Appendix A: Washington SEPA Environmental Checklist

Washington State Environmental Policy Act (SEPA)
Environmental Checklist
WAC 197-11-960

A. BACKGROUND

1. Name of proposed project, if applicable:

TUUSSO Energy Columbia Solar Projects

2. Name of applicant:

TUUSSO Energy, LLC

3. Address and phone number of applicant and contact person:

Jason Evans
General Counsel and Vice President of Business Development
500 Yale Avenue North
Seattle, WA 98109
(206) 303-0198

4. Date checklist prepared:

October 16, 2017

5. Agency requesting checklist:

Washington Energy Facility Site Evaluation Council
Utilities and Transportation Commission
1300 S Evergreen Park Drive SW
Olympia, WA 98504-3172

6. Proposed timing or schedule (including phasing, if applicable):

Construction of the five Columbia Solar Projects is anticipated to commence in second quarter 2018 and would require approximately 6 to 9 months to complete (Table 1). For each project, approximately 3 months of actual construction time would be needed. However, when possible, specialized work crews would be moved from site to site to efficiently move through and manage the phases of construction on each project. The following table provides the proposed schedule for the projects' construction.

Table 1. Columbia Solar Projects Construction Schedule

Project Activity	Schedule
Approval of all other required non-discretionary permits	1st quarter 2018
Approval of all administrative permits	1st quarter 2018
Approved Site Certification Agreements	March 2018
Construction begins	2nd quarter 2018
Completion of construction	4th quarter 2018
Projects operational	4th quarter 2018

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

TUUSSO Energy, LLC (TUUSSO), does not plan for any further additions, expansions, or further activities upon or contiguous to the sites used for the Columbia Solar Projects.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Natural resources field surveys were conducted from April 3 to 12, 2017, to document flora and fauna in the vicinity of each of the five Columbia Solar Project sites, as well as different vegetation communities and habitat.

Each solar project site was surveyed for wetlands from April 3 to 12, 2017, in accordance with the current methodology of the U.S. Army Corps of Engineers' (USACE's) 2008 *Arid West Regional Supplement* (Version 2) and the *Wetlands Delineation Manual*.

Archaeological fieldwork was conducted on each of the five proposed Columbia Solar Project sites from April 4 to 17, 2017, by a team of 11 SWCA Environmental Consultants (SWCA) archaeologists. The parcels were surveyed with pedestrian transects spaced at approximately 20-meter intervals. The survey was supplemented by about 900 shovel probes measuring between 35 and 40 centimeters in diameter.

These and other field studies led to the preparation of the following reports for each site in support of the Washington Energy Facility Site Evaluation Council (EFSEC) Application for Site Certification (ASC), and are attached as appendices to the ASC:

- Vegetation Management Plan
- Habitat, Vegetation, Fish, and Wildlife Assessment Report
- Visual/Aesthetic Assessment Report
- Solar Glare Hazard Analysis Report
- Decommissioning Plan
- Critical Areas Reports (5)
- Cultural Resources Reports (5)
- Permit Applications (11)
- Stormwater Pollution Prevention Plans (5)
- Geotechnical Engineering Studies (5)
- Drainage Reports (5)
- Solar Project Site Plans and Designs

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No other development proposals and associated applications have been submitted to or are awaiting approval from federal, state, or local governmental organizations for the five Columbia Solar Project sites.

10. List any government approvals or permits that will be needed for your proposal, if known.

The following permits or regulatory approvals would be needed for the five Columbia Solar Projects:

- EFSEC Site Certificate - EFSEC Site Certificate to include all local and state permits, authorizations and approvals
- Joint Aquatic Resource Permit Application (JARPA) - U.S. Army Corps of Engineers (USACE) – Seattle District and Washington Department of Ecology (Ecology)
- Application for General Permit to Discharge Stormwater Associated with Construction Activity (Notice of Intent) – Ecology
- Electrical Construction Permit - Washington Department of Labor and Industries
- General Application for Construction – Kittitas County Community Development Services (potentially issued by EFSEC)
- Access Permit Application to Perform Utility work on County Right-of-Way - Kittitas County Department of Public Works

This list will be updated, as needed, as discussions about the Columbia Solar Projects continue to occur with EFSEC and federal, state, and county agencies.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

TUUSSO Energy, LLC's five Columbia Solar Projects would be located in unincorporated Kittitas County, east of the Cascade Range, within the Kittitas Valley, outside of the city of Ellensburg, but relatively close to the northwest, southwest, and southeast of the city (see Figure 1, and below for additional details). Each of the five projects is proposed on agricultural lands, and not on native habitat. Refer to the *Habitat, Vegetation, Fish, and Wildlife Assessment Report* attached to the ASC for site specific details on land use and surrounding habitat.

Camas Solar Project Site

TUUSSO is proposing to construct a new Camas Solar Project photovoltaic (PV) facility on approximately 51.21 acres of private agricultural land, which would connect into the existing Puget Sound Energy (PSE) distribution transmission line along Tjossem Road, located southeast of Ellensburg, in unincorporated Kittitas County, Washington. The Camas Solar Project is intended to provide up to 5 MW of solar energy to PSE for use within their service area.

Fumaria Solar Project Site

TUUSSO is proposing to construct a new Fumaria Solar Project PV facility on approximately 35.24 acres of fallow pasture land, including the construction of a switchyard with a short (2.56-mile-long, ~25.4-acre of right-of-way) generation tie line into an existing PSE substation, located northwest of Ellensburg, in incorporated Kittitas County, Washington. The Fumaria Solar Project is intended to provide up to 5 MW of solar energy to PSE for use within their service area.

Penstemon Solar Project Site

TUUSSO is proposing to construct a new Penstemon Solar Project PV facility on approximately 39.38 acres of private agricultural land, which would connect into the existing PSE distribution transmission line along Tjossem Road, located southeast of Ellensburg, in unincorporated Kittitas County, Washington. The Penstemon Solar Project is intended to provide up to 5 MW of solar energy to PSE for use within their service area.

Typha Solar Project Site

TUUSSO is proposing to construct a new Typha Solar Project PV facility on approximately 54.29 acres of private agricultural land, including the construction of a switchyard with a short (0.45-mile-long, 4.4-acre) generation tie line into an existing PSE distribution transmission line, located northwest of Ellensburg, in unincorporated Kittitas County, Washington. The Typha Solar Project is intended to provide up to 5 MW of solar energy to PSE for use within their service area.

Urtica Solar Project Site

TUUSSO is proposing to construct a new Urtica Solar Project PV facility on approximately 51.94 acres of private agricultural land, which would connect into the existing PSE distribution transmission line along Umptanum Road, located southwest of Ellensburg, in unincorporated Kittitas County, Washington. The Urtica Solar Project is intended to provide up to 5 MW of solar energy to PSE for use within their service area.

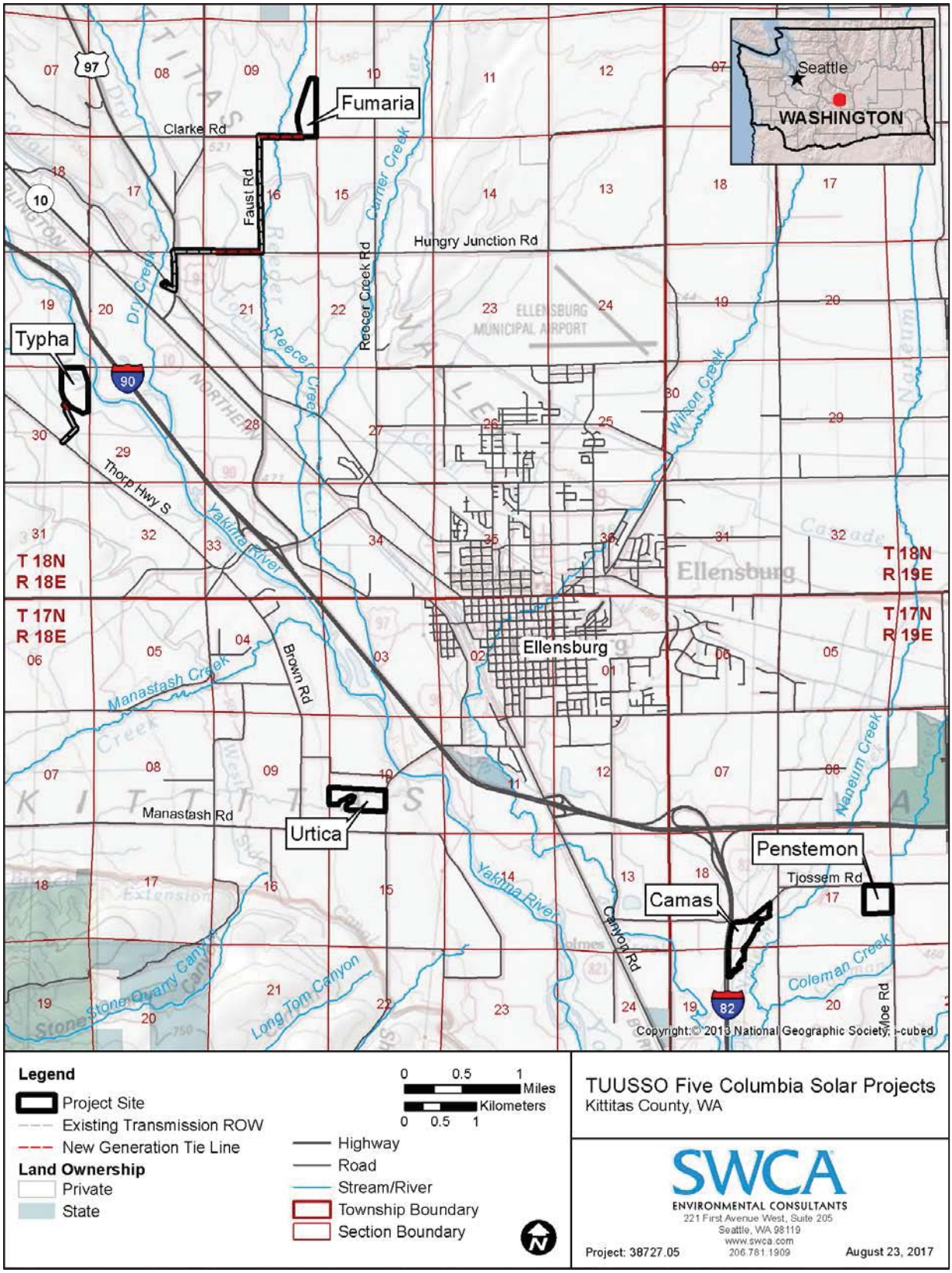

Figure 1. Columbia Solar Project site locations.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The following descriptions provide an overview of the five Columbia Solar Project locations, followed by their legal descriptions.

Solar Project Location Overview

Camas Solar Project Site

The Camas Solar Project site is located immediately southeast of the intersection of Tjossem Road and Interstate 82 (I-82), Ellensburg, WA, 98926. It is active agricultural land, growing alfalfa. The project would be located approximately 2.25 miles southeast of the Ellensburg city center, in Sections 18 and 19 of Township (T) 17 North (N), Range (R) 19 East (E), Willamette Meridian. Topography of the site is fairly flat and slopes to the south toward Little Naneum Creek, with surface elevations ranging from 1,465 to 1,455 feet above mean sea level (amsl).

The Camas Solar Project site would be located on land zoned as Commercial Agriculture, and would be a permitted conditional use under Kittitas County Code (KCC) 17.15.050.01.

Fumaria Solar Project Site

The Fumaria Solar Project site is located approximately 1.5 miles northwest of the intersection of Hungry Junction Road and Reecer Creek Road, in Sections 9, 16, 17, and 20, T18N, R18E, Willamette Meridian in Ellensburg, WA, 98926. It primarily consists of fallow pasture land. The generation tie line would originate from the southwestern site boundary corner and follow Clarke Road, along one of two proposed alignments, to Faust Road, where it would parallel Faust Road south along an existing transmission corridor (sharing poles with an existing distribution line) on the east side of the road right-of-way (ROW) to Hungry Junction Road, where it would turn west and travel along the north side of the road ROW for roughly 2,000 feet, and then continue to travel along the north side of the road ROW within an existing transmission corridor (sharing poles with an existing distribution line) to U.S. Highway 97, where it would travel south along the west side of the road ROW down to just south of McManamy Road, where it would turn northwest to connect into an existing PSE substation (a total of 2.6 miles). The two proposed alignments along Clarke Road comprise one that follows the north side of the road (ROW A), and one that follows the south side of the road (ROW B).

Topography of the project site is generally flat, generally sloping to the south toward the Cascade Irrigation District Canal. Surface elevation within the whole study area (which includes the generation tie line path) ranges from 1,750 to 1,600 feet amsl, the lowest elevation being along the southern study area boundary near the existing PSE substation and the highest elevation being at the northern end of the solar site.

The Fumaria Solar Project site would be located on land zoned as Rural Working – Agriculture 20, and would be a permitted conditional use under KCC 17.15.060.1.

Penstemon Solar Project Site

The Penstemon Solar Project site is located immediately southwest of the intersection of Tjossem Road and Moe Road in Ellensburg, WA, 98926. It is active agricultural land, for growing export hay products (such as timothy and alfalfa). The project would be located approximately 4 miles southeast of the Ellensburg city center, in Section 17, T17N, R19E, Willamette Meridian. Topography of the site is generally flat, sloping to the south, with surface elevations ranging from 1,498 to 1,509 feet amsl.

The Penstemon Solar Project site would be located on land zoned as Commercial Agriculture, and would be a permitted conditional use under KCC 17.15.050.01.

Typha Solar Project Site

The Typha Solar Project site is located approximately 1.1 miles east of the intersection of Thorp Highway South and Cove Road, in Section 30, T18N, R18E, Willamette Meridian in Ellensburg, WA, 98926. It primarily consists of agricultural land (irrigated and grazed pasture) located just west of the Yakima River and north of Thorp Highway South. The generation tie line would originate from the southwestern site boundary and follow existing transmission lines to cross south along an existing access road, crossing the Ellensburg Power (EP) Canal three times, and passing through the Ellensburg Golf and Country Club to connect to the existing PSE distribution transmission line along Thorp Highway South. Topography of the site generally slopes to the east toward the Yakima River. Surface elevation within the study area ranges from 1,570 to 1,614 feet amsl, the lowest elevation being along the eastern site boundary closest to the Yakima River and the highest elevation being at the southern end of the generation tie line near Thorp Highway South.

The Typha Solar Project site would be located on land zoned as Commercial Agriculture, and would be a permitted conditional use under KCC 17.15.050.01.

Urtica Solar Project Site

The Urtica Solar Project site is located approximately 0.2 mile north of the intersection of Umptanum Road and Manastash Road, in Section 10, T17N, R18E, Willamette Meridian in Ellensburg, WA, 98926. It primarily consists of active agricultural land, growing common timothy, located on the west side of Umptanum Road and approximately 0.2 mile southwest of the Yakima River, with McCarl Creek flowing through the site from west to east. Topography of the site generally slopes to the east toward Umptanum Road and toward McCarl Creek, which flows through the site. Surface elevation within the project area ranges from 1,539 to 1,575 feet amsl, the lowest elevation being within the eastern portion of the McCarl Creek channel along Umptanum Road and the highest elevation being along the western site boundary.

The Urtica Solar Project site would be located on land zoned as Rural Working – Agriculture 20, and would be a permitted conditional use under KCC 17.15.060.1.

Legal Descriptions

Camas Solar Project Site Legal Description

TRACT A:

THAT PORTION OF PARCEL 1D OF THAT CERTAIN SURVEY AS RECORDED JUNE 15, 1994 IN BOOK 20 OF SURVEYS AT PAGE 60, UNDER AUDITOR'S FILE NO. 571789, RECORDS OF KITTITAS COUNTY, WASHINGTON, WHICH LIES SOUTHWESTERLY OF THE BULL DITCH RIGHT OF WAY; BEING A PORTION OF PARCEL 1B OF THAT CERTAIN SURVEY AS RECORDED APRIL 29, 1993 IN BOOK 19 OF SURVEYS AT PAGE 74, UNDER AUDITOR'S FILE NO. 559059, RECORDS

OF KITTITAS COUNTY, WASHINGTON; LOCATED IN THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 19 EAST, W.M., KITTITAS COUNTY, WASHINGTON.

AND

THAT PORTION OF PARCEL 1C OF THAT CERTAIN SURVEY AS RECORDED JUNE 15, 1994 IN BOOK 20 OF SURVEYS AT PAGE 60, UNDER AUDITOR'S FILE NO. 571789, RECORDS OF KITTITAS COUNTY, WASHINGTON, WHICH LIES SOUTHWESTERLY OF THE BULL DITCH RIGHT OF WAY; BEING A PORTION OF PARCEL 1B OF THAT CERTAIN SURVEY AS RECORDED APRIL 29, 1993 IN BOOK 19 OF SURVEYS AT PAGE 74, UNDER AUDITOR'S FILE NO. 559059, RECORDS OF KITTITAS COUNTY, WASHINGTON; LOCATED IN THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 19 EAST, W.M., KITTITAS COUNTY, WASHINGTON.

TRACT B:

THAT PORTION OF THE NORTH HALF OF THE THE NORTHEAST QUARTER OF SECTION 19, TOWNSHIP 17 NORTH, RANGE 19 EAST, W.M., IN THE COUNTY OF KITTITAS, STATE OF WASHINGTON, WHICH IS BOUNDED BY A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF PARCEL A OF THAT CERTAIN SURVEY RECORDED APRIL 22, 1993, IN BOOK 19 OF SURVEYS, PAGE 73, UNDER AUDITOR'S FILE NO. 558819. WHICH IS THE TRUE POINT OF BEGINNING FOR SAID DESCRIBED LINE;

THENCE SOUTHERLY, ALONG THE WEST BOUNDARY OF SAID PARCEL A, WHICH IS ALSO THE EAST RIGHT OF WAY BOUNDARY OF 1-82, TO THE SOUTH BOUNDARY OF SAID NORTH HALF OF THE NORTHEAST QUARTER; THENCE NORTH 87°58'34" EAST, ALONG SAID SOUTH BOUNDARY OF SAID NORTH HALF OF THE NORTHEAST QUARTER, 60.81 FEET TO THE CENTERLINE OF NANEUM CREEK; THENCE NORTHEASTERLY, ALONG SAID NANEUM CREEK CENTERLINE, TO THE NORTH BOUNDARY OF SAID NORTH HALF OF THE NORTHEAST QUARTER; THENCE SOUTH 87°42'10" WEST, ALONG SAID NORTH BOUNDARY, 763.52 FEET TO THE TRUE POINT OF BEGINNING FOR SAID DESCRIBED LINE.

(SAID TRACT BEING A PORTION OF PARCEL A OF THAT CERTAIN SURVEY RECORDED APRIL 22, 1993, IN BOOK 19 OF SURVEYS, PAGE 73, UNDER AUDITOR'S FILE NO. 558819 AND OF LOT 1, OF REDD SHORT PLAT, KITTITAS COUNTY SHORT PLAT NO. SP-93-14, AS RECORDED JANUARY 19, 1994 IN BOOK D OF SHORT PLATS, PAGE 89 AND 90, UNDER AUDITOR'S FILE NO. 567251, RECORDS OF KITTITAS COUNTY, STATE OF WASHINGTON.)

TRACT C:

THAT PORTION OF PARCELS 1C AND 1D OF THAT CERTAIN SURVEY AS RECORDED JUNE 15, 1994 IN BOOK 20 OF SURVEYS AT PAGE 60, UNDER AUDITOR'S FILE NO. 571789, RECORDS OF KITTITAS COUNTY, WASHINGTON, WHICH LIES NORTHERLY OF THE BULL DITCH RIGHT OF WAY AND NORTHWESTERLY OF THE CENTERLINE OF THE BRANCH OF NANEUM CREEK WHICH FLOWS THROUGH SAID PARCEL 1C; BEING A PORTION OF PARCEL 1B OF THAT CERTAIN SURVEY AS RECORDED APRIL 29, 1993 IN BOOK 19 OF SURVEYS AT PAGE 74, UNDER AUDITOR'S FILE NO. 559059, RECORDS OF KITTITAS COUNTY, WASHINGTON; LOCATED IN THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 19 EAST, W.M., KITTITAS COUNTY, WASHINGTON.

CONTAINS 51.21 ACRES.

Fumaria Solar Project Site Legal Description

A TRACT OF LAND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 9, TOWNSHIP 18 NORTH, RANGE 18 EAST, W.M., KITTITAS COUNTY, STATE OF WASHINGTON, BEING A PORTION OF PARCEL E OF THAT CERTAIN SURVEY AS

RECORDED DECEMBER 22, 1998 IN BOOK 23 OF SURVEYS, AT PAGES 249 THROUGH 251, UNDER AUDITOR'S FILE NO. 199912220015, RECORDS OF SAID COUNTY, WHICH IS BOUNDED BY A LINE DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER OF SAID SECTION 9;

THENCE SOUTH 00°06'44" EAST ALONG THE EAST BOUNDARY LINE OF SAID SOUTHEAST QUARTER OF SAID SECTION 9, 60.76 FEET TO THE TRUE POINT OF BEGINNING OF SAID LINE;
THENCE CONTINUING SOUTH 00°06'44" EAST, ALONG SAID EAST BOUNDARY LINE OF SAID SOUTHEAST QUARTER, 2384.88 FEET;
THENCE SOUTH 89°36'01" WEST, 41.02 FEET;
THENCE SOUTH 71°56'57" WEST, 18.75 FEET;
THENCE SOUTH 68°28'25" WEST, 25.60 FEET;
THENCE SOUTH 59°52'18" WEST, 21.39 FEET;
THENCE SOUTH 55°35'54" WEST, 165.95 FEET;
THENCE NORTH 16°08'33" WEST, 159.35 FEET;
THENCE NORTH 04°55'17" WEST, 37.25 FEET;
THENCE SOUTH 86°43'54" WEST, 105.98 FEET;
THENCE NORTH 77°47'27" WEST, 339.61 FEET;
THENCE NORTH 88°06'56" WEST, 37.07 FEET;
THENCE SOUTH 69°10'09" WEST, 24.70 FEET;
THENCE NORTH 17°18'53" WEST, 22.35 FEET;
THENCE NORTH 02°14'53" WEST, 143.64 FEET;
THENCE NORTH 02°27'39" WEST, 389.33 FEET;
THENCE NORTH 19°22'16" EAST, 1646.02 FEET
THENCE SOUTH 89°13'18" EAST, 298.08 FEET TO THE TRUE POINT OF BEGINNING AND THE TERMINUS OF SAID LINE.

CONTAINS 35.24 ACRES.

Penstemon Solar Project Site Legal Description

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 17 NORTH, RANGE 19 EAST, W.M., IN THE COUNTY OF KITTITAS, STATE OF WASHINGTON;

EXCEPT:

RIGHT OF WAY OF TJOSSEM AND MOE COUNTY ROADS.

CONTAINS 39.38 ACRES.

Typha Solar Project Site Legal Description

A TRACT OF LAND SITUATED IN THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 30, TOWNSHIP 18 NORTH, RANGE 18 EAST, W.M., KITTITAS COUNTY, STATE OF WASHINGTON, WHICH IS BOUNDED BY A LINE DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE SOUTH 89°16'48" EAST ALONG THE NORTH BOUNDARY LINE OF SAID NORTHEAST QUARTER, 1314.14 FEET TO THE TRUE POINT OF BEGINNING OF SAID LINE;

THENCE CONTINUING SOUTH 89°16'48" EAST ALONG SAID NORTH BOUNDARY LINE, 1134.53 FEET;
THENCE SOUTH 05°04'50" EAST, 98.92 FEET;

THENCE SOUTH 14°06’00” EAST, 80.70 FEET;
THENCE SOUTH 08°58’08” EAST, 174.50 FEET;
THENCE SOUTH 19°32’43” EAST, 160.93 FEET;
THENCE SOUTH 15°40’01” EAST, 143.68 FEET;
THENCE SOUTH 20°06’14” EAST, 124.44 FEET TO A POINT ON THE EAST BOUNDARY LINE OF SAID NORTHEAST QUARTER;
THENCE SOUTH 00°52’11” EAST, ALONG THE EAST BOUNDARY LINE OF SAID NORTHEAST QUARTER, 1262.44 FEET;
THENCE SOUTH 63°35’36” WEST, 47.38 FEET;
THENCE SOUTH 69°41’30” WEST, 117.32 FEET;
THENCE SOUTH 69°54’58” WEST, 101.62 FEET;
THENCE SOUTH 83°42’43” WEST, 36.85 FEET;
THENCE NORTH 15°17’56” WEST, 24.03 FEET;
THENCE SOUTH 74°30’43” WEST, 56.36 FEET;
THENCE NORTH 74°37’20” WEST, 75.56 FEET;
THENCE NORTH 69°50’05” WEST, 53.25 FEET;
THENCE NORTH 60°06’51” WEST, 195.24 FEET;
THENCE NORTH 60°42’51” WEST, 100.56 FEET;
THENCE NORTH 55°37’02” WEST, 226.49 FEET;
THENCE NORTH 40°07’35” WEST, 65.17 FEET;
THENCE NORTH 36°07’05” WEST, 135.85 FEET;
THENCE NORTH 22°37’59” WEST, 58.56 FEET;
THENCE NORTH 51°24’40” WEST, 47.40 FEET;
THENCE NORTH 36°10’00” WEST, 75.75 FEET;
THENCE NORTH 34°20’25” WEST, 72.58 FEET;
THENCE NORTH 26°34’08” WEST, 60.13 FEET;
THENCE NORTH 04°10’07” WEST, 55.08 FEET;
THENCE NORTH 81°36’17” EAST, 30.19 FEET;
THENCE NORTH 04°17’30” EAST, 33.02 FEET;
THENCE NORTH 38°49’40” WEST, 25.43 FEET;
THENCE SOUTH 66°22’39” WEST, 53.58 FEET;
THENCE NORTH 30°46’47” WEST, 93.84 FEET;
THENCE NORTH 21°54’36” WEST, 39.86 FEET;
THENCE NORTH 14°45’26” EAST, 20.96 FEET;
THENCE SOUTH 89°23’14” WEST, 31.77 FEET TO A POINT ON THE WEST BOUNDARY LINE OF SAID EAST HALF OF SAID NORTHEAST QUARTER;

THENCE NORTH 00°36’46” WEST ALONG SAID WEST BOUNDARY LINE OF SAID EAST HALF OF SAID NORTHEAST QUARTER, TO A POINT ON THE NORTH LINE OF SAID NORTHEAST QUARTER, 1166.28 FEET TO THE TRUE POINT OF BEGINNING AND TERMINUS OF SAID LINE.

CONTAINS 54.29 ACRES.

Urtica Solar Project Site Legal Description

A TRACT OF LAND SITUATED IN THE SOUTHWEST QUARTER OF SECTION 10, TOWNSHIP 17 NORTH, RANGE 18 EAST, W.M., KITTITAS COUNTY, STATE OF WASHINGTON, BEING A PORTION OF LOTS 1, 2, 3 AND 4, AND ALL OF LOTS 7, 8, 9, 10, 11, AND 12 OF THAT CERTAIN SURVEY, AS RECORDED IN BOOK 32 OF SURVEYS, PAGE 71, UNDER AUDITOR’S FILE NO. 200602280020, RECORDS OF SAID COUNTY, WHICH IS BOUNDED BY A LINE DESCRIBED AS FOLLOWS:

A. COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTH 01°15’25” EAST ALONG THE EAST BOUNDARY LINE OF SAID SOUTHWEST QUARTER, 1023.64 FEET; THENCE NORTH 88°44’35” WEST, 29.10 FEET TO THE TRUE POINT OF BEGINNING OF SAID LINE;

THENCE NORTH 89°14’26” WEST, 453.87 FEET;
THENCE NORTH 87°05’29” WEST, 1325.35 FEET;
THENCE NORTH 04°10’29” WEST, 211.33 FEET;
THENCE NORTH 61°45’24” EAST, 261.93 FEET;
THENCE NORTH 42°39’06” EAST, 113.46 FEET;
THENCE NORTH 31°25’35” EAST, 123.63 FEET;
THENCE NORTH 40°11’01” WEST, 121.12 FEET;
THENCE NORTH 87°43’34” WEST, 128.38 FEET;
THENCE SOUTH 56°41’46” WEST, 155.23 FEET;
THENCE SOUTH 28°15’58” WEST, 100.76 FEET;
THENCE NORTH 87°36’58” WEST, 96.74 FEET;
THENCE SOUTH 63°15’03” WEST, 170.80 FEET;
THENCE SOUTH 33°19’00” WEST, 161.55 FEET;
THENCE SOUTH 88°58’40” WEST, 447.52 FEET TO A POINT ON THE WEST BOUNDARY LINE OF SAID SOUTHWEST QUARTER;
THENCE NORTH 01°17’45” EAST ALONG SAID WEST BOUNDARY LINE OF SAID SOUTHWEST QUARTER, 801.99 FEET;
THENCE SOUTH 86°51’18” EAST, 1320.00 FEET;
THENCE NORTH 01°17’45” EAST, 7.60 FEET;
THENCE SOUTH 86°50’25” EAST, 1277.79 FEET TO A POINT ON THE EAST BOUNDARY LINE OF SAID SOUTHWEST QUARTER;
THENCE SOUTH 01°18’25” WEST ALONG SAID EAST BOUNDARY LINE OF SAID SOUTHWEST QUARTER, 971.53 FEET TO THE TRUE POINT OF BEGINNING AND TERMINUS OF SAID LINE.

CONTAINS 51.94 ACRES.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other.....

Site Description

General County

The Columbia Solar Project sites are all relatively flat. Kittitas Valley is at the eastern margin of the Yakima River Valley in a structural basin between the Cascade Mountains and the Columbia Plateau.

Solar Project Sites

Camas Solar Project Site
The Camas Solar Project site is sloped gently from north to south with an overall inclination of about 0.5%. Surface geology in the project site vicinity consists of Holocene river and creek alluvium and windblown loess of the Palouse Formation overlying Pleistocene Thorp Gravels. Recent alluvium

deposited by Naneum and Wilson Creeks covers most of the project area, except the northeast corner where an older alluvial terrace of the ancestral Yakima River is present.

Fumaria Solar Project Site
The Fumaria Solar Project site is sloped gently north to south with an overall inclination of about 2%. The project site is within the Kittitas Valley on the east side of the river on a Pliocene epoch gravel deposit called the Thorp Gravels.

Fumaria Solar Project Generation Tie Line
The Fumaria Solar Project generation tie line crosses several adjacent landforms, including ridges of Pleistocene epoch alpine glacial sediment of the Kittitas Drift (Swauk Prairie and Indian John subdrifts) and the Lakedale Drift (Bullfrog subdrift). Quaternary creek alluvium is mapped in the swales between the glacial ridges and at the point of intersection of the generation tie line with the existing grid.

Penstemon Solar Project Site
The Penstemon Solar Project site is flat with a very slight inclination from north to south. Surface geology in the project site vicinity consists of Holocene creek alluvium and wind-blown loess of the Palouse Formation overlying Pleistocene Thorp Gravels. Alluvium deposited by Coleman Creek covers most of the project site.

Typha Solar Project Site
The Typha Solar Project site is irregularly shaped with the north and east site boundaries defined by the Yakima River. The site surface is irregular with an overall topography change of about 10 feet. This area appears to be ancient floodplain, and old meanders and oxbows are visible across the project site. Surface geology in the project site vicinity consists of Holocene river alluvium and wind-blown loess overlying older Pleistocene gravels. Recent alluvium deposited by the Yakima River and its major local tributary Robinson Creek covers most of the project site, and Thorp Highway South follows an older alluvial terrace southwest of the project.

Typha Solar Project Generation Tie Line
The generation tie line would originate from the southwestern corner of the Typha Solar Project site and share wooden poles with existing electric distribution lines that cross south along an existing access road, crossing the EP Canal three times, passing through the Ellensburg Golf and Country Club, to connect to the existing PSE distribution line along Thorp Highway South. The surface geology of the approximately 0.5-mile path is described above for the Typha Solar Project Site.

Urtica Solar Project Site
The Urtica Solar Project site slopes gently from north to south. Surface geology in the project site vicinity consists of Pleistocene-aged wind-blown loess and ash on top of Holocene-aged, water-lain alluvium, both overlying older glacial and pre-glacial gravels. Quaternary terraced sediments that include glacial sediment, older alluvium, and uplifted, partially lithified coastal marine and estuarine deposits form the substrate of the project site. Flows of the Middle Miocene Grande Ronde Basalt make up the hills just south of the project site and younger alluvium is in the valley floor to the north.

b. What is the steepest slope on the site (approximate percent slope)?

Steepest Slope

As indicate above, the parts of the project sites where solar facilities would be located are relatively flat, however there are other parts of some of the sites where slopes are greater. Table 2 indicates the range of slopes at each of the Columbia Solar Project sites, as well as the average slope for each site. The sites

are mostly flat, but there are relatively steep areas that are minimal compared to the rest of the site. Overall the project sites provide favorable areas for construction.

Table 2. Approximate Steepest Percent Slope at each of the Columbia Solar Project Sites

Site Name	Maximum Slope (%)	Average Slope (%)	Range of Slopes (%)
Camas Solar Project Site	23.43	2.81	0.04 – 23.43
Fumaria Solar Project Site	18.00	2.90	0.34 – 18.00
Penstemon Solar Project Site	25.60	1.63	0.10 – 25.60
Typha Solar Project Site	29.02	1.17	0.02 – 29.02
Urtica Solar Project Site	34.00	3.73	0.12 – 34.00

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Soils, including Agricultural Lands

General County

The Columbia Solar Project sites and surrounding area are underlain by Qs (Quaternary Alluvium, Sidestream Facies) soil which is characterized as downstream aggradation deposits with their source being upstream glacial moraines located in the west and northwest areas of the Kittitas Valley. These deposits consist primarily of basaltic gravels and sands with varying amounts of silt and clay minerals. The gravel varies from fine to coarse. These undifferentiated sandy gravel deposits are overlain by varying thicknesses of topsoil, weathered sandy gravel horizons, and loessal (wind) deposits that comprise silty sand and sandy silt units observed from the surface down to the relatively un-weathered, partially cemented gravel. The gravel deposits consistently displayed some level of cementation that is most likely caused by breakdown of the basaltic rock to silt and clay minerals and then subsequent relithification under normal loading. Most soils in the vicinity of the Columbia Solar Project sites have a cemented zone at depth, commonly called caliche, and a blanket of loess and volcanic ash across the surface. The soils observed in the April 2017 borings drilled at the sites were consistent with this mapping.

Solar Project Sites

Camas Solar Project Site

The Camas Solar Project site is an actively farmed alfalfa field. Agricultural facilities such as a barn/equipment storage building are located on the property. Agriculture on the project site and surrounding area is supplied with water through a canal. According to the Natural Resources Conservation Service's (NRCS's) Web Soil Survey's Kittitas County Area, Washington (WA637) map, the Camas site has three classifications of soil types: Mitta ashy silt loam, Nosal ashy silt loam, and Opnish ashy loam that form on floodplains and alluvial fan landforms within alluvium mixed with volcanic ash. Of the three, Mitta ashy silt loam is considered prime farmland if irrigated (Class 4) and the Nosal ashy silt loam is considered prime farmland if irrigated and drained (Class 6). Therefore, the agricultural land use at the Camas Solar Project site is considered prime farmland. Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics

for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Each soil designated as prime farmland is also assigned a number code designating the current quality of farmland and the management actions required to utilize it for adequate farmland. Generally, only prime farmland codes 1 through 4 are considered adequate farmland, which are defined as 1) all areas are prime farmland, 2) prime farmland if drained, 3) prime farmland if protected from flooding or not frequently flooded during the growing season, and 4) prime farmland if irrigated.

Fumaria Solar Project Site

The Fumaria Solar Project site is fallow agricultural land (see section B.4 for additional details). According to the NRCS Web Soil Survey's Kittitas County Area, Washington (WA637) map, the project site has two predominant classifications of soil types. The Reeser-Reelow-Sketter complex accounts for approximately 98% of the project site, of which 94% is considered farmland of statewide importance. Soils of the Reeser-Reelow-Sketter complex form in alluvium and glacial drift with an influence of loess and volcanic ash on remnant alluvial fan landforms and typically extend to 1.8 feet below the surface. The Metmill loam classification accounts for approximately 2% of the solar project site and is considered prime farmland, if irrigated (Class 4). Therefore, the agricultural land use at the Fumaria Solar Project site is considered prime farmland and farmland of statewide importance. Farmland of statewide importance is defined as nearly meeting the definition of prime farmland, and land that can economically produce high yields of crops when treated and managed according to acceptable farming methods. Often times, areas categorized as farmland of statewide importance do not meet the criteria for prime or unique farmland but are still considered potentially acceptable farmland as designated by state law. These areas are designated by the Washington State Department of Agriculture.

Fumaria Solar Project Generation Tie Line

Soils mapped along the proposed generation tie line include Nanum, Manastash, Durtash, Metmill, and Brysill soils that form in alluvium mixed with ash on remnant alluvial fan and old terrace landforms. Soils mapped at the Reecer and Dry Creek crossings include Ackna, Brickmill, Manastash, Metmill, Nanum, Nosal, and Reeser soils that form in alluvium mixed with loess and ash on alluvial fan and terrace landforms, as well as soils of the Weirman-Kayak-Zillhah complex that form in alluvium on floodplains. The alluvial soils extend from 1.3 to 3.7 feet below the modern surface.

Penstemon Solar Project Site

The Penstemon Solar Project site is actively farmed Sudangrass or hay agricultural land. According to the NRCS Web Soil Survey's Kittitas County Area, Washington (WA637) map, the project site has three predominant classifications of soil types. Soil in the west third of the project site is mapped as the Nack-Brickmill complex. Soil in the middle of project area is mapped as Mitta ashy silt loam. Soil in the east third of project area is mapped as Deedale clay loam. These soils form in alluvium mixed with volcanic ash on alluvial fan landforms and floodplain landforms. The Mitta ashy silt loam is considered prime farmland if irrigated (Class 4). The Nack-Brickmill complex soil type is considered prime farmland if irrigated and drained (Class 6). The Deedale clay loam is considered farmland of statewide importance. Therefore, the agricultural land use at the Penstemon Solar Project site is considered prime farmland and farmland of statewide importance.

Typha Solar Project Site

The Typha Solar Project site is fallow agricultural land that is actively grazed (see Section B.4 for additional details). According to the NRCS Web Soil Survey's Kittitas County Area, Washington (WA637) map, the project site has four predominant classifications of soil types: Nosal ashy silt loam, Weirman gravelly sandy loam, Mitta ashy silt loam, and soils of the Weirman-Kayak-Zillah complex that form in alluvium on flood plain landforms. The Weirman gravelly sandy loam is not considered prime farmland. The Mitta ashy silt loam, drained, is considered prime farmland if irrigated (Class 4). The Weirman-Kayak-

Zillah complex and Nossal ashy silt loam soil types are considered prime farmland if irrigated and drained (Class 6). Therefore, a portion of the agricultural land use on the Typha Solar Project site is considered prime farmland.

Urtica Solar Project Site

The Urtica Solar Project site is actively farmed alfalfa agricultural land. According to the NRCS Web Soil Survey's Kittitas County Area, Washington (WA637) map, the Urtica Solar Project site has four classifications of soil types: Ackna loam, Brickmill loam, Brysill loam, and Nanum loam. All four soil classifications are considered prime farmland by the NRCS if irrigated (Class 4).

Impacts to Solar Project Site Agricultural Lands

Construction of the Columbia Solar Project sites would represent a conversion of the roughly 232 acres of leased properties currently used for agricultural hay production and grazing, to use as solar electricity generation facilities for the approximately 30-year lives of the solar projects. Conversion of those 232 acres to solar facilities would represent only 0.13% of the total 183,124 acres of farmlands in Kittitas County, and 0.34% of the 68,314 acres of total croplands. Because these conversions are extremely minimal, and unlike residential development, temporary (for the life of the facility), there would be no significant impacts to agriculture in the county during construction or operation of the five Columbia Solar Projects.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Unstable Soils

There are no surface indications, or history of, unstable soils in the immediate vicinity of the Columbia Solar Project sites or their associated generation tie lines. The April 2017 geotechnical survey reported that upper-level soils at the sites are moisture sensitive. Best management practices (BMPs) would be used during the wet season to avoid erosion issues at site entrance locations and protect moisture-sensitive topsoil.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Grading and Fill

General County

Grading for each of the five Columbia Solar Projects would be minimal and would be isolated to the all-weather access roads (as needed), inverter pads, and switchyard pads to accommodate interconnection equipment. The all-weather access roads would be relatively flat and would be graded to match existing conditions to minimize earthwork. Inverter pads would be placed throughout each solar project site, each of which would be approximately 15 by 30 feet and 1 to 2 feet thick. Each of these pads would be graded, but as with the switchyard pads, the proposed elevation would be set to minimize earthwork. The switchyard and inverter pads would require a minimum of 90% relative compaction. Other property improvements that would have only moderate impact/disturbance to in situ conditions would involve roadbed stabilization for the all-weather access roads.

No export of soil is anticipated for any of the five Columbia Solar Project sites. At the conclusion of construction, all disturbed areas surrounding graded areas would be remediated through reseeding with native, low-cover vegetation.

Minimal grading and ground disturbance would occur as part of the proposed Columbia Solar Projects. The portion of the solar panel array installation that actually disturbs the ground is also very minimal. Because of this, existing topography and drainage patterns would remain relatively undisturbed.

Solar Project Sites

In addition to the general grading/leveling discussed above for all of the project sites, the sites specifically described below would have other sources of grading.

Camas Solar Project Site
In addition to the general grading/leveling discussed above for all of the solar project sites, TUUSSO is proposing to re-site an existing overhead distribution line owned by PSE that passes through the northeast quadrant of Camas A. TUUSSO would pursue one of three options for this distribution line: 1) direct burial of the line from the northern boundary of Camas A to the eastern boundary of Camas A, staying within the current ROW, 2) modifying the ROW slightly to cause the path of the distribution line to travel more directly north-south through Camas A, or 3) modifying the ROW and path of the current overhead distribution line to instead closely follow Bull Ditch and Little Naneum Creek such that the line skirts the northeast boundary of Camas A. Option 1 would have minimal impact to the current site conditions, simply providing for the burial of the PSE distribution line where it passes through Camas A. Option 2 would comprise the construction of up to 4 additional monopoles (typically wood) to support the more north-south path through the project site. Option 3 would comprise the construction of up to around 10 monopoles (typically wood) to support the conduit along the northeast boundary of Camas A.

Typha Solar Project Site
The additional grading/earth moving expected on the Typha Solar Project site would be associated with: 1) the improvement of the existing land bridge near the entrance to the site (e.g., by excavation of 8 to 12 inches of topsoil, placement of geotextile fabric in the excavation, and filling the excavation with quarry spalls) or construction of a small culvert at the location of the existing land bridge; 2) the filling of a small on-site watering pond; and 3) improvement/widening of the existing gravel road leading from Thorp Highway South to the gated site entrance.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Construction Erosion

As described in Section B.1.a., the Columbia Solar Project sites are all relatively flat. Minimal grading and ground disturbance would occur as part of the proposed solar projects (see Section B.1.e). However, soil disturbances (from construction activities associated with the limited site grading, mounting of the solar panels, equipment installation, electrical conduit trenching, and scraping for the all-weather access roads) could cause soil erosion and the eventual release of sediment into stormwater runoff. Obtaining coverage under, and ensuring compliance with, the National Pollutant Discharge Elimination System (NPDES) Construction General Permit requirements (including implementation of appropriate BMPs and consistent record keeping of the Stormwater Pollution Prevention Plan [SWPPP]) would ensure that temporary water quality impacts associated with construction activities would not cause any significant downstream or off-site impacts.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Impervious Surfaces

As show in Table 3, conservatively 3% to 5% of impervious surfaces would be added to each Columbia Solar Project site. Impervious surfaces at the sites would include access roads, concrete pads for the electrical infrastructure, and solar tracker posts.

Table 3. Percent of Solar Project Site Covered with Impervious Surfaces after Project Construction

Site Name	Impervious Surfaces Added (Acres)	Total Project Site Area (Acres)	% of Project Site
Camas Solar Project Site	2.00	50.83	4%
Fumaria Solar Project Site	1.71	35.24	5%
Fumaria Solar Project Generation Tie Line	1.50	30.05	5%
Penstemon Solar Project Site	1.31	39.38	3%
Typha Solar Project Site	1.40	54.29	3%
Typha Solar Project Generation Tie Line	0.21	4.27	5%
Urtica Solar Project Site	1.65	51.94	3%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Erosion Control Measures

The following mitigation measures would be used:

- Planned BMPs include those from stormwater management guidelines applicable to Eastern Washington.
- If excavated site soils are to be used as structural fill, they would be protected from moisture while stockpiled.
- Stockpiled topsoil would not be mixed with structural fill, if it is planned for use in non-structural areas.
- Temporary construction ingress and egress would be completed prior to the start of ongoing construction traffic at the solar project sites. A temporary construction entrance would be constructed of 8 to 12 inches of quarry spalls. If the soils in the entrance locations are soft, a layer of geotextile fabric would be laid down as a barrier prior to placement of quarry spalls. The quarry spalls would provide a stable entrance/exit to the sites and would limit tracking of mud onto the existing public and private roads during and after wet weather.
- Infiltration and Temporary Erosion and Sedimentation Control (TESC) measures would consist of installation of silt fencing as needed around the site entrances, around the perimeter of the low side of the sites, and at discharge points where sediment-laden surface water might enter off-site drainage features. Because the solar project sites are flat and slope very gently to the south, silt fencing would probably not be necessary at the southern perimeters.

The preliminary SWPPP describes a number of BMPs to assure compliance with state water quality standards, including the following:

- Preserving natural vegetation.
- Establishing buffer zones to protect existing wetlands and to relieve potential downstream impacts.
- Providing a single, stabilized construction entrance to prevent soil and sediment from tracking off the site.
- Controlling flow rates leaving the site via full on-site dispersion.
- Installing a silt fence at all areas downslope of disturbed areas, and upslope of existing waterbodies.
- Stabilizing soils when necessary, including the use of plastic covering to protect soil stockpiles.
- If necessary, utilizing a wheel wash at the site exit if sediment may be tracked off-site.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The proposed Columbia Solar Projects are photovoltaic facilities that would only have minimal dust and vehicular air emissions during construction (Table 4). There would be no air emissions during operation.

Conservatively, maintenance-related emissions for the proposed solar projects could consist of monthly maintenance inspections by workers in a single pick-up truck. Thus, maintenance emissions would be minimal.

Table 4. Construction-Related Emissions in Tons Resulting from the Proposed Solar Project (Per Project Site)

Source	CO	NO_X	SO_X [1]	PM_{10}	$PM_{2.5}$	VOCs	HAPs	CO_2e [2]
Off-Road Construction Equipment	3.42	5.53	0.01	0.25	0.23	0.76	0.08	744
Commuting/On-Road Equipment/Material Delivery	0.39	0.11	0.00	1.20	0.14	0.05	0.00	84
Fugitive Dust From Construction Operations	–	–	–	0.03	0.00	–	–	–
Total	**3.81**	**5.63**	**0.01**	**1.48**	**0.37**	**0.81**	**0.08**	**828**
Percent of Total Kittitas County Emissions	***0.01%***	***0.12%***	***< 0.01%***	***0.03%***	***0.01%***	***< 0.01%***	***< 0.01%***	***N/A*** [3]

Note: CO_2e = Carbon dioxide equivalent.
1. All oxides of sulfur (including SO_2). For purposes of comparison, SO_2 emissions reported in the county inventory are assumed to be equal to SO_X.
2. CO_2e emissions are reported in metric tons.
3. CO_2e emissions are not reported for all sources in the county inventory. Therefore, CO_2e emissions are not compared to the county inventory.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The general project area is designated as in attainment for all pollutants. The area consists of residential and commercial developments. The Columbia Solar Project sites would not be expected to be affected by any off-site sources of emissions or odor.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The five proposed Columbia Solar Projects would only have minimal dust and vehicular air emissions during construction, and no air emissions during operation. Dust generated by excavation and grading on the five Columbia Solar Projects would be short term. Dust from access roads would be controlled by applying gravel or watering, as necessary.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Surface Waters

Non-wetland waters

Streams identified within the five Columbia Solar Project sites were classified according to the Washington Administrative Code (WAC) water typing system (WAC 222-16-030). The streams were categorized based on the stream reaches within each of the five solar project sites; reaches downstream of the solar project sites may be rated higher.

A total of one river, the Yakima River (Typha Solar Project site); five streams, including Little Naneum Creek (Camas Solar Project site), Reecer Creek (Fumaria Solar Project generation tie line), an unnamed stream (Fumaria Solar Project generation tie line), Coleman Creek (Penstemon Solar Project site), and McCarl Creek (Urtica Solar Project site); four canals, including Bull Ditch (Camas Solar Project site), the Cascade Irrigation District Canal (Fumaria Solar Project generation tie line), Town Ditch (Fumaria Solar Project generation tie line), and the EP Canal (Typha Solar Project generation tie line); one pond (Urtica Solar Project site); and various ditches were delineated throughout all of the five project sites.

Table 5 summarizes the water types found within the Columbia Solar Project sites. Most delineated waters would fall under the jurisdiction of the USACE, Ecology, and Kittitas County. Some ditches and canals may not be considered jurisdictional based on their connectivity to jurisdictional features; however, this is determined on a case-by-case basis and can only be determined by the applicable regulatory agency. Detailed descriptions of, and more information regarding, each water feature within the solar project sites are provided in the Critical Areas Wetland and Waters Delineation Reports for each site.

A summary of all non-wetland waters and their buffers documented within the Columbia Solar Project sites is provided in Table 5. KCC guidance (Chapter 17A.07.010) defines minimum protection buffers of 40 feet for Type S waters and 20 feet for Type F waters. KCC guidance does not define protection buffers for irrigation canals and ditches, because they do not qualify as streams. In addition, KCC guidance specifies that no protection buffer is needed for Type Ns waters.

Table 5. Summary of Water Features within and near the Columbia Solar Project Sites

Stream Name	Tributary to	Water Typing[1]	USACE Jurisdiction[2]	Kittitas County Minimum Buffer Distance (feet)[3]	Total Size of Water Feature Within the Project Site (acres)[4]
Camas Solar Project Site					
Little Naneum Creek	Naneum Creek	F	RPW	20	0.69
Bull Ditch (CS02)	N/A	N/A	N/A	None	0.22
Fumaria Solar Project Site					
Ephemeral ditch (FS01)	Reecer Creek	N/A	N/A	None	0.00
Ephemeral ditch (FS02)	FS01	N/A	N/A	None	0.00
Fumaria Solar Project Generation Tie Line					
Reecer Creek	Yakima River	F	RPW	20	0.12
Ephemeral ditch (FS01)	Reecer Creek	N/A	N/A	None	0.25
Ephemeral ditch (FS02)	FS01	N/A	N/A	None	0.01
Cascade Irrigation District Canal (FS03)	Yakima River	N/A	N/A	None	0.03
Unnamed stream (FS04)	Town Ditch	Ns	NRPW	None	0.01
Town Ditch (FS05)	Yakima River	N/A	N/A	None	0.04
Roadside ditches	Varies	N/A	N/A	None	0.18
Penstemon Solar Project Site					
Coleman Creek	Naneum Creek	F	RPW	20	0.47
Unnamed Ephemeral Ditch	Coleman Creek	N/A	NRPW	None	0.00
Typha Solar Project Site					
Yakima River	Columbia River	S	RPW	40	0.05
Typha Solar Project Generation Tie Line					
EP Canal (TS01)	Naneum Creek	F	RPW	None	0.44
Unnamed Ephemeral Ditch 1	Yakima River	N/A	RPW	None	0.02
Unnamed Ephemeral Ditch 2	EP Canal	N/A	NRPW		
Urtica Solar Project Site					
McCarl Creek (US01)	Yakima River	F	RPW	20	0.27
UOW01 (western pond)	McCarl Creek	F	RPW	None	0.05
Unnamed Ephemeral Ditch	McCarl Creek	N/A	NRPW	None	0.02

1. S = shoreline of the state (WAC 222-16-030), F = fish-bearing stream (WAC 222-16-030), Ns = non-fish-bearing (WAC 222-16-030), N/A = not applicable, due to ditches and canals being excluded from the WAC typing system.
2. RPW = relatively permanent water, NRPW = non-relatively permanent water, N/A = not applicable, due to exclusion from jurisdiction.
3. Only minimum buffer distances are depicted on maps.
4. Does not include buffer areas.

Wetlands

Wetlands within each of the five Columbia Solar Project sites were rated using the *Washington State Wetland Rating System for Eastern Washington, 2014 Update*. A total of 16 wetlands were delineated within the Columbia Solar Project sites, one on the Camas Solar Project site, six on the Fumaria Solar Project site (one on the solar project site and five along the generation tie line), one on the Penstemon Solar Project site, five on the Typha Solar Project site (three only on the solar project site, one only on the generation tie line, and one on both), and three on the Urtica Solar Project site. These wetlands were rated using field observations and desktop analysis to determine the wetland rating category for each wetland area.

All of the wetlands within the five Columbia Solar Project sites are classified as either Palustrine Emergent (PEM) or Palustrine Scrub-shrub (PSS) wetlands based on the *Classification of Wetlands and Deepwater Habitats of the United States*. In addition, wetlands within the five Columbia Solar Project sites were classified as either Riverine, Slope, or Depressional based on the *Hydrogeomorphic (HGM) Wetland Classification System: An Overview and Modification to Better Meet the Needs of the Natural Resources Conservation Service*. All delineated wetlands would fall under the jurisdiction of the USACE, Ecology, and Kittitas County. Detailed descriptions of each wetland within the solar project sites are provided in the Critical Areas Wetland and Waters Delineation Reports for each site, which also include a list of vegetation observed within each project site, maps of delineated wetlands and their buffers, wetland delineation data sheets, ground-level site photographs, and wetland rating forms.

Table 6 summarizes the size, wetland rating category, minimum wetland protection buffer size (according to guidance in KCC 17A.04.020), and Cowardin classification, and HGM classification of wetlands found within each of five Columbia Solar Project sites.

Table 6. Wetland Size, Rating, Buffer, and Classifications for Wetlands within the Study Areas for Each Columbia Solar Project Site

Wetland Name	Delineated Area within the Project (Wetland Rating Unit Size)[1] (acres)	Wetland Rating[2]	Kittitas County Minimum Buffer Distance (feet)[3]	Cowardin Classification	Hydrogeomorphic Classification
Camas Solar Project Site					
CW01	0.97 (1.72)	III	20	PEM	Riverine
Fumaria Solar Project Site					
FW01	0.00 (estimated 5.57)	III	20	PEM	Slope
Fumaria Solar Project Generation Tie Line					
FW02	0.24 (estimated 2.15)	II	25	PEM	Riverine
FW03	0.03 (estimated 0.58)	III	20	PEM	Depressional
FW04	0.03 (estimated 0.23)	III	0[4]	PEM/PSS	Riverine
FW05	0.20 (estimated 1.67)	IV	0[4]	PEM	Riverine
FW06	0.005 (0.005)	IV	0[4]	PEM	Depressional
Penstemon Solar Project Site					
PW01	0.00 (0.14)	III	0[4]	PEM	Depressional
Typha Solar Project Site					

Wetland Name	Delineated Area within the Project (Wetland Rating Unit Size)[1] (acres)	Wetland Rating[2]	Kittitas County Minimum Buffer Distance (feet)[3]	Cowardin Classification	Hydrogeomorphic Classification
TW01	0.07 (estimated 0.33)	II	25	PEM/PSS	Riverine
TW02	0.42 (estimated 0.68)	II	25	PEM	Riverine
TW03	0.80 (estimated 8.45)	II	25	PEM/PSS	Riverine
TW04	0.05 (0.05)	III	0[4]	PEM	Depressional
Typha Solar Project Generation Tie Line					
TW03	0.06 (estimated 8.45)	II	25	PEM/PSS	Riverine
TW05	0.03 (estimated 0.47)	III	20	PEM	Riverine
Urtica Solar Project Site					
UW01	0.05 (0.05)	III	0[4]	PEM	Depressional
UW02	0.13 (0.97)	III	20	PEM	Depressional
UW03	0.01 (1.19)	III	20	PEM	Depressional

1. Wetland rating unit size is the total area of wetland delineated or estimated based on aerial photograph interpretation and field reconnaissance. Area of delineated portions of the wetlands is based on SWCA survey data. Does not include buffer areas.
2. II = Category II, III = Category III, IV = Category IV.
3. Minimum buffer distances are depicted on maps (Refer to the Critical Areas reports for each project site for maps).
4. No Kittitas County buffer is defined because the wetland area is below the minimum size threshold for protection or is rated as a Category IV; however, building setbacks may be required based on zoning lot line setbacks, but would not exceed 25 feet.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Impacts to Surface Waters – Non-wetland Waters

General County

TUUSSO has made every effort to avoid impacts to water resources throughout all of the Columbia Solar Project sites, which would be achieved through avoidance measures in project design and utilization of BMPs. Impacts to water resources at each solar project site and along each associated generation tie line are described below.

Impacts to water resources at each solar project site and along each associated generation tie line are described below.

Solar Project Sites

All Solar Project Sites and Generation Tie Lines
No impacts are proposed to any water resources within the Camas, Fumaria, Penstemon, Typha, and Urtica Solar Project sites. Internal access roads and site access would be located in upland areas or on existing access roads. For the Fumaria and Typha Generation Tie Lines, all water resources would be spanned by power poles, and existing roads adjacent to the proposed line would be utilized for installation of new lines or power poles. All impacts to water resources would be avoided through project design.

Fumaria Solar Project Site
If the proposed western site access route is used, it would be via Clarke Road and would cross Reecer Creek. The current road edge is eroding on the southern side of the road. TUUSSO would either install spanning structures to avoid impacts to the Reecer Creek crossing (such as using road plates and gravel) or improve and reinforce the current bridge infrastructure, which could result in minor impacts to Reecer Creek. If impacts to Reecer Creek are proposed, then TUUSSO would prepare and submit a Joint Aquatic Resource Permit Application (JARPA) for review by USACE and Ecology. If the eastern access route is used, it would come from Reecer Creek Road and traverse westerly across private property to the eastern border of the Fumaria Solar Project site, which would not result in any impacts to water resources.

Typha Solar Project Site
For site access, existing roads would be utilized as much as possible; however, the existing bridge crossing of the EP Canal would need to be improved in one of three ways: 1) reinforce, improve, and/or replace existing bridge supports to accommodate the truck traffic to the project site; 2) completely remove and replace the existing bridge with a new bridge; or 3) install a temporary bridge over the existing bridge during the construction period to accommodate the truck traffic. Based on the current project design, all impacts to jurisdictional water resources would be avoided through project design. If TUUSSO alters the project design to where the EP Canal would be impacted, then TUUSSO would coordinate with EFSEC, USACE, Ecology, and Kittitas County to comply with all new permitting requirements.

Impacts to Surface Waters – Wetlands

General County

TUUSSO has made every effort to avoid impacts to wetlands throughout all of the Columbia Solar Project sites, which would be achieved through avoidance measures in project design and utilization of BMPs. There are minimal proposed impacts to wetlands within the solar project sites.

Solar Project Sites

Typha Solar Project Site
The Typha Solar Project site has one proposed wetland crossing. This crossing is for an internal access road that enters the site at the southern site boundary at an existing land bridge. The land bridge is periodically flooded by wetland TW03 due to a clogged or crushed culvert that prevents adequate flow through, which has resulted in wetland characteristics developing in the road crossing. TUUSSO is proposing either: 1) an improvement of the existing land bridge (e.g., by excavation of 8 to 12 inches of topsoil, placement of geotextile fabric in the excavation, and filling the excavation with quarry spalls), or 2) construction of a small culvert at the location of the existing land bridge. This would result in a minimal impact to TW03 of less than 0.01 acre. Additional coordination with EFSEC, USACE, Ecology, and Kittitas County would occur as needed if the proposed wetland crossing is altered during project design.

All Other Project Sites and Generation Tie Lines
No impacts are proposed to any wetlands within the Camas, Fumaria, Penstemon, and Urtica Solar Project sites or along the Fumaria and Typha Generation Tie Lines. All impacts to wetlands within and adjacent to these projects would be avoided through project design.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Fill in Waters or Wetlands

Non-wetland Waters

No fill is proposed in non-wetland waters for the Columbia Solar Project sites. All waters within and adjacent to the project sites and along generation tie lines would be avoided through project design. Existing adequate water crossings would be utilized for site access. At inadequate water crossings, spanning structures would be utilized, where applicable, to avoid impacts to non-wetland waters.

Wetlands

Current plans for development of the Columbia Solar Projects would result in partially filling one wetland, TW03, on the Typha Solar Project site for a proposed internal access road that enters the site at the southern site boundary at an existing land bridge. The fill would comprise native soil and structural fill for road construction from a local quarry, with the amounts to be determined during final engineering design. The fill area would be less than 1,000 square feet, which would not require mitigation.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Surface Water Withdrawals or Diversions

None of the five Columbia Solar Projects would require or use water intake or conveyance structures. If the projects use existing on-site water resources, they would be conveyed using existing piping systems or would be trucked from such systems.

Construction Water Use

During construction, water would be used to suppress fugitive dust during grubbing, clearing, grading, trenching, and soil compaction. In addition, non-toxic soil binding agents may be employed to help with soil stabilization during construction.

Construction activities for the five proposed Columbia Solar Projects are conservatively estimated to generate an average water demand of 100,000 gallons per day. The daily water demand estimate assumes that on an average construction day, 20 acres of the solar project sites are in active construction, requiring 10 continuous hours of water using five water trucks, assuming 4,000-gallon-capacity trucks. Construction time for the Columbia Solar Projects would require approximately 6 months, or 156 work days (Monday to Saturday), to complete. Based upon these parameters, the construction water demand for the proposed Columbia Solar Projects is very conservatively estimated to total 15.6 million gallons, or 47.87 acre-feet (1 acre-foot is equal to 325,851 gallons), or approximately 10 acre-feet per solar project.

TUUSSO has considered a number of water supply alternatives for construction purposes. Each of the solar project sites, except for the Fumaria Solar Project site, has on-site existing water allocations that TUUSSO may be able to use during construction. TUUSSO has also explored the use of greywater sources (including those in the Kittitas Valley) for construction, as water for construction activities can be of non-potable quality. However, greywater availability is limited in Kittitas County. Finally, TUUSSO has

discussed with the City of Ellensburg the availability of municipal water for construction purposes. Based on this array of possible water sources, TUUSSO intends to use either on-site water or trucked in water from municipal water sources for all projects except the Fumaria Solar Project, and intends to truck in water for the Fumaria Solar Project from a municipal water source.

Operational Water Use

On an ongoing basis, water would be used for cleaning PV panels and controlling dust (less than 1 acre-foot per year per project site). Some water would also be necessary to establish the tree/shrub visual buffers along portions of the Columbia Solar Project sites, as well as the native plants throughout the solar project sites. Project landscaping would consist of native and drought-tolerant species. Once established, the species would not require ongoing irrigation. The irrigation needs for landscaping establishment are assumed to last for 3 consecutive years following installation.

Based on feedback from farmers familiar with growing conditions in Kittitas Valley (including landowners familiar with the conditions on the five Columbia Solar Project sites), assuming periodic irrigation for establishment purposes over a 3-year period, it is estimated that approximately 400 acre-feet of water per acre per year would be needed over this period to ensure plant establishment on the solar project sites. These water needs are the same as the current water needs on the actively farmed project sites.

With respect to operational water supply, as with the construction water supply, TUUSSO has considered a number of alternatives. Each of the Columbia Solar Project sites, except for the Fumaria Solar Project site, has on-site existing water allocations that TUUSSO may be able to use during operation for irrigation purposes. Given the costs of trucking water from an external source to each of the sites, TUUSSO would likely only pursue such a water source for irrigation needs for the Fumaria Solar Project site. Given the limited water needed for cleaning PV panels, TUUSSO will likely truck in water from municipal water sources for all of the project sites for this purpose.

5) Does the proposal lie within a 100-year flood plain? If so, note location on the site plan.

Impacts to Floodplains

General County

TUUSSO utilized avoidance measures during the project design to avoid, reduce, or eliminate impacts to the 100-year floodplain. Minor encroachment into the FEMA-mapped 100-year floodplain would be unavoidable based on the current project design and would occur over a total of 7.94 acres across all of the Columbia Solar Project sites. However, actual fill in the solar project sites would be limited to solar panel footings, inverters, and access road installation, with all other areas remaining at the current site elevation. Impacts to the FEMA-mapped 100-year floodplain would be limited to 1.80 acres across all of the solar project sites. All inverters would be located outside of the FEMA-mapped 100-year floodplain.

Solar Project Sites

Table 7 summarizes the total area of FEMA-mapped 100-year floodplain within the solar project sites, average distance from the edge of the floodplain boundary to the nearest project disturbance, total 100-year floodplain encroachment, and total impacts to the 100-year floodplain within each of the solar project sites. Impacts to the FEMA-mapped 100-year floodplain along the Fumaria and Typha Solar Project generation tie lines would be avoided by using existing power poles and spanning all floodplain areas; therefore, the generation tie lines are excluded from Table 7.

Table 7. FEMA-Mapped 100-year Floodplain Project Encroachment and Impacts within Each Columbia Solar Project Site

Project Site	Total Area of 100-year Floodplain within Project (acres)[1]	Average Distance from Floodplain Boundary Edge to Project Disturbance (feet)	Total 100-year Floodplain Encroachment (acres)	Total Impacts to 100-year Floodplain (acres)
Camas Solar Project Site	12.41	10	6.78	0.19
Fumaria Solar Project Site	0.00	626	0.00	0.00
Penstemon Solar Project Site	1.96	9	0.00	0.00
Typha Solar Project Site	0.53	60	0.00	0.00
Urtica Solar Project Site	6.09	30	1.16	0.38

1. 100-year floodplain mapping is based on the FEMA-mapped floodplains depicted on Flood Insurance Rate Maps.

Camas Solar Project Site

Encroachment of the Camas Solar Project area into the FEMA-mapped 100-year floodplain would be approximately 6.78 acres based on the current design plans. Proposed impacts to the FEMA-mapped 100-year floodplain were avoided to the extent possible through project design to reduce possible fill in these areas. The total proposed project impacts to the FEMA-mapped 100-year floodplain would be approximately 0.19 acre, which includes less than 0.01 acre of fill from the solar panel footings and 0.18 acre of fill from access road installation. The number and placement of panel footings have not been determined in the project design but would not be expected to exceed 0.01 acre within the FEMA-mapped 100-year floodplain. Therefore, the project would result in minimal impacts to floodplains.

Urtica Solar Project Site

Encroachment of the Urtica Solar Project area into the FEMA-mapped 100-year floodplain would be approximately 1.16 acres based on the current design plans. Proposed impacts to the FEMA-mapped 100-year floodplain were avoided to the extent possible through project design to reduce possible fill in these areas. The total proposed project impacts to the FEMA-mapped 100-year floodplain would be 0.38 acre, which includes less than 0.01 acre of fill from the solar panel modules and 0.37 acre of fill from access road installation. The number and placement of panel footings have not been determined in the project design but would not be expected to exceed 0.01 acre within the FEMA-mapped 100-year floodplain. Therefore, the project would result in minimal impacts to floodplains.

All Other Project Sites and Generation Tie Lines

No impacts are proposed to any FEMA-mapped 100-year floodplain areas within the Fumaria, Penstemon, and Typha Solar Project sites or along the Fumaria and Typha Solar Project generation tie lines. All impacts to floodplains within and adjacent to these projects would be avoided through project design.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

Surface Wastewater Discharge

The five Columbia Solar Projects do not, by design, require wastewater treatment systems. Thus, this section does not apply to them.

b. Ground:

Ground Water Resources

General County

The Columbia Solar Project sites are located within the Upper Yakima sub-basin of the Yakima groundwater basin. Basaltic rocks beneath most of the Yakima River basin are part of the larger Columbia River Basalt Group (CRBG). The CRBG comprises more than 300 individual basalt flows, and multiple aquifers reside within them. Reported “depth to water” levels are as shallow as 10 feet below ground surface (bgs) near river valley bottoms, to more than 200 feet bgs. Well yields are generally less than 100 gallons per minute. Groundwater flows in the basin converge toward the Yakima River.

Groundwater quality in the Yakima basin is generally good; most issues are related to the impacts of agricultural operations on drinking water wells. Water quality issues involve excess nitrate levels and bacterial contamination, particularly in the lower portions of the Yakima basin.

Nearby impaired waters are located either cross-gradient or up-gradient on different local drainage systems that are not connected to any of the Columbia Solar Project sites and would not be impacted by the project.

Solar Project Sites

Fumaria Solar Project Site
Well registry data identified one well on the Fumaria Solar Project site (Well Log ID 339775), which had a recorded depth of 120 feet bgs. No depth to water or pump capacity data were available. Other wells within 1 mile of the project site had depths of 80 to 170 feet bgs. Minor seepage was observed at Boring F-2 on the Fumaria Solar Project site. Groundwater may be present during wetter parts of the year.

Typha Solar Project Site
Well registry data identified one well on the Typha Solar Project site (Well Log ID 339775), which had a recorded depth of 120 feet bgs. No depth to water or pump capacity data were available. Other wells within 1 mile of the project site had recorded water depths of 80 to 170 feet bgs. At 4.5 to 5 feet below grade, there was a 6-inch silty sand seam with perched groundwater seepage on the Typha Solar Project site. The seepage was not continuous. Additional groundwater flow may be observed during the wetter winter months.

Urtica Solar Project Site
Well registry data identified one well on the Urtica Solar Project site (Well Log ID 339775), which had a recorded depth of 172 feet below bgs. No depth to water or pump capacity data were available. Other wells within 1 mile of the project site had depths of 15 to 290 feet bgs. No seepage was observed in either boring at the Urtica Solar Project site.

Camas and Penstemon Solar Project Sites
Well registry data identified no wells on the Camas and Penstemon Solar Project sites. Other wells within 1 mile of these project sites ranged in depth from 12 to 335 feet bgs.

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well? Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

Withdrawals from or Discharges to Ground Water

No points of groundwater withdrawal, associated with water supplies to the Columbia Solar Projects, are planned. No changes to groundwater movement, quantity, quality, or supply uses would result from project construction or operation of the solar projects. If grading and/or construction is carried out during the winter or spring months, groundwater seepage might be present. Appreciable amounts of seepage are not anticipated during excavation. However, during the rainy winter months, seepage in excavations at any of the Columbia Solar Project sites could occur and groundwater control measures would be on-site or readily available, including trash pumps, sumps, and discharge ditches.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Ground Wastewater Discharge

The five Columbia Solar Projects do not, by design, require ground wastewater discharge, nor treatment systems. Thus, this section does not apply to them.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff Source and Receiving Waters

General County

All of the Columbia Solar Project sites are relatively flat and generally slope from north to south. Minimal grading and ground disturbance would occur as part of the proposed projects. The proposed projects include at least 20-foot setbacks from wetlands, streams, and the Yakima River. Additionally, sediment and erosion control measures would be implemented to avoid water quality impacts to adjacent wetlands, streams, and the Yakima River. As a result, there would be no impacts to water quality. The access roads, concrete pads for the inverters and transformers, and solar tracker posts are the only impervious surfaces proposed. Because of this, existing topography and drainage patterns would remain relatively undisturbed, and the proposed drainage basins would encompass the same area as the existing drainage basins. The estimated infiltration rates for the Columbia Solar Project sites are 1.02 inches/hour for the upper, silty sand unit and 0.27 inch/hour for the underlying sandy gravel. The solar project sites are located in Climate Region 2 – Central Basin and receive an average of about 8 inches of precipitation per year, some of it in the form of snow. Because less than 5% of impervious surface would be added to each project site, hydrologic modeling was conducted. The modeled increased runoff can be handled by full dispersion throughout each project site, as a majority of the existing vegetation at the sites would be protected. The increased runoff is also considered negligible, due to the reduction of flood irrigation that

would accompany each of the Columbia Solar Projects. The Columbia Solar Projects would not impact the surface water quality and there would be minor permanent impacts to the surface water movement and quantity. No impacts are expected to occur in waters downstream of the solar project sites.

Solar Project Sites

Camas Solar Project Site
The Camas Solar Project site gently slopes south and is currently an open field used to make hay using flood irrigation methods. The surface water that does not infiltrate flows to the south. The western edge of the site is bordered by an irrigation ditch (CW01) flowing to the south, while Little Naneum Creek flows southwest along the southeastern edge of the site. These surface waters meet at the southwest corner of the site before crossing under I-82 in existing irrigation infrastructure. Bull Ditch runs southeast through the northern portion of the site. These ditches are maintained by the landowner. The project site is made up of two drainage basins. All of the runoff is either infiltrated on-site or flows to the south/southwest.

Conservatively estimated, the Camas Solar Project would convert 2.00 acres into impervious surfaces. The modelling calculations showed that the runoff generated from a 2-year storm increased by 0.02 feet per second (cfs) for Basin 1 while it did not increase for Basin 2. Runoff generated from a 25-year storm increased 0.07 cfs for Basin 1 and 0.01 cfs Basin 2.

Fumaria Solar Project Site
The overall topography of the Fumaria Solar Project site gently slopes to the south. The surface water that does not infiltrate flows to the south. Runoff to the west is captured by an existing irrigation ditch that flows south along the western border of the site (FS01). Runoff to the south is captured in the southern portion of the ditch where it discharges to an existing detention pond just off the southeast corner of the property. Since all runoff is either infiltrated on-site or captured in the existing irrigation pond, the project site is a single drainage basin represented by two sub-basins.

Basin 1B would remain undisturbed throughout the Fumaria Solar Project, with no appreciable impervious surface added. The project would convert 1.71 acres into impervious surfaces in Basin 1A. The modelling calculations showed that the runoff generated from a 2-year storm increased 0.04 cfs. Runoff generated from a 25-year storm increased 0.11 cfs.

Penstemon Solar Project Site
The overall topography of the Penstemon Solar Project site gently slopes to the south. The surface water that does not infiltrate flows to the south. This runoff is captured in an irrigation ditch along the southern property line. The ditch flows to the east and into Coleman Creek at the southeast corner of the site. Since all runoff is either infiltrated or captured in the existing irrigation ditch at the southern border of the project site, the site is a single drainage basin.

The Penstemon Solar Project would convert 1.31 acres into impervious surfaces. The modelling calculations showed that the runoff generated from 2-year and 25-year storms would remain the same as under the existing condition.

Typha Solar Project Site
The overall topography of the Typha Solar Project site gently slopes to the south. The surface water that does not infiltrate flows to the south. There are two narrow wetlands that run west to east through the site and capture surface runoff and slowly discharge it to the east. The Typha Solar Project site is made up of three drainage basins. Drainage Basin 1 is made up of the northwest portion of the site. Drainage from this area flows south and into the northern wetland (TW01) on the site. Drainage Basin 2 is the largest drainage basin on the site and encompasses the northeast portion of the site. Drainage from Basin 2

flows south into the existing northern wetland (TW02), which then carries the flow to the east. Drainage from Basin 3 flows south into the wetland (TW03) which borders the southern portion of the site and is the more major wetland of the two on site. The runoff slowly flows to the east via the wetland. The two wetlands (TW02 and TW03), both make their way to the east. The southern wetland becomes a more defined irrigation channel after leaving the site and continues to convey water to the east for approximately 0.75 mile before discharging into the Yakima River.

The Typha Solar Project would convert 1.40 acres into impervious surfaces. The modelling calculations showed that the runoff generated from a 2-year storm would increase 0.01 cfs for Basin 1 and remain the same as under the existing condition for Basins 2 and 3. Runoff generated from a 25-year storm increased 0.02 cfs for Basin 1 and 0.01 cfs for Basin 3, while Basin 2 remained unchanged.

Urtica Solar Project Site
The overall topography of the Urtica Solar Project site gently slopes to the east. The surface water that does not infiltrate flows to the east. Two ponds are located near the middle of the site and discharge into an existing irrigation ditch that runs west to east through the site. The project site is made up of two drainage basins. The majority of the project site drains to the east into the irrigation ponds and/or irrigation ditch (US01, McCarl Creek) that flows west to east through the site.

The Urtica Solar Project would convert 1.65 acres into impervious surfaces. The modelling calculations showed that the runoff generated from a 2-year storm increased 0.02 cfs for Basin 1 while it did not increase for Basin 2. Runoff generated from the 25-year storm increased 0.01 cfs for Basin 1 and 0.02 cfs for Basin 2.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Wastewater Discharge

The five Columbia Solar Projects do not, by design, require wastewater treatment systems. No discharge of water or contaminants is proposed for the construction and operation of the solar project sites. No export of soils is anticipated for any of the five Columbia Solar Project sites. During site construction, open soil exposure would be minimized through minimization of grading activities, and erosion from runoff would be reduced or eliminated by the utilization of BMPs. At the conclusion of construction, all disturbed areas would be reseeded with native, low-cover vegetation. No ditches or outfall pipes would be installed as part of the proposed solar projects. Therefore, all water in the project impact areas would either be absorbed through infiltration or runoff through overland flow at very low velocities that are unlikely to cause excessive erosion.

During construction, the projects would have a SWPPP defining BMPs that would be used to avoid storm water runoff affecting receiving waters' water quality. Also, measures to prevent and contain any accidental spills resulting from fuel storage and use during construction and operation are described in detail in those phases' Spill Prevention, Control, and Countermeasure (SPCC) Plans.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

Drainage

Construction of the solar arrays at the Columbia Solar Project sites could create a minor increase in the total and effective impervious area of the sites that is equivalent to the area of the solar panel footings and associated infrastructure, including the gravel access roads.

Infiltration into the upper, topsoil-like silty sand/sandy silt soils at the Columbia Solar Project sites is feasible and ongoing. The soils are capable of infiltrating storm water during an average year. Given the relatively low precipitation in the area, combined with the natural permeability of the upper soil horizon, infiltration of normal storm water amounts would occur on the solar project sites and normal levels of storm water would not be concentrated to a significant extent.

Appreciable amounts of seepage are not anticipated during excavation of the Columbia Solar Project sites; however, during the rainy winter months, it is prudent to anticipate seepage in excavations and groundwater control measures would be on-site or readily available. The solar project sites would be graded such that surface water would be directed away from structures and slopes and not allowed to pond near the tops or toes of slopes.

d. Proposed measures to reduce or control surface, ground, runoff water, and drainage pattern impacts, if any:

Water Quality Protection Measures

The following mitigation measures would be used:

- Off-site flows have been calculated for the Columbia Solar Project sites, and would bypass the sites via the existing flow paths, which run throughout the sites in poorly defined flow paths. The solar project sites have been laid out to minimize the area that would encroach into the flow paths. Any grading of the solar project sites would direct surface water away from structures and slopes.
- Surface water would not be allowed to pond near the tops or toes of slopes of the solar project sites.
- Stormwater discharge BMPs would be implemented to control runoff from each of the solar project sites.
- Sediment-laden surface water would be treated such that water discharged from each of the solar project sites meets all water quality standards.
- Stormwater would not be discharged over the project site slopes to the north of each solar project site.
- Groundwater control measures would be on-site or readily available, including trash pumps, sumps, and discharge ditches.

4. Plants

a. Check the types of vegetation found on the site:

Vegetation Types

The types of vegetation observed at the Columbia Solar Project sites were (see those that are “X” and underlined):

X Deciduous tree: Alder, maple, aspen (quaking aspen), other: cottonwood, crack willow, balsam poplar

X Evergreen tree: Fir (grand fir), cedar, pine (ponderosa pine), other: none

X Shrubs

X Grass

X Pasture

X Crop or grain: alfalfa, Sudangrass, timothy hay

_ Orchards, vineyards or other permanent crops

X Wet soil plants: cattail (aka bullrush), buttercup, skunk cabbage, other: lamp rush, yellow iris

X Water plants: Water lily, eelgrass, milfoil, other: duckweed

X Other types of vegetation: see also Section B.4.e regarding noxious weed species observed

The Vegetation Management Plan includes detailed revegetation plans following construction of the proposed Columbia Solar Project sites.

b. What kind and amount of vegetation will be removed or altered?

Analysis Areas

General County

For this discussion, the solar project sites are defined as the footprint of each of the five proposed Columbia Solar Project sites, and the generation tie line corridors associated with two of the sites. To provide a baseline for analysis of potential impacts to biological resources from the proposed solar projects, two analysis areas were evaluated, a project-scale and a landscape-scale analysis area. The project-scale analysis areas include each Columbia Solar Project site and an associated surrounding 500-meter buffer. The landscape-scale analysis area includes all five of the project-scale analysis areas, as well as the surrounding sub-watersheds.

Vegetation Altered: Construction Activities and Long-term Fencing

The construction of the Columbia Solar Projects would impact a total of 223 fenced-in acres (not the entire 232 leased acres), a majority of which would be currently in agricultural production (138 acres). The area of each habitat type removed would be less than 1% of that available in the landscape-scale analysis area, except for three habitat types: fallow – vegetated (some native vegetation, but mostly non-native plant species), fallow (recently grazed), and willow-rose shrub thicket. The impacts to these areas relative to that available in the landscape-scale analysis area is large (49%, 41%, and 34%, respectively) because there is a small area of each of these habitat types available prior to project construction (in the base mapping, although these habitat types may occur in areas base-mapped as the “Other” habitat type). As a result, there would be minor temporary impacts to vegetation and habitats.

Solar Project Sites

Camas Solar Project Site
The Camas Solar Project project-scale analysis area is 82% alfalfa agriculture, but has other species encroaching into the crops in the space between plantings. In addition, the analysis area may go through periods during the production lifecycle in which it is unvegetated, with exposed soil. Along the edges of the area being farmed, more weedy species dominate. The other major habitats are developed and fallow – recently grazed, representing 9% and 5%, respectively, of the analysis area. These habitats also occur in the analysis area: fallow – vegetated, wetlands, and Little Naneum Creek’s open water and riparian corridor.

The Camas Solar Project would primarily impact habitat that is currently under agricultural production. The project site has been designed to avoid impacts on Little Naneum Creek, and the facility incorporates a 40-foot setback from the edge of the creek for any electrical generation equipment. The solar project has also been designed to avoid impacts to the wetland habitat along the western boundary of the project site with a 20-foot setback from the edge of the wetland to the electrical generation equipment.

Fumaria Solar Project Site

With eight habitat types represented in its project-scale analysis area, the Fumaria Solar Project site has the most wildlife habitat diversity of the five proposed Columbia Solar Project sites. The most prevalent habitat type is the surrounding agricultural production, occupying 46% of the analysis area. The surrounding sagebrush-bitter-brush scrub habitat represents 36% of the analysis area, and 2% of the analysis area is developed. The project site is principally fallow – vegetated, (some native vegetation, but mostly non-native plant species; 7% of the analysis area). National Wetland Inventory (NWI)-mapped wetlands are present in the Reecer Creek floodplain (northwest and southwest of the proposed solar project site) and within 500 meters of the substation. These NWI-mapped wetlands total 8% of the available habitat in the analysis area. Open water habitat is present southeast of the project site and willow-rose shrub thicket habitat occurs along the project site borders.

The most prevalent habitat type in the Fumaria Solar Project generation tie line project-scale analysis area is agricultural production, occupying 88% of the analysis area. Developed and riparian corridor habitats each both comprise 4% of the analysis area. The riparian corridor habitat is located along Reecer Creek and within 500 meters of the substation. NWI-mapped wetlands, open water, and sagebrush-bitter-brush scrub habitats comprise the remaining 4% of the analysis area. NWI-mapped wetlands are present within 500 meters of the substation. Open water habitat is present within the 500-meter buffer of the entire generation tie line corridor.

The Fumaria Solar Project site would primarily impact habitat that is currently fallow – vegetated with some native vegetation, but mostly non-native plant species. The associated generation tie line would primarily impact habitat that is currently under agricultural production. The project site layout has been designed to avoid impacts on Reecer Creek. The solar project has also been designed to avoid impacts to the existing drainage ditch along the southwestern boundary of the project site, and the facility incorporates a 60-foot setback from the edge of the wetland on the site to the electrical generation equipment.

Penstemon Solar Project Site

The Penstemon Solar Project project-scale analysis area is 93% Sudangrass agricultural production. The other major habitat is developed, representing 4% of the analysis area. These habitats also occur in the analysis area: fallow – vegetated, a small wetland, and Coleman Creek's open water and riparian corridor.

The Penstemon Solar Project would primarily impact habitat that is currently under agricultural production. The project site has been designed to avoid impacts to Coleman Creek, and the facility incorporates a 60-foot minimum setback from the edge of the creek for any electrical generation equipment, and an average 115-foot setback along the majority of the creek.

Typha Solar Project Site

The portion of the Yakima River adjacent to the northeast corner of the Typha Solar Project site is designated as a shoreline of the state. Because of the Typha Solar Project site's proximity to the Yakima River, the habitat in the project-scale analysis area is important for fish and wildlife. The most prevalent habitat type is the surrounding agricultural production, occupying 52% of the analysis area; this includes

the Ellensburg Golf Course east of the proposed solar project site. The other main habitats in the analysis area are open water (the Yakima River), fallow – recently grazed, and riparian corridor, occupying 14%, 14%, and 11% of the analysis area, respectively. Five percent of the analysis area is developed. Some wetlands were field-delineated, while along the Yakima River there are also NWI-mapped wetlands within 500 meters of the project site. Wetlands habitat totals 4% of the analysis area. Some willow-rose shrub thicket habitat occurs along the Yakima River (northeast of the project site) and the EP Canal (south of the project site).

The most prevalent habitat type in the Typha Solar Project generation tie line project-scale analysis area is the surrounding agricultural production, occupying 90% of the analysis area; this includes the Ellensburg Golf Course to the south. The other main habitat in the analysis area is developed, occupying another 10% of the analysis area. The EP Canal provides open water habitat.

The Typha Solar Project site would primarily impact the fallow – recently grazed habitat. The associated generation tie line would primarily impact habitat that is currently under agricultural production and developed. The project site has been designed to avoid impacts to the Yakima River, including a greater than 100-foot setback from the Yakima River to any electrical generation equipment, and a 30-foot setback from the wetlands located within the site to any electrical generation equipment.

Urtica Solar Project Site
The Urtica Solar Project project-scale analysis area is 84% timothy hay agricultural production. The other major habitat is developed, representing 9% of the analysis area. McCarl Creek, which functions as an irrigation ditch and includes human-made ponds, flows through the center of the project site, making 6% of the analysis area open water and riparian corridor habitats. The analysis area also provides wetlands habitat.

The Urtica Solar Project site would primarily impact habitat that is currently under agricultural production. The project site has been designed to avoid impacts to McCarl Creek, and the facility incorporates a 40-foot minimum setback from the edge of the creek for any electrical generation equipment.

Vegetation Removed: Long-term Impervious Surfaces

A total of 9.78 acres of the five solar projects would be converted to impervious surfaces, rendering it permanently unusable for plants or wildlife for the life of the projects. A majority of the impacted habitat is currently under agricultural production (6.01 acres). The area of each habitat type removed would be 2% or less than that available in the landscape-scale analysis area. As a result, there would be minor permanent impacts to vegetation and habitat.

c. List threatened and endangered species known to be on or near the site.

Threatened and Endangered Plant Species

No sensitive or special-status plant species occur on any of the Columbia Solar Project sites.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Vegetation Preservation or Enhancement

The Columbia Solar Projects designs include retaining as much of the existing vegetation on each project site as possible. Proposed landscaping is also part of the project design at all of the sites (Table 8).

Table 8. Acres of Proposed Landscaping at each of the Columbia Solar Project sites

Site Name	Acres
Camas Solar Project Site	0.13
Fumaria Solar Project Site	0.10
Penstemon Solar Project Site	0.39
Typha Solar Project Site	0.15
Urtica Solar Project Site	0.18

Additionally, TUUSSO prepared a Vegetation Management Plan that incorporates native species planting, through coordination with the landowners, WDFW, and Kittitas County.

e. List all noxious weeds and invasive species known to be on or near the site.

Noxious Weeds and Invasive Plant Species

The Washington State Noxious Weed Control Board has produced a noxious weed list for the state that categorizes weeds into three classes: A, B, and C. Eleven noxious weeds have been identified in the Columbia Solar Projects project-scale analysis areas, all B- or C-Listed species. A list of noxious weeds identified in the project-scale analysis areas, and a ranking of their relative prevalence at each site, is provided in Table 9.

Table 9. Noxious Weeds Documented in the Columbia Solar Projects Project-scale Analysis Areas

Common Name	Scientific Name	Status	Weed Class	Habitat Type Where Observed[1]	Weed Relative Prevalence at Each Solar Project Site (1 = low, 5 = high)				
					Camas	Fumaria	Penstemon	Typha	Urtica
Canadian thistle	*Cirsium arvense*	Invasive, noxious	C	AP, FG, FN, RIP	2	1	2	3	1
Chufa (yellow nutsedge)	*Cyperus esculentus*	Native, noxious	B	WET		1		1	
False mayweed	*Tripleurospermum maritimum*	Non-native, noxious	C	AP, FG	1			1	
Field sow-thistle	*Sonchus arvensis*	Non-native, noxious	C	FN, RIP		1			
Fuller's teasel	*Dipsacus fullonum*	Invasive, noxious	C	RIP, WET	1	1	1	1	2
Hairy cat's-ear	*Hypochaeris radicata*	Non-native, noxious	C	AP, FG, FN	3	3	1	3	3
Pale-yellow iris	*Iris pseudacorus*	Noxious	C	WET	2				
Queen Anne's lace	*Daucus carota*	Non-native	C	AP					1
Reed canary grass	*Phalaris arundinacea*	Invasive, noxious	C	RIP, WET	3	1	2	2	3
Scotch thistle	*Onopordum acanthium*	Noxious	B	FG, RIP	1			3	1
Spotted knapweed	*Centaurea stoebe*	Noxious	B	AP, FN		1			1

1. AP = Agricultural production; DEV = Developed; FG = Fallow, recently grazed; FV = Fallow, vegetated; RIP = Riparian corridor; SBB = Sagebrush-bitter-brush shrub; WRS = Willow–rose shrub thicket; OW = Open water; WET = Wetlands; OTH = Other.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Affected Environment for Fish and Wildlife

General County

Evaluation of Special-status Species with the potential to occur in the Camas Solar Project project-scale analysis area is provided below.

In all, 39 bird species were documented in the Columbia Solar Project project-scale analysis areas during field surveys conducted from April 3 to 12, 2017, including raptors, passerines, near-passerines, and water birds. Of the 39 bird species documented in the project-scale analysis areas, 35 are protected under the Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703-711). Habitats within the analysis areas provide nesting and foraging habitat for these MBTA-protected species. These species include ground-nesters, birds that nest in tall grass or shrubs, cavity nesters, and birds that build nests in trees.

Non-listed fish species were observed in some irrigation ditches and wetlands during the April 2017 field surveys. Fish species listed under the federal Endangered Species Act (ESA) of 1973 (as amended) also occur in streams and the Yakima River adjacent to the Columbia Solar Project sites and are briefly listed in Table 10. The ESA-listed threatened and endangered species are further discussed in Section B.5.b below.

Columbia spotted frog (*Rana lutreveinus*) egg masses and Pacific tree frogs (*Pseudacris regilla*) were documented in the Columbia Solar Projects project-scale analysis areas.

Signs of several mammals, including of mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*), were observed throughout the Columbia Solar Projects project-scale analysis areas. Several burrows likely associated with American badger (*Taxidea taxus*) were observed, but the exact source of the burrows could not be identified. When vegetated, the habitats at all of the solar project sites and generation tie line corridors support small rodents (e.g., mice and voles) that are a prey source for raptors, great blue herons (*Ardea herodias*), and coyotes (*Canis latrans*). The sites are all within approximately 2.5 miles of the Yakima River and 3.5 miles of the nearest areas only minimally inhabited by humans (for example foothills, draws, canyons, and mountains). Migratory species, such as mule deer and coyote, are known to occupy and travel through all of these sites. Some were directly observed during the April 2017 field surveys, sign (i.e., tracks and scat) was observed, and landowners confirmed that these species occur at the solar project sites.

To evaluate the potential Columbia Solar Projects impacts on fish and wildlife habitat, a list of representative species known or suspected to occur in the analysis areas was compiled and their preferred habitat was compared to the habitat types available in the analysis areas. The results of this evaluation are shown in Table 10. Of the bird species documented in the project-scale analysis areas, four are currently being monitored by the State of Washington: great blue heron, prairie falcon (*Falco mexicanus*), osprey (*Pandion haliaetus*), and turkey vulture (*Cathartes aura*). The Columbia spotted frog is a state candidate for listing, and the American badger is also being monitored by the State of Washington.

Solar Project Sites

Camas Solar Project Site

Fourteen bird species were observed at the Camas Solar Project site during the April 2017 field survey. The majority of the species were observed in the open water, riparian corridor, and wetland habitats. During the field survey, an active red-tailed hawk (*Buteo jamaicensis*) nest was observed in a large willow along Little Naneum Creek. Additionally, the floor of the barn in the northeast part of the site was littered with owl pellets and the rafters contained whitewash.

During the April 2017 field survey of the Camas Solar Project site, dace, likely speckled dace (*Rinichthys osculus*), were observed in the wetland (CW01) that flows north to south along the west side of the solar project site, into Little Naneum Creek. A Pacific treefrog was also observed in CW01.

There was evidence of beaver (*Castor canadensis*) activity along Little Naneum Creek. A burrow—which could potentially have been created by an American badger—was observed in the Little Naneum riparian corridor, in the northeast portion of the Camas Solar Project site, south of the Bull Ditch. The Yakima River is located 1.32 miles west of the project site, and the nearest area that is only minimally inhabited by humans is 2.10 miles south of the project site. Because of the site's proximity to these less-inhabited areas, migratory species (e.g., deer and coyote) forage or hunt on and travel through the project site.

Fumaria Solar Project Site

The diversity of habitats at the Fumaria Solar Project site supports at least 21 bird species, all observed during the April 2017 field survey.

Dace were observed in the irrigation ditches south of the Fumaria Solar Project site during the April 2017 field survey. Reecer Creek is known to be fish bearing, containing rainbow trout (*Oncorhynchus mykiss*), a non-anadromous form of steelhead. In the past, the landowner has stocked the ponds (southeast of the site) with triploid rainbow trout. Pacific treefrogs were observed throughout the site in the fallow – vegetated habitat, as well as the open water in the irrigation ditches.

A burrow—which could potentially have been created by an American badger—was observed near the southwestern access entrance to the Fumaria Solar Project site. The Yakima River is located 0.86 mile southwest of the project site, and the nearest area that is only minimally-inhabited by humans is 1.07 miles east of the project site. Because of the site's proximity to these less-inhabited areas, migratory species (e.g., deer and coyote) forage or hunt on and travel through the project site.

Fumaria Solar Project Generation Tie Line

Twenty-one bird species were observed along the Fumaria Solar Project generation tie line during the April 2017 field survey. The majority of the species were observed in the open water, riparian corridor, sagebrush-bitter-brush scrub, and wetland habitats.

East of the Fumaria Solar Project generation tie line (along North Faust Road), two active raptor nests were observed along the Reecer Creek riparian corridor, belonging to a red-tailed hawk and great horned owl (*Bubo virginianus*).

During the April 2017 field survey, dace were observed in the irrigation ditches that are south of the site and are connected to Reecer Creek. Reecer Creek is known to be fish bearing, containing rainbow trout.

The Yakima River is located 0.86 mile west of the western end of the Fumaria Solar Project generation tie line, and the nearest area that is only minimally inhabited by humans is 1.19 miles east of the eastern end of the generation tie line.

Table 10. Representative Species Observed or Likely to Occur in the Columbia Solar Project Analysis Areas

Common Name	Scientific Name	Management Category	Habitat Description	Habitat Types Used[1]										Acres Available in LSAA[2]
				AP	DEV	FG	FN	RIP	SBB	WRS	OW	WET	OTH	
Birds														
Bald eagle	*Haliaeetus leucocephalus*	MBTA, BGEPA, and Federal Species of Concern	Habitat generalist, associated with most aquatic habitats. Prefer rivers, lakes, and reservoirs with lots of fish and surrounding forests.					X				X	X	8,116
Canada goose	*Branta canadensis*	MBTA	Habitat generalist that occurs near water, grassy fields, and grain fields. Always nests near water and winters where feeding areas are within short distances of water.	X	X	X	X	X		X	X	X	X	129,395
Great blue heron	*Ardea herodias*	MBTA, State Monitored	Found in a wide variety of habitats, including sheltered, shallow bays and inlets, sloughs, marshes, wet meadows, shores of lakes, and rivers. Nesting colonies are typically found in mature forests, on islands, or near mudflats, and do best when they are free of human disturbance and have foraging areas close by.	X		X	X	X			X	X	X	124,586
Great horned owl	*Bubo virginianus*	MBTA	Prefers secondary-growth woodlands, swamps, orchards, and agricultural areas, but are found in a wide variety of deciduous, coniferous, or mixed forests. Home range usually includes some open habitats, such as fields, wetlands, pastures, or croplands, in addition to forested areas.	X		X	X	X				X	X	123,339
Killdeer	*Charadrius vociferus*	MBTA	Inhabits open areas such as sandbars, mudflats, and grazed fields with vegetation generally no taller than 1 inch. Often found near water, but also common in dry areas.	X	X	X	X	X	X		X	X	X	129,833
Northern Harrier	*Circus cyaneus*	MBTA	Breeds in freshwater and brackish marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, drained marshlands, high-desert shrub-steppe, and riverside woodlands. Winter habitat includes areas with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes.	X		X	X	X	X			X	X	123,781

Common Name	Scientific Name	Management Category	Habitat Description	Habitat Types Used[1]										Acres Available in LSAA[2]
				AP	DEV	FG	FN	RIP	SBB	WRS	OW	WET	OTH	
Red-tailed hawk	*Buteo jamaicensis*	MBTA	Occupies most open habitat, including desert, scrublands, grasslands, roadsides, fields and pastures, parks, broken woodland, and (in Mexico) tropical rainforest.	X	X	X	X		X				X	120,470
Sandhill Crane	*Grus canadensis*	MBTA, State Endangered	Prefers open shallow waters along river channels, on alluvial islands of braided rivers, or in natural basin wetlands, but can sometimes occur in fields and agricultural lands during feeding and resting. They typically avoid visual obstructions, such as houses and bridges, and paved or gravel roads.	X		X	X	X			X	X		124,586
Fish														
Bull trout	*Salvelinus confluentus*	Federal Threatened; State Candidate	Both resident or migratory varieties, with migratory bull trout spawning in tributary streams where juvenile fish rear for 1 to 4 years before migrating to either a larger river (fluvial) or lake (adfluvial) as adults. Successful egg incubation and survival requires very cold, clear, well-oxygenated waters, as found in pristine headwater stream habitats.								X			1,247
Dace species	*Rhinichthys* spp.	None	Occurs in many types of aquatic habitats, ranging from cool to warm waters. Typically young are observed in shallow edges.								X	X		6,562
Spring chinook (Upper Columbia River)	*Oncorhynchus tshawytscha*	Federal Endangered; State Candidate	Requires sufficient invertebrate organisms for food; cool, flowing waters free of pollutants; high dissolved oxygen concentrations in rearing and incubation habitats; water of low sediment content during the growing season (for visual feeding); clean gravel substrate for reproduction; and unimpeded migratory access to and from spawning and rearing areas.								X			1,247

Common Name	Scientific Name	Management Category	Habitat Description	Habitat Types Used[1]										Acres Available in LSAA[2]
				AP	DEV	FG	FN	RIP	SBB	WRS	OW	WET	OTH	
Steelhead (Middle Columbia River)	*Oncorhynchus mykiss*	Federal Threatened; State Candidate	Requires sufficient invertebrate organisms for food; cool, flowing waters free of pollutants; high dissolved oxygen concentrations in rearing and incubation habitats; water of low sediment content during the growing season (for visual feeding); clean gravel substrate for reproduction; and unimpeded migratory access to and from spawning and rearing areas.								X			1,247
Summer steelhead (Upper Columbia River)	*Oncorhynchus mykiss*	Federal Threatened; State Candidate	Requires sufficient invertebrate organisms for food; cool, flowing waters free of pollutants; high dissolved oxygen concentrations in rearing and incubation habitats; water of low sediment content during the growing season (for visual feeding); clean gravel substrate for reproduction; and unimpeded migratory access to and from spawning and rearing areas.								X			1,247
Herptiles														
Columbia spotted frog	*Rana luteiventris*	State Candidate	Occurs in a variety of still-water habitats, as well as in some streams and creeks. Breeding habitat includes seasonally flooded margins of wetlands, ponds, and lakes, and even some flooded pools and still-water edges of creeks. Most often found in association with wetland plant communities consisting primarily of non-woody plants, such as sedges, rushes, and grasses.					X			X	X		9,363
Pacific treefrog	*Pseudacris regilla*	None	Found in wetlands, meadows, woodlands, and brushy areas. Breeds in shallow ponds, slow moving streams, seasonal pools, watering tanks, and roadside ditches, and spends the rest of the year in surrounding upland areas.	X			X	X		X	X	X		124,496
Sharp-tailed snake	*Contia tenuis*	State Candidate	Prefers forest openings dominated by Garry oak, particularly with rock accumulations, and riparian deciduous woodlands with accumulations of decaying down woody logs within ponderosa pine, oak, or shrub-steppe.					X				X	X	8,116

Common Name	Scientific Name	Management Category	Habitat Description	Habitat Types Used[1]										Acres Available in LSAA[2]
				AP	DEV	FG	FN	RIP	SBB	WRS	OW	WET	OTH	
Mammals														
American badger	*Taxidea taxus*	State Monitored	Found in open habitats including semi-desert, sagebrush, grasslands, and meadows. Also found in forested areas with grassy cover.	X		X	X		X				X	115,665
Coyote	*Canis latrans*	None	Habitat generalists found in desert, scrub, grassland, foothills, populated neighborhoods, and urban environments.	X	X	X	X	X	X				X	123,271
Mule deer	*Odocoileus hemionus*	Big game	Uses dense conifer forests with sufficient cover for thermal regulation and resting. Also may be found in pockets of dense brush or trees and rugged, broken terrain. Seasonal migration occurs.	X		X	X	X		X			X	118,028
Raccoon	*Procyon lotor*	None	Habitat generalist that traditionally prefers heavily wooded areas with access to trees, water, and vegetation. Often found in urban and suburban environments.		X			X		X		X	X	129,925
Small rodents (mice, voles, etc.)	Various	None	Large group of small mammals that are habitat generalists and provide prey for other species such as raptors, great blue heron, and badger.	X	X	X	X	X	X	X		X	X	128,590
Striped skunk	*Mephitis mephitis*	None	Habitat generalists, particularly associated with open areas with a mix of habitats such as wooded areas, grasslands, or meadows. Usually in close proximity to a source of water.		X		X	X		X			X	7,682
Virginia opossum	*Didelphis virginiana*	None	Habitat generalist, ranging from wooded areas to open fields. Prefers environments near streams or wetlands. Shelters in burrows of other animals, tree cavities, brush piles, or other cover.		X			X		X		X	X	12,925

1. AP = Agricultural production; DEV = Developed; FG = Fallow, recently grazed; FV = Fallow vegetated; RIP = Riparian corridor; SBB = Sagebrush-bitter-brush shrub; WRS = Willow–rose shrub thicket; OW = Open water; WET = Wetlands; OTH = Other
2. LSAA = Landscape-scale analysis area. Not including “Other.” The Other habitat category was removed from the species habitats because it includes such a wide range of habitats that it is not valuable for the analysis.

Penstemon Solar Project Site
Twelve bird species were observed at the Penstemon Solar Project site during the April 2017 field survey. The majority of the species were observed in the riparian corridor habitat. An active red-tailed hawk nest was observed southeast of the southeast site corner, in a cottonwood tree along Coleman Creek.

The Yakima River is located 2.54 miles west of the Penstemon Solar Project site, and the nearest area that is only minimally inhabited by humans is 3.31 miles south of the project site. Of all the solar project sites, the Penstemon Solar Project site is furthest from less-inhabited areas, but migratory species (e.g., deer and coyote) still forage or hunt on and travel through the project site.

Typha Solar Project Site
Twenty-two bird species were observed at the Typha Solar Project site during the April 2017 field survey. The majority of the species were observed in the open water, riparian corridor, and wetland habitats. A documented great blue heron breeding area is 224 feet east of the site, on a landform within the Yakima River. The floor of the barn, located south of the southwest corner of the site, was littered with owl pellets and the rafters contained whitewash.

The Yakima River, located adjacent to the northeast corner of the Typha Solar Project site, is a fish-bearing stream containing coho salmon (*Oncorhynchus kisutch*), mountain sucker (*Catostomus platyrhyncus*), rainbow trout, and Westslope cutthroat trout (*O. clarki lewisi*).

The Yakima River is located directly east of the Typha Solar Project site, and the nearest area that is only minimally inhabited by humans is 2.57 miles southwest of the project site. Because of the site's proximity to these less-inhabited areas, migratory species (e.g., deer and coyote) forage or hunt on and travel through the project site.

Typha Solar Project Generation Tie Line
The same bird species were observed along the Typha Solar Project generation tie line during the April 2017 field survey as were observed at the Typha Solar Project site.

The Yakima River is located 0.25 mile east of the Typha Solar Project generation tie line, and the nearest area that is only minimally inhabited by humans is 2.35 miles southwest of the tie line.

Urtica Solar Project Site
Eighteen bird species were observed at the Urtica Solar Project site during the April 2017 field survey. The majority of the species were observed in the open water, riparian corridor, and wetland habitats.

During an April 12, 2017, site visit, WDFW biologists stated that McCarl Creek is likely fish bearing. In the past, the landowner has stocked the ponds with triploid rainbow trout. A Canada goose was observed nesting near the ponds.

The Yakima River is located 0.19 mile northeast of the Urtica Solar Project site, and the nearest area that is only minimally inhabited by humans is 1.02 miles southwest of the project. Because of the site's proximity to these less-inhabited areas, migratory species (e.g., deer and coyote) forage or hunt on and travel through the project site.

Construction Impacts to Fish and Wildlife

General County

Potential impacts to fish and wildlife may result from construction of the five Columbia Solar Projects. Ground disturbance, vegetation clearing, and noise could result in temporary displacement of wildlife

species present in the project-scale analysis areas during construction. Some species, such as small rodents, snakes, and insects, could be affected by the ground-disturbing activities due to temporary habitat alteration and could suffer mortalities from direct contact with construction equipment. More commonly, wildlife would be displaced to adjacent habitat areas. The effects from ground disturbances during construction would be considered low, with respect to common wildlife species, all of which can be expected to have robust populations that would be minimally affected by the temporary and localized construction activities associated with the solar projects. Section B.5.d below details the proposed Columbia Solar Projects' BMPs and mitigation measures that would reduce or minimize the potential for impacts to vegetation, fish, and wildlife.

Table 10 shows the types of habitats used by the representative species analyzed for the Columbia Solar Projects. Table 11 shows the amount of representative habitat used by these species (within the landscape-scale analysis area) that would be impacted by the fenced and impervious areas of the Columbia Solar Projects (all sites combined). These species were chosen to represent wildlife that are likely to occur in the project-scale analysis areas. Not all species listed in Table 10 are listed here (the bald eagle and Columbia spotted frog are discussed below in Impacts to Special-status Species). For most species, up to 1% of the available habitat used by that species (within the landscape-scale analysis area) would be affected from solar project fencing or conversion to impervious areas. As a result, there would no impacts to fish (because of setbacks from water bodies), and there would be minor permanent impacts to wildlife.

Table 11. Acres of Representative Species Habitat (in the Landscape-scale Analysis Area) Impacted by Fencing and Conversion to an Impervious Area of the Columbia Solar Projects

Representative Species	Habitat Available in Landscape-scale Analysis Area[1]	Fenced Area		Impervious Area	
		Acres	Percent of Available Habitat	Acres	Percent of Available Habitat
Birds					
Canada goose	129,395	223	<1%	11	<1%
Great blue heron	124,586	214	<1%	10	<1%
Great horned owl	123,339	213	<1%	10	<1%
Killdeer	129,833	222	<1%	12	<1%
Northern Harrier	123,781	214	<1%	11	<1%
Red-tailed hawk	120,470	219	<1%	12	<1%
Sandhill Crane	124,586	214	<1%	10	<1%
Fish					
Bull trout	1,247	1	<1%	0	<1%
Dace species	6,562	2	<1%	0	<1%
Spring chinook (Upper Columbia River)	1,247	1	<1%	0	<1%
Steelhead (Middle Columbia River)	1,247	1	<1%	0	<1%
Summer steelhead (Upper Columbia River)	1,247	1	<1%	0	<1%
Herptiles					
Pacific treefrog	124,496	177	<1%	9	<1%
Sharp-tailed snake	8,116	2	<1%	0	<1%
Mammals					
American badger	115,665	212	<1%	11	<1%
Coyote	123,271	221	<1%	12	<1%

Representative Species	Habitat Available in Landscape-scale Analysis Area[1]	Fenced Area		Impervious Area	
		Acres	Percent of Available Habitat	Acres	Percent of Available Habitat
Mule deer	118,028	214	<1%	10	<1%
Raccoon	129,925	11	<1%	1	<1%
Small rodents (mice, voles, etc.)	128,590	223	<1%	12	<1%
Striped skunk	7,682	45	<1%	3	1%
Virginia opossum	12,925	11	<1%	1	<1%

1. The "Other" habitat category was removed from the species habitats because it includes such a wide range of habitats that it is not valuable for the analysis.

Solar Project Sites

Camas Solar Project Site
If nesting activity is observed at the red-tailed hawk nest or the barn (used by owls), then a 0.25-mile seasonal construction avoidance buffer may be requested by WDFW until the young have fledged.

Fumaria Solar Project Generation Tie Line
If nesting activity is observed at the red-tailed hawk and a great horned owl nests, then a 0.25-mile seasonal construction avoidance buffer may be requested by WDFW until the young have fledged.

Penstemon Solar Project Site
If nesting activity is observed at the red-tailed hawk nest, then a 0.25-mile seasonal construction avoidance buffer may be requested by WDFW until the young have fledged.

Typha Solar Project Site
The great blue heron nesting season is February through September. WDFW may request a seasonal avoidance buffer during the first half of the season, i.e., February through May. If owl nesting activity is observed at the barn, then a 0.25-mile seasonal construction avoidance buffer may be requested by WDFW until the young have fledged.

Urtica Solar Project Site
No nests were documented in the Urtica Solar Project project-scale analysis area, but a Canada goose was displaying nesting behavior. If construction occurs between March 1 and August 1, nest surveys would take place to ensure new nests have not been built.

Operation Impacts to Fish and Wildlife

Potential impacts to fish and wildlife may result from operation of the five Columbia Solar Projects. Long-term effects of the solar projects would be limited to the long-term modification of habitat in each project-scale analysis area (i.e., fencing or conversion of habitat to impervious surfaces). Table 11 summarizes the acres of habitat for representative species that may be affected by the long-term operation of the Columbia Solar Projects (i.e., from fencing and conversion to impervious areas). Each site would be visited minimally by humans for maintenance, resulting in permanent minimal impacts due to human noise and activity.

Cumulative Impacts to Fish and Wildlife

Historically, Kittitas County land use has been dominated by agriculture. Renewable energy facilities (i.e., wind and solar) have recently been built and proposed. Currently there are two existing solar farms and four completed wind farms in the county. Three additional solar farms and two wind farms are in the

proposal/approval process. Most of these facilities are generally located along the Interstate 90 (I-90) corridor.

Impacts cumulative with other energy facilities include a landscape-scale pattern of habitat removal and fragmentation. This pattern displaces wildlife into other areas that may be of lesser quality, such as developed areas. Fragmentation can disrupt movement patterns, whether on a migratory or local scale.

Post-construction restoration and noxious weed control for the Columbia Solar Projects would replace a weedy vegetation cover type with native plant species in all temporarily disturbed areas (see Table 9 for noxious weed prevalence at each site; all sites currently are principally vegetated by noxious and non-native plant species). These areas would be reseeded with an appropriate mix of native plant species as soon as possible after construction is completed, minimizing the amount of habitat that is permanently removed and thereby reducing cumulative habitat removal.

Fragmentation to riparian corridors would be avoided by the designed inclusion of the waterbody setback distances. Additional fragmentation would be minimized by constructing as few new access roads as possible for the Columbia Solar Projects. Instead, existing roads and trails would be improved and used.

Affected Environment for Special-status Species

General County

See Section B.5.b below for further discussion of threatened and endangered species. The WDFW PHS mapper, which lists sensitive wildlife species and habitats within the five proposed Columbia Solar Project sites, was accessed. Table 12 lists state-listed species that have the potential to occur in the proposed solar project sites, and is followed by a brief discussion of each one. As the PHS mapper is dependent on existing records of species, other sensitive species may occur in the vicinity of the solar project sites, if suitable habitat is present. Based on the existing condition of the sites as developed agricultural lands, it is unlikely that other sensitive species occur in the project-scale analysis areas.

Table 12. Special-status Species with Potential to Occur in the Columbia Solar Project Project-scale Analysis Areas

Common Name	Scientific Name	Status	Sites with Potential Occurrence	Likelihood to Occur in Project-scale Analysis Areas
Birds				
Bald eagle	*Haliaeetus leucocephalus*	Federal Candidate; MBTA and BGEPA Protected	Fumaria	High
Greater sage-grouse	*Centrocercus urophasianus*	Federal Candidate, State Threatened	Camas, Penstemon	Low
Sandhill crane	*Grus canadensis*	State Endangered	Camas, Fumaria, Penstemon, Urtica	Low

Common Name	Scientific Name	Status	Sites with Potential Occurrence	Likelihood to Occur in Project-scale Analysis Areas
Fish				
Bull trout	*Salvelinus confluentus*	Federal Threatened	Typha	None
Spring Chinook salmon (Upper Columbia River)	*Oncorhynchus tshawytscha*	Federal Endangered	Penstemon	None
Steelhead (Middle Columbia River)	*Oncorhynchus mykiss*	Federal Threatened	Typha	None
Summer Steelhead (Upper Columbia River)	*Oncorhynchus mykiss*	Federal Threatened	Penstemon	None
Herptiles				
Columbia spotted frog	*Rana luteiventris*	State Candidate	Camas, Penstemon	High
Sharp-tailed snake	*Contia tenuis*	State Candidate	Camas, Fumaria	Low
Invertebrates				
Giant Palouse earthworm	*Driloleirus americanus*	State Candidate		Low

Bald Eagle

The bald eagle is a Federal Species of Concern, in addition to being Bald and Golden Eagle Protection Act (BGEPA)- and MBTA-protected. They are habitat generalists, typically associated with aquatic habitats, preferring forested areas that surround fish-bearing lakes and rivers. The PHS mapper did not document any bald eagle occurrences in the Columbia Solar Project analysis areas, but eagles were observed during the field survey at the Fumaria and Penstemon Solar Project sites. Both sites are within 3 miles of the Yakima River (potential nesting habitat). Bald eagles are also scavengers, and calves were observed near both sites; it is likely that the observed eagles were scavenging afterbirth in the vicinity of these sites.

Greater Sage-grouse

The greater sage-grouse (*Centrocercus urophasianus*) is classified as a Federal Candidate by U.S. Fish and Wildlife Service (USFWS) and a State Threatened species by WDFW. According to the PHS mapper, an occurrence of this species was recorded within the township that includes the entire area of the proposed Camas and Penstemon Solar Project sites. However, the proposed sites do not fit the description for this species' preferred habitat. Therefore, it is unlikely that this species occurs within these two sites.

Sandhill Crane

The sandhill crane (*Grus canadensis*) is classified as a State Endangered species by WDFW. Klickitat and Yakima Counties hold the primary breeding grounds within the State of Washington for sandhill cranes.

Bull Trout

The bull trout (*Salvelinus confluentus*) is classified as a Federally Threatened species by USFWS. The bull trout has been documented in the Yakima River by PHS, SalmonScape, and StreamNet. In addition,

the part of the Yakima River that is adjacent to the Typha Solar Project site contains designated critical habitat for bull trout.

Chinook Salmon and Steelhead
The Upper Columbia River Spring Chinook and Summer Steelhead are classified as Federally Endangered and Federally Threatened, respectively, by the National Marine Fisheries Service (NMFS). Both the Upper Columbia River Spring Chinook and Upper Columbia River Summer Steelhead have been documented in Coleman Creek along the eastern boundary of the Penstemon Solar Project site, by PHS, SalmonScape, and StreamNet. In addition, the part of Coleman Creek adjacent to the Penstemon Solar Project site contains designated critical habitat for the Upper Columbia River Steelhead. The Middle Columbia River Steelhead has been documented in the Yakima River by PHS, SalmonScape, and StreamNet. In addition, the part of the Yakima River that is adjacent to the Typha Solar Project site contains designated critical habitat for Middle Columbia River Steelhead.

Columbia Spotted Frog
The Columbia spotted frog is classified as a State Candidate species by WDFW. According to the PHS mapper, an occurrence of this species was recorded within 300 feet of the proposed Camas Solar Project site in a waterway to the northeast, and within 1 mile of the proposed Penstemon Solar Project site in a waterway to the southeast. Egg masses from this species were observed at the Typha and Penstemon Solar Project sites during the April 3 to 12, 2017, field surveys. A pre-construction clearance survey may be recommended by WDFW for developments in or near potential spotted frog habitat, but since current plans are to buffer and avoid water bodies, this is unlikely to be necessary.

Sharp-Tailed Snake
The sharp-tailed snake is classified as a State Candidate species by WDFW. According to the PHS mapper, an occurrence of this species was recorded within the quarter-township that includes the entire area of the proposed Camas and Fumaria Solar Project sites (WDFW 2017a). However, the proposed sites do not fit the description for this species' preferred habitat. Therefore, it is unlikely that this species occurs within these two project sites.

Giant Palouse Earthworm
The only special-status invertebrate species known to occur in Kittitas County is the giant Palouse earthworm (*Driloleirus americanus*), a State Candidate species. Known habitats for this species include deep, loamy soils characteristic of the Palouse bunchgrass prairies, and gravelly sandy loam or other rocky soils in forested areas. They have been observed in open forest, shrub-steppe, and prairie habitats and are typically associated with native vegetation.

Solar Project Sites

Camas Solar Project Site
During a site visit to the Camas Solar Project site on April 12, 2017, WDFW biologists stated that Little Naneum Creek could provide anadromous salmon and steelhead habitat.

A review of the PHS database showed that the Camas Solar Project site is located within a township known to support greater sage-grouse, a State Threatened and Federal Candidate species. Greater sage-grouse are closely associated with large uninterrupted areas of sagebrush, native bunchgrasses, wildflowers, and wet meadows. Because the site does not provide this type of habitat, greater sage-grouse are unlikely to occur in this project-scale analysis area.

The Camas Solar Project site also has historic habitat for Columbia spotted frog, a State Candidate species.

Fumaria Solar Project Site
Also observed during the April 12 WDFW site visit, a bald eagle, a federal species of concern, was perched in the riparian habitat along Reecer Creek, within the 500-meter Fumaria Solar Project project-scale analysis area (at the generation tie line northernmost crossing of Reecer Creek).

Reecer Creek is known to be fish bearing, containing rainbow trout.

A review of the PHS database showed that the Fumaria Solar Project site is located within a quarter-township known to support sharp-tailed snake, a State Candidate species. Sharp-tailed snake can occur in a wide variety of habitats, but are most commonly associated with wetter soils in coniferous or mixed woodland forests. Because this site does not provide this type of habitat, sharp-tailed snake are unlikely to occur in this project-scale analysis area.

Fumaria Solar Project Generation Tie Line
Reecer Creek, which is crossed several times by the Fumaria Solar Project generation tie line, is known to be fish bearing, containing rainbow trout.

Penstemon Solar Project Site
A review of the PHS database showed that the Penstemon Solar Project site is located within a township known to support greater sage-grouse, a State Threatened and Federal Candidate species. Greater sage-grouse are closely associated with large uninterrupted areas of sagebrush, native bunchgrasses, wildflowers, and wet meadows. Because the site does not provide adequate greater sage-grouse habitat, they are unlikely to occur in this project-scale analysis area. A bald eagle, a federal species of concern, flew over the project site during the April 2017 field survey, likely traveling to the Yakima River.

Coleman Creek is known to be fish bearing, containing anadromous steelhead and Chinook salmon, and resident rainbow trout.

Additionally, several egg masses, thought to be from Columbia spotted frog, were observed in an irrigation ditch that connects with Coleman Creek south of the southeast corner of the Penstemon Solar Project site.

Typha Solar Project Site
The Yakima River contains four ESA-listed species: bull trout, Spring Chinook (Upper Columbia River), Steelhead (Middle Columbia River), and Summer Steelhead (Upper Columbia River).

Two egg masses, thought to be from Columbia spotted frog, were observed in TW04, a wetland located along the southern boundary of the Typha Solar Project site.

Typha Solar Project Generation Tie Line
No special-status species occurrences, other than those discussed for the Typha Solar Project site, are known within the project-scale analysis area for the Typha Solar Project generation tie line.

Urtica Solar Project Site
During a site visit to the Urtica Solar Project site on April 12, 2017, WDFW biologists stated that McCarl Creek could provide anadromous salmon and steelhead habitat.

Construction Impacts to Special-status Species

The proposed Columbia Solar Projects have the potential to minimally impact the following special-status wildlife species:

- Bald eagle (BGEPA- and MBTA-protected; Federal Species of Concern)
- Columbia spotted frog (Washington State Candidate)

No other special-status species described above has the potential to be impacted by the Columbia Solar Projects.

Bald eagles were incidentally observed during ground surveys near the Fumaria and Penstemon Solar Project sites, and are likely present throughout the project-scale analysis areas. If nests are present in the project vicinity, they have the potential to be affected by noise and visual disturbances during construction. No bald eagle nests have been identified near the solar project sites; if nests are identified near the sites, construction outside of the critical use period (January 1–May 31) is recommended. If construction near active bald eagle nests might occur during the critical use period, local USFWS biologists would be consulted. No aerial nest surveys were conducted.

Columbia spotted frog is known to occur near the Typha, Camas, and Penstemon Solar Project sites, and could be affected by construction and operation in and around ponds and canals that provide breeding habitat. To avoid impacts to aquatic and semi-aquatic species, setback distances from aquatic habitats would be incorporated into the site plans, and appropriate erosion and sediment control measures would be implemented to protect wetlands and streams from sediment and other contaminants.

Recommended mitigation measures for special-status species are described below in Section B.5.d.

Operation Impacts to Special-status Species

For all sites combined, approximately 2 acres of bald eagle habitat and 3 acres of Columbia spotted frog habitat would be fenced (a minor temporary impact, due to the construction activity that would occur within this habitat). Except for the 9.78 acres of impervious surfaces that would remove 0.07 acre and 0.11 acre of available bald eagle and Columbia spotted frog habitat (a minor permanent impact), respectively, no long-term operational impacts to special-status species would occur from the five Columbia Solar Projects.

b. List any threatened and endangered species known to be on or near the site.

Threatened and Endangered Animal Species

Federal and state online databases were accessed to obtain current lists of sensitive species that may occur in or near the Columbia Solar Projects project-scale analysis areas, including the USFWS Information for Planning and Consultation (IPaC) system. The USFWS IPaC database provides county-level lists of ESA-listed species, including species proposed or candidates for listing, and designated critical habitat within a defined project area. No ESA-listed species are anticipated to be affected by the proposed solar projects. No state- or federally listed threatened or endangered species were observed in the Columbia Solar Projects project-scale analysis areas during the April 2017 field survey.

c. Is the site part of a migration route? If so, explain.

Migration Routes

The five Columbia Solar Projects would not affect any identified big game migratory corridors or migratory flyways.

The Columbia Solar Project sites are within 2.5 miles of the Yakima River and 3.5 miles of areas that are only minimally inhabited by humans. Because all of the sites are near these less-inhabited areas, migratory species (e.g., deer and coyote) forage or hunt on and travel through the sites. From initiation of construction (with its associated human activity and noise) through long-term operation (with the planned fencing of the sites), 223 fenced-in acres (not the entire 232 leased acres) comprising the solar project sites would no longer be available to migratory species such as deer (coyote may still use the sites). However, there are 317,997 acres within the landscape-scale analysis area that would still be available to these migratory species, so this would not be a significant impact.

The potential impacts to migratory species from the proposed Fumaria and Typha Solar Project generation tie lines would be the temporary disturbance and the species' avoidance of the human noise and activity during construction of the proposed lines. This would not be a significant impact because these species could use the remainder of the landscape-scale analysis area during this temporary construction season (estimated at 8 months). There would be no long-term impacts to migratory species from the presence of the proposed generation tie lines.

d. Proposed measures to preserve or enhance wildlife, if any:

Wildlife Protection Measures

Throughout this section, the term "mitigation" refers to avoidance and minimization measures. No compensatory mitigation is proposed for this project, as impacts are not expected to be significant. Mitigation would remain consistent with the WDFW POL-M5002.

Water body setbacks are listed by solar project site in Section 4.b, Vegetation Altered.

Buffers and Seasonal Timing

Migratory Birds and Bald and Golden Eagles
To ensure compliance with MBTA, vegetation clearing would ideally be undertaken from August 1 through the end of February. If construction or vegetation clearing is required between March 1 and August 1, nest surveys would be required in the proposed area of disturbance. If active migratory bird nests are encountered during the surveys, land-disturbing construction activities should be avoided while the birds are allowed to fledge. An appropriate species avoidance buffer, as determined in conjunction with WDFW and local agencies, would apply to all active nests for migratory bird species.

The project-scale analysis areas have the potential to provide nesting habitat to raptors and bald and golden eagles. All raptor species are protected under the MBTA, and bald and golden eagles are additionally protected under the BGEPA. If active raptor nests occur within 0.25 mile of the solar project construction activities, noise and construction activities could disturb nesting and fledgling raptors, potentially causing nest abandonment. Based on WDFW guidance, a nest survey within 0.25 mile of construction activities would be conducted within the same year that construction is scheduled, to determine whether nests could be occupied during construction. The nesting seasons vary by species as shown in Table 13. WDFW's 0.25-mile buffer is inclusive of the distance recommended by the National Bald Eagle Management Guidelines), which specifies a 660-foot (0.125-mile) buffer of active eagle nests.

If active raptor nests are observed, then TUUSSO would coordinate with WDFW to determine approaches to minimize disturbance to the nesting raptors. Buffer distances and timing restrictions would collaboratively be developed by WDFW and TUUSSO, dependent upon the sound levels produced by the construction equipment and the sensitivity of the nesting raptors.

Table 13. Nesting Seasons for Raptor Species Likely to Occur in the Analysis Areas

Species	Nesting Season
Bald eagle	January 1–August 31
Golden eagle	January 1–August 31
Red-tailed hawk	March 15–June 30
Great horned owl	February 1–May 15
Swainson's hawk	April 15–July 31

Source: Personal communication with Scott Downes, WDFW Habitat Biologist, 2017.

Riparian Corridors

Rivers and streams in Kittitas County are classified according to the Washington State stream typing system, as defined in WAC 222-16-030. Ecology and the Washington Department of Natural Resources (DNR) recognize the WAC stream typing system. Kittitas County has established riparian habitat buffer ranges for each stream type to reflect the impact of certain intense land uses on riparian habitat functions and values. The performance standard buffers are defined in KCC 17A.070.010.

Table 5 shows the surface waters that were identified in the project-scale analysis areas, their DNR stream type, and the applicable buffers. See Table 6 for recommended buffer and setback distances from the wetlands identified within the sites.

To additionally protect riparian corridors and habitats, it is recommended that peak construction activities be conducted during the dry season as much as possible, to minimize erosion, sedimentation, and soil compaction. If any in-water work is required for construction of access roads, construction in fish-bearing streams would need to occur during agency-approved work windows.

Noise

Most construction activities would take place between the hours of 7 a.m. and 10 p.m. and be conducted in accordance with local noise ordinances, including but not limited to KCC 9.45.010: Public Disturbance noises. Additionally, all noise generating construction activities would be conducted between the hours of 7 a.m. and 10 p.m., in accordance with WAC 173-60-050. These practices would avoid night-time noise disturbances to wildlife species. Construction noise is exempt from regulation under the statewide noise standards, WAC 173-60.

Other Mitigation Measures

Additional mitigation measures and BMPs to protect fish and wildlife in the project-scale analysis areas could include the following:

Design and Construction Techniques

- Avoid, when possible, construction in sensitive areas such as riparian zones and wetlands.
- Flag sensitive habitat areas (e.g., raptor nests, wetlands, etc.) near proposed areas of construction activity, and designate such areas as off limits to all construction personnel.
- During the nesting season, monitor raptor nests within 0.25 mile of the sites for nesting activity; coordinate construction timing and activities with WDFW to avoid impacts to nesting raptors.

- Minimize new road construction by improving and using existing roads and trails, instead of constructing new roads.
- Develop and implement a Fire Control Plan, in coordination with local fire districts, to minimize the risk of accidental fires during construction, and respond effectively to any fire that does occur.
- Designate an environmental monitor during construction to monitor construction activities and ensure compliance with mitigation measures.
- Implement a trenching protocol during the installation of underground electrical facilities, to allow for conservation of surface soils.
- Require construction personnel to avoid driving over or otherwise disturbing areas outside of the designated construction areas.
- Properly store and manage all wastes generated during construction.
- Use certified weed-free straw bales during construction to avoid introduction of noxious or invasive weeds.
- There would be one straight row of barbed wire, not circular barbed wire, at the top of the perimeter fence. This would avoid birds becoming trapped in circular barbed wire.
- For poles installed by TUUSSO, when feasible:
    - equip overhead power lines with raptor perch guards to minimize risks to raptors and
    - space overhead power line conductors to minimize potential for raptor electrocution.

Erosion and Sediment Control

- Use BMPs to minimize construction-related surface water runoff and soil erosion.
- Implement temporary erosion and sediment control measures, as appropriate, both during and after construction.
- Flag sensitive habitat areas (e.g., riparian zones, wetlands, etc.) near proposed areas of construction activity, and designate such areas as off limits to all construction personnel.
- Limit disturbances to the minimum necessary when working in or near waterbodies and install stakes or flagging to restrict vehicles and equipment to designated routes and areas.
- Delineate construction limits within 200 feet of waterbodies, as specified in the SWPPP, with a sediment fence, straw wattles, or similarly approved methods to eliminate sediment discharge into waterways and wetlands, minimize the size of construction disturbance areas, and minimize removal of vegetation, to the greatest extent possible.

Restoration and Noxious Weed Control

- Quickly revegetate habitats temporarily disturbed during construction with native plant species.
- Reseed all temporarily disturbed areas with an appropriate mix of native plant species as soon as possible after construction is completed, to accelerate the revegetation of these areas and to prevent the spread of noxious weeds.

Wildlife Habitat Enhancement Measures

Restoration and Noxious Weed Control

- Consult with WDFW regarding the appropriate native seed mixes to include in the Vegetation Management Plan for revegetation of the solar project sites.
- As further detailed in the Vegetation Management Plan, implement noxious weed control measures.
- Develop a noxious weed control plan prior to construction, and implement the plan over the life of the project. Herbicide application could be a noxious weed control method used.

e. List any invasive animal species known to be on or near the site.

Invasive Animal Species

Information regarding the State's 50 priority invasive species was reviewed to determine whether invasive animal species have the potential to occur on or near the Columbia Solar Project sites. None of the priority terrestrial and aquatic animals listed were observed on or near the project sites. Bullfrog (*Rana catesbeiana*) could occur in the vicinity of the project sites. Nutria (*Myocastor coypu*) and African clawed frog (*Xenopus laevis*) may occur, but it is unlikely. It is possible that all of the infectious animal diseases are present in the vicinity of the project sites; these include amphibian and fish diseases and white nose syndrome which affects bats. Because the proposed project avoids impacts to aquatic habitats, it would not lead to further spread of these invasive aquatic animal species and infectious amphibian and fish diseases. Because the proposed project infrastructure would not contribute to white nose syndrome, it would not contribute to the spread of this disease.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Minimal amounts of electricity, natural gas or propane, and gasoline or diesel fuel, readily available from commercial businesses in Ellensburg, would be used during construction of the Columbia Solar Projects. Thus, no impacts are anticipated to the demand on or supplies of those energy sources in the Ellensburg area.

Because the Columbia Solar Projects would generate up to 5 MW each during operation (for a total of 25 MW), no electricity would be used and no impacts would occur. Gasoline and diesel fuel used for operational vehicles would be purchased from local gas stations. Lubricating oils, grease, and hydraulic fluids used for maintenance would be purchased from distributors of such materials. In all cases, quantities would be minimal and readily available from existing commercial businesses in the Ellensburg area so there would be no impacts on the availability of these resources.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Because the five Columbia Solar Projects are solar PV facilities using a typical design for such facilities, they not only would not affect any potential use of solar energy on adjacent properties, they would be compatible with development of any other potential solar facilities.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Because the Columbia Solar Projects would use minimal sources of energy (e.g., electricity, natural gas or propane, and gasoline or diesel fuel) during construction, and would generate electricity during operation, no energy conservation or mitigation measures are proposed.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

Because there would be minimal amounts of fossil fuels transported, stored, or used to operate equipment during construction, there would be no potential impacts from explosions.

Unlike thermal power plants, solar power projects pose a much smaller risk of accidental fires or explosions because there is no need to transport, store, or combust fossil fuels to generate electricity. The Columbia Solar Projects also would be designed to comply with the National Electric Code (NEC) and the National Fire Protection Agency (NFPA) requirements, to avoid potential electrical fire risks. A strict Fire Prevention and Safety Plan would be developed and enforced during project construction and operation, to reduce and address potential fire risks.

As with any major developments, construction of the Columbia Solar Projects presents some minimal fire risks. Each of the project sites is currently farmed agricultural land, mostly for hay production or grazing. Fumaria is the only fallow agricultural field (not recently grazed) at this time. Thus the predominant groundcover is non-native grasses and weeds, with the greatest fire risks being associated with grass fires during the hot, dry summer season. TUUSSO would maintain the vegetation at or below 12 inches in height to mitigate the risk of fire. TUUSSO has also initiated discussions with the Kittitas County Fire Marshal about potential fire issues, locations and dimensions of access gates and internal access roads, and other issues. A Fire Protection and Safety Plan would be developed and implemented prior to construction, in coordination with the Kittitas County Fire Marshal and other appropriate agencies.

1) Describe any known or possible contamination at the site from present or past uses.

Phase I environmental site assessments were conducted for each of the five Columbia Solar Project sites in February 2017. These assessments revealed that there was no evidence of contamination or recognized environmental conditions in connection with any of the five solar project properties.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

The Fumaria, Penstemon, Typha, and Urtica Solar Project sites do not have any existing hazardous chemicals/conditions, including underground hazardous liquid or natural gas transmission pipelines, that might affect project development and design. The Camas Solar Project site has an underground natural gas pipeline crossing from northeast to southwest across the site. TUUSSO has coordinated with the pipeline owner, and the Camas Solar Project has been designed with appropriate buffers to avoid impacts to that pipeline.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Minimal amounts of petroleum fuels (e.g., gasoline and diesel) and lubricating oils would be transported, stored, or used to operate equipment during construction and operation on the five Columbia Solar Project sites.

4) Describe special emergency services that might be required.

A Fire Protection and Safety Plan would be developed and implemented prior to construction, in coordination with the Kittitas County Fire Marshal, Fire District No. 2/Kittitas Valley Fire and Rescue, Fire District No. 1, and other appropriate agencies. TUUSSO would coordinate with Fire District No. 2/Kittitas Valley Fire and Rescue and Fire District No. 1 to provide PV training to fire responders and construction staff. The intent of this training would be to familiarize both responders and workers with the codes, regulations, associated hazards, and mitigation processes related to solar electricity. This training also would include techniques for fire suppression of PV systems.

5) Proposed measures to reduce or control environmental health hazards, if any:

Construction equipment would have spark-arresting mufflers, heat shields, and other protection measures to avoid starting fires. Fire extinguishers would be available in vehicles and on equipment, to quickly address any accidental fire issues. Work crews also would be trained about fire avoidance and response measures.

If a fire were to occur, water would be available on-site that could be applied to the fire. For the Camas, Penstemon, Typha, and Urtica Solar Project sites the water sources are already available on-site. For the Fumaria Solar Project site, water would be trucked onto the site from the Ellensburg area.

As a result of the above fire avoidance measures and ability to respond on-site to potential fires, the risks of and potential impacts from on-site fires during construction and operation of the five Columbia Solar Projects would be minimal.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Types of noise in the area includes vehicular traffic from I-90, airplanes traveling to the nearby Bowers Field airport, and farm equipment (e.g., tractors) used to grow and harvest crops and to raise cattle and other farm animals.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

The long-term operational noise for the Columbia Solar Project would primarily be generated by the SGI 500XTM inverters at each site. The SGI 500XTM inverter has a sound level rating of 67 A-weighted decibels (dBA) at 10 meters. There would be about ten SGI 500XTM inverters on each project site. The facilities would not emit any noise at night.

Construction noise would consist of the operation of various on- and off-road construction equipment. The maximum noise levels for common construction equipment are given in Table 14.

Table 14. Maximum Noise Levels for Common Construction Equipment

Equipment Type	Typical Maximum Noise Levels at 10 Feet (dBA)	Typical Maximum Noise Levels at 50 Feet (dBA)
Backhoes	92	78
Bulldozers	96	82
Crane	95	81
Concrete Mixer Truck	93	79
Drill Rig	98	84
Drum Rollers	94	80
Dump Trucks	91	77
Graders	99	85
Excavators	95	81
Construction Pickup/Water/Fuel Truck	89	75
Delivery Truck	88	74
Tractor	98	84
Vibratory Pile Driver	115	101

3) Proposed measures to reduce or control noise impacts, if any:

Construction would take place within the hours of 7:00 a.m. to 10:00 p.m.

Preliminary estimations of the operational noise levels at the Camas Solar Project property boundary exceed the Washington State Noise Maximum. Post-construction noise monitoring would be conducted at the Camas Solar Project site and any further mitigation, such as installing a noise-mitigating barrier, would be completed to comply with the noise standard.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Each of the Columbia Solar Project sites is existing farmland, and is surrounded by other farmland. The size, use, and potential land use impacts of each site are described below.

Camas Solar Project Site

The Camas Solar Project site is 51.21 acres of active agricultural land, growing alfalfa, and representing 0.02% of the 291,614 acres of lands specifically designated as Commercial Agricultural land uses in the county's comprehensive plan. Because of the minimal percentages of effect and the fact that it would be an allowed conditional use, the Camas Solar Project would have no construction or operational impacts to land use in the county.

Fumaria Solar Project Site

The Fumaria Solar Project site is 35.24 acres of fallow agricultural land, representing 0.01% of the 329,982 acres of lands specifically designated as Rural Working land uses in the county's comprehensive plan. Because of the minimal percentages of effect and the fact that it would be an allowed conditional

use, the Fumaria Solar Project would have no construction or operational impacts to land use in the county.

Penstemon Solar Project Site

The Penstemon Solar Project site is 39.38 acres of active agricultural land, growing Sudangrass, and representing 0.01% of the 291,614 acres of lands specifically designated as Commercial Agricultural land uses in the county's comprehensive plan. Because of the minimal percentages of effect and the fact that it would be an allowed conditional use, the Penstemon Solar Project would have no construction or operational impacts to land use in the county.

Typha Solar Project Site

The Typha Solar Project site is 54.29 acres, primarily consisting of irrigated agricultural land being used for grazing pasture, and representing 0.02% of the 291,614 acres of lands specifically designated as Commercial Agricultural land uses in the county's comprehensive plan. Because of the minimal percentages of effect and the fact that it would be an allowed conditional use, the Typha Solar Project would have no construction or operational impacts to land use in the county.

Urtica Solar Project Site

The Urtica Solar Project site is 51.94 acres, primarily consisting of active agricultural land growing common timothy hay, and representing 0.02% of the 329,982 acres of lands specifically designated as Rural Working land uses in the county's comprehensive plan. Because of the minimal percentages of effect and the fact that it would be an allowed conditional use, the Urtica Solar Project would have no construction or operational impacts to land use in the county.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

Construction of the Columbia Solar Projects would represent a conversion of the roughly 232 acres of leased properties currently used for agricultural hay production and grazing, to use as solar electricity generation facilities for the approximate 30-year lives of the solar projects. Of that total, 144.9 acres are designated as Commercial Agricultural land uses and 87.2 acres are designated as Rural Working land uses. Conversion of those lands to solar facilities would represent only:

- 0.05% of the 291,614 acres of lands specifically designated as Commercial Agricultural land uses in the county's comprehensive plan;
- 0.03% of the 329,982 acres of lands specifically designated as Rural Working land uses in the county's comprehensive plan;
- 0.13% of the total 183,124 acres of farmlands in Kittitas County; and
- 0.34% of the 68,314 acres of total croplands in Kittitas County.

Because of the minimal percentages of effects and the fact that they would be allowed conditional uses, the five Columbia Solar Projects would have no construction impacts to land uses in the county.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

None of the five Columbia Solar Projects would affect or be affected by any of the surrounding working farms during normal business operations. None of the projects would negatively impact or cause any changes in any existing, accepted farming practices, nor would they in any fashion cause or force changes in any farming operations or practices. Although some heavy construction equipment and materials would be hauled to the sites, they would have direct access to parking/staging areas on each solar project site and, thus, should not have impacts on area roads and access. None of the surrounding farming activities would affect the solar projects.

c. Describe any structures on the site.

The Fumaria, Penstemon, Typha, and Urtica Solar Project sites do not have any structures on them. The Camas Solar Project site has a barn on the northeastern part of the site and, because the solar project has been designed around the barn, it would not be affected by construction or operation of the project.

d. Will any structures be demolished? If so, what?

No structures would be demolished on any of the Columbia Solar Project sites.

e. What is the current zoning classification of the site?

The Kittitas County Comprehensive Plan established the policy framework for Kittitas County's legislative actions designating the land use zones for the five proposed Columbia Solar Project sites. The five sites would be located on lands zoned as either Commercial Agriculture or Rural Working – Agriculture 20. Within these zones, Kittitas County allows many non-agricultural land uses, including solar PV facilities, as permitted conditional uses of the land, subject to criteria that are intended to identify local, site-specific impacts that can be addressed through conditioned permits. These zones are described below.

Commercial Agriculture Land Use Zone

Per the Kittitas County Comprehensive Plan, the Commercial Agriculture land use zone "is an area wherein farming and ranching are the priority." The purpose of this zoning classification "is to preserve fertile farmland from encroachment by nonagricultural land uses and protect the rights of those engaged in agriculture." The Commercial Agriculture zone only allows for agricultural land use with no more than two residential dwellings per 20 acres. According to KCC 17.15.050.01, utilities, including "solar farms" as defined by KCC 17.61, are a permitted conditional use of a Commercial Agriculture zone.

Rural Working – Agriculture 20 Land Use Zone

Per the Kittitas County Comprehensive Plan, the Rural Working general land use designation "generally encourages farming, ranching and storage of agriculture products, and some commercial and industrial uses compatible with rural environment and supporting agriculture and/or forest activities." The purposes of the Rural Working designation are to:

- Provide preservation of agriculture activities where producers can live and work on their own lands separate from resource lands.
- Support the continuation, whenever possible, of agriculture, timber and mineral uses on lands not designated for long-term commercial significance.
- Provide some buffer between rural residential lands and resource lands.

- Provide areas of low intensity land use activities within the agriculture and forest activities.

Within the Rural Working general land use designation, the project sites are zoned Agriculture 20 (A-20). According to KCC 17.29.10, the A-20 zone "is an area wherein farming, ranching and rural life styles are dominant characteristics. The intent of this zoning classification is to preserve fertile farmland from encroachment by nonagricultural land uses; and protect the rights and traditions of those engaged in agriculture." According to KCC 17.15.060.1, utilities, including "solar farms" as defined by County Code 17.61, are a permitted conditional use within an A-20 zone.

Solar Project Sites

Camas Solar Project Site

The site would be located on land with a Commercial Agriculture land use designation, also zoned as Commercial Agriculture, and would be an allowed conditional use in that zone.

Fumaria Solar Project Site

The site would be located on land with a Rural Working land use designation, zoned as Agriculture 20 (i.e., Rural Working – Agriculture 20), and would be an allowed conditional use in that zone.

Penstemon Solar Project Site

The site would be located on land with a Commercial Agriculture land use designation, also zoned as Commercial Agriculture, and would be an allowed conditional use in that zone.

Typha Solar Project Site

The site would be located on land with a Commercial Agriculture land use designation, also zoned as Commercial Agriculture, and would be an allowed conditional use in that zone.

Urtica Solar Project Site

The site would be located on land with a Rural Working land use designation, zoned as Agriculture 20 (i.e., Rural Working – Agriculture 20), and would be an allowed conditional use in that zone.

f. What is the current comprehensive plan designation of the site?

Please refer to the responses to items a. and e., above, for the land use designations.

g. If applicable, what is the current shoreline master program designation of the site?

The nearest Shoreline of the State is located along the Yakima River within 200 feet of the Typha Solar Project eastern site boundary. The western edge of the Yakima River ordinary high water mark (OHWM) is between 35 feet and 200 feet from the eastern edge of the site boundary. All portions of the site within 200 feet of the OHWM of the Yakima River and within the NWI-mapped emergent wetland that extends into the southern portion of the site have a Shoreline Environment Designation (SED) of Rural Conservancy. This SED area partially overlaps wetlands TW01 and TW02, which would be avoided through project design, as well as areas delineated as uplands that would be within the Typha Solar Project area. The proposed project would overlap areas within the Shoreline of the State jurisdiction in two areas. The nearest project impact occurring within 200 feet of the Yakima River shoreline would overlap this shoreline area by only 0.19 acre and would consist of fence installations located at least 144

feet from the OHWM of the Yakima River and solar arrays located at least 154 feet from the OHWM of the Yakima River. The second area of overlap would be located at an existing access road crossing of wetland TW03, an associated wetland of the Yakima River that would be considered within Shoreline of the State jurisdiction, where a culvert replacement would result in approximately 0.01 acre of wetland fill. The Kittitas County Shoreline Master Program (SMP) designates an area that overlaps approximately 6.61 acres of the proposed project area as part of the Shoreline of the State based on NWI mapping; however, SWCA performed a professional wetland delineation throughout the entire site and found that wetlands associated with the Yakima River shoreline only occur in areas delineated as wetlands TW01, TW02, and TW03. Both wetlands TW01 and TW02 would be avoided through project design, and impacts to wetland TW03 would be limited to only 0.01 acre for the proposed culvert replacement for site access. In addition, the vegetation adjacent to the Yakima River would not be altered, and all of the areas of the project within 200 feet of the Yakima River shoreline would be planted with low-growing native plant species. Therefore, the proposed project would have minimal adverse effects on the shoreline of the Yakima River and would preserve the natural character of the shoreline. In addition, any adverse effects associated with the proposed project would be minimal and would not substantially affect the ecology and resources of the Yakima River shoreline.

The proposed Typha Solar Project would add less than 3% impervious surfaces to the property, including less than 10 square feet (based on approximately 16 solar array footings of 6- by 8-inch cross-section) for solar array footings and less than 700 square feet for the access road fill within wetland TW03 in areas within Shoreline of the State jurisdiction. These areas and the overall project would not result in a substantial increase in runoff. No shoreline protection work is proposed nor would be necessary to stabilize the shoreline for project purposes. The location of the proposed Typha Solar Project is on private land located west of a segment of the Yakima River that is not visible from properties immediately to the west of the site. The solar arrays on the proposed site would not exceed 8 feet in height and would not block any views of the Yakima River from adjoining properties. In addition, the associated generation tie line would be predominately located along existing power lines and would not substantially alter the current views nearby.

Solar generation facilities are an allowed conditional use on lands zoned Commercial Agriculture. As described in Section 1.16 of the ASC, the Typha Solar Project would be consistent with the Kittitas County Comprehensive Plan. The proposed project would limit grading activities as much as possible, utilizing existing site contours with limited ground disturbance. The project would operate under a maximum 41-year lease with the current landowner, after which the site may return to its current agricultural land use. In addition, the generation tie line would be located predominantly along existing power lines and would not affect any existing land uses along its route. The proposed Typha Solar Project is located on private land that currently does not allow public access to the Yakima River shoreline. Therefore, public access to the shoreline of the Yakima River and public recreational opportunities would not be affected by the proposed project.

Finally, based on the project design and impacts described above, the proposed Typha Solar Project would not destroy or obstruct scenic views of the Yakima River shoreline because of the private location of the property and topography of the surrounding landscape. In addition, the project would meet the no-net-loss standards of the Kittitas County SMP because the small areas of impact are either below the threshold for mitigation, in the case of the 0.01 acre of wetland fill, or would have a negligible impact with an improvement in vegetation quality, in the case of the 0.19 acre at least 144 feet from the OHWM of the Yakima River. Therefore, the proposed project meets the Kittitas County SMP 6.19.B.12 requirement.

The Typha Solar Project would be a conditionally permitted use for areas within the SED of Rural Conservation under the Kittitas County SMP. KCC 17B.07.0030(I) provides that “any project with a

certification from the governor pursuant to RCW Chapter 80.50" is exempt from shoreline permit requirements. The Typha Solar Project site would nevertheless be consistent with all of the policies specified in RCW 90.58.020 and the Kittitas County SMP, but is subject to EFSEC jurisdiction and authorization. A Shoreline Conditional Use Permit application is attached to the ASC.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Critical Areas

Several Critical Areas, as defined by the KCC 17A Critical Areas Ordinance (CAO), were recorded during field observations within some of the Columbia Solar Project sites. The following Critical Areas defined in the KCC CAO occur on some or all of the Columbia Solar Project sites:

- Wetlands (addressed in Section B.3.a.1)
- Floodplains (addressed in Section B.3.a.5)
- Riparian habitats (addressed with streams and rivers)
- Streams and rivers (addressed in Section B.3.a.1)

The above Critical Areas were addressed in previous sections of this report. Based on the current project design, there would be minimal to no impacts on wetlands, floodplains, riparian habitats, and streams and rivers Critical Areas. All other Critical Areas defined in the KCC CAO do not occur on any of the Columbia Solar Project sites. Therefore, all other Critical Areas would be avoided and would not be impacted by the project.

i. Approximately how many people would reside or work in the completed project?

No one would reside on the five Columbia Solar Project sites.

j. Approximately how many people would the completed project displace?

Because no one resides on the five Columbia Solar Project sites, no one would be displaced by the solar projects.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Because no one resides on or would be displaced by the five Columbia Solar Project sites, no mitigation measures are proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Because all five of the Columbia Solar Projects are allowed conditional uses and would not affect existing or projected land uses and plans, no mitigation measures are proposed.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

Because all five of the Columbia Solar Projects would have minimal effects on agricultural lands, compared to those available in the county, no mitigation measures are proposed.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units would be required from construction or operation of the Columbia Solar Projects because adequate housing would already be available, as described below.

Construction Impacts

It is not anticipated that construction of the five Columbia Solar Projects would result in the permanent relocation or in-migration of any of the construction workforce. Thus, temporary employment of the up to 100 peak workforce (including 20 non-local workers) would not affect the current supplies of vacant and available permanent or rental housing (5,411 vacant units in Kittitas County and 607 vacant units in Ellensburg in 2015) in the Ellensburg area.

The 20 non-local hires might elect to commute to the Ellensburg area on a daily basis from urban areas such as the Tri-Cities (over 96 miles away), the eastern suburbs of Seattle such as Issaquah (91 miles) or North Bend (79 miles), or from the Seattle Metropolitan area (107 miles). However, if they elect not to commute, they are likely to either stay in a personal recreational vehicle (RV) at a camp site, or to rent a motel room at the more than 25 motels in the area. Although there could be some competition for camping spaces during the busy summer recreational season, the over 310 sites at six facilities in the Ellensburg area, over 94 sites at seven facilities in the Cle Elum area, and over 434 sites at five facilities in the Easton area should be adequate to meet the needs of the 20 non-local temporary hires for construction of the five Columbia Solar Projects. Because there would be minimal additional uses of camp sites or motels in the Ellensburg area construction, there would be minimal impacts to RV parks and motels in Kittitas County or in the Ellensburg area.

Operation Impacts

Because there would be minimal direct operational staff levels and no in-migration or relocation into the Ellensburg area, no positive or negative impacts are anticipated on housing levels or availability in Kittitas County overall, or in the Ellensburg area. Similarly, no permanent or temporary relocations of family members or indirect operational employees are anticipated into the Ellensburg area, so there would be no impacts to the current supplies of permanent or rental housing, or to motels or RV parks.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units exist on the five Columbia Solar Projects and, thus, none would be eliminated by development of the solar projects.

c. Proposed measures to reduce or control housing impacts, if any:

Because no impacts would occur to housing from the five Columbia Solar Projects, no mitigation measures are proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest structure of the Columbia Solar Projects is 55 feet, located at the Typha and Fumaria Solar Project sites. These tallest structures are the replacement transmission line poles. The perimeter fencing is 8 feet tall and the panels/inverters are 6 to 8 feet tall at each site.

The principal exterior building material for the sites is galvanized steel (treatment/coating to be determined during final design), comprising the perimeter fence, gates, meteorological data collector, communications and grid-protection equipment, Supervisory Control and Data Acquisition (SCADA) monitoring equipment, interconnection transformers, collection and inverter system, and solar panel support structures. The principal exterior building material for the solar panels is crystalline silicon.

b. What views in the immediate vicinity would be altered or obstructed?

The views of the five sites for the Columbia Solar Projects would shift from agricultural sites to energy-producing sites. Because the sites are all relatively flat, there is generally no obstruction to existing views, and the sites are not prominent from afar since there is little elevational change in the analysis area. There are no scenic views (designated or local) in the immediate vicinity that would be altered or obstructed. Non-scenic views include those that local residents experience from their property and commute, as well as the view motorists (both local and tourists) experience when driving through the greater Kittitas Valley.

When viewing the Columbia Solar Project's five solar sites, the non-scenic foreground views would be altered since the primarily agricultural use would shift to a primarily energy-producing use. The views would change from primarily natural/agricultural in nature to primarily developed/industrial in nature. Middle- and background views would not be altered or obstructed; most of the vegetation growing along fence lines, roads, and ditches is much higher than the facilities at each solar site (the replacement transmission line towers being the exception) and therefore would conceal or block the Columbia Solar Projects from non-scenic middle- and background views.

All elements of the Columbia Solar Projects would be designed in such a manner as to minimize contrast with the surrounding vicinities. Three key observation points (KOPs) were selected for each of the five sites from which to take current condition photos, prepare visual simulations, and to conduct the visual impact assessment. These KOPs were selected based upon locations where the solar projects could be most visible to either a large number of viewers or to sensitive viewers. The proposed solar projects would be visible from 10 of the 15 project sites' KOPs, and would contrast to a minor to moderate degree with the surrounding landscape. The level of change to the landscape apparent from any of the five solar project sites would be minor to moderate based on the visual resource contrast analysis. Minor to moderate contrasts in the elements of the environment would generally be consistent with the characteristic landscape. Although primarily agricultural in setting, there are numerous transmission lines, pipelines, metal buildings, and fence lines visible from each of the KOPs. There are existing visible contrasts apparent from each of the KOPs. None of the KOPs would experience a major or significant change to the characteristic views.

Each of the proposed Columbia Solar Projects would generally repeat the basic elements of line, texture, color, and form found in the predominant natural features of the characteristic landscape. Contrast would be less apparent the further the view is from each site, and would be more apparent the closer the view is to each site.

Adjacent viewers (e.g., farmers, private landowners, and motorists) would experience the greatest change in views since the contrast is most noticeable when viewing up close (i.e., 25 feet or closer). Viewers accustomed to the typical rural, agrarian landscape would be affected by the minor contrast created from solar project impacts. The construction of the Columbia Solar Project sites would cause a long-term change to scenery. However, as these views are not representative of public views they were, therefore, not considered for KOP selection.

The *Visual/Aesthetics Assessment Report,* attached to the ASC, describes in detail the existing views from each of the Columbia Solar Projects 15 key observation points (KOPs) and associated 15 visual simulations for the proposed solar project sites.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Construction layout, site design, and vegetative screening help decrease the contrast to the surrounding characteristic landscape.

The following measures are proposed to decrease the contrasts of construction, operation, maintenance, and decommissioning activities:

General Mitigation Measures

- Vegetation or fencing would be used to interrupt the line of sight from nearby key observation points (KOPs) at or near the same elevation as the project sites.
- Vegetation and ground disturbance would be minimized near roads, and the use of existing clearings would be maximized.
- The use of non-necessary and/or non-safety-related signs and project construction signs should be minimized; necessary signs would be made of non-glare materials and use unobtrusive colors; reverse sides of signs and mounts would be painted or coated using the most suitable color to reduce color contrasts with the existing landscape; however, placement and design of any signs required by safety regulations must conform to regulatory requirements.
- “Good housekeeping” procedures would be developed to ensure that the sites are kept clean of debris, garbage, fugitive trash or waste, and graffiti; to prohibit scrap heaps and dumps; and to minimize storage yards. Design features regarding waste management would be applied.
- A lighting plan would be prepared that documents how lighting would be designed and installed to minimize night-sky impacts during facility construction and operations phases. Lighting for facilities would not exceed the minimum number of lights and brightness required for safety and security, and would not cause excessive reflected glare. Full cut-off luminaires would be used to minimize upward shining lighting. Lights would be directed downward or toward the area to be illuminated. Light fixtures would not spill light beyond the project boundary. Lights in high illumination areas not occupied on a continuous basis would have switches, timer switches, or motion detectors so that the lights operate only when the area is occupied. Where feasible, vehicle-mounted lights would be used for night maintenance activities. Wherever feasible, consistent with safety and security, lighting would be kept off when not in use. The lighting plan would include a process for promptly addressing and mitigating complaints about potential lighting impacts.
- Each of the five solar sites would be adequately screened by either existing or new vegetation or through the application of perimeter fencing to reduce contrast from glint and glare for KOPs with level views.

Construction

- Project developers would integrate visual and aesthetics mitigation elements early in the construction, which may include treatments such as thinning and feathering vegetation along project edges, salvaging landscape materials from within construction areas, etc.

- Visual impacts would be reduced during construction by clearly delineating construction boundaries. Within areas not intended for long-term use, impacts would be reduced by minimizing areas of surface disturbance within those boundaries; preserving vegetation to the greatest extent possible; using undulating surface disturbance edges; controlling erosion; using fugitive dust suppression techniques; and restoring exposed soils to their original contour and vegetation.
- An interim reclamation plan would be in place prior to construction. Interim reclamation of the construction site would begin immediately after construction to reduce the likelihood of visual contrasts associated with erosion and invasive weed infestation and to reduce the visibility of impacted areas as quickly as possible.
- Existing rocks, vegetation, and drainage patterns would be preserved to the maximum extent practicable, particularly within temporary use areas.
- Brush-beating or mowing, or using protective surface matting rather than vegetation removal would be done where feasible.
- For interim reclamation areas, slash from vegetation removal would be mulched and spread to cover fresh soil disturbances as part of the revegetation plan. Slash piles would not be left in sensitive viewing areas.
- No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate surveyor construction activity limits, except in areas defined and designated for disturbance.
- All stakes and flagging would be removed from the construction area and disposed of in an approved facility.

Operation

- The project developer would maintain revegetated surfaces until a self-sustaining stand of vegetation is re-established and visually adapted to the undisturbed surrounding vegetation. For new areas of disturbance (beyond the scope of this project), no new disturbance would be created during operation.
- Interim restoration would be undertaken during the operating life of the project as soon as possible after disturbances.
- Maintenance activities would include noxious weed control.
- Road maintenance activities would avoid blading existing forbs and grasses in ditches and adjacent to roads.
- Painted facilities would be kept in good repair and repainted when color fades or flakes increase visual contrast.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Glare

PV flat plate solar panels are designed to absorb sunlight, with an anti-reflective layer to maximize solar absorption and minimize glare. A mono-crystalline silicon solar cell absorbs two-thirds of the sunlight reaching the panel's surface. Therefore, only one-third or 30% of the sunlight reaching the surface of the solar panel has the opportunity to be reflected. This reflected light from the panels is referred to as glare, a continuous source of bright light, and is considered a nuisance concept of light. Other comparable levels of glare are listed below to help put this into context:

- Dry sand – 45%
- Mono-crystalline silicon solar cell – 30%
- Grass-type vegetation – 25%

- Needle-leaf coniferous trees – 20%
- Broad-leaf deciduous trees – 10%

In practice, from satellite view and airplanes, large arrays of solar modules resemble a dark blue body of water and are not a significant contributor of glare in most conditions. Because the Columbia Solar Projects are comprised of solar arrays that track with the movement of the sun, if any glare occurs it would only be for a very short duration at any one location.

Lighting

Lighting would be installed on metal poles, up to 20 feet tall, located around the periphery of each of the five Columbia Solar Project sites, as well as at the inverter pads, for nighttime security. Lighting would consist of modern, low-intensity, downward-shielded fixtures that are motion-activated, and would be directed onto the immediate site. For each site, five to 10 lights would be installed and powered directly by buried underground electrical supply lines.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Glare

The Solar Glare Hazard Analysis Tool (SGHAT), created by Sandia National Laboratories, was used to conduct the glare analyses for the five Columbia Solar Projects. Representative models of the five proposed PV system were constructed in the SGHAT application for each of the projects' three KOPs relative to the solar module arrays. Potential glare hazards were evaluated against the current FAA guidelines and industry standards for acceptable glare.

Based on SGHAT analysis, for all five Columbia Solar Projects, the ocular impact or glare intensity is below 2×10^2 W/cm^2 in the "Hazard plot for PV" and, therefore, the projects would have no dangerous or detrimental visual impact to the KOPs and would not poise a visual nuisance. Refer to the *Solar Glare Hazard Analysis Report* attached to the ASC for methodology and detailed results.

Lighting

The lighting for the Columbia Solar Projects would not comprise a safety hazard, and would be motion-activated and downward-shielded to minimize any interference with views.

c. What existing offsite sources of light or glare may affect your proposal?

No existing offsite sources of light or glare would affect the Columbia Solar Projects.

d. Proposed measures to reduce or control light and glare impacts, if any:

Because there would be no impacts from light and glare from the Columbia Solar Projects, no mitigation measures are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

No recreation areas are located within or immediately adjacent to the proposed Columbia Solar Project sites. The recreation areas that are the nearest to each of the proposed solar facilities are identified below.

Camas Solar Project Site

The nearest designated potential recreation opportunity to this proposed site is Olmstead Place State Park, located approximately 1.5 miles (“as the crow flies”) northeast of the project site.

Fumaria Solar Project Site

The nearest designated potential recreation opportunity is the Iron Horse Trail, also known as the John Wayne Pioneer Trail. The proposed generation tie line associated with this site would parallel the trail, approximately 550 feet away, between U.S. Route 97 and an existing substation.

Penstemon Solar Project Site

Similar to the Camas Solar Project site, the nearest designated potential recreation opportunity to this proposed site is Olmstead Place State Park, located approximately 0.75 mile (“as the crow flies”) northeast of the project site.

Typha Solar Project Site

The closest recreation facility to the proposed site is the Iron Horse Trail, across the Yakima River and I-90, approximately 1 mile (“as the crow flies”) to the north of the proposed site.

Urtica Solar Project Site

The closest recreation facility to the proposed site is the Ellensburg’s Irene Rinehart Riverside Park. The southernmost part of the park is located approximately 0.25 mile (“as the crow flies”) northeast of the project site, across the Yakima River on Umptanum Road.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Because the existing sites are private agricultural land, the Columbia Solar Projects would not displace existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Because the existing sites are private agricultural land and the Columbia Solar Projects would not displace existing recreational uses or have recreational impacts, no mitigation measures are proposed.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There are eight archaeological sites recorded within 1 mile (1.6 km) of the solar project sites, none of which are listed in or eligible for listing in national, state, or local preservation registers. SWCA completed a historic and archaeological survey of the five solar sites and resulted in the recording of 10 historic properties, three archaeological sites, and 13 archaeological isolates. Two historic properties were recommended potentially eligible for listed on the National Register of Historic Places (NRHP), and are discussed below.

The Cascade Canal, currently called the Cascade Irrigation District Canal, is 42 miles long and a portion passes through the Fumaria Solar Site. The section passing through the Fumaria Solar Project site is unlined and approximately 20 feet across. The Cascade Canal Irrigation Company formed in 1902 as a successor firm to the Inter-Mountain Irrigation Association, proposing the construction of two canals: a lower canal with an intake on the Yakima River near Thorp, and an upper canal with a dam on Lake Kachess. Construction of the lower canal began in 1903 and water began flowing in the spring of the following year. The Cascade Canal is one of the earliest canals built in Kittitas County and continues to be used more than 100 years later. It is recommended eligible for the NRHP under Criterion A for its contribution to the history of irrigation in the Pacific Northwest.

The Ellensburg Power Canal passes through the generation tie line and access route for the Typha Solar Site. The canal varies in width, measuring an average of 40 feet across, and is unlined within the solar project study area. A steel- and timber-deck bridge carries a farm driveway across the canal to provide access to a farm. A field ditch inlet on the east side of the canal, southeast of the farm bridge, indicates that in addition to power generation, the canal was also utilized for irrigation. The Ellensburg Power Canal was constructed in the first half of the twentieth century to divert water from the Yakima River for a power generation facility. This canal is recommended eligible for the NRHP under Criterion A for its contribution to the history of power generation in the region of Thorp and Ellensburg.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation. This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are 56 cultural resource investigations that have been completed within 1 mile (1.6 km) of the solar project sites. The Camas, Fumaria, Typha, and Urtica Solar Project sites themselves have not been previously surveyed for cultural resources. One cultural resources survey was previously conducted along the north and east edges of the Penstemon Solar Project site. Schroeder and Landreau excavated 13 probes in the Penstemon Solar Project site in 2013, but did not identify cultural resources within the solar project site.

Cartographic Review

Camas Solar Project Site

A Native American trail is shown [redacted] on a General Land Office (GLO) map of T17N, R19E from 1884, and a structure is denoted as Shooshooskins [redacted]

[redacted]. The Metsker Maps (1956) atlas indicates the Camas Solar Site was farmed by A.B. Paine, Paul Wipple, E. Clerf, and Louis E. Poulsen. The Poulsen family still owns the land across Tjossem Road from the project site. Today, there is a barn in the project site, and the Valley Land Company owns the land.

Fumaria Solar Project Site

Trails used by the Yakama to travel between their villages and resource-gathering locales may have once followed [redacted], up from the Yakima River, but the original locations of these creeks have shifted due to irrigation canals and roads. The 1884 GLO map of T18N, R18E does not show any historical structures in the project vicinity. According to the Bureau of Land Management, the Northern Pacific Railroad Company was granted most of the land in Sections 9 and 17, T18N, R19E in 1864, as well as the NW¼ of Section 21, which they claimed in 1895. The State of Washington obtained Section 16 in 1934. Land in the NE¼ of Section 20 left public domain when Carl Justus Larson and Peter A. Wold claimed their homesteads in 1892 and 1883, respectively.

By 1956, the land where the Fumaria Solar Project is proposed was farmed by Creston S. Crest (Metsker Maps 1956). The land south of the solar project site and along Faust Road, which holds the Cascade Canal, was farmed by the Penningtons and Howard Altice. Jack Bopp and John Liboky farmed the land on the south side of Hungry-Junction Road where Reecer Creek once flowed freely and another irrigation canal, the Town Ditch, was present. Liboky's property was also adjacent to the railroad and land owned by Joseph McManamy at the southwest end of the proposed project. Several highways were present in the vicinity by 1956.

The Fumaria Solar Project site is currently used for agriculture and is owned by Jay T. and Lori A. Pittenger, as is the land on the north and south sides of Clarke Road following the proposed generation tie line ROW. Three buildings were constructed on the solar project site in 2002 and no other structures are present.

Penstemon Solar Project Site

A Native American trail is shown following [redacted] on a GLO map of T17N, R19E from 1884, and a structure is denoted as Shooshooskins is shown [redacted]. Additional trails are mapped [redacted], such as the Squaw Creek Trail that ran [redacted].

Typha Solar Project Site

The closest known ethnographic Yakama village site is [redacted]. The Yakama followed well-established trails from their villages to important resource-gathering locales, such as fishing sites at Selah, Icicle Creek, and Priest Rapids. A known crossing of the Yakima River was near [redacted]. Because of the river crossing and proximity to an ethnographic village, this solar project site has heightened sensitivity for encountering pre-contact and ethnographic-period cultural materials.

According to the Bureau of Land Management, land in the Typha Solar Project site left public domain by Cash Entry in 1873 and Homestead Entry in 1888. The 1884 GLO map of T18N, R18E does not show any historical structures or trails in the immediate project vicinity. B.W. Frisby and R. Geddes may have farmed land south of the project site when the earliest maps of the vicinity were drawn (GLO 1884c). By 1956, land in the project site was owned by L. D. Peters and adjacent properties west of the river were owned by P. F. P. Young (Metsker Maps 1956). A golf course was present southeast of the project site by

this time (Metsker Maps 1956). The property is currently owned by Douglas Dicken and is used for agricultural purposes. One mobile home that was built in 1979 and a few outbuildings that were built in 1910, 1960, 1980, 1982, and 1987 are present on the property, but these structures are located south of the project boundary.

Urtica Solar Project Site

According to the Bureau of Land Management, land in the project site left public domain in 1884 when Hiram H. Swasey claimed a homestead. The 1884 GLO map of T17N, R18E does not show any historic structures or trails in the immediate project vicinity. By 1956, land in the project site was farmed by Jeff Walters, Robert Kuhn, and Mare Bender (Metsker Maps 1956). A branch of the West Side Canal, the remnants of which are south of the current project and Manastash Road, flowed through Mr. Walter's property. Land in the project site is currently owned by Herbert J. Etux Snowden who continues to use the property for agriculture. Farm buildings and structures on Mr. Snowden's property (but not within the proposed solar project site) date to between 1984 and 1988, with updates as recently as 2011.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archaeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Tribal Consultation

SWCA sent a letter via certified mail to notify Johnson Meninick, of the Cultural Resources Program at the Confederated Tribes and Bands of the Yakama Nation, on March 23 and 30, 2017, about all five proposed Columbia Solar Projects and the cultural resource surveys that would be conducted. The purpose of this communication was to seek input and identify any of the Cultural Resources Program's Tribal concerns related to cultural resources, and it was not intended to replace any government-to-government consultation that may be required pursuant to National Historic Preservation Act (NHPA) Section 106.

Joy Potter, TUUSSO, met with Johnson Meninick of the Yakama Nation on June 15, 2017. Mr. Meninick informed Ms. Potter that all of Kittitas County once held villages of the Yakama Nation. He stated that the Yakama Nation is very concerned about the actual village locations and burial grounds; and noted that the proposed solar sites were not at known villages or burial locations. He was concerned that the Tribe did not do the study, as they are mostly concerned about the oral interview history portion of the cultural resource study. The ground disturbance was a secondary concern. TUUSSO is continuing discussion with the Yakama Nation.

Background Research

Prior to field investigations, SWCA staff searched Washington State Department of Archaeology and Historic Preservation's (DAHP's) Washington Information System for Architectural and Archaeological Records Data (WISAARD) database to identify previous cultural resource assessments and recorded archaeological and historical sites located within 1.0 mile (1.6 km) of each solar project site. Additional archival research examined historical documents, maps, research publications, and books that provided information about the natural history, human settlement, and land use around the Kittitas Valley. Specific attention was given to review of available historical maps, such as GLO plats and Metsker Maps, as part of this overview investigation.

Field Methods

Archaeological Survey

Archaeological fieldwork for each project site was conducted on the following dates: Camas Solar Project site – April 12 to 15, 2017; Fumaria Solar Project site – April 4 to 8, 2017; Penstemon Solar Project site – April 16 and 17, 2017; Typha Solar Project site – April 4 to 6, 2017; and Urtica Solar Project site – April 9 to 15, 2017. Yonara Carrilho directed 11 SWCA archaeologists and field technicians.

Archaeological surveys were conducted in a similar manner at each solar project site, and deviations are described in the individual project reports. Each solar project site was surveyed with pedestrian transects spaced at approximately 20-meter intervals. The pedestrian surveys were supplemented with shovel probes measuring between 35 and 40 cm in diameter. Shovel probes were spaced approximately 30 m apart. The shovel probes were excavated in arbitrary 20-cm levels, and the sediments from each level were passed through a ¼-inch mesh screen.

Shovel probes were terminated at 100 cm, when native alluvial cobbles or gravels were encountered, or when other obstructions prevented further excavation. If a probe was positive for cultural material, a minimum of two 20-cm negative levels were excavated beyond the lowest positive level, unless an obstruction or depth of 100 cm was reached first. Any cultural material identified during the pedestrian survey and SP survey was recorded and photographed. Subsurface artifacts were bagged in plastic bags, labeled, and reburied where they were found.

The findings of each probe were recorded on standard shovel/auger probe forms that included information regarding soil color, texture, composition, and observed cultural materials. A Trimble handheld global positioning system (GPS) unit was used to collect the Universal Transverse Mercator (UTM) coordinates of shovel probes. Digital photographs were taken of each solar project site and a sample of the excavated shovel probes, and information about the photographs was recorded on a standard photograph log. Shovel probe photographs included cardinal direction overview photos and at least one photograph of the soil stratigraphy. Project field records and files are on file at SWCA's office in Seattle.

Information about any identified archaeological sites or isolates was recorded on State of Washington Archaeological Site Inventory Forms, which were entered into the WISAARD database.

Built Environment Survey

SWCA architectural historian Eileen Heideman conducted field surveys for built environment resources for all five solar projects on April 5 and 6, 2017. Built environment resources over 50 years old were identified, and included buildings such as houses, barns, and sheds, and structures such as bridges and irrigation ditches. Resources were photographed and described on field forms, and these data were then entered into the WISAARD database, and an inventory form was generated for each resource.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Monitoring and mitigation measures are prescribed to ensure avoidance of significant cultural resources because of unavoidable impacts resulting from a project's construction, operation, or decommissioning. Mitigation measures are designed to minimize the impact on any kind of significant cultural resource, whether an element of the built environment, an ethnographic property, or an archaeological site. Projects

whose design cannot be changed to avoid known significant cultural resources would have mitigation activities.

SWCA recommends that an Inadvertent Discovery Plan be prepared for the solar sites prior to project construction to inform construction personnel what to do in the event that previously unidentified cultural resources are discovered during excavation. In addition, it is understood that DAHP may recommend additional mitigation measures after reviewing the reports on the cultural resource surveys conducted for the proposed solar projects, which they will do after EFSEC notifies them that the ASC has been received.

Camas Solar Project Site

The Camas Solar Project site plans include fencing off the Paul Wipple Barn and the irrigation lateral from the solar project site, and this would protect the resources from potential construction impacts. The pre-contact isolate (45KT4010) appears to lie [redacted]. No further mitigation measures are required for these non-NRHP-eligible resources.

Fumaria Solar Project Site

The Fumaria Solar Project site plans specifically state to protect Lateral NB 7.7, which would be located outside of the perimeter fence. The Crest Field Ditch Turnout is in the fenced facility, and project plans state to maintain this feature. Also located [redacted] is 45KT4000, and project plans do not include solar panels in this location. No further mitigation measures are required for these non-NRHP-eligible resources.

The Cascade Canal is eligible for the NRHP under Criterion A. Project plans include using the existing generation tie line to connect the solar facility with the existing PSE substation on McManamy Road. Use of the exiting line would avoid direct impacts to the Cascade Canal, and no further mitigation measures are required.

Portions of the proposed generation tie line ROW alternatives have not undergone pedestrian inventory and it is, therefore, recommended that the remaining accessible portions of the ROW undergo such survey prior to project construction. Further, because no subsurface probing was conducted for the proposed generation tie line ROW, it is recommended that a Monitoring and Discovery Plan be prepared for the generation tie line, and that all project excavation within or associated with the transmission line ROW be monitored by a professional archaeologist.

Penstemon Solar Project Site

The two cultural resources recorded in the Penstemon Solar Site—45KT4011 and 45KT4012—are recommended not eligible for the NRHP and no further mitigation measures are required.

Typha Solar Project Site

The Typha Solar Project site plans include the use of the existing generation tie line near the Ellensburg Golf Club Cart Shed, and this feature would be avoided during construction. The six isolates are located [redacted]. No further mitigation measures are required for these non-NRHP-eligible resources.

The Ellensburg Power Canal is eligible for the NRHP under Criterion A. Project plans include using the existing generation tie line to connect the solar facility with the existing PSE substation on Thorp Highway South. Use of the exiting line would avoid direct impact to the Cascade Canal, and no further mitigation measures are required.

Because no subsurface probing was conducted for the proposed generation tie line ROW, it is recommended that a Monitoring and Discovery Plan be prepared for the generation tie line, and that all project excavation within or associated with the line ROW be monitored by a professional archaeologist.

Urtica Solar Project Site

The Urtica Solar Project site plans include protection of the McCarl Creek waterway, and the Walters Field Ditch would be located outside of the solar facility. These measures would protect the resources from potential construction impacts. The remaining three resources are located [redacted]. No further mitigation measures are required for these non-NRHP-eligible resources.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area, and describe proposed access to the existing street system. Show on site plans, if any.

Existing Highways and Roadways

The anticipated access routes for construction equipment, materials deliveries, and construction and operation crews to access each of the five Columbia Solar Project sites consist of the existing roads that are adjacent to the sites and the existing roads that would be used to access the nearest interstate and Ellensburg. The interstates and state highways that would be used to access the sites include I-82, I-90, State Route (SR) 821, and U.S. Route 97. I-90 and I-82 are four-lane divided highways with limited-access on- and off-ramps and average daily traffic (ADT) counts of 16,333 vehicles and 18,477 vehicles both ways, respectively. SR 821 and U.S. Route 97 are two-lane highways with 1,500 and 2,800 ADT, respectively. Table 15 provides more detailed information about each road that would be used to access the sites, including average daily traffic counts.

Table 15. Potential Construction Vehicle Impacts for Columba Solar Project Sites

Access Highway/Road	Sites Involved	Existing Average Daily Traffic (ADT)	Construction ADT	Percent Change in ADT
Interstate 82	Camas Penstemon	18,477 (both ways)	25	0.14
State Route 821	Camas Penstemon	1,500 (2016 estimate)	25	1.67
Tjossem Road	Camas Penstemon	634 at intersection with Road No. 6 (2017 count)	25	3.94
Road No. 6	Camas Penstemon	865 at intersection with Tjossem Road (2015 count)	25	2.89
Interstate 90	Fumaria Typha Urtica	16,333 (both ways)	25	0.15
U.S. Route 97	Fumaria (generation tie line only)	2,800 (2016 estimate)	25	0.89
Clarke Road	Fumaria	66 near Faust Road (2016 count)	25	37.88
Faust Road	Fumaria	201 south of Clark Road (2016 count)	25	12.44

Access Highway/Road	Sites Involved	Existing Average Daily Traffic (ADT)	Construction ADT	Percent Change in ADT
Hungry Junction Road	Fumaria	271 at intersection with Faust Road (2016 count)	25	9.23
Reecer Creek Road	Fumaria	2,612 at intersection with West University Road (2016 count)	25	0.96
Thorp Highway South	Typha	579 at intersection with Cove Road (2016 count)	25	4.32
W University Way	Typha	3,648 at intersection with Reecer Creek Road (2016 count)	25	0.69
Umptanum Road	Urtica	2,612 at intersection with Manastash Road (2016 count)	25	0.96
Canyon Road	Urtica	8,300 at intersection with Umptanum Road (2005 estimate)	25	0.30

Note: Average Daily Traffic 2016 data for interstates is from the closest permanent traffic recorders used (R042 for I-90 and R048 for I-82).

The major roads that are part of the Kittitas County's County Road System that would be used to access the sites include Tjossem Road, Road No. 6, Clarke Road, Faust Road, Hungry Junction Road, Reecer Creek Road, Thorp Highway South, and Umptanum Road. These are two-lane roads with ADTs ranging from 66 to 3,648 vehicles. The major streets within Ellensburg city limits that would be used to access the sites include West University Way (two lanes with 3,648 ADT), Umptanum Road (two lanes with 2,612 ADT), and Canyon Road (four lanes with 8,300 ADT).

Solar Project Site Driveways and Internal Access Roads

The points of access and associated construction methods vary for each Columbia Solar Project site and are described below in greater detail. Interior all-weather access roads within each site would be designed to provide access to the inverter pads from the site entrance. These all-weather access roads would be 12 feet wide, would consist of compacted soils or gravel to 90%, and a soil binder would then be sprayed or aggregate would be laid down to protect them from wind and water erosion to allow for continuous access. The soil binder would be reapplied annually to ensure the integrity of the access roads.

The remainder of the access roads throughout each solar project site would be unpaved vegetated drive roads, with slopes less than 4%. All access roads have been located to minimize grading, closely following the existing elevations.

Construction Impacts

During the peak of construction, a typical day would include the transportation of workers, transportation of materials, and movement of heavy equipment. Vehicular trip generation for employees, delivery trucks, and heavy equipment would vary depending on the phase of construction for each of the five Columbia Solar Projects. As shown in Table 16, it is estimated that a total of approximately 1,500 trips would be made to each site during a 3-month construction period, with conservatively 25% of those trips (375) made by heavy vehicles. On average, approximately 25 trips would be made to each site each day during construction, again assuming that 25% (6) would be heavy vehicle trips. These heavy vehicle trips could

haul materials and equipment from Ellensburg on state highways and county roads. But, depending upon where they are purchased and shipped from, deliveries could also be made from Seattle, Portland, the Tri-Cities, and other urban areas using the federal interstates and highways.

Table 16. Estimated Construction Vehicle Traffic Volumes

Type of Vehicle	Average Daily Trips (ADT)	Total Site Trips
Each Site Over About 3 Months		
Heavy Vehicles	6	375
Non-heavy Vehicles	19	1,125
Total	**25**	**1,500**
Maximum for All Five Sites Over 8 Months[1]		
Heavy Vehicles	30	1,875
Non-heavy Vehicles	95	5,625
Total	**125**	**7,500**

1. This assumes that all five solar projects would be constructed simultaneously and at peak, as a worst-case scenario. However, peak ADTs would not reach these levels because construction would be phased between all five sites over 8 months.

Construction of the five Columbia Solar Projects would begin in the second quarter of 2018 and would end in the fourth quarter of 2018, occurring over about 8 months from April through November. Construction of the five solar projects would employ up to 100 workers per day during the peak construction period. Approximately 80 of the peak workforce would likely be hired locally, or would be provided by locally-contracted companies or businesses, and the remaining 20 non-local peak workforce might elect to commute to the Ellensburg area on a daily basis. However, if they elect not to commute, they are likely to either stay in a personal RV at a camp site or to rent a motel room in the Ellensburg area or Kittitas County for the duration of the construction period. These workers would commute daily to each project site individually, in pairs, or in small groups.

Table 15 showed the potential changes in traffic volumes as a result of construction of an individual solar project site. Most of the highways and roads would experience less than a 5% increase in average daily traffic volumes and, thus, transportation systems and volumes would not be impacted for four of the solar project sites (i.e., Camas, Penstemon, Typha, and Urtica).

The exception would be three county roads accessing the Fumaria Solar Project site, with ADT increases on Clarke Road (37.88%), Faust Road (12.44%), and Hungry Junction Road (9.23%) for the 3-month construction period, representing minor to moderate temporary impacts.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

None of the five Columbia Solar Project sites is served by public transit. No transits stops are within a feasible travel distance.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The five Columbia Solar Project sites are currently agricultural fields, with no formal parking spaces but with adequate room for any vehicles. Thus, no parking spaces would be eliminated by the solar projects. The Columbia Solar Projects have been designed with adequate off-road parking available on each site.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The Columbia Solar Projects would not require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities (not including driveways/on-site access roads).

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The solar panels for the Columbia Solar Project sites would likely be shipped from China via normal shipping routes (likely waterborne); however, delivery of the panels would not affect any existing shipping routes. No other equipment or materials would be shipped to the five Columbia Solar Project sites via waterborne, rail, or air routes. Based on these reasons, there would be no impacts to those modes of travel as a result of construction or operation of the solar projects.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

None of the operational workforce is anticipated to permanently in-migrate or relocate into the Ellensburg area. The operational workforce for the five Columbia Solar Project sites would be relatively small and would typically be off-site. In addition, it is anticipated that four to five maintenance personnel would make about two to three visits per year to each of the solar project sites to conduct the on-site operations and maintenance functions. These staff would likely use water trucks, utility vehicles, and pickup trucks to conduct maintenance activities. Because there would be minimal operational staff levels and vehicle trips, no positive or negative impacts are anticipated to transportation infrastructure or use levels in Kittitas County, in the Ellensburg area, or on roads accessing the individual solar project sites.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The Columbia Solar Projects would not affect the movement of agricultural or forest products on roads or streets in the area.

h. Proposed measures to reduce or control transportation impacts, if any:

Because there would be minimal or no impacts on area highways and roads, no mitigation measures are proposed.

15. Public Services

a. Would the project result in an increased need for public services (for example: Fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Fire Protection

Construction Impacts

As with any major development, construction of the Columbia Solar Projects presents some minimal fire risks. Each of the project sites is currently farmed agricultural land, mostly for hay production or grazing. The Fumaria Solar Project site is the only fallow agricultural field (not recently grazed) at this time. Thus the predominant groundcover is non-native grasses and weed species, with the greatest fire risks being associated with grass fires during the hot, dry summer season. TUUSSO has initiated discussions with the Kittitas County Fire Marshal about potential fire issues, locations and dimensions of access gates and internal access roads, and other issues. A Fire Protection and Safety Plan would be developed and implemented prior to construction, in coordination with the Kittitas County Fire Marshal, Fire District No. 2/Kittitas Valley Fire and Rescue, Fire District No. 1, and other appropriate agencies. TUUSSO would coordinate with Fire District No. 2/Kittitas Valley Fire and Rescue and Fire District No. 1 to provide PV training to fire responders and construction staff.

Construction equipment would have spark-arresting mufflers, heat shields, and other protection measures to avoid starting fires. Fire extinguishers would be available in vehicles and on equipment, to quickly address any accidental fire issues. Work crews also would be trained about fire avoidance and response measures.

During construction, water would be used to suppress fugitive dust during grubbing, clearing, grading, trenching, and soil compaction. If a fire were to occur, that water could be diverted for firefighting purposes. For the Camas, Penstemon, Typha, and Urtica Solar Project sites water is already available on-site. For the Fumaria Solar Project site, water would be trucked onto the site from the Ellensburg area.

As a result of the above fire avoidance measures and ability to respond on-site to potential fires, the risks of and potential impacts from on-site fires during construction of the five Columbia Solar Projects would be minimal.

Operation Impacts

Unlike thermal power plants, solar power projects pose a much smaller risk of accidental fires or explosions because there is no need to transport, store, or combust fossil fuels to generate electricity. The five Columbia Solar Projects also would be designed to comply with the NEC and NFPA requirements, to avoid potential electrical fire risks. A strict Fire Prevention and Safety Plan would be developed and enforced during project operation, to reduce and address potential fire risks.

TUUSSO would coordinate with Fire District No. 2/Kittitas Valley Fire and Rescue and Fire District No. 1 to provide PV training to fire responders, and operation and maintenance staff. The intent of this training would be to familiarize both responders and workers with the codes, regulations, associated hazards, and mitigation processes related to solar electricity. This training would include techniques for fire suppression of PV systems.

Combustible vegetation on and around each of the five Columbia Solar Project boundaries would be maintained by TUUSSO and the landowner. Each solar project site would include fire breaks around the project boundary, in accordance with applicable state and/or county standards.

As a result of the above fire avoidance measures and ability to respond on-site to potential fires, the risks of and potential impacts from on-site fires during operation of the five Columbia Solar Projects would be minimal.

Police

Construction Impacts

Construction would have minimal impacts on state, county, or city law enforcement staff. The peak construction workforce would be 100 people, of which 80 would be hired locally and would be existing residents, and 20 would either commute to the Ellensburg area daily, or would stay at an RV park or motel. Thus, the size of the workforce should not result in any additional police calls and no impacts.

There might be minimal impacts if police have to respond to other potential project-related traffic issues, emergency medical calls, or if they would provide a coordination role in the unlikely event that a fire were to occur. These calls would be very infrequent and, thus, should not require the hiring of or additional shifts for state, county, or city law enforcement staff.

Operation Impacts

TUUSSO would take several measures (e.g., fencing, lighting, security cameras, and site security) to maintain security at the five Columbia Solar Project sites, and thus avoid placing additional burdens on state and county law enforcement. The solar project sites would be secured using 6- to 8-foot-high, perimeter, chain-link fencing, topped by razor wire, and surrounding the PV system and switchyard. The entrance gates for each of the solar sites would be about 8 feet high and 12 feet wide, to allow for fire department and maintenance access. “Warning High Voltage” signs would be placed on the fencing at about 100-foot intervals and at each gate.

In addition, lighting would be installed on metal poles, up to 20 feet tall, located around the periphery of each of the five Columbia Solar Project sites, as well as at the inverter pads, for nighttime security. Lighting would consist of modern, low-intensity, downward-shielded fixtures that are motion activated, and would be directed onto the immediate site. For each site, five to 10 lights would be installed and powered directly by buried underground electrical supply lines. TUUSSO might also install security cameras on those same light poles.

Finally, security staff may periodically drive along the site perimeter security fence. As a result of these measures, it is anticipated that operation of the five Columbia Solar Project sites should have no impacts on state or county law enforcement.

Other Public Services

Because it is not anticipated that construction of the five Columbia Solar Projects would result in the permanent relocation or in-migration of any of the direct or indirect construction or operational workforces, there would be no impacts to public transit, health care, schools, or other public services in Kittitas County or the Ellensburg area.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Because there would be no or minimal potential impacts to public services, no mitigation measures are proposed.

16. Utilities

a. Circle utilities currently available at the site: Electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

Only electricity is available on or near the five Columbia Solar Project sites; natural gas, water, refuse service, telephone, sanitary sewer, septic system, or other utilities are not available.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

It is not anticipated that construction of the five Columbia Solar Projects would result in the permanent relocation or in-migration of any of the direct or indirect construction or operational workforces and, thus, there would be no additional demands for housing requiring additional public utilities. Thus, there would be no impacts to public utilities in Kittitas County or the Ellensburg area.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: . . . . . .

Date Submitted: . . . . . .

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, flood plains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

[Statutory Authority: RCW 43.21C.110. WSR 16-13-012 (Order 15-09), § 197-11-960, filed 6/2/16, effective 7/3/16. Statutory Authority: RCW 43.21C.110 and 43.21C.100 [43.21C.170]. WSR 14-09-026 (Order 13-01), § 197-11-960, filed 4/9/14, effective 5/10/14. Statutory Authority: RCW 43.21C.110. WSR 13-02-065 (Order 12-01), § 197-11-960, filed 12/28/12, effective 1/28/13; WSR 84-05-020 (Order DE 83-39), § 197-11-960, filed 2/10/84, effective 4/4/84.]