2 SOLAR PROJECT PROPOSAL DESCRIPTIONS

2.1 Site Description 463-60-125

The application shall contain a description of the proposed site indicating its location, prominent geographic features, typical geological and climatological characteristics, and other information necessary to provide a general understanding of all sites involved, including county or regional land use plans and zoning ordinances.

2.1.1 Kittitas County Overview

TUUSSO Energy, LLC's (TUUSSO's), Columbia Solar Projects would be located in unincorporated Kittitas County, east of the Cascade Mountains, within the Kittitas Valley, outside of the city of Ellensburg, but relatively close to the northwest, southwest, and southeast of the city (see Figure 2.1-1, and below for additional details).

The topography of each of the five sites is relatively consistent and fairly flat, with surface elevations ranging from 1,455 to 1,750 feet above mean sea level (amsl), depending on the site. The sites are not within any mapped geologically hazardous areas. No erosion/landslide geologic hazard areas, snow avalanche hazards, or mine hazard areas are mapped on any of the parcels (Kittitas County 2016). As a result, the projects would not require specialized engineering to ascertain that the properties are suitable for development.

Historical (1971–2000) average annual rainfall is 8.96 inches, as obtained from the closest wetlands climate analysis (WETS) climate station, the Ellensburg National Weather Service (NWS) station (ELBW1) at the Ellensburg Wastewater Treatment Plant, located south of Ellensburg, Washington.

Land use in Kittitas County is guided by the Kittitas County Comprehensive Plan (Kittitas County 2016). The plan is currently being revised, is the subject of public review, and is scheduled to be adopted in April 2018. The 20-year plan will be the guiding document for land use for the county through 2037. All five of the proposed TUUSSO Columbia Solar Project sites would be located on land zoned either as "Commercial Agriculture" or as "Rural Working – Agriculture 20."

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 Kittitas County Code (KCC) 17.15.050.01, utilities, including "solar farms" as defined by County Code 17.61, are a permitted use of a Commercial Agriculture zone.

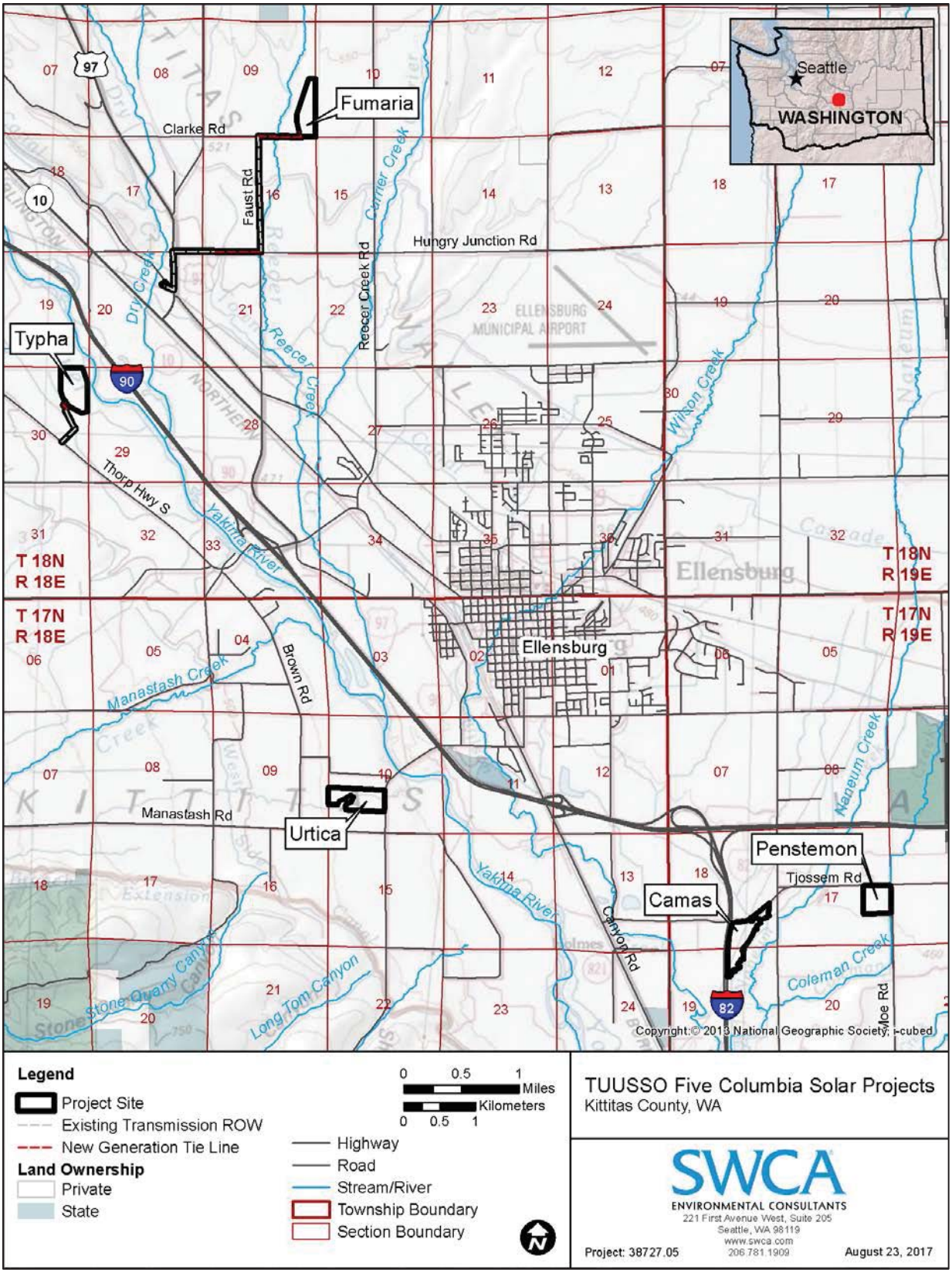

Figure 2.1-1. Columbia Solar Project site locations.

The “Rural Working” general land use designation “generally encourages farming, ranching and storage of agriculture products, and some commercial and industrial uses compatible with a 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 are areas zoned as “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 use within an A-20 zone.

2.1.2 Solar Project Sites

2.1.2.1 Camas Solar Project Site

TUUSSO is proposing to construct a new photovoltaic (PV) solar 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.

The Camas Solar Project site is active agricultural land, growing alfalfa, located immediately southeast of the intersection of Tjossem Road and Interstate 82 (I-82). 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 (Figure 2.1-2). 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 amsl.

The Camas 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.

2.1.2.2 Fumaria Solar Project Site

TUUSSO is proposing to construct a new PV solar 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) 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.

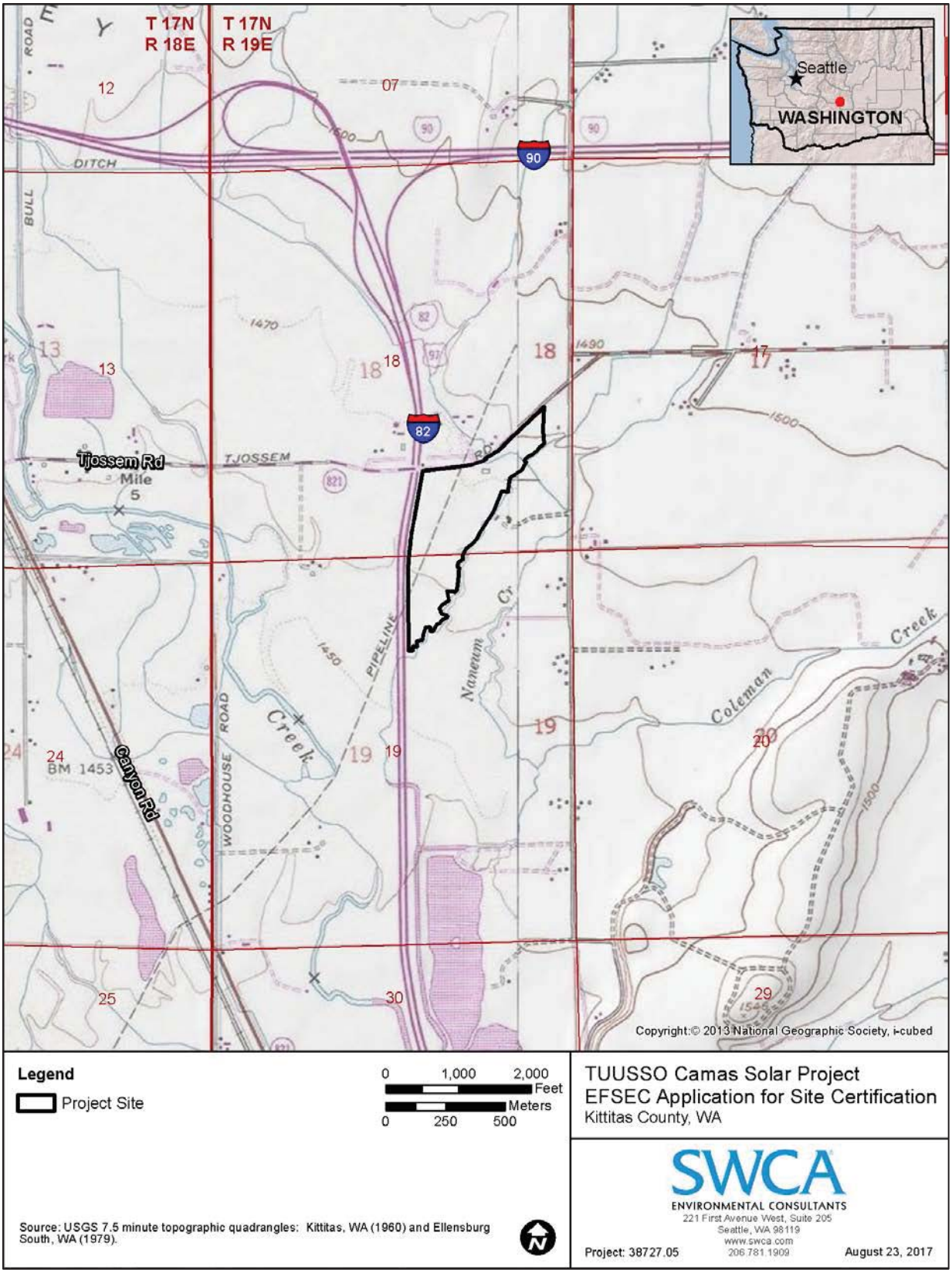

Figure 2.1-2. Camas Solar Project site location.

The Fumaria Solar Project site primarily consists of fallow pasture land. The project would be located approximately 1.5 miles northwest of the intersection of Hungry Junction Road and Reece Creek Road, in Sections 9, 16, 17, and 20, T18N, R18E, Willamette Meridian (Figure 2.1-3). 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).

The Fumaria Solar Project study area totals approximately 67.0 acres (35.24 acres for the solar site and 25.4 acres for the generation tie line). Topography of the site generally slopes to the south toward the Cascade Irrigation District Canal. Surface elevation within the study area 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.

2.1.2.3 Penstemon Solar Project Site

TUUSSO is proposing to construct a new PV solar facility on approximately 39.38 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 Penstemon Solar Project is intended to provide up to 5 MW of solar energy to PSE for use within their service area.

The Penstemon Solar Project site is active agricultural land, for growing export hay products (such as timothy and alfalfa), located immediately southwest of the intersection of Tjossem Road and Moe Road. The project would be located approximately 4 miles southeast of the Ellensburg city center, in Section 17, T17N, R19E, Willamette Meridian (Figure 2.1-4). Topography of the site slopes 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.

2.1.2.4 Typha Solar Project Site

TUUSSO is proposing to construct a new PV solar 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.

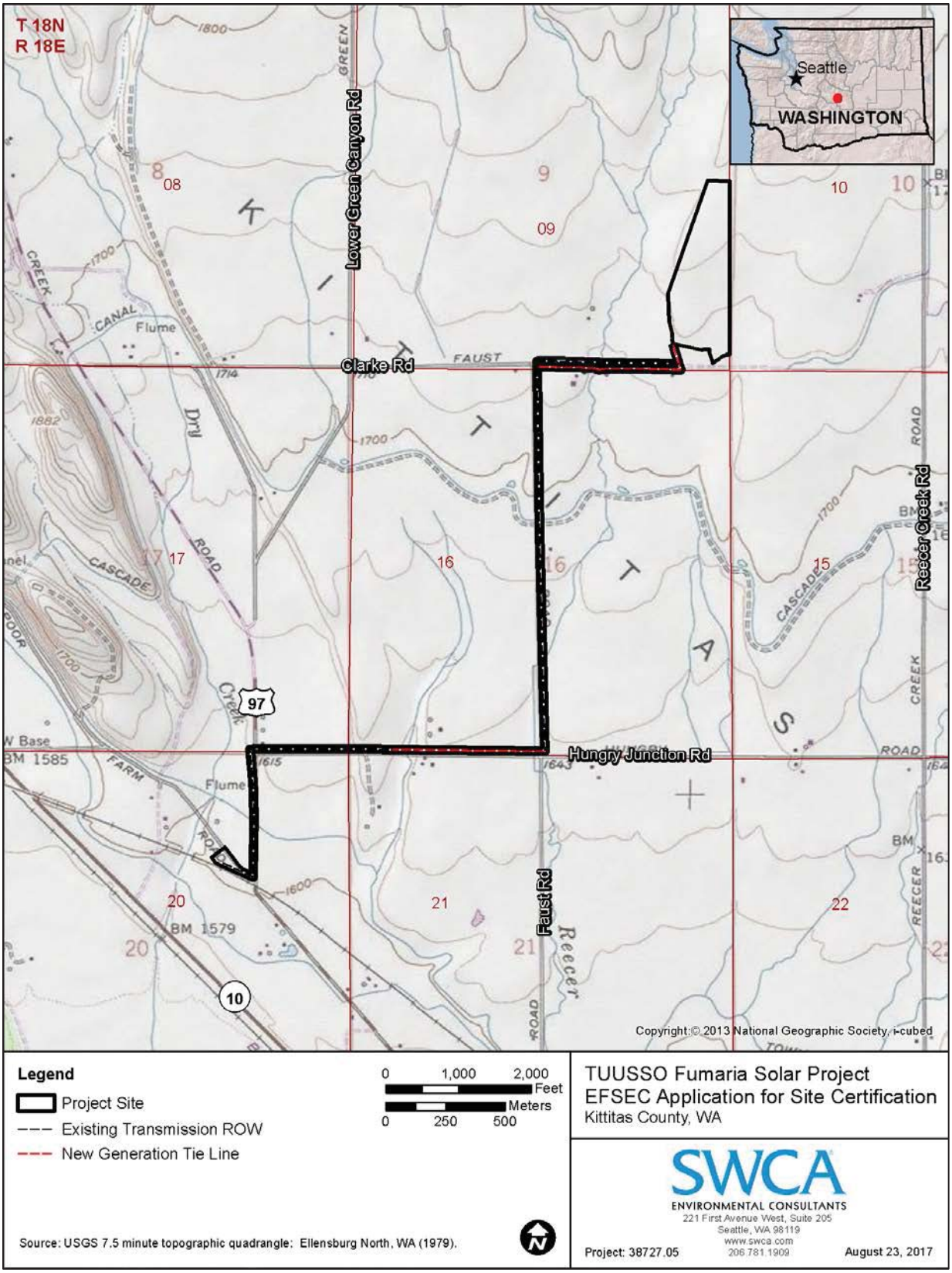

Figure 2.1-3. Fumaria Solar Project site location.

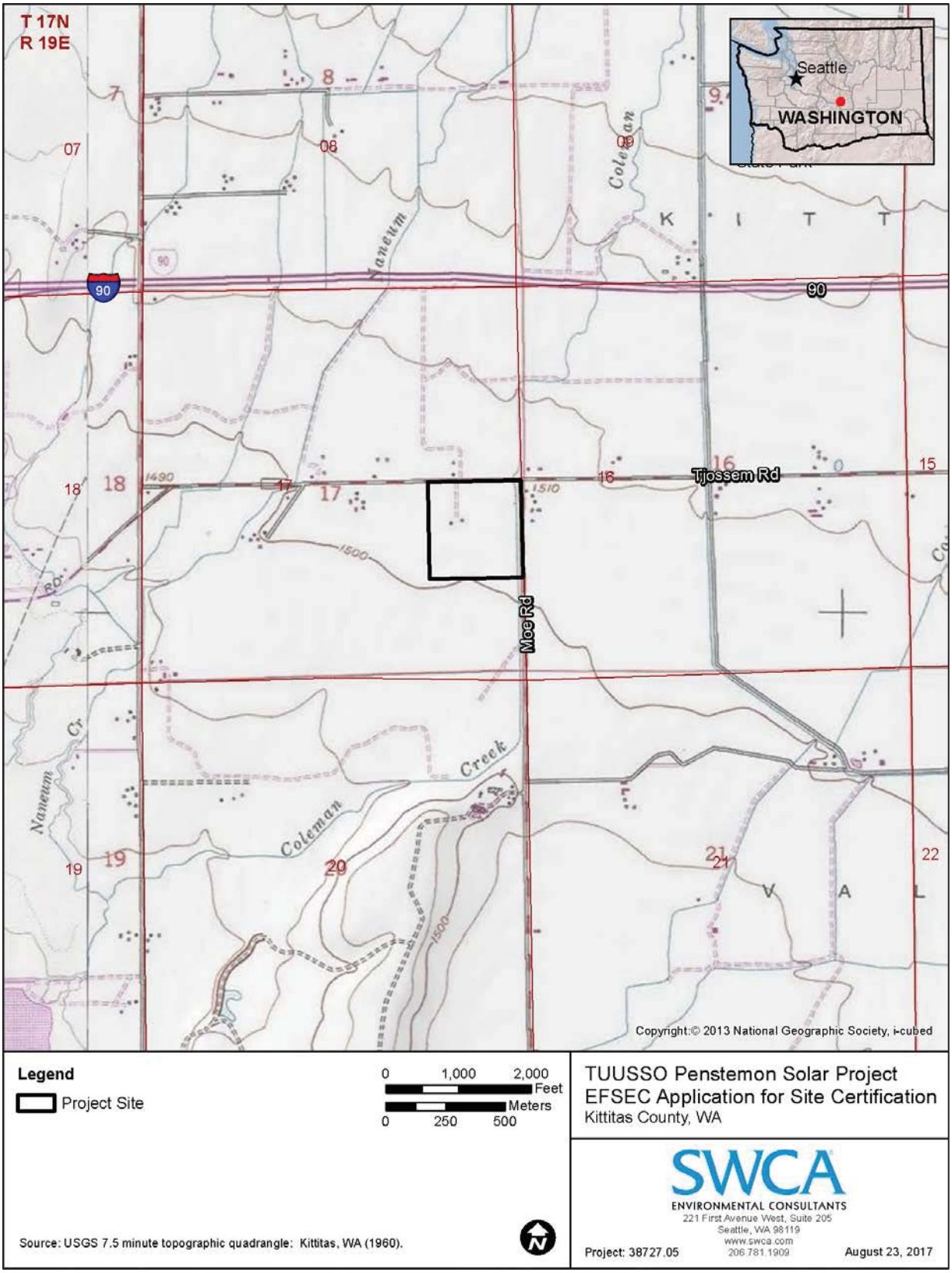

Figure 2.1-4. Penstemon Solar Project site location.

The Typha Solar Project site primarily consists of agricultural land (irrigated and grazed pasture) located just west of the Yakima River and north of Thorp Highway South. The project would be located approximately 1.1 miles east of the intersection of Thorp Highway South and Cove Road, in Section 30, T18N, R18E, Willamette Meridian (Figure 2.1-5). 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.

2.1.2.5 Urtica Solar Project Site

TUUSSO is proposing to construct a new PV solar 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.

The Urtica Solar Project site 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. The project would be located approximately 0.2 mile north of the intersection of Umptanum Road and Manastash Road, in Section 10, T17N, R18E, Willamette Meridian (Figure 2.1-6). 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.

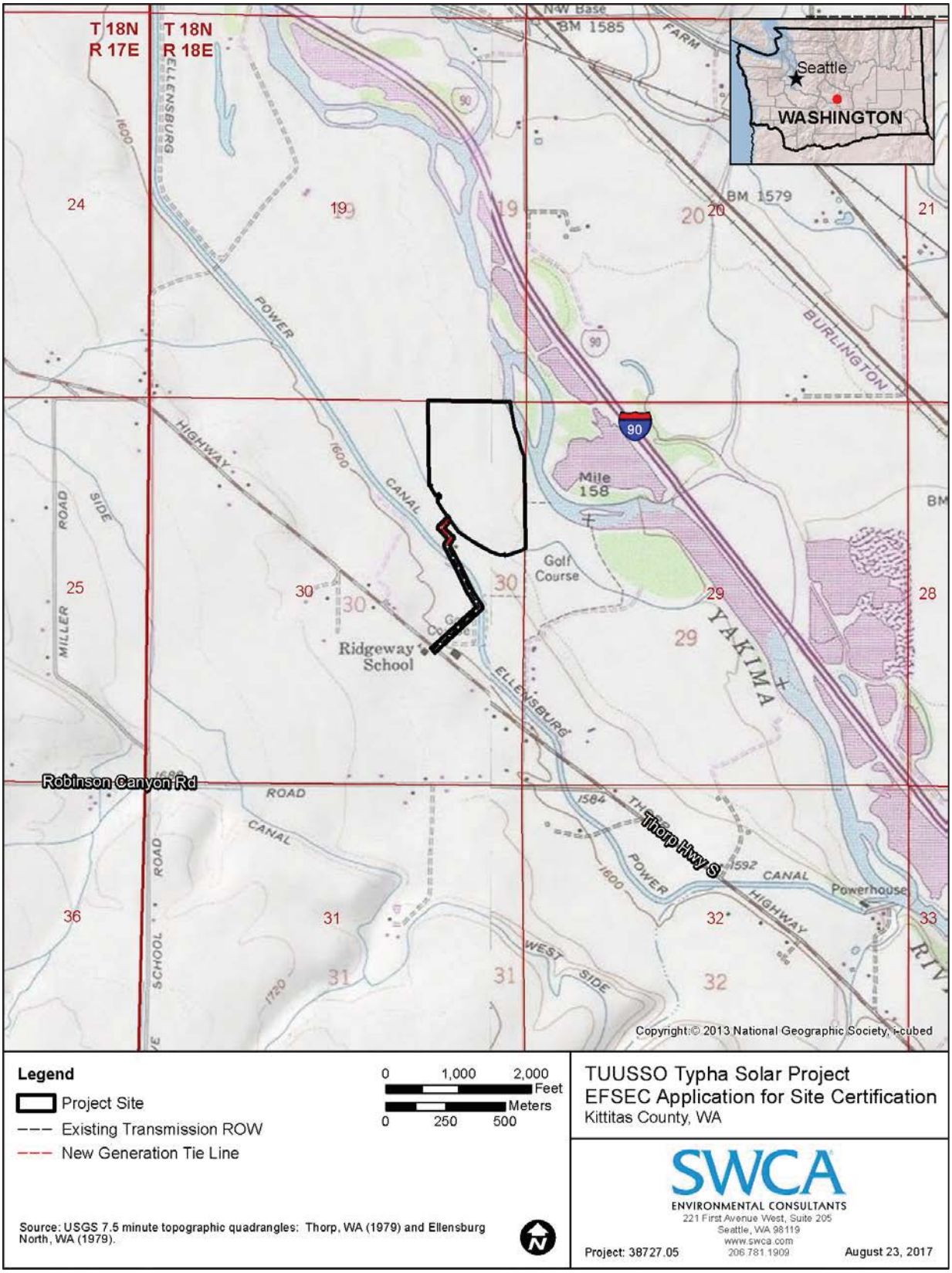

Figure 2.1-5. Typha Solar Project site location.

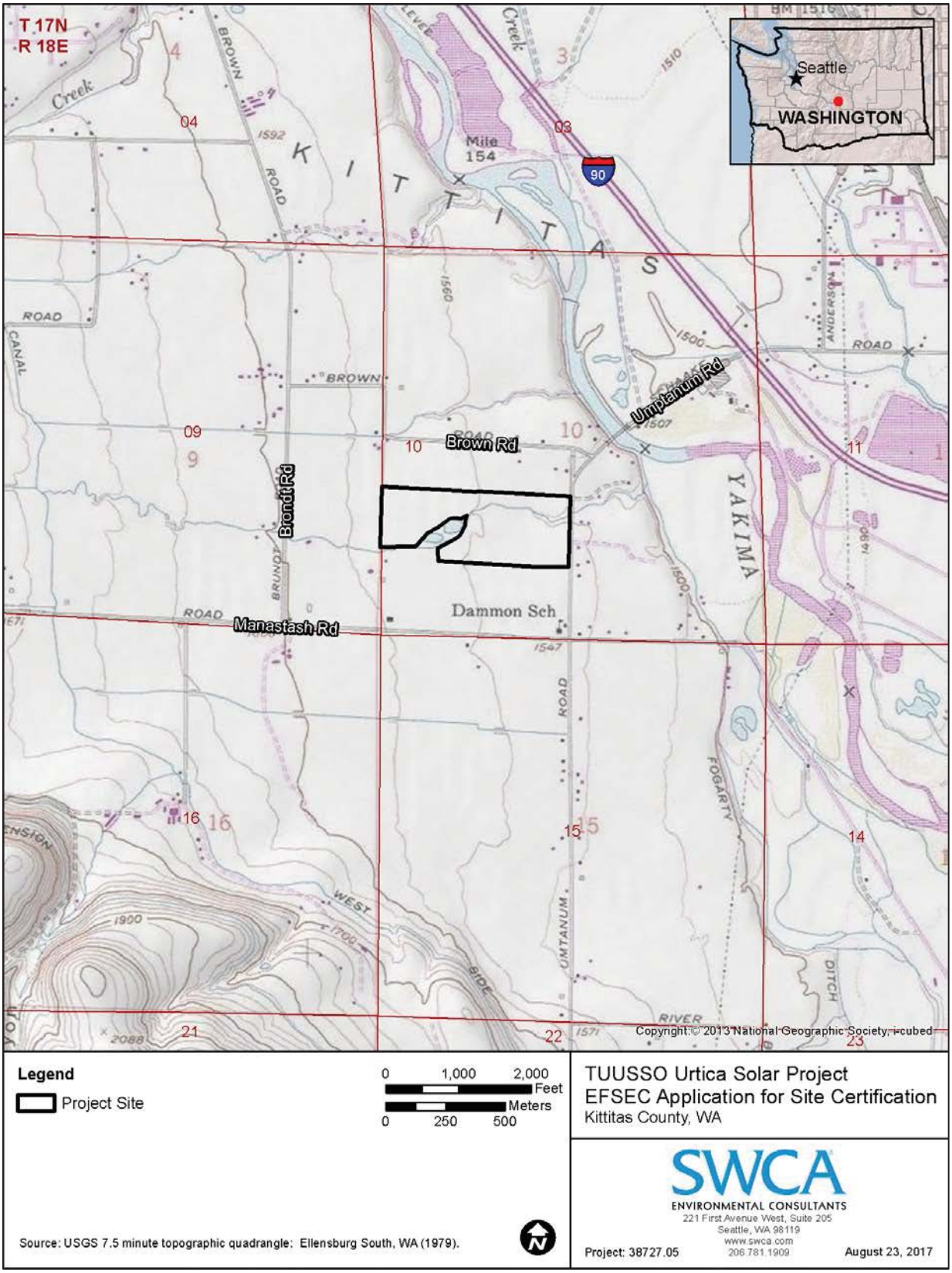

Figure 2.1-6. Urtica Solar Project site location.

2.2 Legal Descriptions and Ownership Interests 463-60-135

(1) Principal facility. The application shall contain a legal description of the site to be certified and shall identify the applicants and all nonprivate ownership interests in such land.

TUUSSO has established site control of all five of the proposed Columbia Solar Project sites via lease agreements executed with the landowners of record. All project sites are located in Kittitas County, Washington.

2.2.1 Camas Solar Project Site

2.2.1.1 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 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.

2.2.1.2 Applicants and All Non-private Ownership Interests

The Applicant is TUUSSO Energy, LLC, which has a leasehold interest in the Camas Solar Project site from:

Ownership: Valley Land Company, LLC
1585 Tjossem Road
Ellensburg, WA 98926

TUUSSO is not aware of any non-private ownership interest in the project site.

2.2.2 Fumaria Solar Project Site

2.2.2.1 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.

2.2.2.2 Applicants and All Non-private Ownership Interests

The Applicant is TUUSSO Energy, LLC, which has a leasehold interest in the Fumaria Solar Project site from:

Ownership: Reecer Creek Solar LLC
6616 - 223rd Ave. NE
Redmond, WA 98053

TUUSSO is not aware of any non-private ownership interest in the project site.

2.2.3 Penstemon Solar Project Site

2.2.3.1 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.

2.2.3.2 Applicants and All Non-private Ownership Interests

The Applicant is TUUSSO Energy, LLC, which has a leasehold interest in the Penstemon Solar Project site from:

Ownership: Valley Land Company LLC
1585 Tjossem Road
Ellensburg, WA 98926

TUUSSO is not aware of any non-private ownership interest in the project site.

2.2.4 Typha Solar Project Site

2.2.4.1 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.

2.2.4.2 Applicants and All Non-private Ownership Interests

The Applicant is TUUSSO Energy, LLC, which has a leasehold interest in the Typha Solar Project site from:

Ownership: Douglas Dicken
P.O. Box 1201
Ellensburg, WA 98926

TUUSSO is not aware of any non-private ownership interest in the project site.

2.2.5 Urtica Solar Project Site

2.2.5.1 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:

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.

2.2.5.2 Applicants and All Non-private Ownership Interests

The Applicant is TUUSSO Energy, LLC, which has a leasehold interest in the Urtica Solar Project site from:

Ownership: Herbert and Shirley Snowden
751 Manastash Road
Ellensburg, WA 98926

TUUSSO is not aware of any non-private ownership interest in the project site.

(2) Associated and transmission facilities. For those facilities described in RCW 80.50.020 (6) and (7) the application shall contain the legal metes and bounds description of the preferred centerline of the corridor necessary to construct and operate the facility contained therein, the width of the corridor, or variations in width between survey stations if appropriate, and shall identify the applicant's and others' ownership interests in lands over which the preferred centerline is described and of those lands lying equidistant for 1/4 mile either side of such center line.

Pursuant to Revised Code of Washington (RCW) 80.50.020 (7), all on-site improvements to the five proposed Columbia Solar Project sites are described in Section 2.3 of this application.

With respect to off-site improvements, of the five proposed TUUSSO Columbia Solar Project sites, only two would have off-site generation tie lines of significant length that tie into PSE’s distribution transmission line network, namely the Fumaria and Typha Solar Project sites. Applicable additional information is provided below.

Camas Solar Project Site: the point of interconnection would be adjacent the Camas Solar Project site (Figure 2.2-1), and TUUSSO would not construct any associated or transmission facilities off-site.

Fumaria Solar Project Site: the generation tie line would originate from the southwestern corner of the Fumaria Solar Project site and would connect to the existing Puget Sound Energy’s distribution transmission lines (or the Puget Sound Energy substation) approximately 2.6 miles away to the southwest. The Fumaria Solar Project site, alternative access routes, and generation tie line path are illustrated in Figures 2.2-2 through 2.2-6. Up to 0.9 miles of the generation tie line would require new wooden poles or undergrounded conductor (as shown in the figures). The remaining length of the new generation tie line would be installed along existing distribution/transmission ROWs, and would either be mounted on the existing wooden poles, or those existing poles would be replaced with new poles to which the new generation tie line would be mounted. The generation tie line corridor ROWs would be 20 to 60 feet wide.

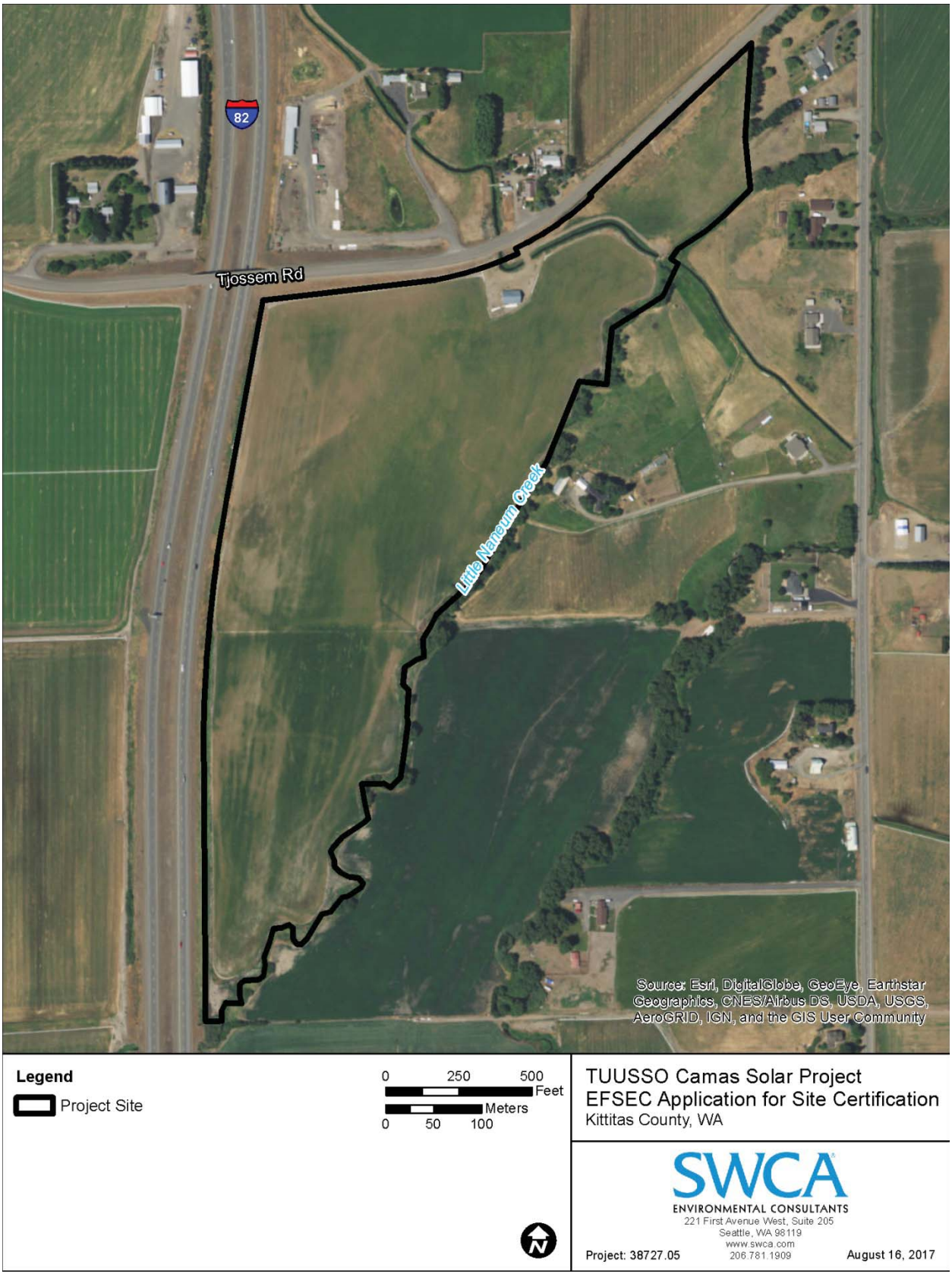

Figure 2.2-1. Camas Solar Project site.

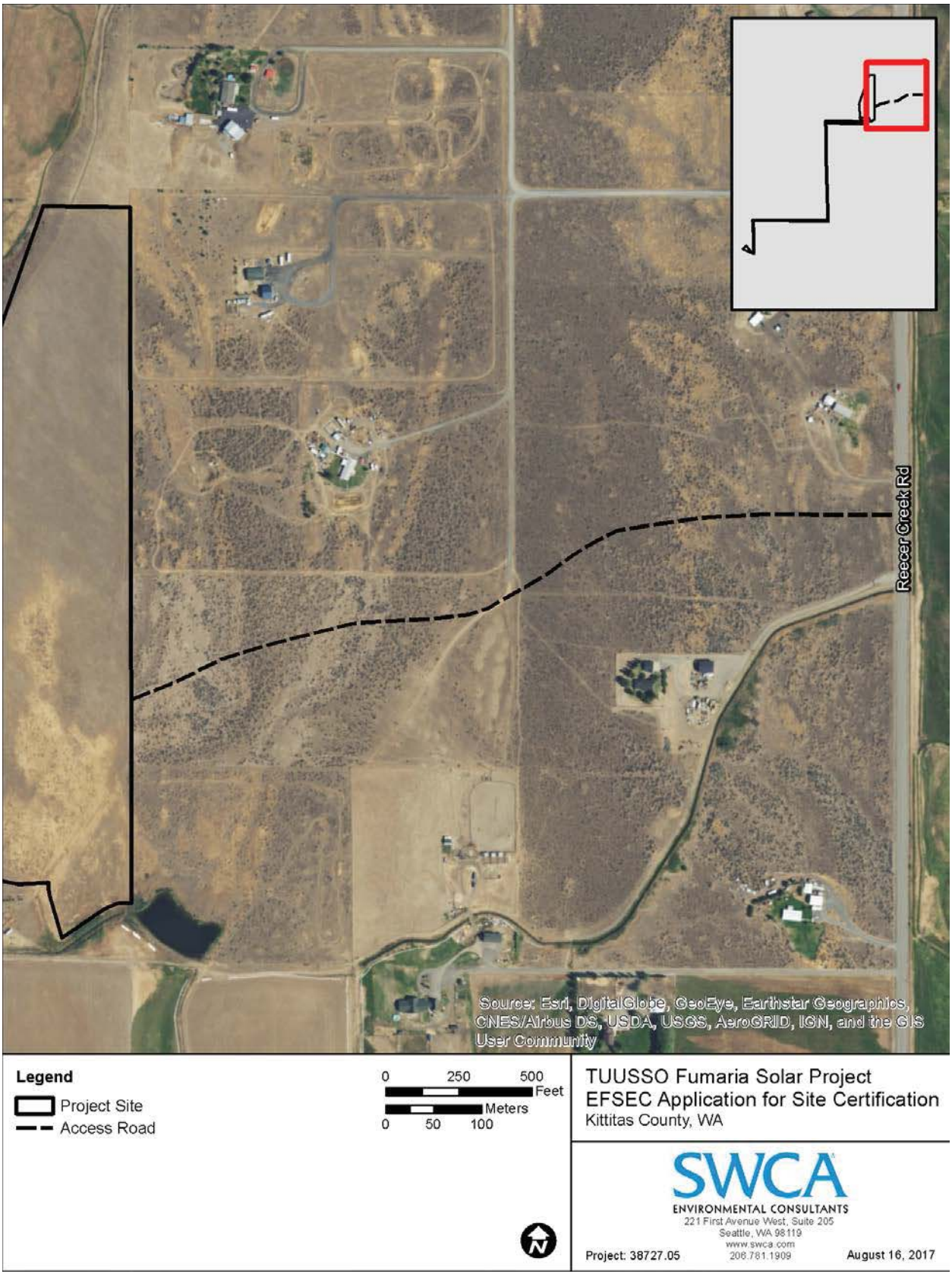

Figure 2.2-2. Fumaria Solar Project site, Map 1 of 5.

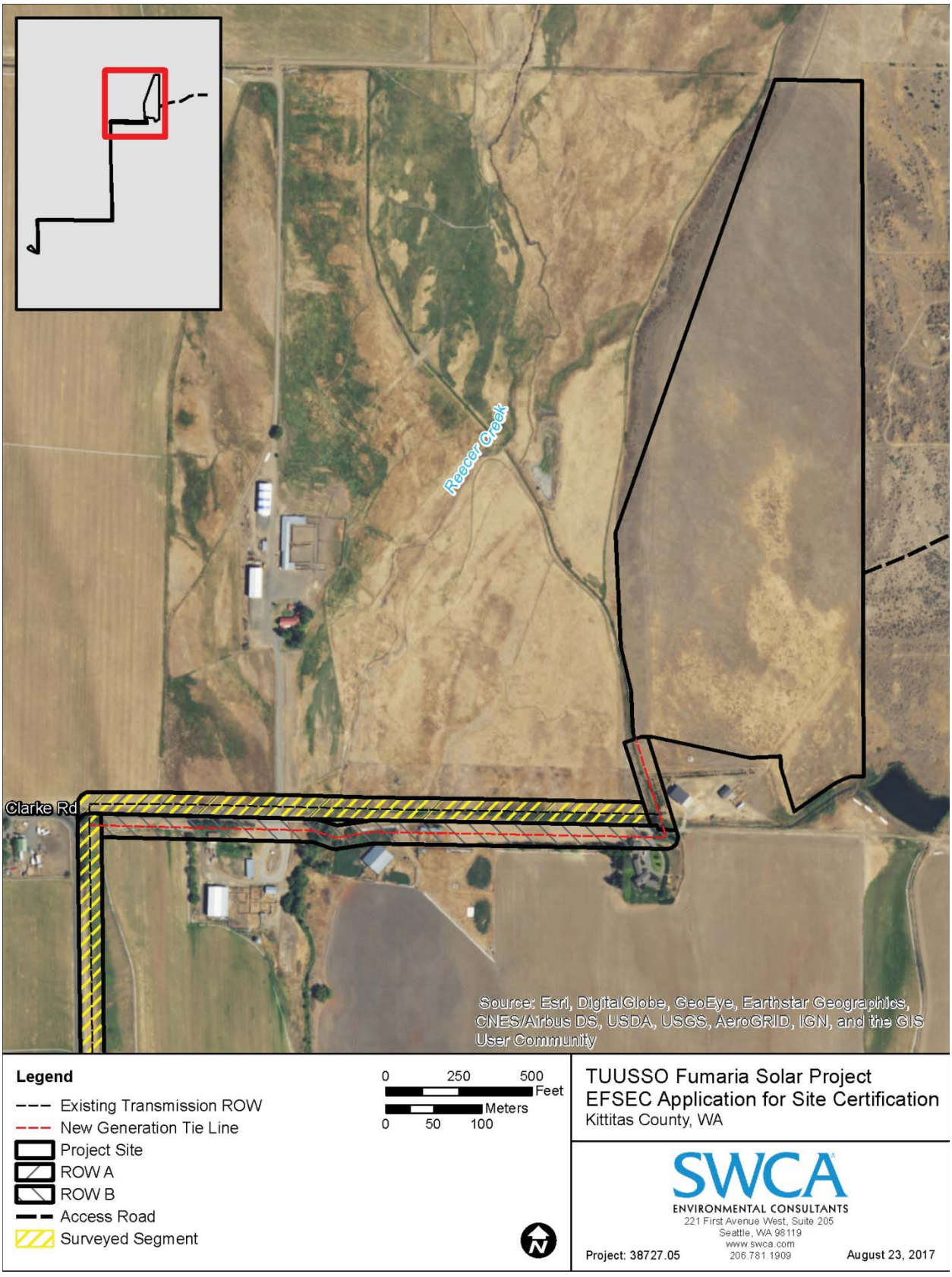

Figure 2.2-3. Fumaria Solar Project site, Map 2 of 5.

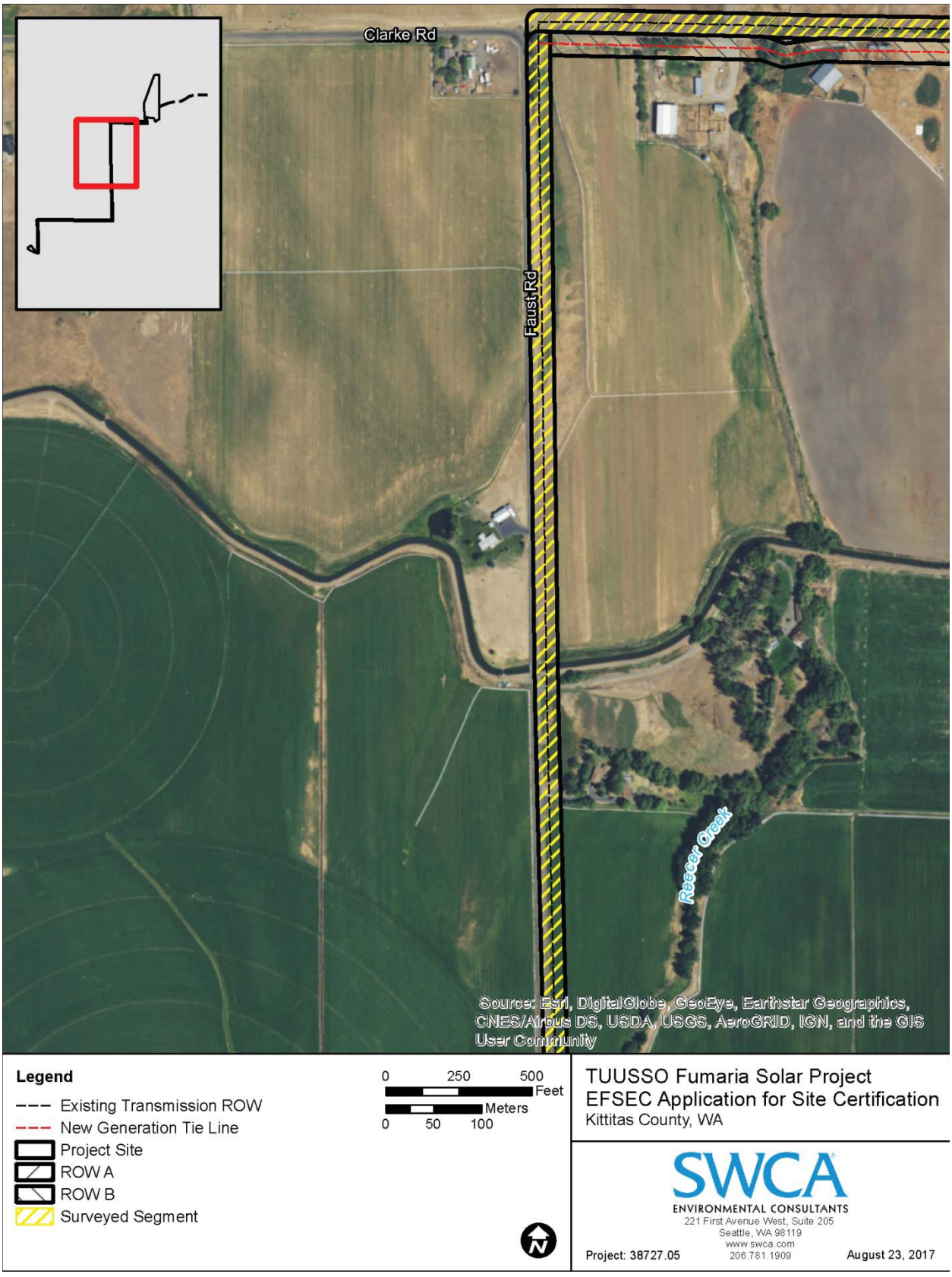

Figure 2.2-4. Fumaria Solar Project site, Map 3 of 5.

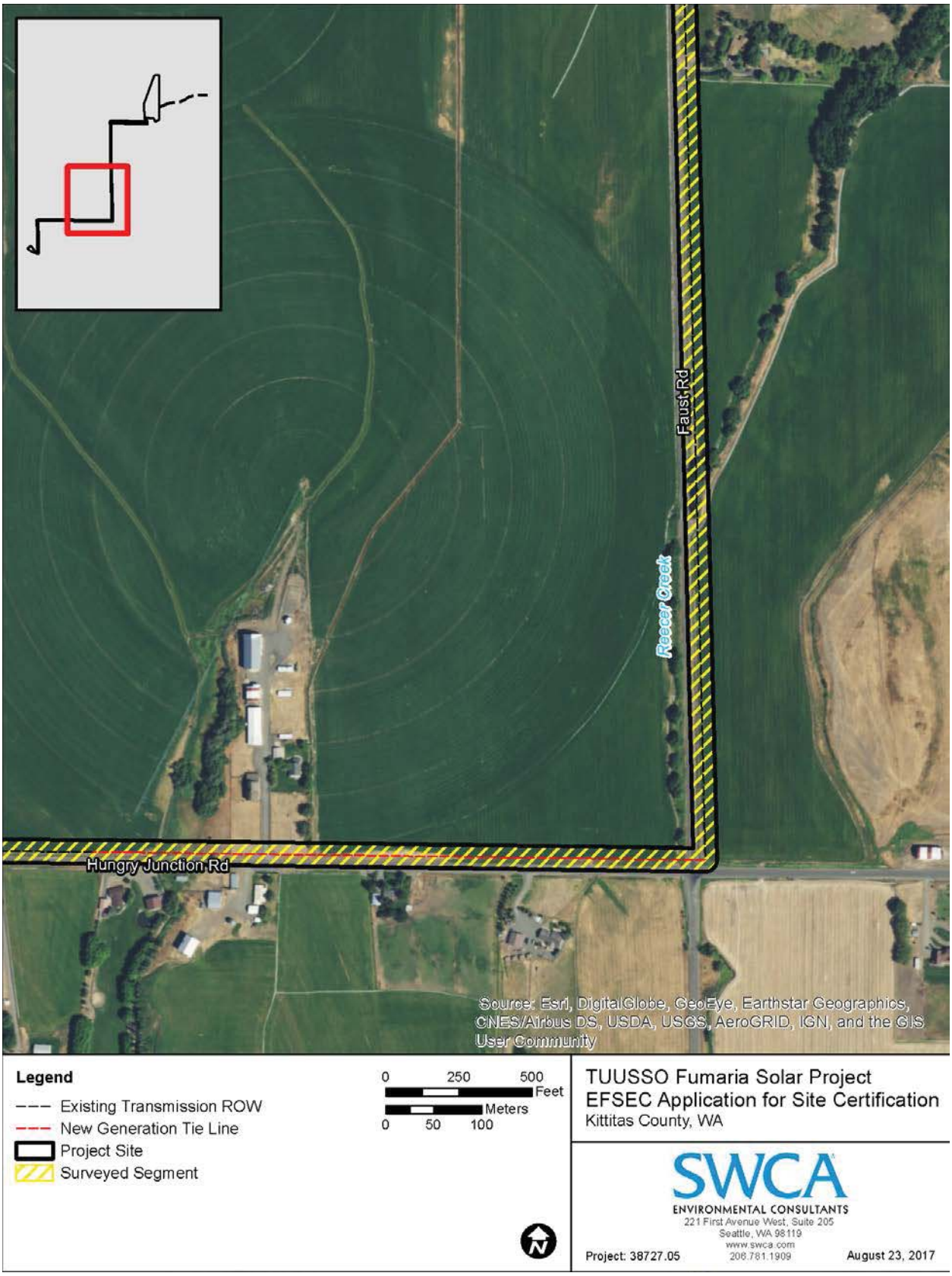

Figure 2.2-5. Fumaria Solar Project site, Map 4 of 5.

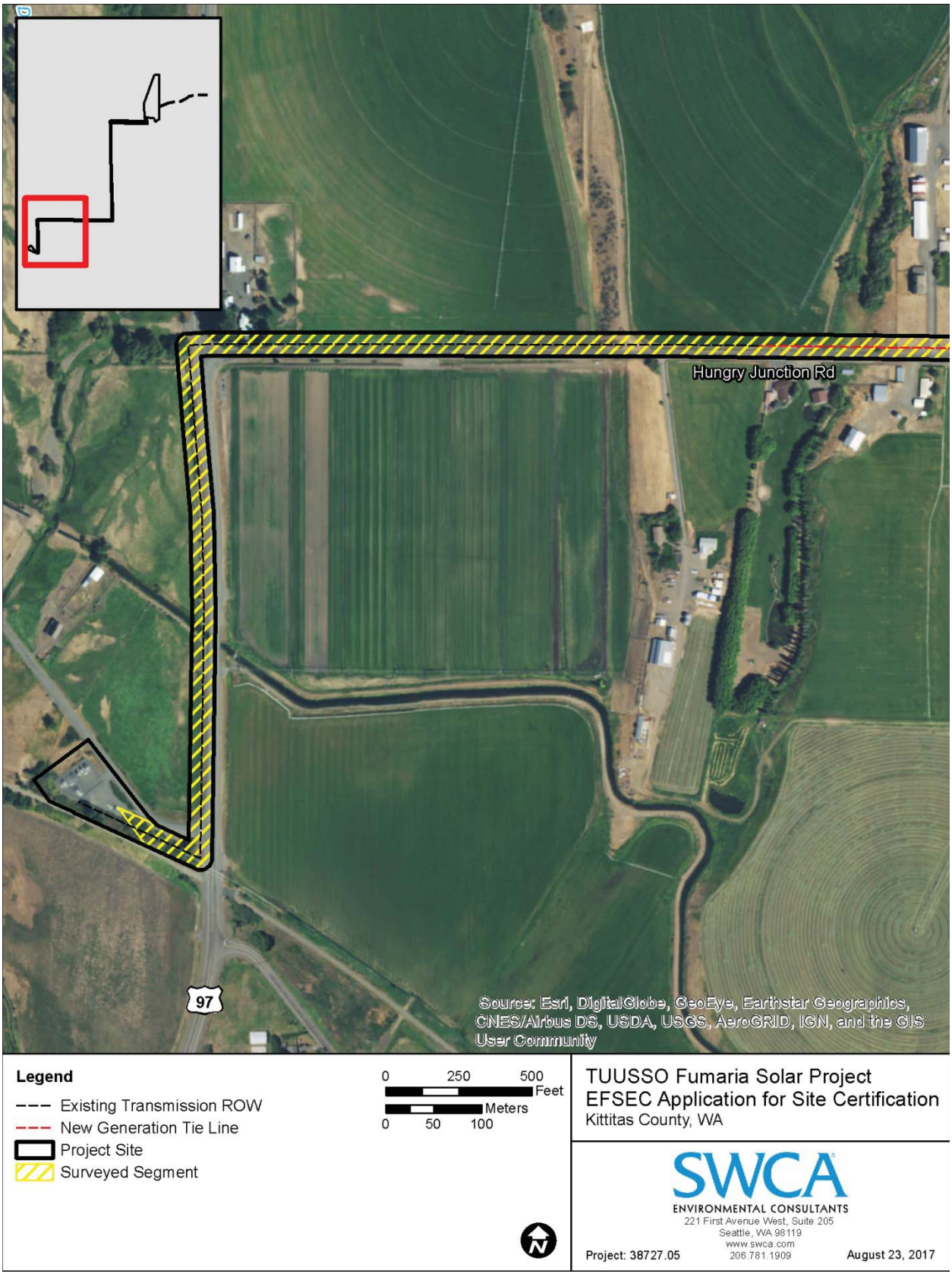

Figure 2.2-6. Fumaria Solar Project site, Map 5 of 5.

Penstemon Solar Project Site: the point of interconnection would be adjacent to the Penstemon Solar Project site (Figure 2.2-7) and TUUSSO would not construct any associated or transmission facilities off-site.

Typha Solar Project Site: the generation tie line would originate from the southwestern corner of the Typha Solar Project site and share wooden poles with existing distribution transmission 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 approximately 0.5-mile path is illustrated in Figure 2.2-8, of which less than 0.1 mile would require new wooden poles and conductor (as shown in Figure 2.2-8). The remaining length of the new generation tie line would be installed along existing electrical ROWs, and would either be mounted to the existing wooden poles, or those existing poles would be replaced with new poles to which the new generation tie line would be mounted. The generation tie line corridor ROWs would be 20 to 60 feet wide.

Urtica Solar Project Site: the point of interconnection would be adjacent to the Urtica Solar Project site (Figure 2.2-9), and TUUSSO would not construct any associated or transmission facilities off-site.

Figure 2.2-7. Penstemon Solar Project site.

Figure 2.2-8. Typha Solar Project site.

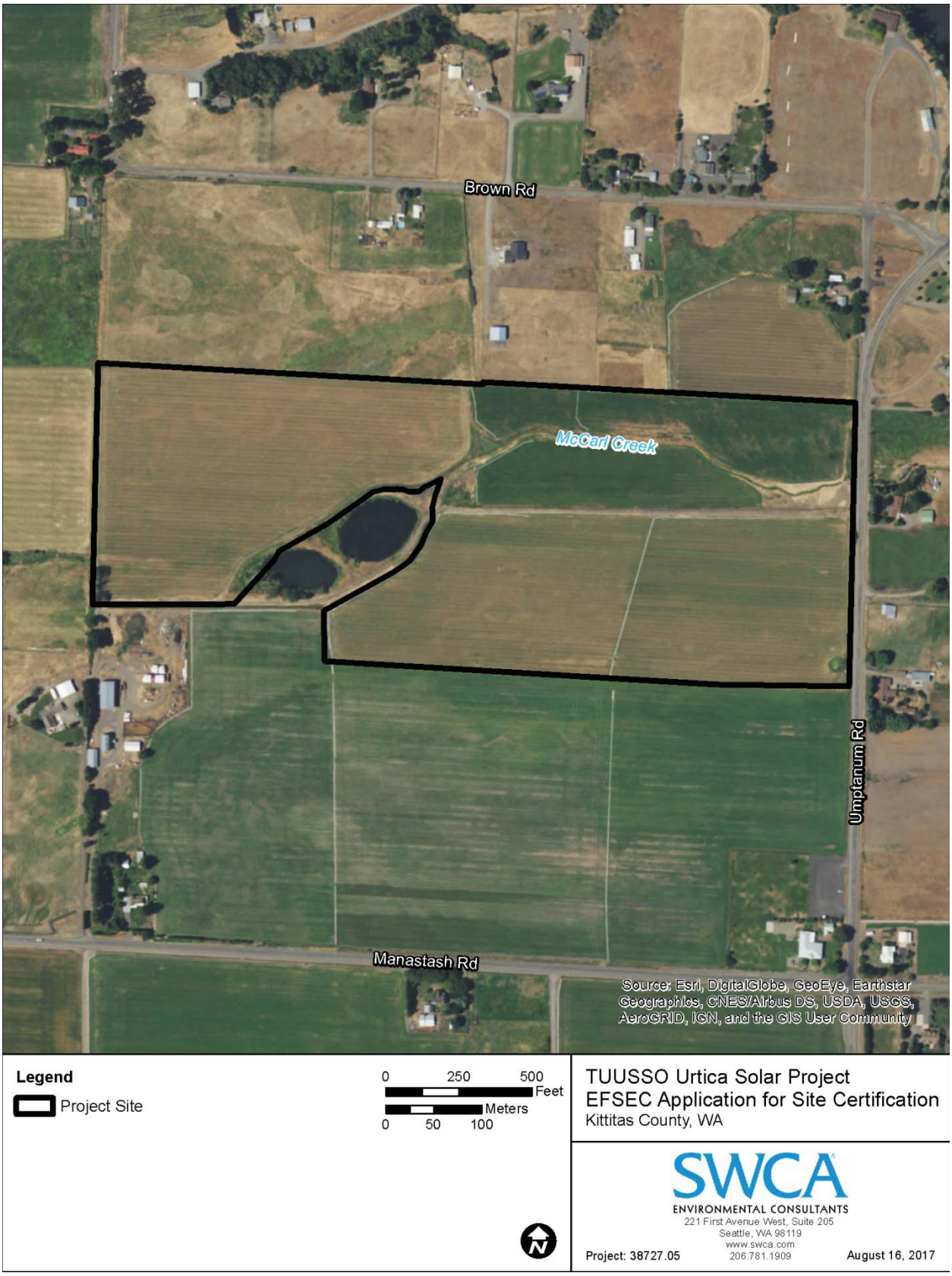

Figure 2.2-9. Urtica Solar Project site.

2.3 Construction on Site 463-60-145

The applicant shall describe the characteristics of the construction to occur at the proposed site including the type, size, and cost of the facility; description of major components and such information as will acquaint the council with the significant features of the proposed project.

2.3.1 Overview of TUUSSO'S Columbia Solar Projects

The Applicant, TUUSSO, a Seattle-based developer of ground-mounted solar power projects with a proven history of successful low-impact development of over 100 MW of solar projects, proposes to develop, own, and operate five PV projects, the Camas, Fumaria, Penstemon, Typha, and Urtica Solar Projects, collectively the Columbia Solar Projects. Each of these projects would be located in Kittitas County, outside of the city of Ellensburg on agricultural land, where major alternative energy facilities are a permitted conditional use under county code. The project sites would be converted to solar power generating facilities with associated grid interconnection equipment. The projects would operate year-round, producing up to 25 MW of renewable electric power in aggregate during daytime hours. The proposed schedule for construction of the facilities is to begin grading and construction of the facilities in April 2018 and complete construction by November 2018. The total cost of each facility is estimated to be $8 to 10 million, for a total of $40 to 50 million for all five solar projects.

TUUSSO has established site control of the Columbia Solar Project sites via lease agreements and has executed 15-year power purchase agreements with PSE to supply electricity generated by the projects to the utility under PSE's Schedule 91 program. Each of the projects is currently in advanced stages of the interconnection process with PSE, who have determined that the interconnection and proposed timelines are feasible, and may be made with limited impact to the local distribution and transmission system.

TUUSSO is proposing to construct each of the five Columbia Solar Projects to meet the following objectives:

- provide PSE and the State of Washington with clean, renewably generated electricity;
- stimulate the local economy through construction and operations job creation;
- support Washington's efforts to reduce greenhouse gas emissions and meet Renewable Portfolio Standard (RPS) mandates; and
- develop economically feasible and commercially financeable projects.

2.3.2 Columbia Solar Projects Facilities and Infrastructure

Each of the five Columbia Solar Project facilities would consist of:

- a solar field of north-south-oriented rows of crystalline silicon PV panels, such as QCells Q.Antum Solar Modules Q.Plus L-G4.2 between 325 and 345Wp, mounted on single-axis tracking systems, such as NEXTracker's NX Horizon^{TM}, on galvanized steel support structures;
- an electrical collection and inverter system that aggregates the output from the PV panels and converts the electricity from direct current (DC) to alternating current (AC), including inverters such as Solectria's SGI 750/500 XTM inverters;

- interconnection equipment where the facility output is transformed to a voltage of 12.47 kV, including a padmount-style transformer manufactured by ABB or similar;
- for the Typha and Fumaria Solar Projects, a 12.47-kV generation tie line connecting each solar project site to nearby existing distribution lines;
- Remote Supervisory Control and Data Acquisition (SCADA) monitoring incorporated into the process control system to allow unmanned operations;
- communications and grid-protection equipment;
- a meteorological data collection system configured to collect meteorological information roughly at the height of the PV panels;
- civil infrastructure including access gates, internal access roads, and secure fencing; and
- where appropriate, native trees, shrubs, and/or plants in selected locations to provide visual screening.

The design, including the selection of the primary components of each of the five Columbia Solar Project facilities, is subject to change based on the final engineering and market conditions at the time of construction.

Figures 2.3-1 through 2.3-5 show preliminary plans for each of the five Columbia Solar Project sites. These plans include the scale of the drawing and north point; locations of all existing and proposed uses, structures, fences, and improvements; distances between structures and property lines; and locations of all driveways, internal access roads, and points of ingress and egress. Typical racking details depict the array with portrait racking, with one row of modules positioned vertically on each rack. An elevation sketch is also provided to show a proposed inverter pad, including inverter and transformer structures on a concrete pad, showing dimensions and heights above the ground (Appendix L).

2.3.2.1 Photovoltaic Panels

The solar field would consist of PV panels mounted on steel support structures. The PV panels would consist of polycrystalline panels arranged in rows aligned north to south. The assembled PV panels would have a minimum leading edge height (bottom edge of the modules) of approximately 1 foot from grade, and a maximum top edge height of approximately 8 feet from grade, depending on the angle of the tracking system as it changes over the course of each day.

The supports would be configured with a pivoting, single-axis tracking system, such as NEXTracker's NX Horizon™ system. Throughout the day, the PV panels would pivot up to 120 degrees around a north-south axis, tracking the sun from east to west.

Depending on the final racking vendor selection and design, the number of racks supporting the PV panels could vary. Subject to final design, the typical three string rows would consist of nine pile driven posts, each serving as the foundation. Each post would be an I-beam, 10 to 15 feet in length, and have a cross-section of approximately 6 by 4 inches. They would be driven to a depth of approximately 5 to 7 feet below grade. The solar arrays would be designed to withstand snow loads of 25 pounds per square foot (psf) and winds of 120 miles per hour (mph).

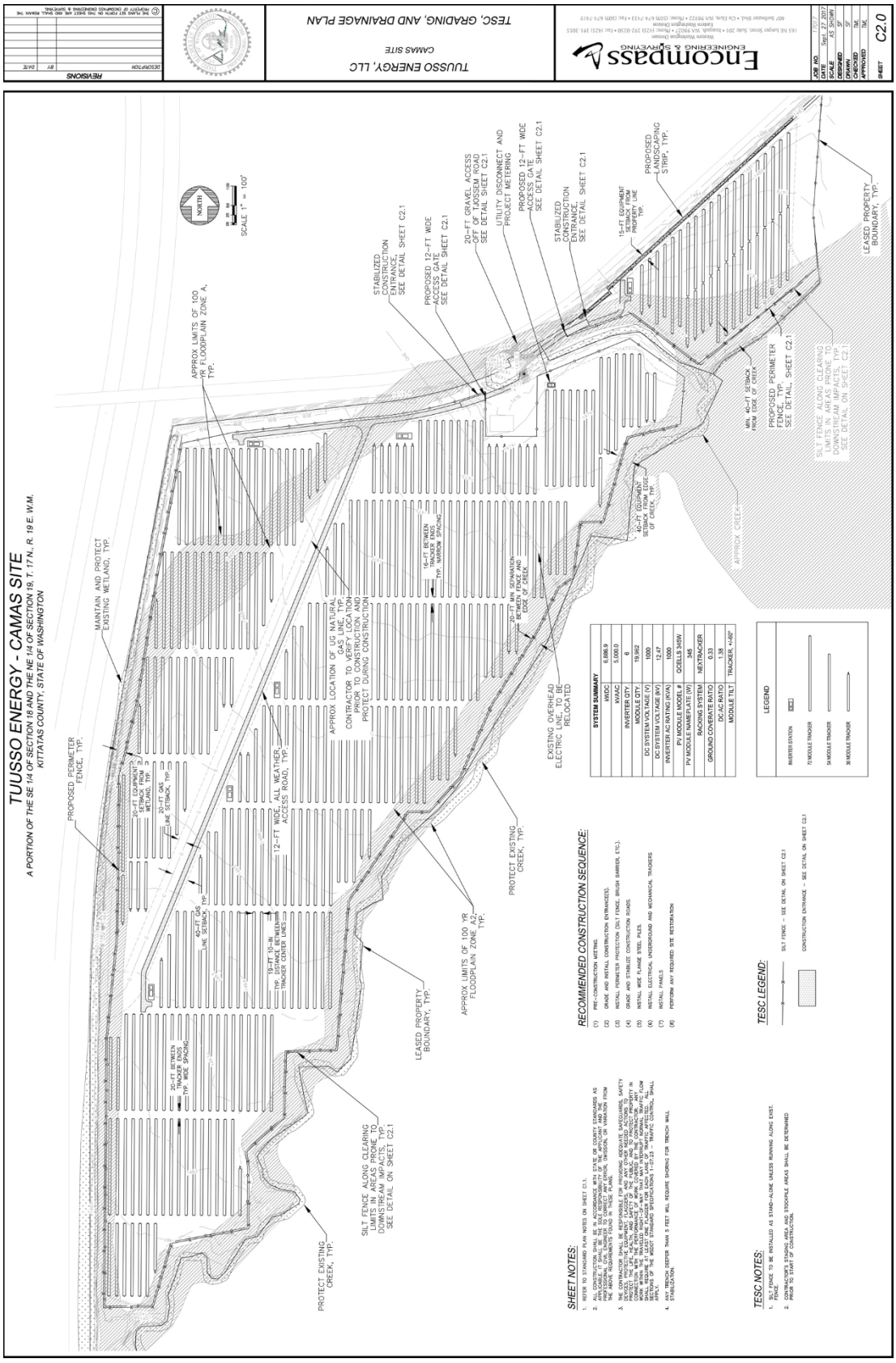

Figure 2.3-1. Camas Solar Project preliminary project plan.

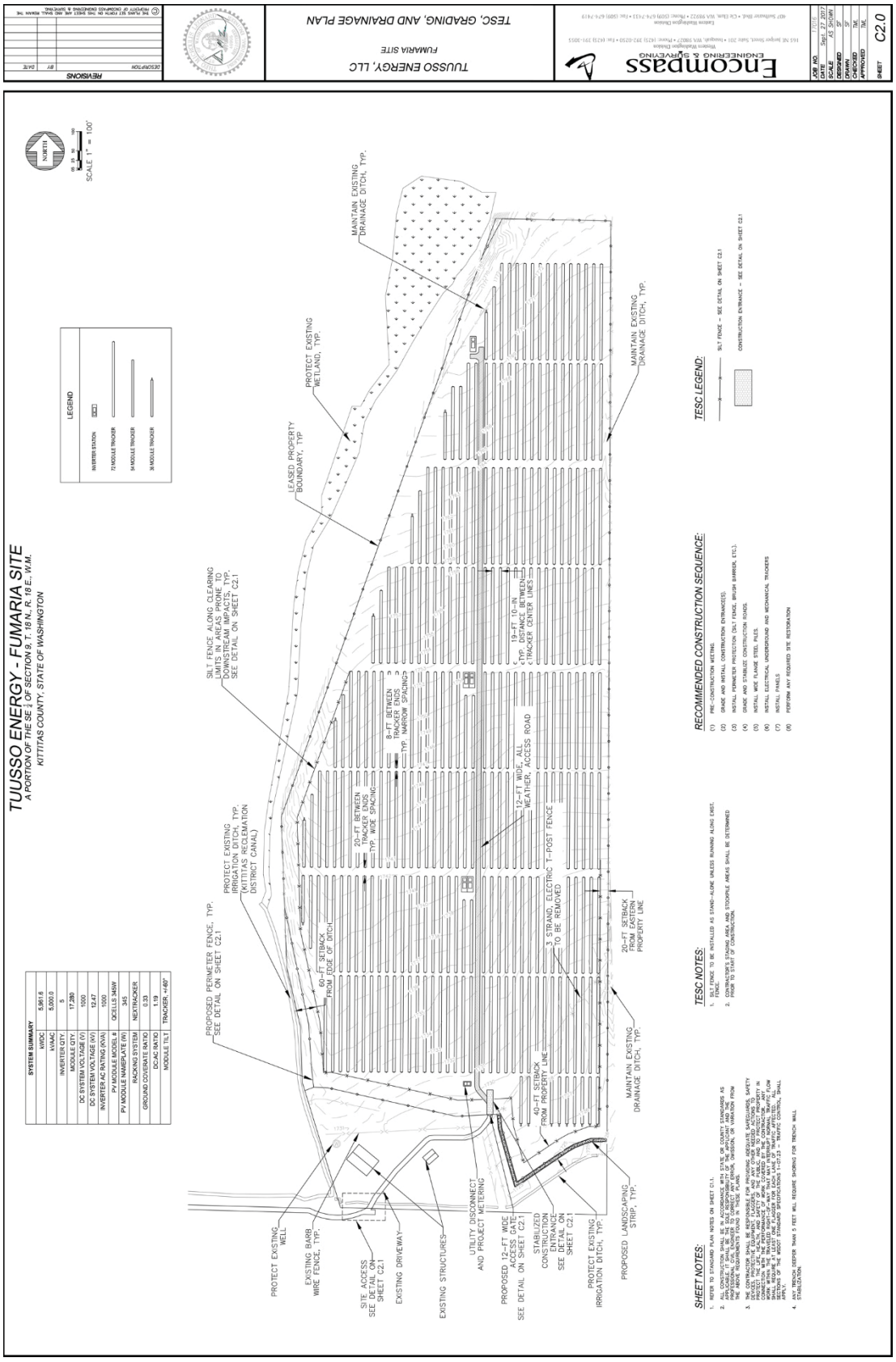

Figure 2.3-2. Fumaria Solar Project preliminary project plan.

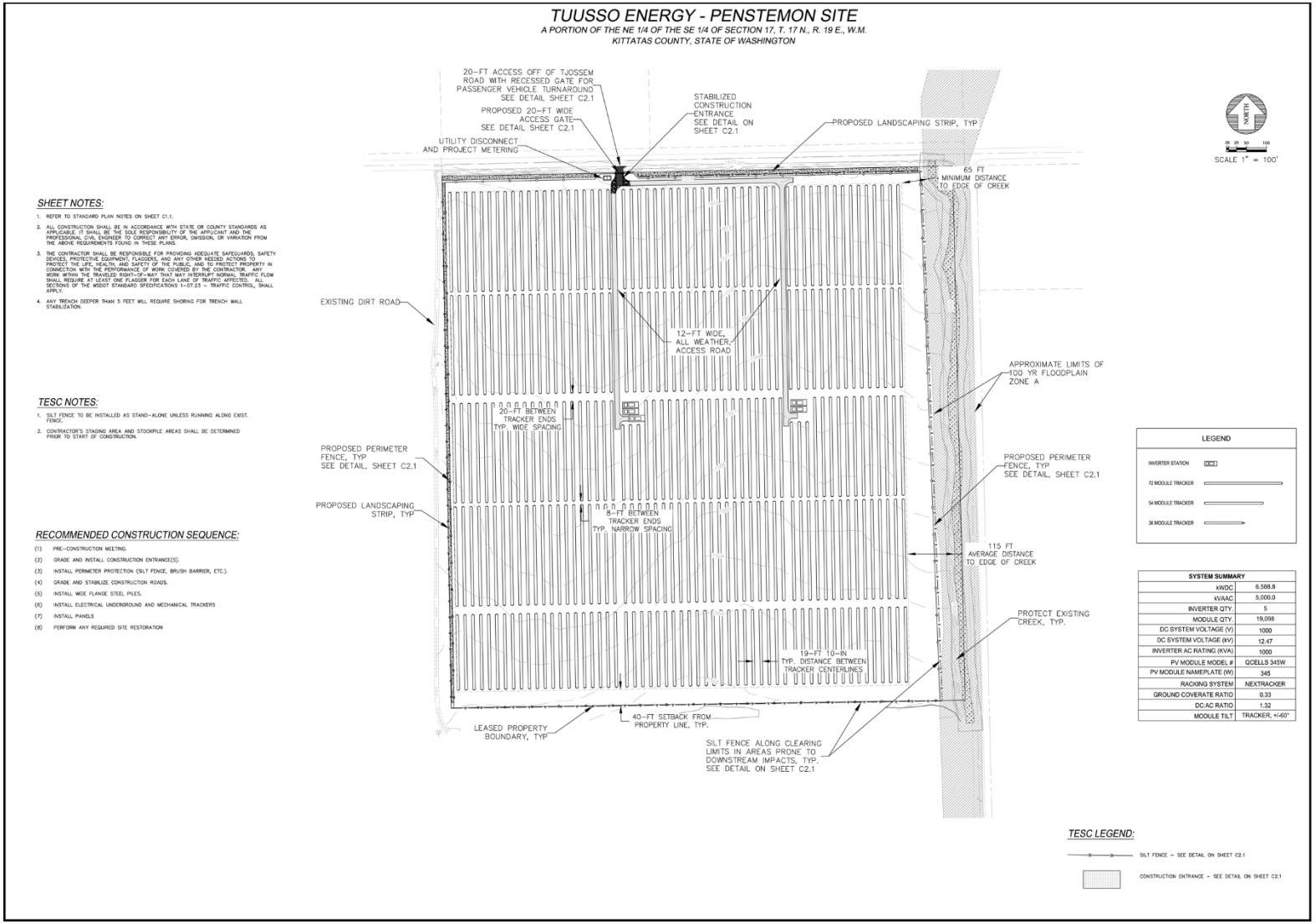

Figure 2.3-3. Penstemon Solar Project preliminary project plan.

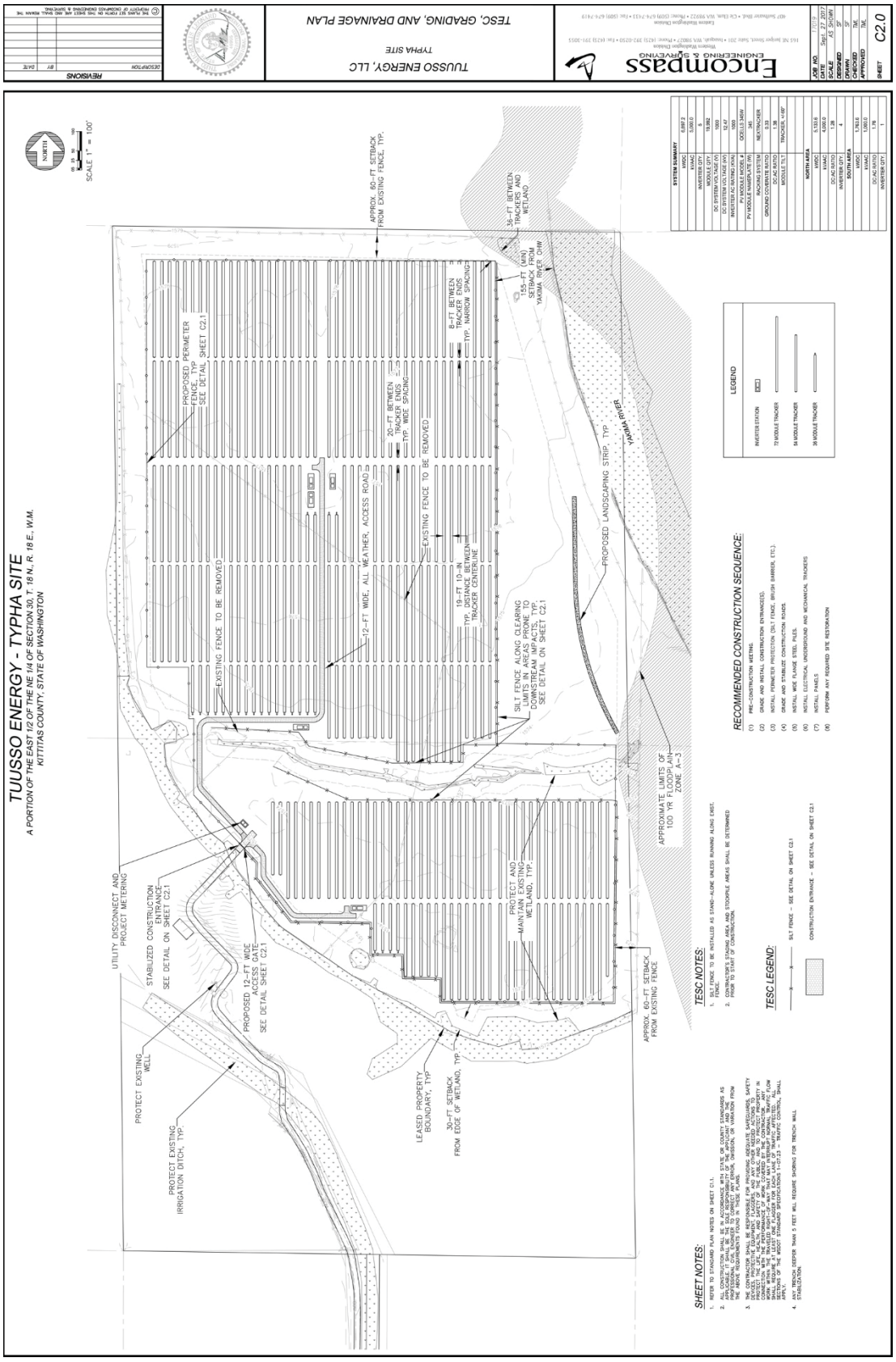

Figure 2.3-4. Typha Solar Project preliminary project plan.

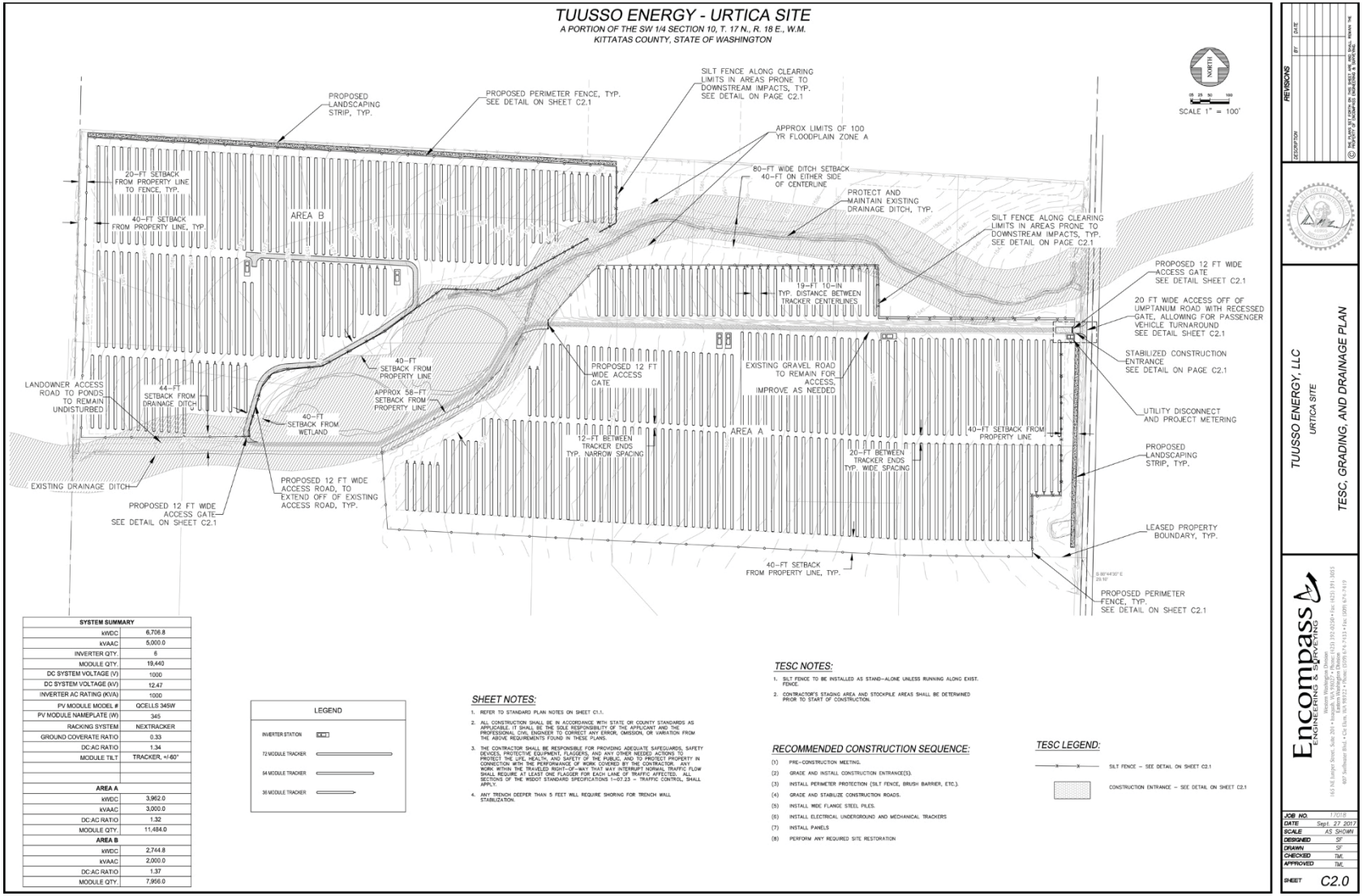

Figure 2.3-5. Urtica Solar Project preliminary project plan.

2.3.2.2 Electrical Collection System

The PV panels would be organized into electrical groups referred to as “blocks.” Each block would encompass approximately 7 acres of PV panels (capable of producing about 1.3 MW DC of power each) and would be connected to a central station inverter that would transform the DC power to AC power, which would then be transmitted by the grid and used by the utility’s customers. A typical block would measure approximately 600 by 500 feet. The size of each block would depend primarily on the inverter loading ratio (ILR; the ratio of DC power capacity to the AC output power of the inverter, and typically 1.3:1), and the ground cover ratio (GCR; i.e., the space that the PV panels occupy as a percentage of land area beneath them). The lower the GCR, the less space the PV panels occupy, thereby minimizing shading from row to row in the early morning and late afternoon hours.

Special weather and sunlight resistant conductors, attached under the PV panels, allow the connection of the panels with each other in parallel, to cumulatively form strings of higher voltage and power capacity. Each of these strings would consist of up to 20 panels in parallel and would terminate into above-ground special DC source circuit combiner boxes, with dimensions of approximately 36 × 36 × 10 inches that collect the power produced by multiple strings. From the combiner boxes, the cabling transitions to underground via buried trenches, feeding into the inverters and associated switchgear housed in each inverter skid. The cable sizes would vary based on the detailed electrical design, as would the size and depth of the trenches. However, the trenches would likely be about 36 to 48 inches deep, with cables installed in sand or similar material at the bottom of the trench and then 30 inches of compacted backfill placed over the bottom material. The trenches would be 6 to 24 inches wide. Actual cable width would be smaller, depending on whether direct burial or cable-in-conduit is used. In general, at least 3 inches of clearance is required from the bottom and sides of the trench to any cable or conduit.

Each inverter skid is anticipated to be a 15- by 30-foot, and 12- to 24-inch-deep prefabricated concrete pad with equipment mounted to it, including meteorological equipment up to 8 feet in height. The array and skid would be unoccupied except during inspection and maintenance. Each inverter skid would include an associated outdoor utility-grade transformer, roughly 6 × 6 × 6 feet, to step up the electricity voltage from the inverter output level (e.g., 480 V AC) to 12.47 kV AC.

From these transformers, electricity would be conveyed via an underground 12.47-kV AC collector circuit to a common 12.47-kV switchyard. The interconnection specifics for each of the five Columbia Solar Project sites would then vary, as described in greater detail below.

2.3.2.3 Energy Resource

TUUSSO modeled the design and associated energy output for each project using PVSyst v6.21. PVSyst is a PV solar project modeling software widely used in the solar power industry and is considered the state of the art standard for output simulation. The energy output simulated by PVSyst is based on the meteorological data at the project site, models of the system equipment such as the inverters and solar panels, and project design specifications. PVSyst v6.21 was used to simulate the predicted energy output from each of the five Columbia Solar Projects, with an estimate of approximately 11,500 megawatt hours (MWh) in the first full year of project operation.

2.3.2.4 Electrical Interconnection

Conceptual single-line diagrams illustrating the electrical collection system and interconnection for each of the five Columbia Solar Project sites are included in Appendix L. The switchyards would each include protection and communication equipment, including:

- 12.47-kV switchgear and circuit breaking devices;
- 12.47-kV capacitors;
- wood support structures up to 30 feet in height;
- grounding grid;
- prefabricated utility control enclosures;
- perimeter fence; and
- SCADA system, remotely monitored by TUUSSO's operations and maintenance (O&M) provider and PSE.

For the Typha and Fumaria Solar Projects, a generation tie line would be constructed from the on-site switchyard to the nearby distribution line infrastructure owned by PSE. The specifics of each generation tie line are described in greater detail below.

2.3.2.5 Meteorological Data Collection System

Each of the five Columbia Solar Project facilities would also include at least one meteorological data collection system, configured to collect the following meteorological data at the level of the solar panels, or approximately 6 to 8 feet above the ground:

- global horizontal irradiance;
- global irradiance/plane of array;
- ambient temperature;
- wind speed;
- wind direction;
- relative humidity;
- precipitation;
- barometric pressure; and
- visibility.

2.3.2.6 Infrastructure

Driveways and Access Roads

The points of access and associated construction methods vary for each 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, and would consist of compacted soils or gravel. These all-weather access roads would be compacted to 90%, and a soil binder would then be sprayed or aggregate would be laid down to protect them from wind and water erosion and 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 site would be unpaved vegetated drive roads, with slopes of less than 4%. All access roads have been placed to minimize grading, closely following the existing elevations.

Grading Design

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 in order 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.

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.

Landscaping

Per the recommendation of the Washington Department of Fish and Wildlife (WDFW), each of the five Columbia Solar Project sites, except for the Fumaria Solar Project site, would be revegetated with low-cover native plant species. These species would be planted from drought-tolerant seed mixes, adapted well to the Kittitas County climate. Each solar project has been designed to minimize disturbed areas by keeping grading to a minimum. The Fumaria Solar Project site has very limited water availability, and so TUUSSO plans to leave the existing established vegetation on-site.

To effectively establish the new native plant species, TUUSSO would likely undertake mowing, herbicide treatments, tilling, drilling seeds, and irrigation during the initial few years of operation. Subsequent broadleaf treatments during the first couple years after construction would be undertaken to prevent broadleaf weeds from competing against the newly planted native vegetation. Formal landscaping is not proposed for any of the solar projects, as the amount of proposed grading does not warrant a full landscape design. The plantings planned for each solar project site are set forth below in greater detail.

Fencing

The five proposed Columbia Solar Project sites would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped by razor wire 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. All fencing would be placed at or above grade to ensure drainage flows are unobstructed.

“Warning High Voltage” signs would be placed on the fencing at about 100-foot intervals and at each gate.

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, as required for nighttime security purposes. 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, between five and 10 lights would be installed and fed by direct buried underground electrical supply lines.

Sewer and Water Facilities

None of the five Columbia Solar Project facilities would have on-site toilet and septic or sewer system connections. The projects would follow the applicable state and/or county guidelines with respect to relief stations for employees, when employees are on-site. Any on-site water for ongoing use would be provided by the landowners or would be trucked to the site from outside water sources.

Fire Suppression and Safety

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

also coordinate with the Kittitas County Fire Department to provide PV training to fire responders and construction, operational, 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.

2.3.3 Solar Project Sites

The following sections describe any site-specific characteristics of the construction and/or major components that might occur at each proposed Columbia Solar Project site.

2.3.3.1 Camas Solar Project Site

The proposed Camas Solar Project, a preliminary plan for which is provided in Figure 2.3-1, is a 5-MWac solar energy generation facility that would be located at the intersection of Tjossem Road and I-82, within a development envelope of approximately 50.83 acres. The setbacks to the fencing and to the electrical generating equipment are depicted in Figure 2.3-1. As illustrated, the project would consist of two primary sections separated by Bull Ditch that are separately fenced but electrically connected. To clarify references to these different portions of the solar project, that larger portion of the project to the southwest of Bull Ditch is referred to as Camas A, and that smaller portion of the project to the northeast of Bull Ditch is referred to as Camas B.

A total of approximately 20,000 PV panels would be arranged in approximately 270 rows with center-to-center spacing of about 15 feet. The GCR is currently planned at approximately 33%. The final facility equipment numbers and locations would depend upon the results of technical studies (e.g., the Interconnection Facilities Study).

There would be approximately six inverter pads throughout the Camas Solar Project site, each of which would be approximately 15 by 30 feet and 1 to 2 feet thick, where the direct current from the arrays would be converted to alternating current and then transmitted by the electric grid. Each inverter pad would include one to two inverter enclosures and one AC transformer. The inverter located within Camas B would be electrically connected to Camas A via an overhead 12.47-kV conduit mounted to four to six wood monopoles passing over Bull Ditch. A typical wood monopole would be 30 to 45 feet tall, set 6 to 8 feet deep in the ground, and be 8 to 16 inches in diameter.

Aside from construction equipment traffic, there is little to no anticipated ground disturbance for the installation of the racking and solar modules. The Camas Solar Project site has an overall grade change of less than 2%, is relatively flat, and the piles can be installed on the existing grades. There would be 5% or less of impervious surfaces added to the site, less than 100,000 square feet. Impervious areas would be associated with all-weather access roads running to the inverter pads, the six inverter pads, piles for the solar panels and fencing, and a pad for the switchyard.

The only grading/earth moving expected on the Camas Solar Project site would be associated with a minor widening of the entrance road to Camas A; grading/leveling as required for the all-weather access roads; the small areas required for the concrete pads to support the inverters, transformers, and switch gear; and trenching for the DC and AC collection system. Other property improvements that would have only moderate impact/disturbance to in situ conditions would involve roadbed stabilization for the all-weather access roads.

In addition, 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. A typical wood monopole would be 30 to 45 feet tall, set 6 to 8 feet deep in the ground, and be 8 to 16 inches in diameter.

Electrical Interconnection

The Camas Solar Project would be located in Puget Sound Energy's service territory, and would connect to the existing PSE distribution lines along Tjossem Road, on the northern boundary of the project site, where the switchyard is located (as illustrated in Figure 2.3-1). The interconnection would comprise a line tap on the existing electrical 12.47-kV distribution circuit Clymer-15, feeding into PSE's Clymer Substation. TUUSSO expects to finalize its Interconnection Agreement for the solar project with PSE by December 2017.

The major elements of the preliminary interconnection design required for the Camas Solar Project are likely to include:

- Install relay improvements or modifications, circuit breakers, and a new single phase line potential transformer within the Clymer Substation.
- Install one span of feeder conductor, gang operated switch, underground cable terminations, and underground cable from the existing feeder along Tjossem Road to the customer point of interconnection (POI).
- Install primary metering equipment at the project site.

The above described span of feeder conductor would connect from the Camas Solar Project switchyard to the existing 12.47-kV distribution circuit. Typically, such conduit would be strung with two to three new monopoles (typically wood). A typical wood monopole would be 30 to 45 feet tall, set 6 to 8 feet deep in the ground, and be 8 to 16 inches in diameter.

Site Access

There would be a single point of access to Camas A from Tjossem Road, and a separate point of access to Camas B from Tjossem Road. The point of access to Camas A would use the existing 20-foot gravel road running to the entry gate, which would be widened slightly from current conditions between Tjossem Road and the existing culvert, and would provide emergency access as well as access for maintenance and operation purposes. The point of access to Camas B would comprise a new, short span of 20-foot gravel road off of Tjossem Road leading to the entry gate for Camas B.

Fencing and Landscaping

The Camas Solar Project site would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped with razor wire surrounding the PV system and switchyard. The entrance gates for both Camas A and Camas B would be about 8 feet high, 12 feet wide, and set back from the edge of Tjossem Road to allow for fire department and maintenance access without disrupting traffic flows. All fencing would be placed at or above grade to ensure that drainage flows would be unobstructed.

Along the northern boundary of Camas A, the natural topography of the Camas Solar Project site and existing vegetation present a visual barrier for neighbors viewing the site from Tjossem Road. Along the northern boundary of Camas B, TUUSSO would plant a line of trees and/or shrubs up to 15 feet in height between Tjossem Road and the fence line, to provide neighbors a regionally appropriate visual barrier. Along the eastern boundary of the project site, the existing line of trees along Little Naneum Creek and Bull Ditch provides a visual barrier for other neighbors.

In the interior of the Camas Solar Project site, native plant species (e.g., bluegrass, fescue, and/or bentgrass) would be maintained beneath and around the arrays, mowed to a height of 12 inches or less. These plant species are indigenous to the area and have been recommended for use by BFI Native Seeds, to which TUUSSO was referred by WDFW. This seed mix would be carefully selected to provide low growth and low maintenance.

Drainage Design

Existing and proposed flows and volumes have been calculated for 2-, 10-, 25-, and 100-year storm events, and Standard Urban Stormwater Mitigation Plan (SUSMP) events to determine the quantity of stormwater to be retained on-site. Once constructed, the Camas Solar Project would not result in any significant change in surface hydrology on the site, nor runoff from the site. There would be less than 5% of impervious surface added, less than 100,000 square feet. Impervious areas would be associated with the limited all-weather access roads, the six inverter pads, piles for the solar panels and fencing, and a pad for the switchyard. Although the solar panels themselves are impermeable, they are small, disconnected from each other, and installed over the existing soil surface. Stormwater and snowmelt would drip from the panels and infiltrate the surface. Off-site flows have also been calculated and would bypass the site via the existing flow paths, which run throughout the site in poorly defined flow paths. The solar project has been laid out to minimize the area that would encroach into the flow paths.

In addition, as shown in Section 2.2.5.2, the Camas Solar Project has been laid out to avoid impacts to Little Naneum Creek, located along the eastern boundary of Camas A.

Current and Proposed Hydrology

Drainage on the Camas Solar Project site has been affected by development to the extent that natural watercourses no longer exist. Drainage in the area is subject to agricultural land and road infrastructure, with a network of canals, drains, and berms. Surface runoff on the solar site and vicinity drains locally northeast to the south on a gentle slope. An unnamed tributary makes up the southeastern boundary of the project site and appears to drain to the Yakima River via Wilson Creek. One other ditch crosses the project site's northeastern corner. Up-gradient drainage is largely controlled by agricultural development and channeled through other drains, canals, or creeks. Major roadways also border the project site and minimize or eliminate overland storm flows.

The Camas Solar Project site is located within the Upper Yakima subbasin 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 (U.S. Bureau of Reclamation [Reclamation] 2012). Reported "depth to water" levels are as shallow as 10 feet near river valley bottoms, to more than 200 feet. Well yields are generally less than 100 gallons per minute. Groundwater flows in the basin converge toward the Yakima River, southwest of the project site.

Groundwater quality in the Yakima basin is generally good; most issues are related to the impacts of agricultural operations on drinking water wells (Reclamation 2012). Quality issues involve excess nitrate levels and bacterial contamination, particularly in the lower portions of the Yakima basin. There is a short

segment of the Yakima River mapped as impaired (U.S. Environmental Protection Agency [EPA] 2017). The impaired segment intersects with Wilson Creek, to which the Camas Solar Project's primary drainage is a tributary. There are also short impaired segments up-gradient of the project site, on Cooke Creek. These are located cross-gradient or up-gradient on different local drainage systems not connected to the site.

Well registry data (Washington State Department of Ecology [Ecology] 2017) identified no wells on the Camas Solar Project site. Two wells were located approximately 400 feet east of the project site. The wells had depths of 80 and 120 feet, but no depth to water or pump capacity was listed in the data files. Other wells in the vicinity had depths between 45 and 180 feet.

The layout for the Camas Solar Project 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 layout has also been designed to avoid impacts to the existing drainage ditch and associated wetland along the western boundary of the project site, and the facility incorporates a 20-foot setback from the edge of the wetland to the electrical generation equipment. No inverters would be placed within the 100-year floodplain and very limited portions of the all-weather access road would cross the 100-year floodplain, resulting in minimal incremental impervious area within the flood zone.

2.3.3.2 Fumaria Solar Project Site

The proposed Fumaria Solar Project, a preliminary plan for which is provided in Figure 2.3-2, is a 4.99-MWac solar energy generation facility that would be located on Clarke Road, within a development envelope of approximately 35.24 acres. The setbacks to the fencing and to the electrical generating equipment follow Kittitas County guidelines and are depicted in Figure 2.3-2.

A total of approximately 18,000 PV panels would be arranged in approximately 250 rows, with center-to-center spacing of about 15 feet. The GCR is currently planned at approximately 33%. The final facility equipment numbers and locations would depend upon the results from technical studies (e.g., the Interconnection Facilities Study).

There would be approximately five inverter pads throughout the Fumaria Solar Project site, each of which would be approximately 15 by 30 feet and 1 to 2 feet thick, where the direct current from the arrays would be converted to alternating current and then transmitted by the electric grid. Each inverter pad would include one or two inverter enclosures and one AC transformer.

Aside from construction equipment traffic, there is little to no anticipated ground disturbance for the installation of the racking and solar modules on the Fumaria Solar Project site. The site has an overall grade change of less than 3% and is relatively flat, and the piles can be installed on the existing grades. There would be 5% or less of impervious surface added to the site, less than 100,000 square feet. Impervious areas would be associated with all-weather access roads running to the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard.

The only grading/earth moving expected on the Fumaria Solar Project site would be associated with grading/leveling required for the all-weather access roads; the small areas required for the concrete pads to support the inverters, transformers, and switch gear; and trenching for the DC and AC collection system. Other property improvements that would have only moderate impact/disturbance to in situ conditions would involve roadbed stabilization for the all-weather access roads.

Electrical Interconnection

The Fumaria Solar Project would be located in PSE's service territory, and would connect to the existing PSE distribution lines near PSE's Woldale Substation, located at the corner of McManamy Road and Interstate 97 (I-97). A roughly 2.6-mile generation tie line would run from the switchyard located near the southwestern corner of the project site to the adjacent PSE's Woldale Substation (see Section 2.2.5.2). The generation tie line would include up to 0.9 mile of new ROW, requiring new distribution poles and conductors or buried line (see Section 2.2.5.2). The remaining length would be installed along existing electric utility ROWs, and would include either mounting the new generation tie line on existing poles, or replacing the existing poles with new poles and placing the conductors on those new poles. The interconnection would comprise a line tap on the existing electrical 12.47-kV distribution circuit Woldale-15, feeding into PSE's Woldale Substation. TUUSSO expects to finalize its Interconnection Agreement for the solar project with PSE by December 2017.

The major elements of the preliminary interconnection design required for the Fumaria Solar Project are likely to include:

- Install relay improvements or modifications, circuit breakers, and a new single phase line potential transformer within the Woldale Substation.
- Install 2.6 miles of new generation tie line as described above, a gang operated switch, and cable terminations from the existing feeder adjacent to Woldale Substation to the customer POI.
- Install primary metering equipment at the project site.

Along those portions of the Fumaria Solar Project generation tie line within an existing utility ROW, sharing poles with that utility, the double-circuited poles would typically comprise pole classes H2 or H3, average spans of 250 feet between the poles, pole lengths of 60 to 65 feet (heights above ground of 50 to 55 feet), and groundline diameters of the poles between 16 and 24 inches. Along those portions of the generation tie line strung on new wood poles in a new ROW, the single-circuited poles would typically comprise pole classes 1 or 2, average spans of 300 to 350 feet between the poles, pole lengths of 40 to 45 feet (heights above ground of 30 to 40 feet), and groundline diameters of the poles between 16 and 20 inches.

Site Access

TUUSSO may incorporate one of two paths for accessing the Fumaria Solar Project site. The first potential site access would be provided from Clarke Road. This access route would use the existing 12-foot gravel and dirt road (up to the entry gates) to provide emergency access as well as access for maintenance and operation purposes. The second potential site access would be provided from Reecer Creek Road, as illustrated in Figure 2.3-2. This access route would utilize a new 12- to 20-foot-wide, approximately 0.5-mile-long gravel road up to entry gates on the east boundary of the project site, to provide emergency access as well as access for maintenance and operation purposes.

Fencing and Landscaping

The Fumaria Solar Project site would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped with razor wire surrounding the PV system and switchyard. The entrance gates for the project would be about 8 feet high and 12 feet wide to allow for fire department and maintenance access. All fencing would be placed at or above grade to ensure that drainage flows would be unobstructed.

The Fumaria Solar Project site is relatively isolated with few neighbors. Along the southern boundary of the project site, the existing line of trees provides a visual barrier for the project's neighbors located to the south, which would be further supplemented by an additional line of trees and/or shrubs up to 15 feet in

height along the eastern portion of the southern boundary (as shown in Figure 2.3-2), to provide neighbors a regionally appropriate visual barrier.

In the interior of the Fumaria Solar Project site, TUUSSO plans to leave the current vegetation cover in place, mowed to a height of 12 inches or less. Where ground is disturbed during construction, native plant species (e.g., bluegrass, fescue, and/or bentgrass) would be planted. These species are indigenous to the area and have been recommended for use by BFI Native Seeds, to which TUUSSO was referred by WDFW. This seed mix would be carefully selected to provide low growth and low maintenance.

Drainage Design

Existing and proposed flows and volumes on the Fumaria Solar Project site have been calculated for 2-, 10-, 25-, and 100-year storm events, and SUSMP events to determine the quantity of stormwater to be retained on-site. Once constructed, the project would not result in any significant change in surface hydrology on the site, nor runoff from the site. There would be less than 5% of impervious surface added to the site, less than 100,000 square feet. Impervious areas would be associated with the limited all-weather access roads, the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard. Although the solar panels themselves are impermeable, they are small, disconnected from each other, and would be installed over the existing soil surface. Stormwater and snowmelt would drip from the panels and infiltrate the surface. Off-site flows have also been calculated and would bypass the site via the existing flow paths, which run throughout the site in poorly defined flow paths. The solar project has been laid out to minimize the area that would encroach into the flow paths.

Current and Proposed Hydrology

Drainage on the Fumaria Solar Project site has been affected by agricultural use to the extent that there are no pre-development watercourses. Drainage in the local area is generally subject to agricultural land and road infrastructure, with a network of canals, drains, and berms. Surface runoff on the project site and vicinity drains locally southward on a gentle slope. Several ditches in the area appear to collect overland sheet flow. A network of ditches and canals drains water from and distributes water to agricultural fields. The nearest named natural drainage is Reecer Creek, which crosses Clarke Road from north to south; several other unnamed tributaries flow roughly parallel with Reecer Creek and most join Reecer Creek south of the project site. Up-gradient drainage is largely controlled by agricultural development and channeled through other drainages, canals, or local creeks.

The Fumaria Solar Project site is located within the Upper Yakima subbasin of the Yakima groundwater basin. Basaltic rocks beneath most of the Yakima River basin are part of the larger CRBG. The CRBG comprises more than 300 individual basalt flows, and multiple aquifers reside within them (Reclamation 2012). 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, approximately 3 miles southwest of the project site.

Groundwater quality in the Yakima basin is generally good; most issues are related to the impacts of agricultural operations on drinking water wells (Reclamation 2012). Quality issues involve excess nitrate levels and bacterial contamination, particularly in the lower portions of the Yakima basin. There are no impaired reaches in, adjacent to, or up-gradient of the Fumaria Solar Project site (EPA 2017).

Well registry data (Ecology 2017) 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 between 80 and 170 feet bgs.

The Fumaria Solar Project site layout has been designed to avoid impacts on Reecer Creek. The layout 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 passing along the western edge of the site to the electrical generation equipment.

2.3.3.3 Penstemon Solar Project Site

The proposed Penstemon Solar Project, a preliminary plan for which is provided in Figure 2.3-3, is a 4.99-MWac solar energy generation facility that would be located at the intersection of Moe and Tjossem Roads, within a development envelope of approximately 39.38 acres. As depicted in Figure 2.3-3, the proposed solar project array layout includes a 15-foot setback from the western site boundary to the electrical generation equipment, a 20-foot setback from the northern and southern boundaries to the electrical generation equipment, and a 60-plus-foot setback from the creek along the eastern boundary of the site to the electrical generation equipment.

A total of approximately 20,000 PV panels would be arranged in approximately 270 rows, with center-to-center spacing of about 15 feet. The GCR is currently planned at approximately 33%. The final facility equipment numbers and locations would depend upon the results from technical studies (e.g., the Interconnection Facilities Study).

There would be approximately five inverter pads throughout the Penstemon Solar Project site, each of which is approximately 15 by 30 feet and 1 to 2 feet thick, where the direct current from the arrays would be converted to alternating current and then transmitted by the electric grid. Each inverter pad would include one or two inverter enclosures and one AC transformer.

Aside from construction equipment traffic, there would be little to no anticipated ground disturbance for the installation of the racking and solar modules. The Penstemon Solar Project site has an overall grade change of less than 2% and is relatively flat, and the piles can be installed on the existing grades. There would be 5% or less of impervious surface added to the site, less than 100,000 square feet. Impervious areas would be associated with all-weather access roads running to the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard.

The only grading/earth moving expected on the Penstemon Solar Project site would be associated with grading/leveling as required for the all-weather access roads; the small areas required for the concrete pads to support the inverters, transformers, and switch gear; and trenching for the DC and AC collection system. Other property improvements that would have only moderate impact/disturbance to in situ conditions would involve roadbed stabilization for the all-weather access roads.

Electrical Interconnection

The Penstemon Solar Project would be located in PSE's service territory, and would connect to the existing PSE distribution transmission lines along Tjossem Road, on the northern boundary of the project site, where the switchyard would be located (as illustrated in Figure 2.3-3). The interconnection would comprise a line tap on the existing electrical 12.47-kV distribution circuit KIT-22, approximately 5.0 circuit miles from PSE's Kittitas Substation. TUUSSO expects to finalize its Interconnection Agreement for the solar project with PSE by December 2017.

The major elements of the preliminary interconnection design required for the Penstemon Solar Project include:

- Install relay improvements or modifications within the Kittitas Substation.
- Replace the 15-kV power circuit breaker within the Kittitas Substation with a new smart breaker.

- Install a new single phase line potential transformer (PT) within the Kittitas Substation.
- Install one span of feeder conductor, gang operated switch, underground cable terminations, and underground cable from the existing feeder along Tjossem Road to the customer POI.
- Install primary metering equipment at the project site.

The above described span of feeder conductor would connect the Penstemon Solar Project switchyard to the existing 12.47-kV distribution circuit. Typically, such conduit would be strung with two to three new monopoles (typically wood). A typical wood monopole would be 30 to 45 feet tall, set 6 to 8 feet deep in the ground, and be 8 to 16 inches in diameter.

Site Access

The single point of site access for the Penstemon Solar Project would be provided from Tjossem Road. The point of access would be a short paved or gravel driveway leading up to the entry gates from Tjossem Road, to provide emergency access as well as access for maintenance and operation purposes.

Fencing and Landscaping

The Penstemon Solar Project site would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped with razor wire surrounding the PV system and switchyard. The entrance gates for the project would be about 8 feet high, 12 feet wide, and would be set back from the edge of Tjossem Road, to allow for fire department and maintenance access without disrupting traffic flow. All fencing would be placed at or above grade to ensure that drainage flows would be unobstructed.

Along the northern boundary of the Penstemon Solar Project site, TUUSSO would plant a line of trees and/or shrubs up to 15 feet in height between Tjossem Road and the fence line, to provide neighbors a regionally appropriate visual barrier. Similarly, TUUSSO would plant a line of trees and/or shrubs up to 15 feet in height along the western boundary of the Penstemon Solar Project site. Along the eastern boundary of the project site, the existing line of trees along Coleman Creek provides a visual barrier for neighbors viewing the site from Moe Road.

In the interior of the Penstemon Solar Project site, native plant species (e.g., bluegrass, fescue, and/or bentgrass) would be maintained beneath and around the arrays, mowed to a height of 12 inches or less. These species are indigenous to the area and have been recommended for use by BFI Native Seeds, to which TUUSSO was referred by WDFW. This seed mix would be carefully selected to provide low growth and low maintenance.

Drainage Design

Existing and proposed flows and volumes for the Penstemon Solar Project have been calculated for 2-, 10-, 25-, and 100-year storm events, and SUSMP events to determine the quantity of stormwater to be retained on-site. Once constructed, the project would not result in any significant change in surface hydrology on the site, nor runoff from the site. There would be less than 5% of impervious surface added to the site, less than 100,000 square feet. Impervious areas would be associated with the limited all-weather access roads, the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard. Although the solar panels themselves are impermeable, they are small, disconnected from each other, and installed over the existing soil surface. Stormwater and snowmelt would drip from the panels and infiltrate the surface. Off-site flows have also been calculated and would bypass the site via the existing flow paths, which run throughout the site in poorly defined flow paths. The project has been laid out to minimize the area that would encroach into the flow paths.

In addition, as shown in Figure 2.3-3, the Penstemon Solar Project has been laid out to avoid impacts to Coleman Creek, located near the eastern boundary of the project, with an average distance of 115 feet from the electrical generating equipment to the edge of the creek.

Current and Proposed Hydrology

Drainage on the Penstemon Solar Project site has been affected by development, to the extent that natural watercourses no longer exist. Drainage in the area is subject to agricultural land and road infrastructure, with a network of canals, drains, and berms. Surface runoff on the project site travels toward the central drainage ditch, which flows south, then east to Coleman Creek. The greater vicinity appears to gently slope to the southwest. Coleman Creek connects with Wilson Creek and the Yakima River, within approximately 3 river miles of the project site. Up-gradient drainage is largely controlled by agricultural development and channeled through other drains, canals, or creeks. Roadways also border the project site and minimize or eliminate overland storm flows.

The Penstemon Solar Project would be 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 CRBG. The CRBG comprises more than 300 individual basalt flows, and multiple aquifers reside within them (Reclamation 2012). Reported “depth to water” levels are as shallow as 10 feet near river valley bottoms, to more than 200 feet. Well yields are generally less than 100 gallons per minute. Groundwater flows in the basin converge toward the Yakima River, southwest of the project site.

Groundwater quality in the Yakima basin is generally good; most issues are related to the impacts of agricultural operations on drinking water wells (Reclamation 2012). Quality issues involve excess nitrate levels and bacterial contamination, particularly in the lower portions of the Yakima basin. There is a short segment of the Yakima River mapped as impaired (EPA 2017). The impaired segment intersects with Wilson Creek, of which the Penstemon Solar Project’s primary drainage is a tributary. There are also short impaired segments up-gradient of the project site, on Cooke Creek. These are located cross-gradient or up-gradient on a different local drainage system not connected to the project site.

Well registry data (Ecology 2017) identified no wells on the Penstemon Solar Project site. Two wells were mapped approximately 700 feet east and north of the project site. The wells had depths of 125 to 150 feet bgs, but no depth to water or pump capacity was listed in the data files. Other wells within 1 mile of the project site had depths between 12 and 335 feet bgs.

The Penstemon Solar Project layout has been designed to avoid impacts on Coleman Creek, and the facility incorporates a greater than 100-foot average setback from the edge of the creek for any electrical generation equipment. No inverters would be placed within the 100-year floodplain and none of the all-weather access roads would be built within the 100-year floodplain, resulting in minimal incremental impervious area within the flood zone.

2.3.3.4 Typha Solar Project Site

The proposed Typha Solar Project, a preliminary plan for which is provided in Figure 2.3-4, is a 4.99-MWac solar energy generation facility that would be located off Thorp Highway South, within a development envelope of approximately 54.29 acres. The proposed array layout includes a greater than 100-foot setback from the Yakima River to any electrical generation equipment, a 30-foot setback from the wetlands located within the site to any electrical generation equipment, and other setbacks as shown in Figure 2.3-4.

A total of approximately 20,000 PV panels would be arranged in approximately 300 rows, with center-to-center spacing of about 15 feet. The GCR is currently planned at approximately 33%. The final facility

equipment numbers and locations would depend upon results from technical studies (e.g., the Interconnection Facilities Study).

There would be approximately five inverter pads throughout the Typha Solar Project site, each of which would be approximately 15 by 30 feet and 1 to 2 feet thick, where the direct current from the arrays would be converted to alternating current and then transmitted by the electric grid. Each inverter pad would include one or two inverter enclosures and one AC transformer.

Aside from construction equipment traffic, there would be little to no anticipated ground disturbance for the installation of the racking and solar modules. The Typha Solar Project site has an overall grade change of less than 1% and is relatively flat, and the piles can be installed on the existing grades. There would be 5% or less of impervious surface added to the site, less than 100,000 square feet. Impervious areas would be associated with all-weather access roads running to the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard.

The only 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; 3) grading/leveling as required for the all-weather access roads and the small areas required for the concrete pads to support the inverters, transformers, and switch gear; 4) trenching for the DC and AC collection system; and 5) improvement/widening of the existing gravel road leading from Thorp Highway South to the gated site entrance. Other property improvements that would have only moderate impact/disturbance to in situ conditions involve roadbed stabilization for the all-weather access road.

Electrical Interconnection

The Typha Solar Project would be located in PSE's service territory, and would connect to the existing PSE distribution transmission lines running along Thorp Highway South. A roughly 0.5-mile generation tie line would run from the switchyard located near the southwestern corner of the project site to Thorp Highway South (see Figure 2.3-4). The generation tie line would include a very short section of new ROW requiring new distribution wood poles and conductor, or buried line (see Figure 2.3-4). The remaining length would be installed along existing electric utility ROWs and would involve mounting the new generation tie line on existing wood poles, or replacing the existing poles with new poles and mounting the new generation tie line on those new poles. The interconnection would comprise a line tap on the existing electrical 12.47-kV distribution circuit Woldale-13, feeding into PSE's Woldale Substation. TUUSSO expects to finalize its Interconnection Agreement for the solar project with PSE by December 2017.

The major elements of the preliminary interconnection design required for the Typha Solar Project are likely to include:

- Install relay improvements or modifications, circuit breakers, and a new single phase line potential transformer within the Woldale Substation.
- Install 0.45 mile of new generation tie line, as described above, a gang operated switch, and cable terminations from the existing feeder along Thorp Highway South to the customer POI.
- Install primary metering equipment at the project site.

Along those portions of the Typha Solar Project generation tie line within an existing utility ROW, sharing poles with that utility, the double-circuited poles would typically comprise pole classes H2 or H3, average spans of 250 feet between the poles, pole lengths of 60 to 65 feet (heights above ground of 50 to 55 feet),

and groundline diameters of the poles between 16 and 24 inches. Along those portions of the generation tie line strung on new poles in a new ROW, the single-circuited poles would typically comprise pole classes 1 or 2, average spans of 300 to 350 feet between the poles, pole lengths of 40 or 45 feet (heights above ground of 30 to 40 feet), and groundline diameters of the poles between 16 and 20 inches.

Site Access

The single point of site access for the Typha Solar Project site would be provided from Thorp Highway South. This access route would use the existing 12-foot gravel and dirt road (up to the entry gates) to provide emergency access as well as access for maintenance and operations purposes. TUUSSO is in consultation with local fire authorities, and may widen the existing road to 20 feet based on the final requirements agreed upon in consultation with such authorities. An existing bridge along this road over the EP Canal would also 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 heavy truck traffic.

Fencing and Landscaping

The Typha Solar Project site would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped with razor wire surrounding the PV system and switchyard. The entrance gates for the project would be about 8 feet high and 12 feet wide, to allow for fire department and maintenance access. All fencing would be placed at or above grade to ensure that drainage flows would be unobstructed.

The existing trees surrounding much of the Typha Solar Project site, as well as the topography of the site, provide a significant visual barrier for the project's neighbors. Along a portion of the eastern boundary of the project site closest to the nearby golf course, a line of trees and/or shrubs up to 15 feet in height would be planted to provide neighbors a regionally appropriate visual barrier.

In the interior of the Typha Solar Project site, native plant species (e.g., bluegrass, fescue, and/or bentgrass) would be maintained beneath and around the arrays, mowed to a height of 12 inches or less. These species are indigenous to the area and have been recommended for use by BFI Native Seeds, to which TUUSSO was referred by WDFW. This seed mix would be carefully selected to provide low growth and low maintenance.

Drainage Design

Existing and proposed flows and volumes on the Typha Solar Project site have been calculated for 2-, 10-, 25-, and 100-year storm events, and SUSMP events to determine the quantity of stormwater to be retained on-site. Once constructed, the project would not result in any significant change in surface hydrology on the site, nor runoff from the site. There would be less than 5% of impervious surface added to the site, less than 100,000 square feet. Impervious areas would be associated with the limited all-weather access roads, the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard. Although the solar panels themselves are impermeable, they are small, disconnected from each other, and installed over the existing soil surface. Stormwater and snowmelt would drip from the panels and infiltrate the surface. Off-site flows have also been calculated and would bypass the site via the existing flow paths, which run throughout the site in poorly defined flow paths. The project has been laid out to minimize the area that would encroach into the flow paths.

Current and Proposed Hydrology

Drainage on the Typha Solar Project site has been affected by agricultural use to the extent that pre-development watercourses do not exist. Drainage in the local area is generally subject to agricultural land

grading, with a network of canals, drains, and berms. Surface runoff on the project site and vicinity drains locally east and southeast along a gentle slope. The Yakima River abuts the project site's northeastern border. A ditch that wraps around the site's western and southern boundaries connects with other canals, which distribute or collect water to or from agricultural fields. This ditch later flows into the Yakima River. Up-gradient drainage is largely controlled by agricultural development and channeled through other drains, canals, or local creeks.

The Typha Solar Project site is located within the Upper Yakima subbasin of the Yakima groundwater basin. Basaltic rocks beneath most of the Yakima River basin are part of the larger CRBG. The CRBG comprises more than 300 individual basalt flows, and multiple aquifers reside within them (Reclamation 2012). Reported "depth to water" levels are as shallow as 10 feet near river valley bottoms, to more than 200 feet. Well yields are generally less than 100 gallons per minute. Groundwater flows in the basin converge toward the Yakima River, which directly abuts the project site.

Groundwater quality in the Yakima basin is generally good; most issues are related to the impacts of agricultural operations on drinking water wells (Reclamation 2012). Quality issues involve excess nitrate levels and bacterial contamination, particularly in the lower portions of the Yakima basin. There are no impaired reaches in, adjacent to, or up-gradient of the project site (EPA 2017).

Well registry data (Ecology 2017) 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 between 80 and 170 feet bgs.

The Typha Solar Project layout has been designed to avoid impacts on 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. No inverters would be placed within the 100-year floodplain, and a limited portion of the all-weather access roads would be built within the 100-year floodplain, resulting in minimal incremental impervious area within the flood zone.

2.3.3.5 Urtica Solar Project Site

The proposed Urtica Solar Project, a preliminary plan for which is provided in Figure 2.3-5, is a 4.99-MWac solar energy generation facility that would be located near the intersection of Umptanum and Manastash Roads, within a development envelope of approximately 51.94 acres. The proposed array layout would include 40-foot setbacks from nearby wetlands to the electrical generation equipment, as depicted in Figure 2.3-5.

A total of approximately 20,000 PV panels would be arranged in approximately 320 rows on the Urtica Solar Project site, with center-to-center spacing of about 15 feet. The GCR is currently planned at approximately 33%. The final facility equipment locations would depend upon the results from the technical studies (e.g., the Interconnection Facilities Study).

There would be approximately five inverter pads throughout the Urtica Solar Project site, each of which would be approximately 15 by 30 feet and 1 to 2 feet thick, where the direct current from the arrays would be converted to alternating current and then transmitted by the electric grid. Each inverter pad would include one or two inverter enclosures and one AC transformer.

Aside from construction equipment traffic, there would be little to no anticipated ground disturbance for the installation of the racking and solar modules. The Urtica Solar Project site has an overall grade

change of less than 2% and is relatively flat, and the piles can be installed on the existing grades. There would be 5% or less of impervious surfaces added to the site, less than 100,000 square feet. Impervious areas would be associated with all-weather access roads running to the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard.

TUUSSO would use the existing 12-foot gravel/dirt road to access much of the Urtica Solar Project site. The only grading/earth moving expected would be associated with grading/leveling as required for new all-weather access roads running to the inverter pads; the small areas required for the concrete pads to support the inverters, transformers, and switch gear; and trenching for the DC and AC collection system. Other property improvements that would have only moderate impact/disturbance to in situ conditions would involve roadbed stabilization for the all-weather access roads.

Electrical Interconnection

The Urtica Solar Project would be located in PSE's service territory, and would connect to the existing PSE distribution transmission lines along Umptanum Road, on the eastern boundary of the project site, where the switchyard is located (as illustrated in Figure 2.3-5). The interconnection would comprise a line tap on the existing electrical 12.47-kV distribution circuit CLY-16, running from PSE's Clymer Substation. TUUSSO expects to finalize its Interconnection Agreement for the solar project with PSE by December 2017.

The major elements of the preliminary interconnection design required for the Urtica Solar Project include:

- Install relay improvements or modifications within the Clymer Substation.
- Replace the 15-kV power circuit breaker within the Clymer Substation with a new smart breaker.
- Install a new single phase line PT within the Clymer Substation.
- Install one span of feeder conductor, gang operated switch, underground cable terminations, and underground cable from the existing feeder along Umptanum Road to the customer POI.
- Install primary metering equipment at the project site.

The above described span of feeder conductor would connect from the Urtica Solar Project switchyard to the existing 12.47-kV distribution circuit. Typically, such conduit would be strung with two to three new monopoles (typically wood). A typical wood monopole would be 30 to 45 feet tall, set 6 to 8 feet deep in the ground, and be 8 to 16 inches in diameter.

Site Access

The single point of access to the Urtica Solar Project site would be provided from Umptanum Road. The point of access would be a short paved or gravel driveway leading up to the entry gates from Umptanum Road, to provide emergency access as well as access for maintenance and operation purposes.

Fencing and Landscaping

The Urtica Solar Project site would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped with razor wire surrounding the PV system and switchyard. The entrance gates for the project would be about 8 feet high, 12 feet wide, and would be set back from the edge of Umptanum Road, to allow for fire department and maintenance access without disrupting traffic flow. All fencing would be placed at or above grade to ensure that drainage flows would be unobstructed.

Along a portion of the eastern boundary of the Urtica Solar Project site, TUUSSO would plant a line of trees and/or shrubs up to 15 feet in height between Umptanum Road and the fence line, to provide neighbors a regionally appropriate visual barrier. Along a portion of the northern boundary of the project

site, TUUSSO would plant another line of trees and/or shrubs up to 15 feet in height outside of the fence line, to provide neighbors with another regionally appropriate visual barrier.

In the interior of the Urtica Solar Project site, native plant species (e.g., bluegrass, fescue, and/or bentgrass) would be maintained beneath and around the arrays, mowed to a height of 12 inches or less. These species are indigenous to the area and have been recommended for use by BFI Native Seeds, to which TUUSSO was referred by WDFW. This seed mix would be carefully selected to provide low growth and low maintenance.

Drainage Design

Existing and proposed flows and volumes on the Urtica Solar Project site have been calculated for 2-, 10-, 25-, and 100-year storm events, and SUSMP events to determine the quantity of stormwater to be retained on-site. Once constructed, the project would not result in any significant change in surface hydrology on the site, nor runoff from the site. There would be less than 5% of impervious surfaces added to the site, less than 100,000 square feet. Impervious areas would be associated with the limited all-weather access roads, the five inverter pads, piles for the solar panels and fencing, and a pad for the switchyard. Although the solar panels themselves are impermeable, they are small, disconnected from each other, and installed over the existing soil surface. Stormwater and snowmelt would drip from the panels and infiltrate the surface. Off-site flows have also been calculated and would bypass the site via the existing flow paths, which run throughout the site in poorly defined flow paths. The solar project has been laid out to minimize the area that would encroach into the flow paths.

In addition, as shown in Figure 2.3-5, the Urtica Solar Project has been laid out to avoid impacting the nearby ponds or the on-site ditch which flows through the northeastern portion of the property.

Current and Proposed Hydrology

Drainage on the Urtica Solar Project site has been affected by agricultural use to the extent that pre-development watercourses remain, but do not exist in their natural state. Drainage in the local area is generally subject to agricultural land grading, with a network of canals, drains, and berms. Surface runoff on the project site and vicinity drains locally east along a gentle slope to Fogarty Ditch and the Yakima River, which is located approximately 0.25 mile from the project site. Up-gradient drainage is also largely controlled by agricultural development and channeled through other drains, canals, or local creeks.

The Urtica Solar Project site would be located within the Upper Yakima subbasin of the Yakima groundwater basin. Basaltic rocks beneath most of the Yakima River basin are part of the larger CRBG. The CRBG comprises more than 300 individual basalt flows, and multiple aquifers reside within them (Reclamation 2012). Reported “depth to water” levels are as shallow as 10 feet near river valley bottoms, varying to more than 200 feet. Well yields are generally less than 100 gallons per minute. Groundwater flows in the basin converge toward the Yakima River, which directly abuts the project site.

Groundwater quality in the Yakima basin is generally good; most issues are related to the impacts of agricultural operations on drinking water wells (Reclamation 2012). Quality issues involve excess nitrate levels and bacterial contamination, particularly in the lower portions of the Yakima basin. There are no impaired reaches in, adjacent to, or up-gradient of the project site (EPA 2017).

Well registry data (Ecology 2017) identified one well on the 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 between 15 and 290 feet bgs.

No inverters would be placed within the Urtica Solar Project site 100-year floodplain and limited portions of the all-weather access roads would be built within the 100-year floodplain, resulting in minimal incremental impervious area within the flood zone.

2.4 Energy Transmission Systems 463-60-155

The application shall identify the federal, state, and industry criteria used in the conceptual design, route selection, and construction for all facilities identified in RCW 80.50.020 (6) and (7), and shall indicate how such criteria are met.

Pursuant to RCW 80.50.020 (7), all on-site improvements to the five Columbia Solar Project sites are described in Section 2.3.

With respect to off-site improvements, of the five proposed TUUSSO Columbia Solar Project sites, only two would have off-site generation tie lines of significant length that tie into the PSE's distribution transmission line network, namely the Fumaria and Typha Solar Project sites, as described in Section 2.2.5.2. The design, route selection and construction of the generation tie lines have been selected to meet the following criteria: 1) safety; 2) minimal environmental impact by locating such lines, where possible, within existing distribution line corridors; 3) shortest possible route to proposed POI; 4) available access across landowners' properties; and 5) overall construction impacts.

2.5 Electrical Transmission Facilities 463-60-160

(1) Prior to submitting an application for site certification for an electric transmission facility under RCW 80.50.060(3) an applicant shall follow the procedure as set in chapter 463-61 WAC.

TUUSSO is not submitting an ASC for an electric transmission facility, and therefore this section is not applicable.

(2) An application for an electric transmission facility shall include the information required by this chapter unless the requirement may not be applicable to such a facility.

TUUSSO is not submitting an ASC for an electric transmission facility, and therefore this section is not applicable.

(3) An application for an electrical transmission facility shall include the results of any pre-application negotiations including any agreements between the applicant and cities, towns, or counties where the electrical transmission facility is proposed to be located.

TUUSSO is not submitting an ASC for an electric transmission facility, and therefore this section is not applicable.

2.6 Water Supply 463-60-165

(1) Water intake and conveyance facilities. The application shall describe the location and type of water intakes, water lines, pipelines and water conveyance systems, and other associated facilities required for providing water to the energy facility for which certification is being requested.

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.

(2) Water supply and usage alternatives.

(a) The applicant shall consider water supply alternatives, including use of reclaimed water, water reuse projects, and conservation methods. The application shall describe all supply alternatives considered, including the associated cost of implementing such alternatives, and the resulting benefits and penalties that would be incurred.

2.6.1 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 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.

TUUSSO would also incorporate water conservation methods wherever possible. For example, water would not be used for concrete hydration on-site because the concrete is expected to be delivered to the site already hydrated. Less water-intensive methods of dust suppression are also under review, including use of soil stabilizers, tightly phasing construction activities, staging grading and other dust-creating activities, and/or compressing the entire construction schedule to reduce the time period over which dust-suppression measures would be required.

2.6.2 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). Water would also be necessary to establish the tree/shrub visual buffers along portions of the Columbia Solar Project sites, as described above, as well as the native plant species 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 at a maximum 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.

TUUSSO has incorporated water conservation methods into its operational water plan as well. Where feasible, TUUSSO would work with the current landowners to incorporate more efficient irrigation systems, such as drip lines, to water the trees and shrubs forming the visual buffers. TUUSSO has used native and drought-tolerant species to ensure that the landscaping can be established quickly with water needs similar to or below current water usage, and once established, would not require any further watering except in extreme drought conditions. TUUSSO would also investigate using sprinkler systems on the Columbia Solar Project sites to irrigate the native ground cover (instead of the current flood irrigation methods used on the solar project sites).

(b) The application shall include detailed information regarding using air cooling as an alternative to consumptive water use, including associated costs.

The five Columbia Solar Projects do not, by design, require consumptive water cooling. Thus, air cooling versus water cooling is not an issue for these facilities.

(c) The application shall describe water conservation methods that will be used during construction and operation of the facility.

During construction, TUUSSO would incorporate water conservation methods wherever possible. For example, water would not be used for concrete hydration on-site because the concrete is expected to be delivered to the site already hydrated. Less water-intensive methods of dust suppression are also under review, including use of soil stabilizers, tightly phasing construction activities, staging grading and other dust-creating activities, and/or compressing the entire construction schedule to reduce the time period over which dust-suppression measures would be required.

TUUSSO has incorporated water conservation methods into its operational water plan as well. Where feasible, TUUSSO would work with the current landowners to incorporate more efficient irrigation systems to water the trees and shrubs forming the visual buffers. TUUSSO has used native and drought tolerant species to ensure that the landscaping can be established quickly with minimal water needs, and once established, would not require any further watering except in extreme drought conditions. TUUSSO would also investigate using sprinkler systems on the Columbia Solar Project sites to irrigate the native ground cover (instead of the current flood irrigation methods used on the solar project sites).

(3) Water rights and authorizations. An applicant proposing to use surface or groundwater for the facility shall describe the source and the amount of water required during construction and operation of the energy facility and shall do one or more of the following:

As described above, TUUSSO is proposing to use water supplied under existing water allocations or from municipal water sources for all but the Fumaria Solar Project site (which is limited to water supplied from municipal water sources). For each of these sites, TUUSSO is conservatively estimating approximately 10 acre-feet would be needed for construction, and (with the exception of the Fumaria Solar Project site) based on very conservative water estimates, 20,000 acre-feet would be needed per site per year during the first 3 years of operation. After the initial 3 years of operation, TUUSSO would require less than 1 acre-foot of water per site per year.

(a) Submit a water use authorization or a contractual right to use water supplied by a municipal corporation or other water purveyor; or

TUUSSO is in the process of making a final determination between on-site existing water allocations and municipal water sources, and has not yet submitted any requests to municipal water sources.

(b) Submit a water right permit or water right certificate issued by the department of ecology for the proposed facility in an amount sufficient to meet the need of the facility. If the permit and/or certificate has been issued five years prior to the submittal date, the applicant shall provide evidence that the water right permit is in good standing, or that the certificate has not relinquished through nonuse; or

Not applicable.

(c) For applications for new surface or groundwater withdrawals, or applications for water right changes or transfers of existing rights or certificates for withdrawal, the applicant shall submit appropriate application(s) for such rights, certificates or changes in rights and certificates, to the department of ecology prior to submittal of the application for site certification to the council. The application for site certification shall include report(s) of examination, identifying the water rights, or water right changes, submitted to and under review by the department of ecology, the quantities of water in gallons per minute and acre feet per year that are eligible for change, together with any limitations on use, including time of year. The report(s) of examination shall also include comments by the Washington state department of fish and wildlife with respect to the proposed water right applications under review by the department of ecology.

Not applicable.

(d) Mitigation. The application shall contain a description of mitigation proposed for water supply, and shall include any and all mitigation required by the department of ecology pursuant to the review of water rights or certificates, or changes to water rights or certificates required in (c) of this subsection.

Not applicable.

2.7 System of Heat Dissipation 463-60-175

The application shall describe both the proposed and alternative systems for heat dissipation from the proposed facilities.

The five Columbia Solar Projects do not, by design, require cooling or heat dissipation. Thus, air cooling versus water cooling is not an issue for these facilities.

2.8 Characteristics of Aquatic Discharge Systems 463-60-185

(1) Where discharges into a watercourse are involved, the applicant shall identify outfall configurations including:

(a) Location(s) of water discharge pipeline or conveyance system, the outfall, and any associated dilution systems;

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

(b) Average and maximum discharge rate;

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

(c) Extent of the dilution zone if necessary;

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

(d) Width of the receiving water body at the outfall location;

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

(e) Dimension(s), and rated and maximum carrying capacity of the water discharge pipeline or conveyance system, the outfall structure and any associated dilution systems;

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

(f) Depth and width of the receiving water body at the discharge point;

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

(g) Average, minimum and maximum water velocity of the receiving water body at the discharge point, and the times when the maximum and minimum flows occur.

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

(2) Where discharges are into a water-course via an existing discharge system for which certification is not being sought, the applicant shall also provide the following information:

(a) Ownership of the discharge conveyance system;

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

(b) A description of, and the terms and duration contained in, the use agreement that allows the applicant to use the discharge conveyance system;

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

(c) Identification of the party responsible for operation and maintenance of the discharge conveyance system;

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

(d) NPDES or state wastewater discharge permit number for the existing system discharge;

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

(e) Location of connection point into the existing discharge system;

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

(f) Diameter and rated and maximum volume capacity of the wastewater line or conveyance system into which discharge is being proposed;

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

(g) Existing, rated and maximum flow levels in the wastewater line or conveyance system into which the discharge is being proposed;

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

(h) Where a discharge is proposed to a publicly owned treatment works, in addition to the items provided in subsections (1) and (2) of this section, the applicant shall provide an engineering analysis showing that the proposed discharge will not cause the waste treatment facility to exceed capacities or to violate its authorized discharge limits, including both the quality of the discharge and the volume of the discharge, or to violate the permits governing its operation.

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

2.9 Wastewater Treatment 463-60-195

(1) The application shall describe each wastewater source associated with the facility and for each source, the applicability of all known, available, and reasonable methods of wastewater control and treatment to ensure it meets current waste discharge and water quality regulations.

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

(2) Where wastewater control involves collection and retention for recycling and/or resource recovery, the applicant shall show in detail the methods selected, including at least the following information:

(a) Waste source(s);

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

(b) Average and maximum daily amounts and composition of wastes;

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

(c) The type of storage vessel and the storage capacity and duration; and

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

(d) Any bypass or overflow facilities to the wastewater treatment system(s) or the receiving waters.

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

(3) Where wastewaters are discharged into receiving waters, the applicant shall provide a detailed description of the proposed treatment system(s), including:

(a) Appropriate flow diagrams and tables showing the sources of all tributary waste streams:

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

(b) Their average and maximum daily amounts and composition;

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

(c) Individual treatment units and their design criteria;

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

(d) Major piping (including all bypasses); and

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

(e) Average and maximum daily amounts and composition of effluent(s).

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

2.10 Spillage Prevention and Control 463-60-205

The application shall describe all spillage prevention and control measures to be employed regarding accidental and/or unauthorized discharges or emissions, relating such information to specific facilities, including but not limited to locations, amounts, storage duration, mode of handling, and transport. The application shall describe in general detail the content of a Construction Phase and an Operational Phase Spill Prevention, Control and Countermeasure Plan (chapter 40 C.F.R. Part 112 and Hazardous Waste Management Plan) that will be required prior to commencement of construction.

2.10.1 Construction Phase Spill Prevention, Control, and Countermeasure Plan

This section describes measures that would be taken to prevent and mitigate any accidental spills or discharges. A detailed construction Spill Prevention, Control, and Countermeasure (SPCC) Plan would be developed by TUUSSO's engineering, procurement, and construction (EPC) contractor and submitted to EFSEC for review prior to construction. EFSEC, as well as pertinent local emergency response organizations, where appropriate, would review and approve all plans before they are implemented. The plan would address prevention and clean-up of any potential spills from construction activities.

Petroleum fuels are the only potentially hazardous materials that would be used in any significant quantity during construction of the Columbia Solar Projects. Construction of the projects would require the use of diesel fuel for operating construction equipment and vehicles. Measures to prevent and contain any accidental spills resulting from this fuel storage and use are described in detail below in Construction Spill Prevention, below. Construction of the projects would not result in the generation of any hazardous wastes in quantities regulated by state or federal law.

2.10.1.1 Construction Spill Prevention

Fuel and lubricating oils from construction vehicles and equipment and, if the transformers used are not dry-type, then the mineral oil used to fill the transformers are the only potential sources for a spill. The EPC contractor would be responsible for training its personnel in spill prevention and control and, if an incident occurs, would be responsible for containment and cleanup.

2.10.1.2 Fuel Spill Prevention

During construction, the EPC contractor would utilize fuel trucks for refueling of construction vehicles, fuel storage tanks and equipment on site. The fuel trucks would be properly licensed and would incorporate

features in equipment and operation, such as automatic shut-off devices, to prevent accidental spills. Some construction vehicles, such as pickup trucks, would be fueled in town at gas stations. Any spills would be addressed in accordance with the Construction Spill Prevention Plan that would be developed by the EPC contractor and would be submitted to EFSEC for review and approval prior to construction.

Potential risks would be additionally mitigated by using dedicated fuel-delivery trucks driven by professional, appropriately licensed drivers and by ensuring adherence to site speed limits. No other equipment fueling plan is anticipated. A fuel tanker accident would trigger activation of the SPCC Plan. The SPCC Plan would include a description of procedures that would be followed in the event of a fuel tanker spill and would contain a list of equipment that would be on-site for spill response emergencies.

2.10.1.3 Lubricating Oils

Lubricating oils used during construction would mostly be contained in the vehicles and equipment for which they are used. Small quantities of lubricating oils may also be stored in appropriate containers at the construction staging area. The details of storage and containment of lubricating oils and other materials at the construction staging area would be addressed in the construction-phase SPCC Plan, which would be developed by the EPC contractor and submitted to EFSEC prior to construction for review and approval. Appropriate measures would be taken to ensure these materials are not spilled and that if a spill does occur, it is promptly cleaned up and reported to the proper agencies.

2.10.1.4 Transformer Mineral Oil

The pad-mounted transformers found throughout each of the five Columbia Solar Project sites would likely be filled with mineral oil at the factory and not at the site during construction. Appropriate measures would be taken to ensure these materials are not spilled and that if a spill does occur, it is promptly cleaned up and reported to the proper agencies.

2.10.2 Operational Phase Spill Prevention, Control, and Countermeasure Plan

An operational-phase SPCC Plan would be developed and submitted to EFSEC prior to the commencement of Columbia Solar Project operations. Operation of the projects would not require the storage or use of significant quantities of fuel or other materials that could cause a spill or other accidental release.

Columbia Solar Project operations would not require the use of a permanent fuel storage tank, as fuel use during operations is limited to maintenance vehicle fueling, which would be done at existing licensed gas stations in nearby communities. The potential for accidental spills during operations is minimal, as the sole source of potential spills on-site would be the small amounts of mineral oil contained within the pad-mounted transformers. The transformers are designed to meet stringent electrical industry standards, including containment tank welding and corrosion protection specifications.

2.11 Surface-Water Runoff 463-60-215

The application shall describe how surface-water runoff and erosion are to be controlled during construction and operation to assure compliance with state water quality standards. The application shall describe in general detail the content of the construction and operational storm water pollution prevention plans that will be prepared prior to commencement of construction and/or operation of the facility.

2.11.1 Short-term Construction

Construction of the five Columbia Solar Projects has the potential to generate water pollutants during the construction phase unless best management practices (BMPs) are implemented. Stormwater runoff from the solar project sites could contain pollutants such as soils and sediments that are released during grading activities, as well as chemical and petroleum-related pollutants due to spills or leaks from heavy equipment and machinery. Other common pollutants that may result from construction activities include solid or liquid chemical spills; concrete and related cutting or curing residues; wastes from paints, sealants, solvents, detergents, glues, acids, lime, plaster, and cleaning agents; and heavy metals from equipment.

Hazardous materials (such as fuels, solvents, and coatings, among others) associated with the Columbia Solar Project construction activities would be stored and used in accordance with the manufacturer's specifications and applicable hazardous material regulations. In addition, spill kits would be required for all construction equipment in order to immediately manage any spills from fueling or equipment breakdown. 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.

The National Pollutant Discharge Elimination System (NPDES) permit program was established to control water pollution by regulating point sources that discharge pollutants into "Waters of the U.S." Pursuant to Clean Water Act (CWA) Section 402(p), which requires regulations for permitting of certain stormwater discharges, Ecology has issued the statewide NPDES General Permit for Stormwater Discharges Associated with the Construction and Land Disturbance Activities.

Under this Construction General Permit, individual NPDES permits or Construction General Permit coverage must be obtained for discharges of stormwater from construction sites with a disturbed area of 1 or more acres, and those undertaking construction are required to either obtain individual NPDES permits for stormwater discharges or be covered by the Construction General Permit.

Coverage under the Construction General Permit is accomplished by completing and filing a Permit Registration Document (PRD) with Ecology prior to commencement of construction activities. The PRD consists of a Notice of Intent (NOI); a Risk Assessment; a site map; a Stormwater Pollution Prevention Plan (SWPPP); an annual fee; and a signed certification statement. The primary objective of the SWPPP is to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. Encompass Engineering & Surveying has prepared a preliminary SWPPP for the Columbia Solar Projects, but this has not yet been approved by Ecology. A copy of the preliminary SWPPP is included in the materials submitted with this ASC.

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.

The installed BMPs would be visually monitored at least once per week, and within 24 hours of any stormwater or non-stormwater discharge from the site. Turbidity sampling would also be required at least once per week as applicable to ensure that the Columbia Solar Projects do not exceed 25 nephelometric turbidity units and a transparency of less than 33 cm.

Obtaining coverage under, and ensuring compliance with, the Construction General Permit requirements (including implementation of appropriate BMPs and consistent record keeping of the SWPPP) would ensure that temporary water quality impacts associated with construction activities would not cause any significant downstream or off-site impacts.

2.11.2 Long-term Operation

Operation of the five proposed Columbia Solar Projects would include infrequent site visits for inspection and maintenance. Maintenance activities would include washing the PV panels to remove accumulated airborne dust and debris using a truck with a water tank and sprayer, and mowing or otherwise managing the native vegetation to maintain buffers around the site and vegetation height within the site. Panel washing would occur between one and four times per year, depending on the accumulation of dust on the surfaces of the panels, and vegetation management would occur at a similar frequency based on rainfall and yearly plant growth.

Table 2.11-1 presents a summary of typical pollutants associated with commercial developments and their likelihood of being generated at the project site. As shown, due to annual maintenance activities, pollutants such as pesticides, trash, and oil/grease are anticipated to be generated from project implementation. However, because the project site would be an unmanned site and would only be subject to maintenance a couple of times per year, the potential for pollutants would be greatly reduced when compared to a typical commercial or industrial land use.

As shown in Table 2.11-1, no Columbia Solar Projects–generated pollutants are expected to impact downstream receiving waters, and project flows would not discharge to any receiving waterbody that is listed for water quality impairment.

As the five Columbia Solar Projects would not generate any pollutants of concern, impacts would be less than significant. However, BMPs are incorporated into the project to address water quality impacts on site and at downstream receiving waters. The five proposed solar projects would include vegetation throughout the sites such that full dispersion and infiltration would treat and control the runoff for the area within the panel arrays.

Other water quality BMPs include: 1) protecting slopes and channels through the preservation of existing site drainage patterns; 2) the absence of chemical storage and pollution generating surfaces on-site; 3) maintaining BMPs regularly, including annual inspections of the entire site and maintenance of inspection records; 4) regular maintenance of any bare soil or gravel surfaces, such as the all-weather access roads, to ensure that they are properly stabilized; and 5) training for Columbia Solar Projects operators and contractors, and the provision of educational materials for project personnel, regarding housekeeping practices that prevent pollutant loading in on-site runoff and BMP maintenance.

Table 2.11-1. Potential Columbia Solar Project Pollutants

Associated Project Pollutants			Is a Pollutant?	
Pollutants	**Status**	**Notes**	**303(d) listed***	**Total Maximum Daily Load**
Sediment/Turbidity	Potential	Open areas	No	No
Nutrients	Potential	Open areas	No	No
Organic Compounds	Expected	Pesticides and hydrocarbons	No	No
Trash and Debris	Potential	Windblown litter	No	No
Oxygen Demanding Substances	Potential	Open areas	No	No
Bacteria and Viruses	No	No paved parking areas	No	No
Oil and Grease	Potential	Petroleum hydrocarbons	No	No
Pesticides	Potential	Open areas	No	No
Metals	No	Materials at the site are designed to be exposed to the elements	No	No

*Under Section 303(d) of the Clean Water Act, states are required to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized Tribes. The law requires that states establish priority rankings for waters on the lists and calculate the Total Maximum Daily Load (TMDL) for these waters. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.

Further, any cleaning agents or additives used to clean the PV panels would be biodegradable, non-toxic, and non-hazardous to plants, animals, and groundwater. Therefore, the use of water to clean the PV panels would have a less than significant impact on surface water and groundwater quality.

2.12 Emission Control 463-60-225

(1) The application shall describe and quantify all construction and operational air emissions subject to regulation by local, state or federal agencies.

Construction emissions for each of the proposed Solar Projects have been quantified and shown in Section 3.2.6.1 of this application. The proposed Columbia Solar Projects are PV facilities and would not be a source of any air emissions during operation.

(2) The application shall identify all construction and operational air emissions that are exempt from local, state and federal regulation, and the regulatory basis for the exemption.

Per WAC 173-400-110 a notice of construction application must be submitted for new and stationary sources of air emissions. WAC 173-400-110(4) exempts certain emission units and activities from new source review and the filing of a notice of construction application. Construction activities that do not result in new or modified stationary sources or portable stationary sources are one of the exemptions (WAC 173-400-110[4][x]). The five proposed Columbia Solar Projects would only have minimal dust and vehicular air emissions during construction, and no air emissions during operation. Thus, the Columbia Solar Projects would not result in new sources of air emissions. Per WAC 173-400-110(4)(x), the

Columbia Solar Projects are exempt from new source review and filing a notice of construction application.

Once operational, the five proposed Columbia Solar Projects would not be a source of air emissions. Therefore, the projects would not be subject to air emission regulations. There would not be any applicable air emission regulations to be exempted from.

(3) The applicant shall demonstrate that the highest and best practicable treatment for control of emissions will be utilized in facility construction and operation.

Once operational, the five proposed Columbia Solar Projects would not be a source of air emissions. Construction emissions would be temporary and transient in nature. Dust from access roads would be controlled by applying gravel or watering, as necessary.

(4) The application shall identify all state and federal air emission permits that would be required after approval of the site certification agreement by the governor, and the timeline for submittal of the appropriate applications for such permits.

The five proposed Columbia Solar Projects would be PV facilities and would not be a source of air emissions. No further air emission permits would be required for the Columbia Solar Projects after approval of the site certification agreement.

(5) In the case of fossil-fuel fired energy plants, the application shall describe and quantify all emissions of greenhouse gases.

Because TUUSSO is proposing the five Columbia Solar Projects, and not a fossil-fueled plant, this requirement does not apply.

(6) In the case of a nuclear-fueled plant, the applicant shall address optional plant designs as these may relate to gaseous emissions.

Because TUUSSO is proposing the five Columbia Solar Projects, and not a nuclear-fueled plant, this requirement does not apply.

2.13 Carbon Dioxide Mitigation 463-60-230

For thermal electric energy facilities, the application shall include a carbon dioxide mitigation plan and information required by chapter 463-80 WAC.

Because TUUSSO is proposing the five Columbia Solar Projects, which are PV facilities without carbon dioxide emissions, not thermal electric energy facilities, WAC 463-80 does not apply to the proposed projects. The Columbia Solar Projects would not be a source of carbon dioxide (CO_2) emissions and thus would not have any CO_2 emissions to mitigate.

2.14 Greenhouse Gases Emissions Performance Standards 463-60-232

For baseload electric generating facilities, the application shall provide information required by, and describe how the requirements of chapter 463-85 WAC will be met.

As these five Columbia Solar Projects are PV facilities, not baseload electric generating facilities, WAC 463-85 is not applicable to the projects. The operation of Columbia Solar Projects would not emit any

greenhouse gases. However, it is notable that the implementation of the projects would result in a net regional and global reduction of greenhouse gas (GHG) emissions compared with the existing conditions.

2.15 Construction and Operation Activities 463-60-235

The application shall: Provide the proposed construction schedule, identify the major milestones, and describe activity levels versus time in terms of craft and noncraft employment; and describe the proposed operational employment levels.

2.15.1 *Project Phases and Schedule*

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. 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. Table 2.15-1 provides the proposed schedule for the projects' construction. While the schedule may be modified due to the date of EFSEC's approval as well as other approvals/permits, this table illustrates the approximate duration of major project activities. Construction activities would occur between the hours of 7:00 a.m. and 10:00 p.m., Monday through Saturday.

Table 2.15-1. 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

Project construction would include several phases occurring simultaneously across the five Columbia Solar Project sites, including:

1. the grading and construction of a temporary gravel construction entrance/exit at the entry gates of each site;
2. the installation of silt fencing;
3. the pile driving of piers or posts, and the placement of trackers on support piers;
4. the trenching and installation of the DC and AC collection system, including the installation of the inverter enclosures;
5. the installation of the PV panels;
6. the construction of electrical interconnection facilities, including the construction of the interconnection and generation tie lines;
7. the mowing, application of herbicide treatment, discing/tilling, and planting of native plant species on the sites, as well as the planting of landscaping species (e.g., trees and bushes along certain boundaries of the sites); and

8. the grading, compaction, and placement of gravel (as necessary) for all-weather access roads.

2.15.2 *Construction Workforce and Workspace*

Construction of the five Columbia Solar Projects would employ up to 100 workers per day during the peak construction period, with roughly 80% non-craft laborers and 20% craft mix laborers. Based on prior experience, approximately 80% of the workers would be local hires. For each site, the projects would host up to 50 workers per day during the peak construction period.

Vehicular trip generation for employees and delivery trucks would vary depending on the phase of construction. It is estimated that a total of approximately 1,500 trips would be made to each site during the 3-month construction period, with conservatively 25% of those trips made by heavy trucks. Thus, on average, approximately 25 trips per site per day would be generated during construction. During the peak of construction, a typical day would include the transportation of workers, movement of heavy equipment, and transportation of materials.

Construction staging and material lay-down areas would be set up for each section of each Columbia Solar Project site, to allow for efficient distribution of components to different parts of each project site. These lay-down areas would be temporarily fenced and would cover approximately 1.5 acres each within the project boundaries.

2.15.3 *Site Preparation and Grading Activities*

Construction of the five Columbia Solar Projects would involve:

- limited clearing and grubbing of the existing vegetation for construction;
- limited grading, if necessary, for the construction of all-weather access roads and the installation and operation of the PV system;
- trenching for the electrical DC and AC collection system, including the telecommunication lines;
- installation of the inverter enclosures and associated transformers;
- construction of an underground 12.47-kV line for each collection system leading to each project switchyard;
- installation of the interconnection equipment; and
- for the Typha and Fumaria Solar Projects, installation of the generation tie lines.

It is anticipated that there would be no import or export of soils for the projects. To prepare each of the five Columbia Solar Project sites, temporary gravel construction entrance/exits at the entry gates of each site would be constructed, and silt fencing would be installed (as illustrated in the respective site layouts).

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. Water may be trucked in from municipal water sources or may be supplied on-site based on existing water allocations.

2.15.4 Ongoing Operations and Maintenance

2.15.4.1 Operations Workforce

The workforce performing ongoing O&M would be relatively small and would typically be off-site. The workforce would consist of general labor for cleaning purposes, skilled electricians for visual inspections and performance testing, and skilled mechanics to inspect and maintain the mechanical portions of the

tracking system. Because the facilities would be monitored remotely in real time, as described in detail below, it is anticipated that four to five O&M personnel would make roughly two to three visits per year to each of the five Columbia Solar Project sites to conduct the on-site O&M functions.

Other than O&M, general landscape labor would perform vegetation maintenance based on the weather and vegetation growth, to maintain ground cover and remove unwanted vegetation.

Skilled O&M personnel would review the information provided by the SCADA system. In addition, if a fault or an error occurs, an automatically generated email would be sent to monitoring personnel to alert them. The monitoring personnel would assess the fault or error information to determine what corrective actions would be needed. In most cases with PV systems, the fault is auto-correctable and does not require reactive repair at the site.

2.15.4.2 Facility Maintenance

PV facilities contain very few moving parts and have limited ongoing maintenance requirements. Maintenance activities would consist of checking electrical performance parameters via remote monitoring, performing periodic inspections and maintenance of transformers and inverters, responding to any problems detected by remote monitoring, conducting weed abatement, mowing vegetation cover, performing dust control activities, cleaning PV panels, and maintaining all-weather access roads. Water would be used for cleaning PV panels and controlling dust as well as to establish landscaping (both for the trees and shrubs, forming a visual buffer along the boundaries of some of the sites, and the native vegetation cover) during the first 3 years, but no water would be used by the facility for the production of electricity. No major equipment is anticipated to be required for maintenance of the facility except as necessary for maintenance of the all-weather access roads.

2.15.4.3 Site Security

Site security could be provided by fencing, monitoring cameras, and security staff, who may periodically drive along the site perimeter security fence. As mentioned above, lighting would also be installed around the perimeter of each of the five Columbia Solar Project sites to deter criminal activities.

2.15.4.4 Dust Control

The facilities would be constructed within the existing contours and topography of the land. For those limited areas that are cleared and grubbed, water trucks would be employed to keep dust to a minimum. As the roads are compacted for construction, soil binding agents and/or aggregate would be laid down to control the dust. After construction is complete, interior roads other than the all-weather access roads would be plowed and re-seeded with a native, low-lying seed mix that requires little maintenance and would help control dust.

2.16 Construction Management 463-60-245

The application shall describe the organizational structure including the management of project quality and environmental functions.

For the construction of the five proposed Columbia Solar Projects TUUSSO plans to utilize a standard turnkey EPC contract structure, which would cover construction of all generating facilities and any necessary civil infrastructure and interconnection such as the all-weather access roads, project switchyards, etc. TUUSSO or the primary financial sponsor would act as the owner in the EPC contract, with construction oversight responsibilities. As part of the EPC contract, the contractor would be required

to design and implement a safety plan, a quality assurance/quality control (QA/QC) plan, and an environmental protection plan, including a SWPPP and any erosion control measures.

2.16.1 Construction Management and Organizational Structure

The detailed Columbia Solar Projects management organizational structure would be decided by the final EPC contractor, but would typically include three primary management structures on the contractor side: management of engineering and design, management of supply chain and logistics, and construction project management (Figure 2.16.-1).

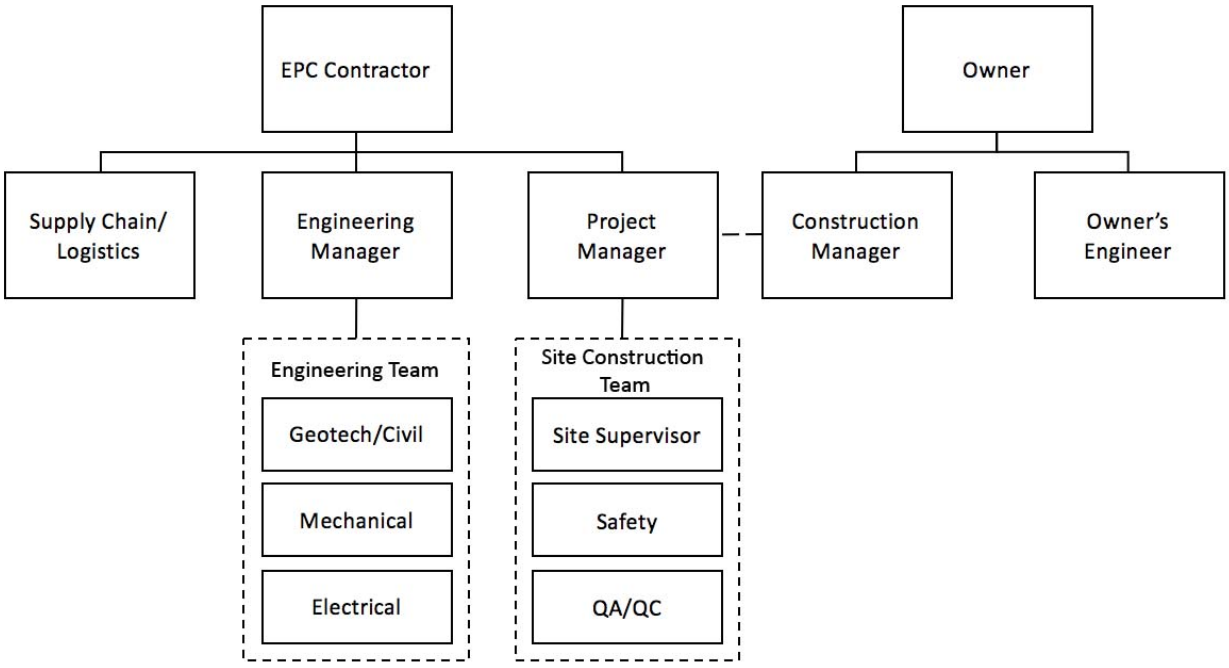

Figure 2.16-1. Columbia Solar Projects management structures.

The engineering and design team is responsible for selecting the generating equipment, the detailed plant design, and construction specifications for QA/QC of the various portions of the Columbia Solar Projects. The engineering team, in conjunction with the supply chain team, would review proposals from multiple suppliers for key equipment such as panels, trackers, and inverters to ensure that the equipment selected is best suited for the site and project performance goals. The engineering team also would ensure that the detailed design would meet the required codes and standards applicable to each project.

The supply chain team would ensure that the procurement and delivery of key generating equipment and construction equipment to each project site are on time and within the project budget.

Finally, the project manager would be responsible for planning and executing all aspects of field activities, including scheduling and staffing of site work, safety, and field QA/QC. The project manager would also be responsible for specification and procurement of any construction equipment required on-site. As part of their overall responsibilities, the project manager would manage any required construction subcontractors including civil subcontractors involved in site preparation, interior roads, and post installation; any mechanical subcontractors working on trackers and other moving parts; and any

electrical subcontractors required for the DC/AC installation and commissioning. The project manager would be assisted by a site supervisor or foreman, a safety manager, and a QA/QC team that would work together to ensure that the work is performed safely to the design specifications and conforms to best industry practices.

On the owner's side, the construction manager would act as the primary liaison with the EPC project manager to ensure schedule and other performance metrics meet targets. The construction manager would be assisted by the owner's engineer, who would provide independent verification in conjunction with the Columbia Solar Projects' field QA/QC team.

While this organizational structure represents a typical structure for solar power plant construction, the exact organization may change after award of the EPC contract and other subcontracts.

2.16.2 Quality Assurance/Quality Control

A QA/QC Plan would be implemented and maintained during the duration of the five Columbia Solar Projects, to ensure that the construction and commissioning of each plant is completed as specified. QA/QC inspections would typically include, but not be limited to, the following checks and review:

Supplier QA/QC

- Review and inspection of third party test verification reports for panels and inverters
- Review and inspection of manufacturer's QA/QC procedures for International Organization for Standardization (ISO) compliance
- Review of logistics procedures and handling

Field QA/QC

- Review of equipment and material delivery acceptance inspection procedures
- Inspection of post galvanization finishing and protection
- Overall visual inspection (including assembly, fastening systems, and any welding)
- Field verification of road locations compared to site plan and survey markings
- Review of clearing and grubbing and compaction process
- Verification of road materials and compaction
- Field verification of concrete pouring and concrete testing
- Field verification of post locations and heights compared to site plan and relative to survey markings
- Verification of all mechanical assembly work for trackers and racking
- Verification of field wiring and tagging
- Inspection of cables and trenches prior to burial and backfilling
- Witness of proper backfilling procedures
- Inspection of terminations and termination hardware
- Verification of polarity, cable marking, grounding system tests
- Witness and/or review of all electrical tests

Safety QA/QC

- Review of safety procedures
- Observation and attendance of safety training for supervisors and field staff including daily safety debriefings
- Review of construction safety techniques and implementation

The owner's engineer would work directly with the QA/QC team on site to ensure that the QA/QC plan is implemented and maintained satisfactorily.

2.16.3 Environmental Protection

An Environmental Protection and Compliance Program would be developed by the EPC contractors to ensure that all construction activities meet the conditions, limits, and specifications set in environmental standards established in the Site Certification Agreement and all other federal, state and local environmental regulations. The Environmental Protection and Compliance Program would cover avoidance of wetlands, and any other sensitive areas during construction, waste handling and storage, stormwater management, spill prevention and control, and other components required by state and county regulation. Copies of the plan and all applicable construction permits would be kept on-site. The project manager would be responsible for ensuring that all the requirements in the Environmental Protection and Compliance Plan and the construction permits are adhered to, and that any deficiencies are promptly corrected.

2.17 Construction Methodology 463-60-255

The application shall describe in detail the construction procedures, including major equipment, proposed for any construction activity within watercourses, wetlands and other sensitive areas.

Table 2.17-1 lists the typical construction equipment commonly associated with the construction of solar facilities.

Table 2.17-1. Construction Equipment

Type of Equipment	Construction Use
Heavy Vehicles	
Boom Truck/Truck Mounted Crane	Moving materials
Bore/Drill Rigs	Drilling holes into the ground
Concrete Mixing Trucks	Delivering concrete used for any slabs and foundations
Dump Trucks	Delivering and spreading aggregates
Excavators	Trenching and foundations
Graders	Access road and driveway leveling
Paving Equipment	Paving, if required
Pile/Vibratory Drivers	Driving structure posts
Rollers	Compacting access roads and driveways
Semi-Tractor Trailers	Moving materials and equipment
Non-heavy Vehicles	
Forklifts	Moving materials, loading and unloading of trucks
Personnel transport vehicles	Transporting workers
Other Material Handling Equipment	Moving materials
Service Trucks	Maintaining heavy equipment
Skid Steer Loaders	Light soil work for slabs and foundations
Sweepers/Scrubbers	Dust control on paved areas
Tractors/Loaders/Backhoes	Clearing and grubbing and moving soil
Trenchers	Light trench work
Water Trucks	Dust control

Type of Equipment	Construction Use
Other Equipment	
Disposal Containers	Disposing of and removing construction debris
Other General Industrial Equipment	Assembling structures
Plate Compactors/Jumping Jacks	Compacting soil under concrete slabs and foundations
Pressure Washers	Cleaning
Storage Containers	Storing on-site materials
Welders	Assembling structures

Construction of each project would be undertaken in accordance with all state and local authority having jurisdiction (AHJ) requirements and civil, electrical, mechanical codes and standards as applicable. Construction procedures would utilize industry best practices for low-impact construction and would be carried out in conjunction with a safety plan, a QA/QC plan, and a comprehensive environmental protection plan, as described in Section 2.16.3. The major steps in construction and associated procedures are outlined in the following sections.

2.17.1 Pre-construction and Site Preparation Including Revegetation Activities

Prior to start of construction, pre-construction activities would be undertaken, including detailed project management and scheduling, crew sizing, and recruitment plans, construction equipment procurement, in parallel with administrative permitting. Following administrative permits, preliminary site preparation activities would also be completed at that time. This would include any utility locates, demarcation of staging areas, local temporary construction office installation, and commencement of site revegetation activities in accordance with the Revegetation Plan. The site would be mowed, grubbed as necessary, and any weed control measures would be started at that time.

2.17.2 Grade and Install Construction Entrance and Fencing

The sites for the five Columbia Solar Projects are relatively flat, and there are no grades within the design areas that exceed solar racking longitudinal or cross-slope mechanical tolerances. In addition, the existing hydrological flows on-site would not be altered for any drainage or stormwater management, and as a result, overall grading would be restricted to that which may be required for the site entrance and all-weather access roads. Motor graders with typical blade lengths of 12 feet would be used to level the entrance area off the roadway, as per the design, and maintain the slope within design parameters. The entrance area soil would be stabilized, including potential use of binders, geotextiles, and mats, overlaid with aggregate and compacted using equipment such as vibratory rollers and soil compactors. Native soils would be utilized for the minimal fill that may be required, and no export of topsoil is anticipated. Fencing would be installed around the perimeter of the sites, as per the design for each project.

At that time, the temporary laydown area would also be demarcated, grubbed, and stabilized with erosion control measures as necessary.

2.17.3 Install SWPPP Measures Including Perimeter Protection

Interior perimeter protection (including silt fencing, sandbags, straw bales or other BMPs) would then be installed as per the SWPPP and Temporary Erosion and Sediment Control (TESC) Plan. Any existing storm drains and culverts would be inspected for clear flows and brought up to maintenance standards.

2.17.4 Install Interior All-weather Access Roads

Interior all-weather access roads would be located and demarcated, as per the design, utilizing standard surveying equipment. The road areas would be graded using a motor grader or similar, then stabilized and compacted using vibratory rollers and plate compactors. If necessary, these all-weather access roads might be overlaid with aggregate and then compacted. No export of topsoil is anticipated, as per the design.

2.17.5 Layout Arrays, Combiner Box, Trenching, and Inverter Locations

Pier locations would be identified and demarcated using string lines, as per the array design, using standard laser surveying equipment and site boundary survey reference points. Pier locations are further identified as corners, motor mounts, and interior piers as per the design, as these are structurally distinct from each other. At this time, the detailed DC collection system path, combiner box locations, inverter pad locations, AC collection system routing, and interconnection point would be established and demarcated. Inverter locations include the appropriate clearances and setbacks that provide for safety as per code and provide for adequate inverter pad access during installation and maintenance.

2.17.6 Install Piles

Using flatbed trucks, boom trucks, and forklifts, the wide-channel, galvanized-steel piles for the arrays would be transported to the pier locations and laid out for the civil crew who would drive them into the ground to support the trackers. Using laser beacons and global positioning system (GPS)-enabled vibratory pile drivers in conjunction with previously demarcated pier locations, piles would be driven into the ground within mechanical tolerance requirements. The pile drivers are specifically designed for solar array construction and consist of a high frequency vibratory hammer that operates at around 1,500 beats per minute, with plumb line and pile height controls. Typically, a crew of two to three people operate a single pile driver, driving in a post every 1 to 2 minutes with 3- to 5-minute transitions between locations. Grounding of panels is achieved through the piles via the tracking mechanism.

2.17.7 Install Trackers

The parts for the tracker cross-beams, which support the panels and are also referred to as the torque tubes, would be transported to the array locations by flatbed trucks, boom trucks, and forklifts. These torque tube sub-assemblies would be lifted onto the installed supporting piles and connected to the piles using bracket-mounted bearings, torsional limiters, and tracking actuators, which consist of DC motors with slew gear assemblies. Trackers would typically then be field assembled by three- to five-person crews utilizing specialty tools, allowing for rapid installation. The wireless mesh tracker control systems would then be installed at the center drive posts, with an ability to measure inclination and use that to control position in accordance with tracking algorithms.

2.17.8 Install Panels and Complete Racking

Galvanized steel and aluminum tubes and purlins are used for attaching the modules to trackers. These components would be transported to the assembled trackers, and attached using bolts and specifically designed brackets. Modules would then be transported to the trackers for installation on the purlins and mounting rails. Modules are attached to the rails and purlins using specialized fasteners and clamps, such as pressure mounting clips, that also provide ability for grounding. The modules typically have junction boxes with multi-contact connectors for the DC collection system.

2.17.9 Trenching for AC and DC Cabling

Trenches for the DC cabling would be dug from the array combiner box locations to the inverter pads using excavators and trenchers. Trenches for the AC collection system would also be dug from the inverter pad locations to the plant switchgear and POI. Trench sizes are typically determined by electrical code requirements for the type and size of cabling to be buried. Trenches may contain circuits of different systems as long as proper separation is maintained. Trenching would be performed in a manner that minimizes impact to the surrounding area, and the area surrounding open trenches during the installation would be identified and protected as required for safety.

Cables would be installed in the finished trenches. Cabling would be supplied to the site in spools, either as cable in conduit or base cable. Spools are typically transported to the trenches using special mounting structures on trucks or tractors and cables are pulled into trenches by the electrical crew. All buried cables would be in metal sheath, polyvinyl chloride (PVC), or similar conduit, or are direct buried, with appropriate rating and environmental protection as per code and best practices. Minimum AC and DC collector system cover depth throughout the entire project site would be in accordance with acceptable solar energy standards, the National Electrical Code (NEC), and the state and local AHJ requirements.

Completed cabling would then be tested and carefully identified and marked during all phases of construction. The area of the trench and surrounding area would be cleaned up and restored to its prior condition as soon as cable installation and trenching were completed.

2.17.10 Install Medium Voltage DC Collection System

Electrical crews would install the combiner boxes and the medium voltage DC collection system cables from the combiners to the inverter pad. Combiner boxes include DC disconnectors that are left open to enable safe connection of the modules. The electrical crews would then complete string assembly of the panels in series using ultraviolet (UV)-rated wiring and connectors, and combine the strings in parallel at the combiner boxes to complete the medium voltage DC system.

2.17.11 Install Inverters

Inverters are typically either fully assembled with the transformers and skid-mounted off-site for delivery via flatbed or assembled on-site onto poured concrete slab foundations. If the latter method is used, then slabs, often steel reinforced, would be designed, taking into account inverter mounting and cabling conduit requirements, appropriate load bearing capacity, and plant lifetime. Areas around the slab foundation would be stabilized and compacted. Excavators and graders would be used to create the appropriate foundation trench with cabling entry and exit points. Concrete mixers would be driven to the inverter locations, and the concrete pads would be poured and cured over the required time.

The inverters and transformers would then be delivered to the pad locations on pallets using flatbed trucks. Various lifting methods would be used to move the equipment onto the mounting structures on the pads, including forklifts, truck-mounted cranes, and crane forks. Electrical crews would then terminate the MV DC collection system at the inverters, and connect the inverters and transformer sub-assemblies.

2.17.12 Install AC Collection System

The AC cabling, typically aluminum cable, would be installed, with transformers from multiple inverter pads connected in series and terminating at the pad-mounted circuit breaker and pad-mounted recloser of the interconnection switchyard. Cabling would be tested again for continuity and conformance to design parameters. This would complete the installation of the AC collection system.

2.17.13 Construction of Interconnection Facilities

A small area at the POI would be used for the interconnection facilities. This area would be graded using excavators and graders, and foundation trenches dug, with cabling entry and exit points for any pad-mounted equipment. The pad-mounted equipment, such as circuit breakers, reclosers, relays, etc., would be brought to the location using flatbeds and lifted into place using boom trucks, truck-mounted cranes, or similar equipment. The AC collection system termination would then complete the customer side of the interconnection. The wood monopole(s) required for connection to the utility lines would be transported to the POI using a flatbed truck and installed using auger drills, boom trucks, and truck-mounted cranes.

2.17.14 Site Restoration

At the completion of construction, following successful testing and before final plant commissioning, areas requiring any intensive restoration and remediation would be identified. These might include areas such as the laydown area that have experienced unexpected erosion from traffic or vegetation that has been disturbed by construction equipment or on-site stored generating equipment pallets. Any such areas would be restored to pre-construction levels using any fill or revegetation as may be required.

2.18 Protection from Natural Hazards 463-60-265

The application shall describe the means to be employed for protection of the facility from earthquakes, volcanic eruption, flood, tsunami, storms, avalanche or landslides, and other major natural disruptive occurrences.

The five Columbia Solar Project sites are not subject to any significant risk of avalanche, tsunami, landslides, or flood. The size, mounting depth, and other characteristics of the mounting structures would meet the American Society of Civil Engineers (ASCE) requirements for general structural design for wind, snow, rain, atmospheric ice, and earthquake loads, as well as combinations thereof. The requirements are based on site-specific conditions and would be adhered to in the final detailed design of the mounting structures.

2.18.1 Earthquakes

The 2015 International Building Code recognizes the ASCE for seismic site class definitions. In accordance with Table 20.3-1 of the *ASCE Minimum Design Loads for Building and Other Structures manual*, Site Class D would be used by TUUSSO for the design of the five Columbia Solar Projects.

Based on the soil conditions discovered during geotechnical analyses, the five Columbia Solar Project sites have very low susceptibility to liquefaction.

2.18.2 Volcanic Eruption, Tsunami, Avalanches, or Landslides

TUUSSO has not taken any special precautions to protect the facilities from these potential disasters. However, the facilities would be built to meet building codes and would be appropriately insured.

2.18.3 Floods/Storm Events

Portions of the Camas, Typha, and Urtica Solar Project sites would be located within 100-year flood hazard areas, as determined by the Federal Emergency Management Agency (FEMA). The FEMA flood hazard is categorized as a Zone “A,” meaning this area is subject to a 1% annual chance flood, also

known as a 100-year storm event. The flood hazard areas are shown in the site layouts for each of these projects (Appendix L).

To protect the five Columbia Solar Projects from flood impacts, TUUSSO would not locate any of the inverter pads within these flood zones, and would raise the perimeter fence 6 to 12 inches above grade to prevent a build-up of debris along the fence lines during a flooding event.

2.19 Security Concerns 463-60-275

The application shall describe the means employed for protection of the facility from sabotage, terrorism, vandalism and other security threats.

2.19.1 Fencing

The five proposed Columbia Solar Project sites would be secured using 6- to 8-foot-high, perimeter, chain-link fencing topped by razor wire 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.

2.19.2 Lighting/Cameras

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, as required for nighttime security purposes. 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, between five and 10 lights would be installed and fed by direct buried underground electrical supply lines. Security cameras may also be installed by TUUSSO on those same lighting poles.

2.20 Study Schedules 463-60-285

The application shall furnish a brief description of all present or projected schedules for additional environmental studies. The studies descriptions should outline their scope and indicate projected completion dates.

2.20.1 Natural Resources Site Visits with the Washington Department of Fish and Wildlife (April 12, 2017)

On April 12, 2017, SWCA Environmental Consultants (SWCA) conducted site visits of all five proposed Columbia Solar Project sites with Scott Downes and Brent Renfrow, WDFW staff, to review the natural resources on each site and to obtain their input about potential site impacts, buffers, and mitigation. These site visits provided the bases for subsequent email exchanges with WDFW (see Section 1.12 for a summary of those exchanges).

2.20.2 Natural Resource Surveys (April 3–12, 2017)

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 solar project sites, as well as different vegetation communities and habitat. Visual observations were recorded within 200 feet of each project site, and included wildlife and habitat data. A Trimble Geo XT GPS unit was used by the biological field team to assist in identifying the site

boundaries and to record site spatial data. This device was capable of submeter accuracy. The full extent of each solar project site was covered by the biological field team. Photographs were taken and wildlife observations and vegetation characteristics were documented. The spatial locations of some features observed outside of the solar project sites were approximated using field observations and aerial imagery to determine their extent. Geographic information system (GIS) software was used to analyze data and to produce habitat map figures.

2.20.3 Wetland Delineations (April 3–12, 2017)

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* (Environmental Laboratory 1987). Wetlands and streams located outside of a project site and any associated generation tie line (for the Fumaria and Typha Solar Project sites) but that occurred within 200 feet of their boundaries and had the potential to have buffers extend into the project were included in a "study area." Wetlands and streams outside of the project site and within the study area were visually inspected but not formally delineated. Detailed descriptions of the field methods used in these studies are provided in Appendices G through K.

A Trimble Geo XT GPS unit was used by the field team to assist in identifying the project site boundaries and to record site spatial data. This device was capable of submeter accuracy.

The full extent of each project site was covered by the team of biologists. Photographs were collected and vegetation, soil, and hydrology characteristics were documented. The boundaries for wetlands located outside of the project site but within the study area were approximated using field observations and aerial imagery to determine the extent of on-site wetland buffers.

GIS software was used to analyze data and to produce the report figures. Per Washington Administrative Code (WAC) 463-60-333 and KCC Chapter 17A, wetlands were rated using Ecology's wetland rating criteria in the *Washington State Wetland Rating System for Eastern Washington, 2014 Update*. Kittitas County's definition of a wetland is based on RCW 36.70A.030. Per KCC 17A.04.020, the resulting wetland ratings were used to determine the Kittitas County–prescribed range of wetland buffers for each wetland.

A detailed analysis of wetland functions was not conducted; however, a brief description of wetland functions is provided as part of the general description for each wetland.

2.20.4 Archaeological Surveys (April 4–17, 2012)

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 archaeologists. The parcels were surveyed with pedestrian transects spaced at approximately 20-meter intervals. The survey was supplemented by about 900 shovel probes (SPs) measuring between 35 and 40 cm in diameter (Appendices G–K). The SPs 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 the present of 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 SP were recorded on standard shovel/auger probe forms that included information about soil color, texture, composition, and observed cultural materials. A Trimble handheld GPS unit was used to collect the Universal Transverse Mercator (UTM) coordinates of shovel probes. Digital photographs were taken of each project area and a sample of the excavated SPs, and information about the photographs was recorded on a standard photograph log. SP photographs included cardinal direction overview photographs 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 Washington State Department of Archaeology and Historical Preservation's Washington Information System for Architectural and Archaeological Records Data (WISAARD) database.

For the generation tie lines for the Fumaria and Typha Solar Project sites, SWCA also conducted a pedestrian survey, but no shovel probing, for portions of the generation tie line ROW associated with each solar facility. The generation tie line pedestrian survey was conducted by four SWCA archaeologists on April 17, 2017. Within the generation tie line ROW, SWCA did not survey any private property outside of the ROW of public roads, except where landownership was the same as the project site and landowner permission had therefore been given. In addition, though TUUSSO is considering two alternative generation tie line alignments for the Fumaria Solar Project (ROWs A and B), only the one located on the north side of Clarke Road (ROW A) was surveyed for the present inventory, and the area around the substation at the terminus of the transmission line also was not surveyed. Photographs were taken from the center of the generation tie line ROW in cardinal directions, and toward any places of interest within the generation tie line ROW.

2.20.5 Built Environment Surveys (April 5–6, 2017)

A SWCA architectural historian conducted site visits on April 5 and 6, 2017, to conduct a field survey of built environment resources over 50 years old. These resources included buildings such as houses, barns, and sheds, and structures such as bridges and irrigation ditches. Resources were photographed and described on field forms, these data were then entered into the WISAARD database, and an inventory form was generated for each resource (Appendices G–K).

2.21 Potential for Future Activities at Site 463-60-295

The application shall describe the potential for any future additions, expansions, or further activities which might be undertaken by the applicant on or contiguous to the proposed site.

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

2.22 Analysis of Alternatives 463-60-296

The application shall include an analysis of alternatives for site, route, and other major elements of the proposal.

Within Washington State, Kittitas County represents a unique overlap of: 1) available land parcels large enough to support a utility-scale solar project; 2) high solar insolation; and 3) PSE's service territory (one of the only utilities in Washington with tariffs that support utility-scale solar production). In early 2016,

TUUSSO identified Kittitas County as the best area for utility-scale solar development in Washington State.

As part of the initial conceptual development and siting of the five Columbia Solar Projects, TUUSSO applied solar facility siting criteria to identify potential sites in Kittitas County. These criteria included the following:

- High solar insolation
- Available land of sufficient size for the solar facility
- Proximity to PSEs distribution lines and/or substations
- Proximity to existing roads
- Cost-effective land value
- Land currently zoned for utility-scale solar development in accordance with Kittitas County's permitting requirements
- Agricultural, or otherwise previously disturbed land
- Land that is sufficiently flat for efficient solar installation with minimal grading

TUUSSO identified more than 100 sites in Kittitas County based on these criteria, and approached the landowners for these sites. Sites were then dropped based on one of the following screens: 1) landowner not interested in a lease or sale of the property; 2) distribution lines near the project site were not owned by PSE; 3) landowner's lease rates were not economical for solar development; 4) distribution lines near the site were electrically connected to other lines upon which TUUSSO or another solar developer was already proposing a project (only one utility-scale solar project could be connected to each distribution line, and only two utility-scale solar projects could be connected to each PSE substation); or 5) idiosyncratic site risks made the site too risky (e.g., high risk of flooding, protected flora or fauna on site, etc.).

In the process of culling through more than 100 sites, TUUSSO identified the proposed five Columbia Solar Project sites as the best opportunities for solar development in Kittitas County.

2.23 Pertinent Federal, State, and Local Requirements 463-60-297 (Compliance Evaluation)

(1) Each application shall include a list of all applicable federal, state, and local statutes, ordinances, rules, permits, and required use authorizations (i.e., leases, easements, rights of way, or similar authorizations) that would apply to the project if it were not under council jurisdiction. For each federal, state, or local requirement, the applicant shall describe how the project would comply or fail to comply. If the proposed project does not comply with a specific requirement, the applicant shall discuss why such compliance should be excused.

(2) Inadvertent failure by the applicant to discover and list a pertinent requirement shall not invalidate the application, but may delay the council's processing of the application.

Table 2.23-1 lists the pertinent federal, state, and local permits and related requirements pursuant to WAC 463-42-685 that would apply to construction and operation of the five Columbia Solar Projects. The table lists the permits or requirements, identifies the permitting agency, and cites the authorizing statute or regulation. The table also identifies the sections in the ASC relating to each permit or requirement.

Table 2.23-1. Pertinent Federal, State and Local Codes, Ordinances, Statutes, Rules, Regulations, and Permits

Permit or Requirement	Agency Code, Ordinance, Statute, Rule, Regulation, or Permit	Application Section
Federal		
Threatened or Endangered Species	U.S. Fish and Wildlife Service Endangered Species Act of 1973 (16 USC, Section 1531, et seq.) and implementing regulations. Designates and provides for protection of threatened and endangered plants and animals and their critical habitat.	Sections 3.4.2 and 3.4.4
Migratory Birds	U.S. Fish and Wildlife Service Migratory Bird Treaty Act (16 USC 703-711)	Sections 3.4.1, 3.4.5, 3.4.6.1
Bald Eagles	U.S. Fish and Wildlife Service Bald and Golden Eagle Protection Act (16 CFR 668-668c) Eagle permit regulations (50 CFR 22)	Sections 3.4.2 and 3.4.4
Waters of the United States	U.S. Army Corps of Engineers, Seattle District Clean Water Act of 1972 (Waters of the U.S. 1986/1988 regulatory definition in 40 CFR 230.3) Joint Aquatic Resource Permit Application (JARPA) for Section 404 fill in Waters of the U.S.	Sections 3.3.1, 3.3.2, 3.5.1, 3.5.2, 3.5.3, 3.5.4; Appendix J-3
State		
Electrical Construction Permit	Washington Department of Labor and Industries WAC 296-746A, Washington Department of Labor and Industries Safety Standards – Installing Electrical Wires and Equipment – Administration Rules.	
Noise Control	Washington Department of Ecology RCW 70.107, Noise Control; WAC 173-58, Sound Level Measurement Procedures WAC 173-60, Maximum Environmental Noise Levels; WAC 463-62-030, Noise Standards	Sections 4.1.4, 4.1.6, 4.1.7

Permit or Requirement	Agency Code, Ordinance, Statute, Rule, Regulation, or Permit	Application Section
Water Quality Storm Water Discharge: Construction Activities	Washington Department of Ecology RCW 90.48, Water Pollution Control Act, establishes general stormwater permits for the Washington Department of Ecology National Pollutant Discharge Elimination System Permit Program WAC 173-201A, Washington Department of Ecology Water Quality Standards for Surface Waters of the State of Washington, which regulates water quality of surface waters Federal statute(s) and regulations implemented by the above state statute(s) and regulations include: Federal Clean Water Act, 42 USC 1251; 15 CFR 923-930 KCC 12.70	Sections 2.3.3, 2.10, 2.11, 3.3.4, 3.3.5, 3.3.6, 3.3.7, 3.3.8; Appendices G-3, H-3, I-3, J-3, K-3
Shorelines of the State	Washington Department of Ecology WAC 173-18, Shoreline Management Act, Streams and Rivers Constituting Shorelines of the State (Note EFSEC energy facility exemption from Shoreline Act permitting requirements, RCW 90.58.140[9]). WAC 173-22, Adoption of Designations of Shorelands and Wetlands Associated with Shorelines of the State JARPA and shoreline conditional use permit (CUP) for fill in wetlands associated with Shorelines of the State	Sections 3.3.1, 3.3.2, 3.5.1, 3.5.2, 3.5.3, 3.5.4; Appendix J-3
Fish and Wildlife	Washington Department of Fish and Wildlife WAC 220-610, defines State species status and protections WAC 232-12, Washington Department of Fish and Wildlife Permanent Regulations, provides information on classification of wildlife species, including “Priority Habitats and Species” RCW 77, Hydraulic Code for in-water work	Section 3.4

Permit or Requirement	Agency Code, Ordinance, Statute, Rule, Regulation, or Permit	Application Section
State Environmental Policy Act (SEPA)	RCW 43.21C, Washington Environmental Policy Act WAC 197-11, Washington Department of Ecology SEPA Rules, which establishes uniform requirements for compliance with SEPA KCC 15.04	A SEPA Environmental Checklist is attached as Appendix A. Also, this entire Application for Site Certification describes the affected environment, potential construction and operational impacts, and mitigation measures.
Archaeology and Historic Preservation	Washington State Department of Archaeology and Historic Preservation RCW 27.53, Archaeological Sites and Resources	Sections 4.2.10 and 4.10.11
County		
Comprehensive Plan	Kittitas County Comprehensive Plan, 2000–2020	Sections 4.2.1 and 4.2.2
Zoning Ordinance, including Critical Areas Ordinance	KCC 17, including 17A	Sections 2.1.1, 2.18.2, 3.1.1, 3.1.2, 3.1.3, 3.1.10, 3.1.11, 3.3.1, 3.3.2, 3.3.3, 3.3.9, 3.3.10, 3.5.1, 3.5.2, 3.5.3, 3.5.4, 3.5.5; Appendices G-1, H-1, I-1, J-1, K-1
Access Permit	KCC 12.05	Appendices G-3, H-3, I-3, J-3, K-3
Grading Permit (if necessary)	KCC 14.05	Section 2.15.3

2.23.1 Pertinent Federal Statutes, Regulations, Rules, and Permits

2.23.1.1 Threatened or Endangered Species

The Endangered Species Act (ESA) of 1973 (16 United States Code [USC] 1531, et seq.) and implementing regulations designates and provides for protection of threatened and endangered plants and animals and their critical habitat. It requires a determination of whether a protected species is present in the area affected by a project. Section 7 of the ESA requires that federal agencies consult with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) for their determination in authorizing a project that may affect listed species or designated critical habitats that may be found in the vicinity of a project. In cases where a project does not require the approval, funding, or conduct of a federal agency, Section 10 of the ESA provides a parallel process whereby non-federal entities may consult with the USFWS or NMFS and acquire a take statement for incidental adverse effects or take of listed species by the project.

Statement of Compliance

TUUSSO has carried out studies and field surveys for the Columbia Solar Projects. Bald eagles (*Haliaeetus leucocephalus*), a Federal Species of Concern, are present 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.

There are no threatened, endangered, proposed, or candidate species, or designated critical habitat, present at the project sites. Because the Columbia Solar Projects do not have a federal nexus and also would not affect any federally-listed threatened or endangered species, ESA Section 7 and Section 10 consultation were not conducted for the proposed projects.

2.23.1.2 Migratory Bird Species

The U.S. Fish and Wildlife Service administers and enforces the Migratory Bird Treaty Act (MBTA) (16 USC 703-711). The MBTA prohibits the taking, killing, or possession of migratory birds, except as allowed by the Secretary of the Interior. The list of migratory birds is found in 50 CFR 10, and permit regulations are found in 50 CFR 21.

Statement of Compliance

To ensure compliance with MBTA, vegetation clearing for the Columbia Solar Projects 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 areas 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. Implementing these measures would result in the Columbia Solar Projects being in compliance with the MBTA.

2.23.1.3 Bald Eagles

The federal Bald and Golden Eagle Protection Act (BGEPA) (16 CFR 668-668c) prohibits the taking, possession, purchase, sale, barter, transport, export, or import of any bald or golden eagle or any part, nest, or egg of a bald or golden eagle, except for certain scientific, exhibition, and religious purposes. Eagle permit regulations are found in 50 CFR 22.

Statement of Compliance

The Columbia Solar Project project-scale analysis areas have the potential to provide nesting habitat to 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 (Appendix C), 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 Section 3.4.6.1. WDFW's 0.25-mile buffer is inclusive of the distance recommended by the National Bald Eagle Management Guidelines (USFWS 2007), which specifies a 660-foot (0.125-mile) buffer from 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. Implementing these measures would result in the Columbia Solar Projects being in compliance with the BGEPA.

2.23.1.4 Waters of the United States

The Clean Water Act of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States, which are defined in subsequent regulations in 1986 and 1988 (40 CFR 230.3), and regulating quality standards for surface waters. The fill or excavation of waters of the United States, which includes associated wetlands, is regulated by the USACE.

Statement of Compliance

The Columbia Solar Projects would avoid all impacts to waters of the United States through avoidance measures in the project design, except for the Typha Solar Project site. A minor wetland fill is currently proposed on the Typha Solar Project site at the southern site entrance where a culvert replacement would be necessary. A Joint Aquatic Resource Permit Application (JARPA) would be submitted to the Seattle District USACE and Ecology to meet both federal and state regulations. The wetland fill activities during construction and operation of the Typha Solar Project site would be in compliance with CWA regulations.

2.23.2 Pertinent State Statutes, Regulations, Rules, and Permits

2.23.2.1 Electrical Construction Permit

The Washington Department of Labor and Industries permits, inspects, and enforces regulations regarding electrical installations pursuant to WAC 296-746A, Washington Department of Labor and Industries Safety Standards – Installing Electrical Wires and Equipment – Administration Rules.

Statement of Compliance

The Washington Department of Labor and Industries would administer and enforce all electrical permitting, inspecting, design, and enforcement regulations regarding electrical installations either directly or pursuant to a contract with EFSEC. The Columbia Solar Projects would be designed and constructed in conformance with WAC 296-746A.

2.23.2.2 Noise Control

Ecology has the authority regarding noise standards and control pursuant to RCW 70.107, Noise Control; WAC 173-58, Sound Level Measurement Procedures; and WAC 173-60, Maximum Environmental Noise Levels.

Statement of Compliance

The Columbia Solar Projects would be designed, constructed and operated to meet the Ecology's noise regulations and standards.

2.23.2.3 Water Quality Storm Water Discharge: Construction Activities and Operation

The Columbia Solar Projects would require a Stormwater General Permit for construction activities because construction of the facilities would disturb more than 5 acres of land. EFSEC has jurisdiction regarding the NPDES Permit for the Columbia Solar Projects pursuant to WAC 463-38. Ecology would have had jurisdiction in the absence of EFSEC. The applicable statutes and regulations are as follows:

- RCW 90.48, Water Pollution Control Act;

- WAC 173-226, Waste Water General Permit Program establishes general stormwater permits for the Washington Department of Ecology National Pollutant Discharge Elimination System Permit Program (NPDES); and
- WAC 173-201A Washington Department of Ecology Water Quality Standards for Surface Waters of the State of Washington, which regulates water quality of surface waters.

Federal statute(s) and regulations implemented by the above state statute(s) and regulations include: 42 USC 1251, Federal Clean Water Act; and 15 Code of Federal Regulations [CFR] 923-930. A NPDES Permit would be required for construction activities and may be required for operation.

Statement of Compliance

TUUSSO would obtain the necessary NPDES Permit(s) from EFSEC pursuant to WAC 463-39 that would conform and be in compliance with all the requirements set forth above. An NPDES Permit for stormwater would be obtained, and its associated SWPPP(s) would be implemented, for construction of the Columbia Solar Projects. The above measures also meet the Kittitas County Storm Water Management Plan guidelines (KCC 12.70).

2.23.2.4 Shorelines of the State

EFSEC jurisdictional energy facilities (including those opting in to EFSEC) are exempt from the requirements of the Shoreline Management Act (RCW 90.58.140[9]). 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 CUP application and JARPA meeting state regulations are included in Appendix J-3.

In non-EFSEC settings, Ecology, pursuant to the Shoreline Management Act (WAC 173-18), regulates waters designated as Shorelines of the State and wetlands associated with them as defined in WAC 173-22. Any impacts that would occur in designated Shorelines of the State would need to be addressed in a JARPA that would be submitted to Ecology. In addition, if the project is considered a "substantial development" by the definition stated in RCW 90.58.030(3)(e), then a substantial development permit (SDP) would be required for any work that impacts designated Shorelines of the State and would be submitted to Ecology in conjunction with the JARPA. In addition, a shoreline conditional use permit (CUP) would be required for utility generation facilities in areas with a Shoreline Environment Designation (SED) of Rural Conservancy, based on the Kittitas County Shoreline Master Program (SMP). Under WAC 173-27-150, SDPs and CUPs cannot be approved unless they are consistent with policies and procedures of the Shoreline Management Act, Ecology rules, and the local master program.

Statement of Compliance

Designated Shorelines of the State are not located near any of the Columbia Solar Projects, except for the Typha Solar Project site. The nearest Shoreline of the State is located along the Yakima River within 200 feet of the eastern site boundary for the Typha Solar Project site. 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 National Wetland Inventory (NWI)-mapped emergent wetland that extends into the southern portion of the site, have a 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 site.

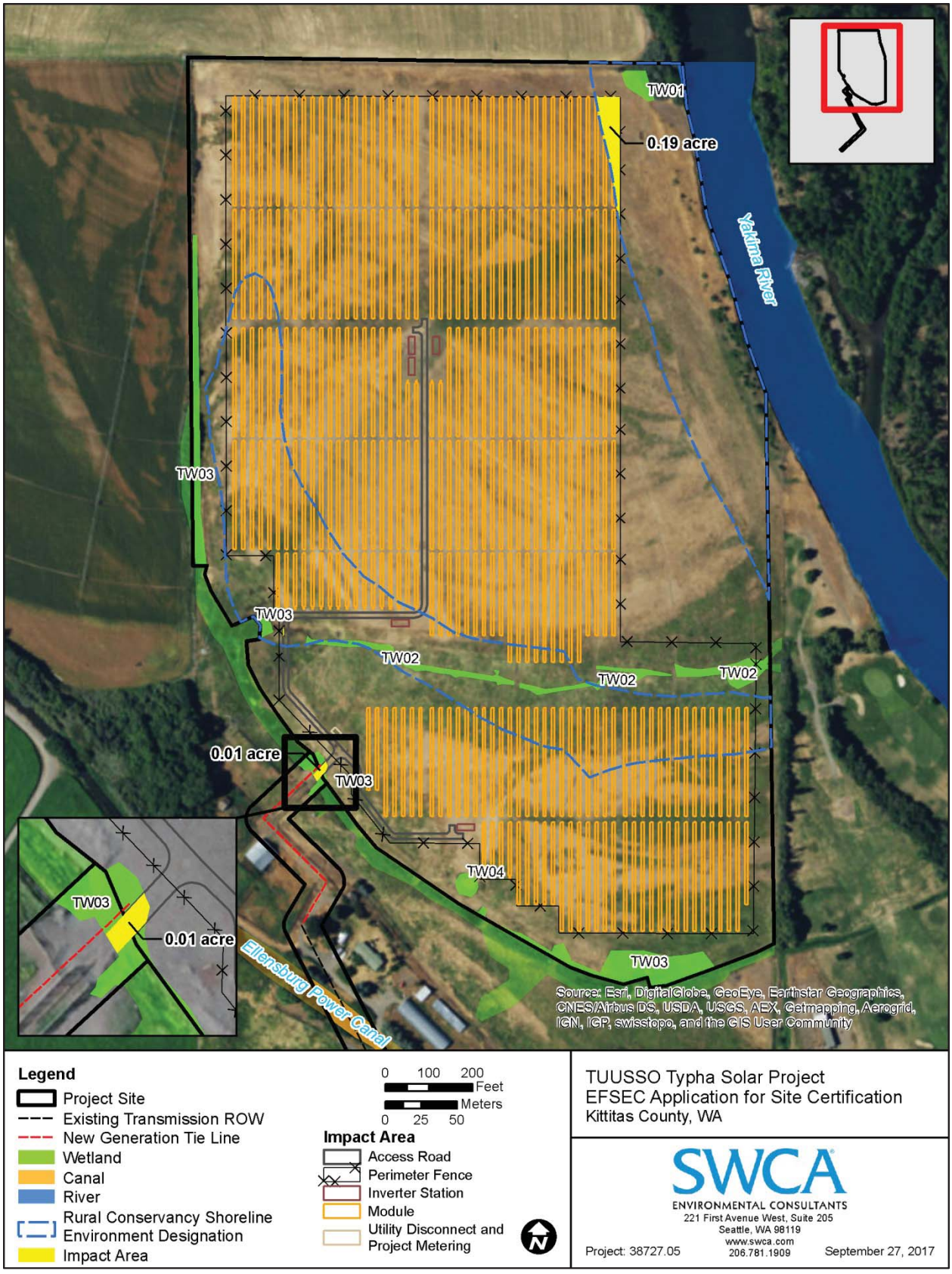

Figure 2.23-1. Shoreline of the State encroachment areas for the Typha Solar Project.

The Typha Solar 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 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. Refer to Figure 2.23-1 for exact locations. 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 (meets RCW 90.58.020[2–4]).

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 (meets Kittitas County SMP 6.19.A.1). 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 (meets Kittitas County SMP 6.19.A.2).

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 (meets Kittitas County SMP 6.19.A.3). 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 (meets RCW 90.58.020[5–6]).

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. The wetland fill activities during construction of the Typha Solar Project site would be in compliance with regulations under the Shoreline Management Act (WAC 173-18) and the Kittitas County SMP.

2.23.2.5 Fish and Wildlife

The WDFW, pursuant to WAC 232-12, provides information on the classification of wildlife species. Additionally the WDFW, pursuant to WAC 232-12, designates certain Priority Habitats and Species. The State of Washington regulates fish and wildlife with RCW 77 and WAC 220. State and protected species regulations are defined in WAC 220-610, which includes provisions for endangered, threatened, and sensitive wildlife species, ESA-listed fish, and bald eagle protection rules. Fish and aquatic habitats are protected under RCW 77.55, commonly referred to as the Hydraulic Code. Any environmental impacts that could occur in waters of the state below the OHWM would need to be addressed in a Hydraulic Project Approval process.

Statement of Compliance

TUUSSO would comply with the substantive requirements of the WDFW regarding the appropriate minimization and mitigation of impacts to Priority Habitats and Species. Sections 3.4.3, 3.4.4, and 3.4.5 evaluate the potential for construction and operation impacts on habitats, fish, and wildlife. No significant impacts would occur from the proposed Columbia Solar Projects, therefore these projects would comply with State habitat, fish, and wildlife guidelines.

2.23.2.6 State Environmental Policy Act (SEPA)

A Development Permit would have been required from Kittitas County, which would have made it the lead agency for SEPA, absent EFSEC jurisdiction. The applicable statutes and regulations are as follows: RCW 43.21C, Washington Environmental Policy Act; and WAC 197-11, Washington Department of Ecology SEPA Rules, which establishes uniform requirements for compliance with SEPA and Kittitas County SEPA regulations set out in KCC 15.04.

Statement of Compliance

A SEPA Environmental Checklist has been prepared meeting the above statutes and regulations, and is attached as Appendix A to this application. A SEPA Determination would be issued by EFSEC that would comply with the statutes and regulations set out above. The substantive requirements set out in KCC 15.04 are the same and would be used by EFSEC in its SEPA process.

2.23.2.7 Archaeological Sites

The Washington State Department of Archaeology and Historic Preservation (DAHP) regulates and protects the cultural and historic resources on private and public lands in the State of Washington. The applicable statute is as follows: RCW 27.53, Archaeological Sites and Resources.

Statement of Compliance

The Columbia Solar Projects would comply with RCW 27.53. TUUSSO has researched state and federal registries along with all archaeological and historical files and maps located at DAHP in Olympia. TUUSSO conducted a comprehensive pedestrian field survey of the project area. This archaeological

survey project covered the entire areas within the Columbia Solar Projects where ground-disturbing activities are proposed. Thirteen isolates, one historic debris scatter, and two small lithic scatter sites were identified, and SWCA recommends these resources are not eligible for listing on the NRHP. These sites would be avoided during construction and operation of the Columbia Solar Projects. A qualified archaeologist would monitor all ground-disturbing activities during the construction process. The Yakama Nation has been consulted during the planning process, beginning in March of 2017. The Yakama Nation would be notified prior to commencement of construction and would be invited to have representatives present during all ground-disturbing activities. It is anticipated that a stipulation would be made with the Yakama Nation establishing procedures to be followed in the event of any finds during construction.

2.23.3 Pertinent Local Ordinances and Permits

2.23.3.1 Comprehensive Plan, Zoning Ordinances, Critical Areas

The five Columbia Solar Projects and two associated generation tie lines are located in unincorporated portions of Kittitas County and are consistent and compliant with the Kittitas County Code, including KCC 17, Zoning, or the December 2016 Kittitas County Comprehensive Plan.

Since Kittitas County is a full-planning Growth Management Act county, the Kittitas County Code, including its zoning code, must be consistent with the county's comprehensive plan. As a result, compliance with the Kittitas County Code also serves as compliance with the comprehensive plan.

Under the Kittitas County Code, each of the Columbia Solar Projects is a "major alternative energy facility" because each is a solar farm that is not a "minor alternative energy facility" (see KCC 17.61.010[9, 11]). As major alternative energy facilities, the solar projects can be authorized as conditional uses in the A-20 and Commercial Agriculture zones (see KCC 17.61.020). In designating solar PV generation facilities as permitted conditional uses, Kittitas County has made the legislative decision (based on its comprehensive plan policies) that these solar projects are allowable within the A-20 and Commercial Agricultural zones, subject to site-specific review and conditions to address potential *localized impacts* to the agricultural land uses in the vicinity. The Camas, Penstemon, and Typha Solar Projects would be located on land zoned as Commercial Agriculture. The Fumaria and Urtica Solar Projects would be located on land zoned as Rural Working – Agriculture 20. As a result, the Columbia Solar Projects are consistent and compliant with siting and zoning pursuant to the Kittitas County Code and Comprehensive Plan.[2]

The Columbia Solar Projects can be authorized as conditional uses in A-20 and Commercial Agriculture zones because the solar projects meet the Kittitas County Code review criteria for conditional uses. In accordance with RCW 80.50.110, and WAC 463-60-117 and 463-28, EFSEC can permit and authorize a conditional use, with appropriate consideration accorded to the following county code requirements:

Kittitas County Code Title 17.61.020, Permitted and Conditional Uses

A) The proposed use is essential or desirable to the public convenience and not detrimental or injurious to the public health, peace, or safety or the character of the surrounding neighborhood (KCC 17.60A.015[1]).

[2] On July 18, 2017, the Kittitas County Board of Commissioners extended until January 9, 2018, a moratorium on accepting applications for major alternative energy facilities in the form of solar farms. Ordinance 2017-004 (July 18, 2017). The moratorium temporarily precludes accepting applications but does not preclude approving facilities. In addition, it does not alter the Kittitas County Comprehensive Plan or Kittitas County Code which allow (via CUP) solar facilities on Commercial Agriculture and Agriculture-20 zoned lands. Therefore, the moratorium does not alter findings that the Columbia Solar Projects are consistent and compliant with the Comprehensive Plan and Kittitas County Code.

The Columbia Solar Projects are essential or desirable to the public convenience because the projects would help the state meet Washington's Renewable Portfolio Standard mandates for 9% of Washington's electricity to be generated from renewable sources by 2016, increasing to 15% by 2020. The solar projects would also provide clean, locally produced power that would be delivered directly to the PSE electricity grid. The Columbia Solar Projects would deliver their 25 MW of output to the PSE electric grid through its existing electrical distribution transmission line system.

Washington has a policy to increase the use of renewable energy facilities through focusing on local sources such as solar (RCW 82.16.110 and 82.16.110). The legislature also found it in the public interest to encourage private investment in renewable energy resources, to stimulate the state's economic growth and to enhance the continued diversification of energy resources used in the state (RCW 80.60.005). The Columbia Solar Projects meet this policy because they would be funded by private money, with an estimated total cost of $40 to $50 million, which should stimulate economic growth and would diversify energy resources further through additional solar facilities.

Finally, the Columbia Solar Projects would not be detrimental or injurious to the public health, peace, safety, or character of the surrounding neighborhood. As discussed in this application, the solar projects would have minimal impacts to the environment and available agricultural land. The Columbia Solar Projects would be the largest individual and collective solar projects in Washington and would fortify Kittitas County's electric grid with clean, local power. Each of the five Columbia Solar Projects would generate an estimated 11,500 MWh of electricity in the first full year of project operation, for a total of 57,500 MWh.

B) The proposed use at the proposed locations will not be unreasonably detrimental to the economic welfare of the county, and that it will not create excessive public cost for facilities and services by finding that

a. The proposed use will be adequately serviced by existing facilities such as highways, roads, police and fire protection, irrigation and drainage structures, refuse disposal, water and sewers, and schools; or

b. The applicant shall provide such facilities; or

c. The proposed use will be of sufficient benefit to offset additional public costs or economic detriment (KCC 17.60A.015[2]).

The Columbia Solar Projects would not be unreasonably detrimental to the economic welfare of Kittitas County or create excessive public cost. The solar projects would not have a detrimental impact on the county's economic welfare but rather a positive impact. During peak construction, the solar projects would employ up to 100 workers per day, hired locally when possible, and should increase local spending. The projects would also provide an estimated $4,880,000 in property tax revenues for Kittitas County over the approximate 30-year project life, as well as consistent revenue to the landowners through lease payments. The electricity generated by the five Columbia Solar Projects would likely be absorbed into PSE's service area in Ellensburg and Kittitas County. Capital investments for each of the five projects is estimated to be $8 to $10 million, for a total investment of $40 to $50 million. In addition to generating a source of renewable electricity, the solar projects would create additional economic benefits through direct capital investments in the local and regional economy.

In addition, as described in Sections 4.3 and 4.4, existing services would adequately serve the Columbia Solar Projects, with no anticipated significant impacts to police, fire, school, irrigation, refuse, water or septic systems, or health care services. Any additional facilities required by the solar projects would be

provided by TUUSSO. These facilities may include appropriate access improvements coordinated with the Kittitas County Department of Public Works and the Washington State Department of Transportation, and additional fire response and safety training for the local fire departments. Finally, the solar projects should generate a positive tax-related impact for the area that could help expand services.

C) The proposed use complies with relevant development standards and criteria for approval set forth in this title or other applicable provisions of Kittitas County Code (KCC 17.60A.015[3]).

TUUSSO and the Columbia Solar Projects would comply with all relevant development standards and criteria in the Kittitas County Code, including low impact construction and operation, and BMPs, as well as:

KCC Title 8 Health, Welfare, and Sanitation,
KCC Title 9 Public Peace, Safety and Morals
KCC Title 10 Vehicles and Traffic
KCC Title 12 Roads and Bridges
KCC Title 13 Water and Sewers
KCC Title 14 Buildings and Construction
KCC Title 15 Environmental Policy
KCC Title 17 Zoning
KCC Title 17A Critical Areas
KCC Title 20 Fire and Life Safety

TUUSSO is dedicated to using BMPs during all phases of development, construction, and operation/maintenance of the Columbia Solar Projects. The five solar projects would comply with any and all relevant development standards required by the Kittitas County Code.

D) The proposed use will mitigate material impacts of the development, whether environmental or otherwise (KCC 17.60A.015[4]).

As discussed in the SEPA Environmental Checklist and this ASC's Section 1.10 and Chapter 3, the Columbia Solar Projects would mitigate potential impacts through mitigation plans and other measures. TUUSSO is committed to developing well-sited, well-constructed solar projects. TUUSSO employed a rigorous site selection process to first avoid and then to mitigate, to the greatest extent feasible, potential negative natural and built environmental impacts, while partnering with landowners and local residents to generate positive community impacts and economic development in Kittitas County.

The development process for the five Columbia Solar Projects began in early 2016 when TUUSSO originally identified more than 100 potential solar project sites in Kittitas County. TUUSSO has been systematically collecting and evaluating information for each of those sites, to identify those that best avoid having impacts and then subsequently those with the least potential impacts, while also achieving successful financing and operations. TUUSSO would continue to work to mitigate potential impacts. TUUSSO is committed to developing well-sited solar projects that avoid sensitive habitats and engaging agencies early and often, as shown in Section 1.12, with discussions and correspondence with the EFSEC, Ecology, WDFW, DAHP, the Yakama Nation, and various representatives of Kittitas County.

E) The proposed use will ensure compatibility with existing neighboring land uses (KCC 17.60A.015[5]).

The five proposed Columbia Solar Projects would be compatible with the existing neighboring land uses as they would create very limited visual and auditory impacts and generate almost no traffic during operations, as discussed in Chapters 3 and 4. The solar projects are an allowed use, considered to be compatible with the Kittitas County Comprehensive Plan, and an accepted rural land use. Solar PV facilities are, therefore, compatible with the rural nature of Kittitas County.

F) The proposed use is consistent with the intent and character of the zoning district in which it is located (KCC 17.60A.015[6]).

Kittitas County Code allows major alternative energy facilities as conditional uses in the A-20 and Commercial Agriculture zones. A major alternative energy facility can be a solar farm that is not a minor alternative energy facility (KCC 17.61.010[9]). As a result, the Columbia Solar Projects would be major alternative energy facilities that can be allowed as conditional uses in A-20 and Commercial Agriculture zones. The solar projects are consistent with the intent and character of the zoning districts, as they are expressly allowed and satisfy the Growth Management Act's intent that the county allow a range of land uses in rural areas, discouraging residential sprawl, to meet local economic needs.

The zoning for the five Columbia Solar Project sites is as follows:

- Camas Solar Project Site: the site would be located on land zoned as Commercial Agriculture.
- Fumaria Solar Project Site: the site would be located on land zoned as Rural Working – Agriculture 20.
- Penstemon Solar Project Site: the site would be located on land zoned as Commercial Agriculture.
- Typha Solar Project Site: the site would be located on land zoned as Commercial Agriculture.
- Urtica Solar Project Site: the site would be located on land zoned as Rural Working – Agriculture 20.

G) For conditional uses outside of Urban Growth Areas the use:

1. Is consistent with the intent, goals, policies, and objectives of the Kittitas County Comprehensive Plan, including the policies of Chapter 8, Rural and Resource Lands;

Kittitas County has established goals, policies, and objectives (GPOs) to provide its intent toward county-wide land use planning. The county created these GPOs in response to identified needs within the county and to guide legislative actions in adopting zoning. Tables 2.23-2 and 2.23-3 provide an overview of the GPOs related to the lands where the Columbia Solar Projects would be located, and are intended to direct the county in the adoption of specific zoning ordinances:

Table 2.23-2. Kittitas County Comprehensive Plan GPO General Policy Statements

GPO Number	General Policy Statements
2.15	The development of resource based industries and processing should be encouraged in all areas of Kittitas County. When such uses are located in rural and resource lands, criteria shall be developed to ensure the protection of these lands to ensure compatibility with rural character. Consider adding a definition for "resource based industry" to the definitions in Title 17, Zoning.
6.18	Decisions made regarding utility facilities should be consistent with and complementary to regional demand and resources and should reinforce an interconnected regional distribution network.

GPO Number	General Policy Statements
6.36	Develop a study area encompassing the entire county to establish criteria and design standards for the siting of solar farms.
8.1	Rural lands are characterized by a lower level of services; mixed residential, agricultural and open space uses; broad visual landscapes and parcels of varying sizes, a variety of housing types and small unincorporated communities.
8.3	The County shall promote the retention of its overall character by establishing zoning classifications that preserve rural character identified to Kittitas County.
8.4	Development in rural areas is subject to agricultural and forestry activities that may take place as a right on adjacent properties.
8.8	A certain level of mixed uses in rural areas and rural service centers is acceptable and may include limited commercial, service, and rural industrial uses
8.11	Policies will reflect a “right to farm” in agricultural lands.
8.13	Encourage development activities and establish development standards which enhance or result in the preservation of rural lands.
8.14C	Development shall be located distances from streams, rivers, lakes, wetlands, critical areas determined necessary and as outlined within existing Shorelines Management Program, the Critical Areas Ordinance and other adopted resource ordinances in order to protect ground and surface waters.
8.15	Uses common in rural areas of Kittitas County enhancing rural character, such as agriculture uses in Lower Kittitas and rural residential uses and recreation uses in Upper Kittitas shall be protected from activities which encumber them.
8.17	Land use development within the Rural area that is not compatible with Kittitas County rural character or agricultural activities as defined in RCW 90.58.065(2)(a) will not be allowed.
8.44	Growth and development in Rural lands will be planned to minimize impacts upon adjacent natural resource lands.
8.129	Encourage development projects whose outcome will be the significant conservation of farmlands.
8.16	Give preference to land uses in Rural designated areas that are related to agriculture, rural residential development, tourism, outdoor recreation, and other open space activities.
8.21	Kittitas County will provide criteria within its zoning code to determine what uses will be permitted within rural zone classifications in order to preserve rural character.

Table 2.23-2 Kittitas County Comprehensive Plan GPO Zoning Implementation Statements

GPO Number	General Policy Statements
6.7	Decisions made by Kittitas County regarding utility facilities will be made in a manner consistent with and complementary to regional demands and resources.
6.9	Process permits and approvals for all utility facilities in a fair and timely manner, and in accordance with development regulations that ensure predictability and project concurrency.
6.10	Community input should be solicited prior to county approval of utility facilities, which may significantly impact the surrounding community.
6.23	Kittitas County reserves the right to review all applications for utilities placed within or through the County for consistency with local policies, laws, custom and culture.
8.5	In order to protect and preserve Resource Lands, non-resource development and activities on adjacent Rural lands shall require preservation of adjacent vegetation, existing landforms (e.g. ravines) or use of other methods that provide functional separation from the resource land use.

GPO Number	General Policy Statements
8.9	Protecting and preserving resource lands shall be given priority. Proposed development allowed and adjacent to resource lands shall be conditioned to protect resource lands from negative impacts from that development.
8.21B	Functional separation and setbacks found necessary for the protection of water resources, rural character and/or visual compatibility with surrounding rural areas shall be required where development is proposed. The first sentence of this policy shall not apply to agricultural activities as defined in RCW 90.58.065(2(a). When required by the county shoreline master program or critical area regulations, buffers shall be provided.

The above GPOs are directed at the legislative effort to adopt zoning codes that implement the intent and policy direction of Kittitas County and these GPOs; therefore, they have little to no direct application to the Columbia Solar Projects. Given this, while the zoning code references the comprehensive plan, the plan itself is not a regulatory mandate, does not include regulatory criteria capable of reliable and predictable implementation, and is not directly applicable or enforceable as such.

However, the Columbia Solar Projects are consistent with the above listed GPOs from the Kittitas County Comprehensive Plan, including policies in Chapters 2 (Land Use), 6 (Utilities), and 8 (Rural and Resource Lands). The solar projects implement the intent under the Growth Management Act for land uses that are compatible with agricultural uses, provide economic opportunity to rural area residents and landowners, minimize and mitigate impacts to rural and resource lands, and recognize the emphasis the GPOs place on the character and use of these lands. The solar projects are consistent particularly with GPO 6.36, which focuses on developing and studying the county for siting solar farms, showing an intent to address solar facilities as allowed uses.

2. Preserves “rural character” as defined in the Growth Management Act (RCW 36.70A.030[15]);

The Columbia Solar Projects preserve the area’s rural character, as defined in the Growth Management Act, by being compatible with the county’s rural patterns of land use and development. The solar projects maintain natural areas, open space, and the visual landscape. The low-lying panels used in the projects are quiet, unobtrusive structures with very few moving parts and minimal maintenance requirements that would not significantly impact viewsheds or alter the county’s rural character during operations. The panels would have native vegetation planted under them and would be surrounded by native habitat. The solar projects would also be compatible with current rural uses of the land. The projects would not impact traditional rural lifestyles, rural-based economies, or opportunities to live and work in rural areas. Local farming practices can (and TUUSSO anticipates would) continue on the properties adjacent to the projects, particularly where the projects would operate on portions of larger parcels. The solar projects would not in any way interfere with existing surrounding agricultural practices and would not force or compel any conversions to non-agricultural land uses.

The Columbia Solar Projects would also not cause inappropriate conversion of undeveloped land into sprawling, low-density residential development. The projects would be temporary and provide an opportunity for diversified farming income that disincentivizes sprawling, low-density development. Finally, as discussed below, the solar projects would not require the extension of urban governmental services.

The Columbia Solar Projects would also maintain the rural character of the wildlife habitat and protection of natural surface water and groundwater flows, recharge, and discharge. The projects would also be compatible with local wildlife. TUUSSO would continue to work with WDFW to manage existing wildlife habitat. In addition, the solar projects would maintain current patterns of surface water and groundwater

flow and recharge and discharge areas, as well as surface water and groundwater uses. The projects are anticipated to have no stormwater discharges and would use water under existing water allocations or water that is trucked in.

3. Requires only rural government services; and

The Columbia Solar Projects would require only rural government services, such as police and fire services. The projects would have on-site fire prevention and protection measures. In addition, with minor improvements, the surrounding roads and infrastructure would be sufficient to serve the projects' construction and operation. As mitigated, the solar projects would not increase the need for police, fire, school, irrigation, refuse, water or septic systems, or health care services. As mitigated, there should be no costs or detriments to offset.

4. Does not compromise the long term viability of designated resource lands (KCC 17.60A.015[7]).

The Columbia Solar Projects would not compromise the long-term viability of the surrounding agricultural land. The solar projects would temporarily remove approximately 232 acres of land from its current agricultural use or fallow status. Throughout the solar projects' life, they would not compromise agricultural and rural use on the surrounding land. Moreover, after the removal of all solar equipment after the lease terms, the land would be returned to its original state and can be returned to agricultural production.

Kittitas County Code Title 17A, Critical Areas

The Columbia Solar Projects would meet applicable requirements of KCC 17A, Critical Areas Ordinance (CAO), as indicated below.

The KCC CAO applies to lands within unincorporated Kittitas County, including both Washington state-owned lands and privately owned lands. The Columbia Solar Projects would follow the general guidance of the Kittitas County critical areas policy document, coupled with the more specific provisions of the critical areas development ordinance, pursuant to the requirements of RCW 36.70A (Ord. 94-22 [part], 1994).

TUUSSO has adhered to all requirements outlined in the critical areas checklist and required information (KCC 17A.03.035) for project activities subject to this ordinance, which are outlined in the critical areas reports for each solar project site in Appendices G to K. The critical area reports and this application include the following information, meeting the required KCC CAO checklist (KCC 2017):

- Legal descriptions of the land, and assessor's parcel numbers.
- As defined herein, the location of the following, if applicable:
    - wetlands;
    - erosion hazard areas;
    - floodplains and floodways;
    - riparian habitats;
    - geologically hazardous areas;
    - landslide hazard areas;
    - mine hazard areas;
    - seismic hazard areas; and
    - streams and rivers.

- Any voluntary methods or activities anticipated by TUUSSO pertaining to critical areas, including incentives being offered by the local or state government.
- Duplicate plans drawn to scale showing the nature, location, dimensions, and elevations of the areas in question, including existing or proposed structures, estimated amounts of fill materials, drainage facilities, significant natural features, and the location of the above items, if applicable.
- The requirement for delineating the location of possible critical areas would be waived if field investigations by county staff indicate the following:
    - sufficient information exists for staff to estimate the boundaries of any critical areas without a delineation by the applicant; or
    - no structures and uses, except for exempt activities, are proposed to be located within any possible critical area.
- Subject to field investigations by county staff, or other reliable and relevant information, the information submitted by the applicant shall be presumed valid for all purposes under this chapter (Ord. 94-22 [part], 1994).

The Columbia Solar Projects would comply with all Kittitas County critical areas ordinances.

2.23.3.2 Access Permit

Under KCC 12.05, an access permit is required for any activity within Kittitas ROWs and for driveways or access roads that connect to county ROWs.

Statement of Compliance

TUUSSO has prepared access permits for each of the Columbia Solar Project sites and would be in compliance with this requirement.

2.23.3.3 Grading Permit

Under KCC 14.05, grading or filling on a site involving more than 100 cubic yards requires a grading permit from Kittitas County.

Statement of Compliance

Grading on the Columbia Solar Project sites would be minimized to the extent possible and be focused in access road and transformer locations. The Columbia Solar Projects would be permitted through EFSEC and would likely not require a grading permit through Kittitas County. If a grading permit is required, then TUUSSO would coordinate with the county to prepare and submit a grading permit for each project site, as necessary.

2.24 References – Chapter 2

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