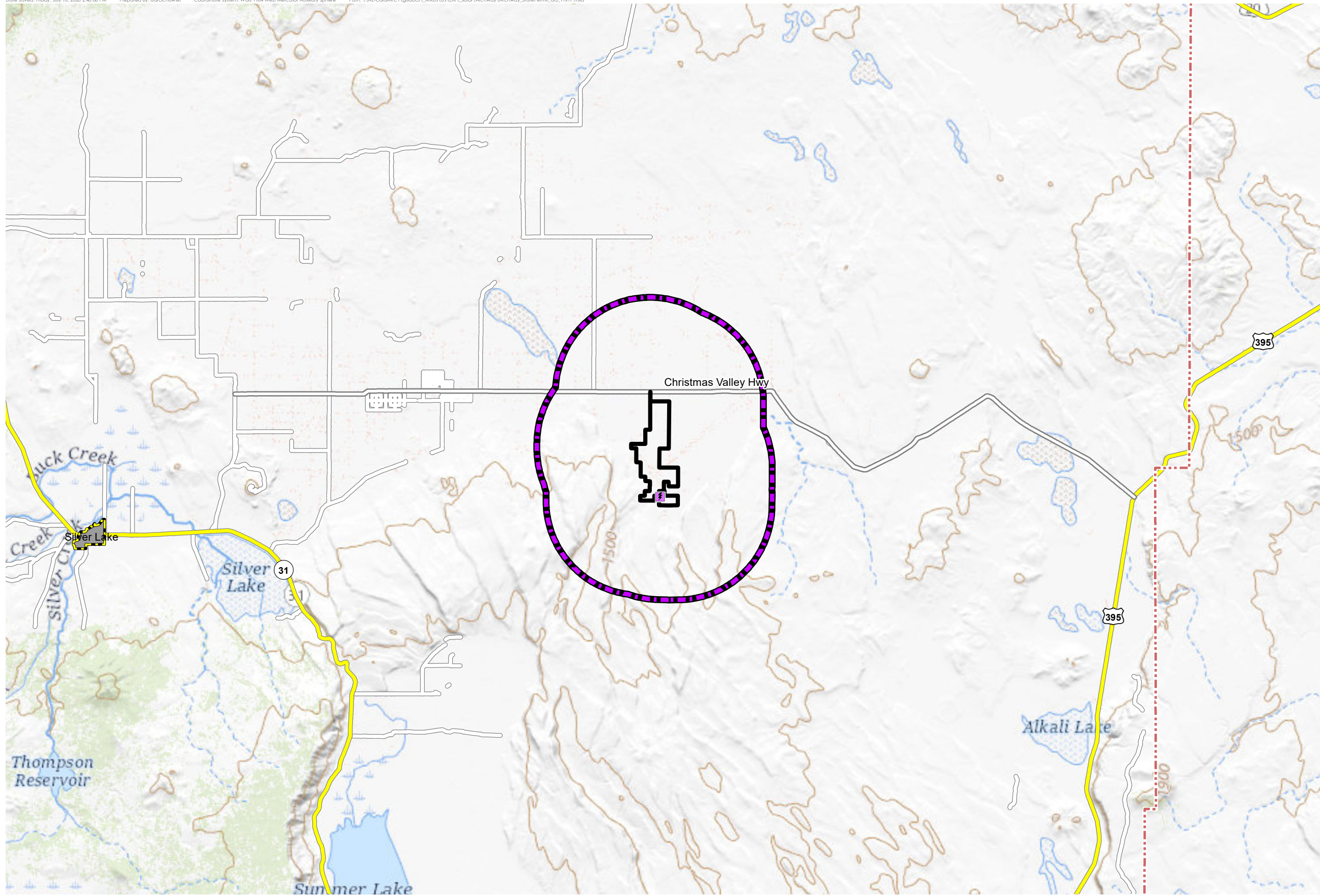
Isaacs, F. B. and R. G. Anthony. 2011. *Bald Eagles (Haliaeetus leucocephalus) nesting in Oregon and along the lower Columbia River, 1978-2007*. Final Report. Oregon Cooperative Fish and Wildlife Unit, Corvallis, Oregon. March 18.

Jacobs Engineering Group Inc. (Jacobs). 2018. *Preliminary Site Evaluation and Site Characterization Study*.

- Jacobs. 2020a. *Special-Status Wildlife Species Survey Report*. January.
- Jacobs. 2020b. *Addendum to the Special-Status Wildlife Species Survey Report*. December.
- Jacobs. 2020c. *Wetland Delineation*. March.
- NatureServe. 2018. *NatureServe Explorer: An Online Encyclopedia of Life*. Web application. Version 7.1. NatureServe, Arlington, Virginia. Accessed April 2018. <http://explorer.natureserve.org>.
- ORBIC. 2013. *Rare, Threatened, and Endangered Species of Oregon*. Institute for Natural Resources, Portland State University, Portland, Oregon. Oregon Department of Agriculture.
- ODA. 2018. *Oregon Listed Plants by County*. Accessed April 2018. <http://www.oregon.gov/ODA/programs/PlantConservation/Pages/ListedPlants.aspx>.
- ODFW. 2011. *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat*. [https://www.dfw.state.or.us/wildlife/sagegrouse/docs/20110422\\_GRSG\\_April\\_Final%2052511.pdf](https://www.dfw.state.or.us/wildlife/sagegrouse/docs/20110422_GRSG_April_Final%2052511.pdf).
- ODFW. 2012. Map: *Sage-Grouse Action Areas – Northern Lakeview Resource Area*. ODFW GIS: March 22. <https://nrimp.dfw.state.or.us/DataClearinghouse>.
- ODFW. 2016. Deer and Elk Winter Range Maps. Accessed October 19, 2016. <http://www.dfw.state.or.us/maps/>.
- ODFW. 2018. Compass Online Fish and Wildlife Mapping Tool. Accessed April 2018. <http://dfw.state.or.us/maps/compass/>.
- Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr., K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. *The North American Breeding Bird Survey, Results and Analysis 1966 - 2015*. Version 2.07. 2017 USGS Patuxent Wildlife Research Center, Laurel, Maryland.
- Sullivan, B. L., C. L. Wood, M. J. Iliff, R. E. Bonney, D. Fink, and S. Kelling. 2009. "eBird: a citizen-based bird observation network in the biological sciences." *Biological Conservation*. No. 142. pp. 2282-2292.
- USFWS. 2018a. Information for Planning and Consultation. Accessed April 2018. <https://ecos.fws.gov/ipac/location/index>.
- USFWS. 2018b. National Wetlands Inventory. Wetland Mapper V2. USDI Fish and Wildlife Service, Washington, DC. Accessed April 2018. <https://www.fws.gov/wetlands/data/mapper.html>.
- USGS. 2018. The National Map: Your Source for Topographic Information. Accessed April 2018. <https://nationalmap.gov/>.



# FIGURES



- Legend**
- POI Substation
  - Site Boundary
  - Threatened and Endangered Species Analysis Area (5-mile)
  - City Limit
- Road Classification**
- US/State Route
  - County Road

**Figure Q-1 - Analysis Area**  
Archway Solar Energy Facility | Lake County, Oregon

Rev. 00

