Vegetation Management Strategy
Schnebly Coulee Solar Energy Project
Kittitas County, Washington

Final

Prepared for:

Schnebly Coulee Solar Energy LLC

1401 17th Street, Suite 1100
Denver, Colorado 80202

Prepared by:

Carla DeMasters, Leslie Rodman-Jaramillo, Julia Fields, and Todd Mabee

Western EcoSystems Technology, Inc
2725 NW Walnut Blvd
Corvallis, Oregon 97330

February 2, 2024

CONTRIBUTORS

Todd Mabee	Project Manager
Carla DeMasters	Deputy Project Manager, Technical Lead
Michael Van Laeken	Senior Reviewer
Julia Fields	Report Writer, GIS Specialist
Leslie Rodman-Jaramillo	Regulatory Reviewer, Report Writer
Julia Preston-Fulton	Technical Editor

REPORT REFERENCE

DeMasters, C., L. Rodman-Jaramillo, J. Fields, T. Mabee. 2024. Vegetation Management Strategy, Schnebly Coulee Solar Energy Project, Kittitas County, Washington. Prepared for Schnebly Coulee Soular Energy LLC, Denver, Colorado. Prepared by Western EcoSystems Technology, Inc. (WEST), Corvallis, Oregon. February 2, 2024. 24 pages + appendices.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1 INTRODUCTION

Schnebly Coulee Solar Energy LLC (Schnebly) has proposed the development of the Schnebly Coulee Solar Energy Project (Project) located approximately 5 miles (mi) east of Kittitas in Kittitas County, Washington (Figure 1.1). The Project consists of an alternating current, solar photovoltaic-power generating facility on the proposed, leased 1,280 acres (ac) of private land (Project Area), with a capacity up to 90-megawatts (Figure 1.1).

Western EcoSystems Technology, Inc. (WEST), completed a Vegetation Management Strategy (VMS) to assist Project planning and permitting. The objective of the VMS is to provide a review of applicable regulations and a strategy for topsoil and vegetation management at the Project in compliance with the Kittitas County *Comprehensive Plan* (Kittitas County 2021, 2023), Energy Facility Site Evaluation Council (EFSEC) rules, and Washington Administrative Code (WAC). In the absence of state guidance for commercial-scale solar projects, vegetation management measures were informed by the Washington Department of Fish and Wildlife (WDFW) *Wind Power Guidelines* (2009), the *Management Recommendations for Washington's Priority Habitats: Managing Shrub-steppe in Developing Landscapes* (Azerrad et al. 2011), and the *Shrub-Steppe and Grassland Restoration Manual for the Columbia River Basin* (Benson et al. 2011).

2 PROJECT GOALS

The purpose of the VMS is to provide a strategy for effective topsoil management, invasive plant species control, vegetation stabilization, and enhancement of opportunistic wildlife habitat for the life of the Project. This strategy is consistent with Washington Department of Ecology (WDOE) and Kittitas County to 1) retain native topsoil and natural vegetation in an undisturbed state to the degree practicable; 2) reduce stormwater runoff and erosion, and 3) control noxious and invasive weeds.

1. Stabilize areas temporarily disturbed during construction in the Project Area with the desired vegetative cover by the end of Contractor commitments and confirm to have met revegetation requirements for the National Pollution Discharge Elimination System (NPDES) in Washington and commitments in the Project's Habitat Management Plan (HMP).
2. Minimize the presence and proliferation of noxious and invasive species throughout the construction and operational phases of the Project to inform Kittitas County Community Development Services on Schnebly's Noxious Weed Management Plan.
3. Restore vegetation following the conservation practices of the National Resources Conservation Service (NRCS; Code 327; U.S. Department of Agriculture [USDA] NRCS 2015).
4. Monitor restoration progress following principles of the U.S. Environmental Protection Agency's (USEPA) Integrated Vegetation Management (IVM) strategy (USEPA 2008).

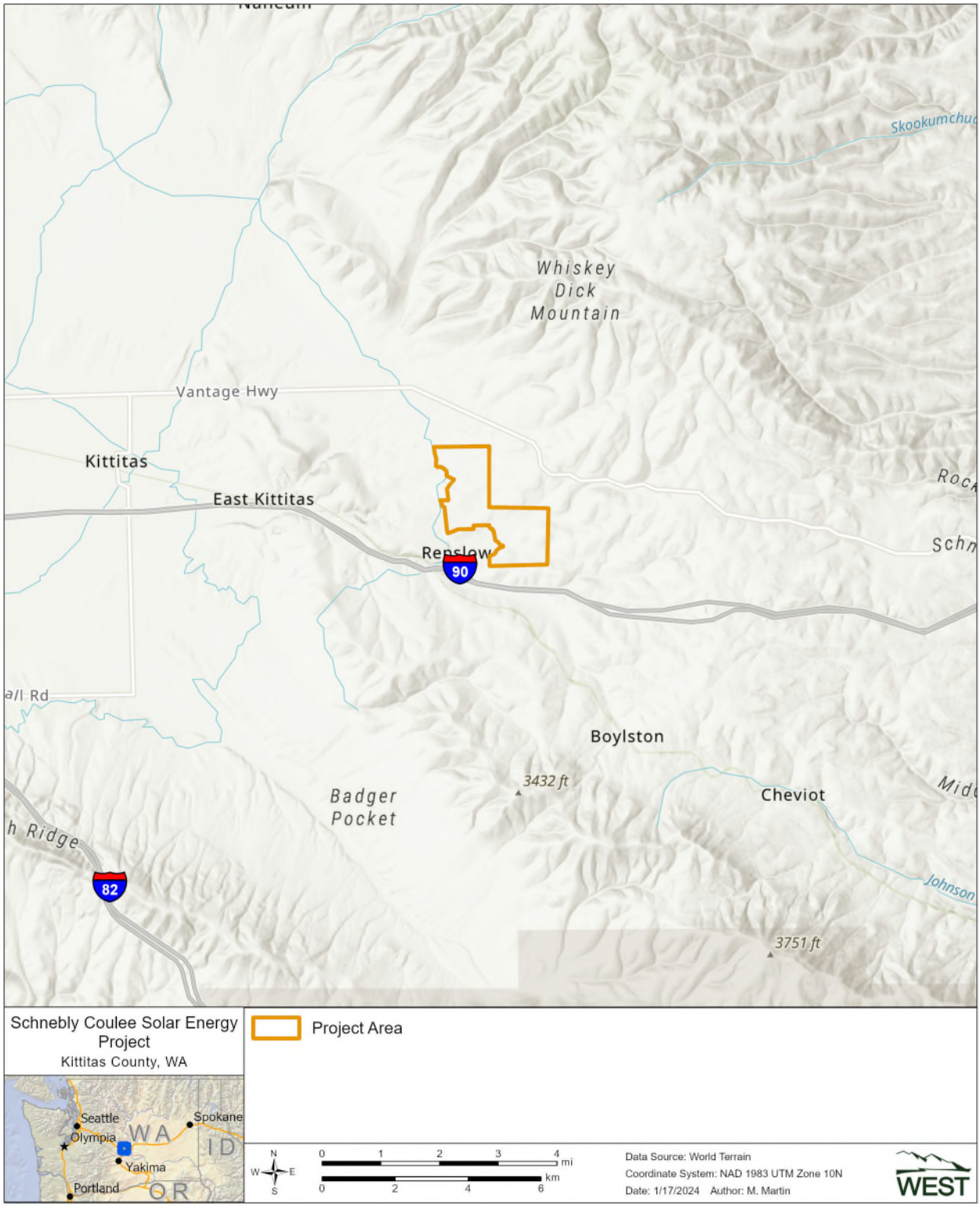


Figure 1.1. Location of the Schnebly Coulee Solar Energy Project, Kittitas County, Washington.

3 REGULATORY POLICIES

Schnebly maintains a commitment to work cooperatively to minimize adverse impacts on vegetation and habitat resources. Through the planning stages of the Project, Schnebly and its consultants closely coordinated with federal and state agency personnel to conduct relevant rare plant and habitat studies and inform siting considerations during the planning process. Schnebly will continue to work with the agencies to implement measures intended to avoid, minimize, and/or mitigate potential impacts to vegetation and habitat resources.

WEST compiled an environmental permitting table summarizing the federal, state, and county regulations and associated permits or compliance that may be required regarding vegetation and topsoil management for the Project (Appendix A). The following sections identify all anticipated or applicable federal, state, and local laws, ordinances, and regulations relating to vegetation that are relevant to the Project. Mitigation requirements regarding vegetation will be addressed in the Habitat Management Plan (WEST in prep).

3.1 State Regulations

3.1.1 State Environmental Policy Act

Enacted in 1971, the Washington State Environmental Policy Act (SEPA; 43 Revised Code of Washington [RCW] 43.21C], 197 WAC 197-11 [2016]) establishes the framework for Washington State and local agencies to consider the environmental consequences of a proposal before making decisions. These decisions may be related to issuing permits for private projects, constructing public facilities, or adopting regulations, policies, or plans. Information provided during the SEPA review process helps agency decision-makers, applicants, and the public understand how a proposal would affect the environment. Overall, the degree and intensity of impacts determines the type of environmental review to be conducted. This information can be used to change a proposal to reduce likely impacts, or to condition or deny a proposal when adverse environmental impacts are identified. The SEPA applies to decisions by every state and local agency within Washington State, including state agencies, counties, cities, ports, and special districts (such as a school or water district). The SEPA lead agency is typically the local city or county government agency that receives the first application from the project proponent or the local jurisdiction where the greatest portion of the project is located.

A SEPA checklist was completed for this Project and will be included with the Kittitas County Conditional Use Permit. According to the WDOE SEPA checklist guidance, “governmental agencies use the SEPA environmental checklist to help determine whether a proposal will have significant adverse environmental impacts” (WDOE 2023). The information helps identify what measures can be taken to avoid, counter, or minimize likely impacts — or whether compensatory mitigation measures could be used to offset adverse effects.” Section B.4 of the SEPA checklist includes details regarding the types of vegetation found at the Project; what kind and amount of vegetation will be removed or altered; threatened or endangered species known on or near the Project; proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site; and a list of all noxious weeds and invasive species present at the Project.

3.1.2 Noxious Weed Control Board

Within RCW Title 17 (*Weeds, Rodents, and Pests*), under 17 RCW 17.10, the state granted Kittitas County the authority to establish a Noxious Weed Control Board (NWCB) to prevent, control and eradicate the degrading effects of noxious weeds within Kittitas County. The board works with landowners to educate, provide recommendations, and assist in the enforcement of state weed laws. There are three classes of weeds in Washington, described as follows (Washington State NWCB 2023):

- **Class A**: Limited distribution in Washington, landowners are required to eradicate existing populations and prevent new infestations.
- **Class B**: Designated for mandatory control in regions where they are not widespread. The goal for Class B weeds is to prevent new infestations and contain established populations.
- **Class C**: Widespread or of special interest to the agricultural industry. The Washington State NWCB does not require control of Class C weeds; however, county NWCBs may require landowners to control a Class C weed if it poses a threat to agriculture or natural resources.

The 16 WAC 16-750 includes Washington State's Noxious Weed List, definitions, and descriptions of regional boundaries for Class B weeds,[1] and the schedule of monetary penalties. The 16 WAC 16-752 describes the quarantine list maintained by the Washington State Department of Agriculture (WSDA). The Washington regulation that calls for the creation and maintenance of the quarantine list is 17 RCW 17.24 (*Insect Pests and Plant Diseases*). See Section 5.2 for a description of compliance with Washington State weed laws.

3.2 Kittitas County Ordinances

3.2.1 Solar Power Production Facilities

As outlined in the Kittitas County *Comprehensive Plan*, Kittitas County established Solar Power Production Facilities (SPPF) guidance and an overlay map (17 KCC 17.61C; Kittitas County Ordinance 2018-018 and 2019-004) to identify and preserve prime agricultural land and designate areas appropriate for siting solar power facilities. Specifically, the purpose and intent of 17 KCC 17.61C is "…to establish a process for recognition and designation of properties in Kittitas County suitable for the location of SPPF, to protect the health, welfare, safety, and quality of life of the general public, to allow for development while protecting existing agricultural resources and rural character, to comply with the goals and requirements of the Washington State Growth Management Act, and to ensure compatibility with land uses in the vicinity of these facilities…" (Kittitas County Ordinance 2018-018).

[1] Class B noxious weeds are considered a local priority for control and are designated by region. Kittitas County is Region 5 (16 WAC 16-750-011).

The SPPF overlay map is divided into three zones (1–3), each with specific restrictions and siting requirements based on land designations in the WSDA agricultural land use geodatabase. The Solar Overlay Zones are organized as follows:

- **Zone 1**: Lands designated by the WSDA as agricultural land uses.
- **Zone 2**: Lands that are not designated by WSDA as agricultural land uses.
- **Zone 3**: Lands that are not designated by WSDA as agricultural land uses and are outside of irrigation district boundaries.

The Project Area occurs in Zone 2 (12.8%) and Zone 3 (87.2%). Projects in Zones 2 and 3 require Conditional Use Permit approval.

In accordance with Kittitas County zoning and SPPF submittal requirements (17 KCC 17.61C.070 (1)(4)(5)) and specific to vegetation management, in addition to submitting site plans identifying all existing and proposed structures (e.g., setbacks, access routes, and proposed road improvements), areas of natural vegetation removal and any re-vegetation methods, weed control, dust and erosion controls, and any critical areas on or abutting the property must be identified. Additional requirements include a noxious weed management plan outlining methods, maintenance schedules, and any potential soil viability impacts (see Section 5.2) and a stormwater management plan that includes any proposed ground disturbance and mitigation measures (e.g., reseeding with appropriate vegetation) to contain storm water runoff (see Sections 5.1 and 5.3.2).

3.2.1.1 Priority Habitats and Species

The Priority Habitats and Species (PHS) program is the WDFW's primary means of transferring fish and wildlife information from WDFW resource experts to local governments, landowners, and others who use it to protect habitat (WDFW 2021). As stated above, the WAC refers to PHS in sections pertaining to critical area ordinances (as defined by 17 KCC 17A.02.590 and 17A.02.600) and FWHCAs, specifically to include the following:

- "**State priority habitats and areas associated with state priority species**. The state Department of Fish and Wildlife should be consulted for current listing of priority habitats and species."
- "**Habitats and species of local importance**. Kittitas County recognizes that the priority habitats and species designated by the WDFW that occur within the County are locally important and are hereby designated as habitats and species of local importance."

The Project contains the Priority Habitat Kittitas County shrubsteppe. Schnebly, in coordination with WDFW and Kittitas County, will mitigate for impacts to PHS as described in the HMP (WEST in prep).

4 PROJECT ASSESSMENT

Several desktop and field studies were conducted to evaluate biological resources for the Project (Table 4.1). Site characteristics relevant to topsoil management and vegetation stabilization are provided below.

Table 4.1. Summary of desktop and field surveys at the Schnebly Coulee Solar Energy Project, Kittitas County, Washington.

Survey Date	Survey	Reference	Summary of Findings
March 2019	Site Characterization Study	Enercon Services, Inc. 2019	Identified shrub/scrub steppe, grasslands, and list of special-status species that may occur.
March 2023	Wetlands and Other Waters Delineation Report	ESA 2024	Identified five wetlands, six ephemeral drainages, and one intermittent irrigation canal within the Project Area.
August 2023	Wildlife and Habitat Survey Report	ESA 2023	Identified ten special-status species and one occupied-active raptor nest. Shrubsteppe was the dominant habitat mapped.

ESA = Environmental Science Associates.

4.1 Land Cover

Land cover within the Project Area was a mixture of shrub/scrub (79%), herbaceous (18%), developed, open space (2%), and hay/pasture (less than 1%; Figure 4.1; National Land Cover Database 2019, Enercon Services, Inc. [Enercon] 2019; Environmental Science Associates [ESA] 2023b). ESA conducted a site visit in April 2023 to map habitat types in the Project Area as described by the WDFW PHS List (2008, ESA 2023; Table 4.2, Figure 4.2). The dominant habitat type was shrubsteppe (1,072 ac), followed by eastside steppe (146 ac), rangeland/disturbed land (61 ac), and wetland (less than 1 ac). Rangeland was notably degraded from livestock grazing (ESA 2023). Native shrub species included big sagebrush (*Artemisia tridentata*), rubber rabbitbrush (*Ericameria nauseosa*), and antelope bitterbrush (*Purshia tridentata*). Eastside steppe was present in patches throughout the Project Area and consisted of native bunchgrasses including Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), and needle-and-thread grass (*Hesperostipa comata*), with a low density of shrubs. Cheatgrass (*Bromus tectorum*), an invasive annual grass, was present throughout the Project Area (ESA 2023).

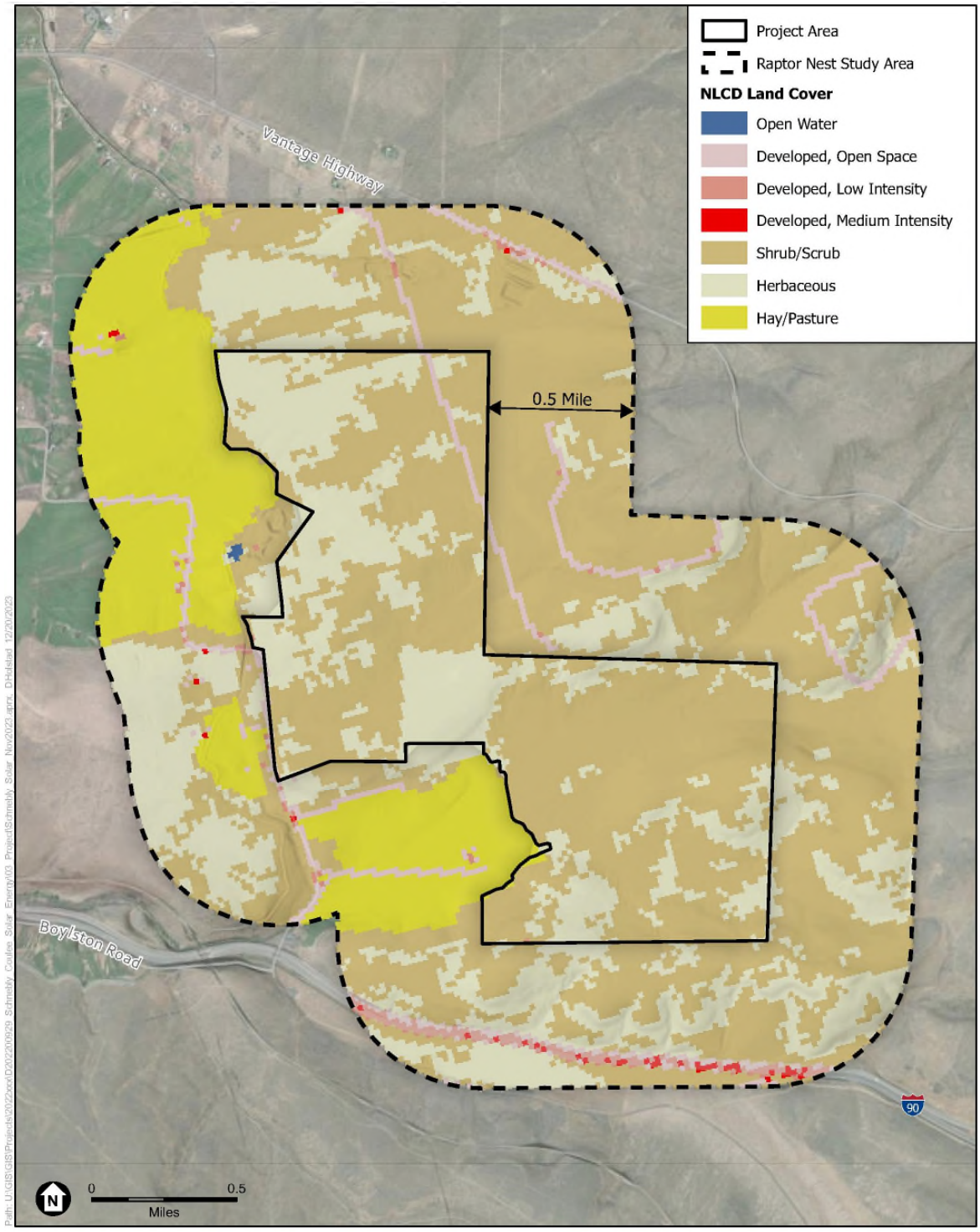
Table 4.2. Washington Fish and Wildlife (2009) habitat types at the Schnebly Coulee Solar Energy Project, Kittitas County, Washington.

Habitat Type	Area (acres)	Percent Composition
Shrubsteppe	1,072	84
Eastside steppe	146	11
Disturbed/rangeland[1]	61	5
Wetland	<1	<1
Total	**1,280**	**100**

Source: Environmental Science Associates 2023

Sums may differ due to rounding.

[1] Not a Washington Fish and Wildlife (2009) habitat type.



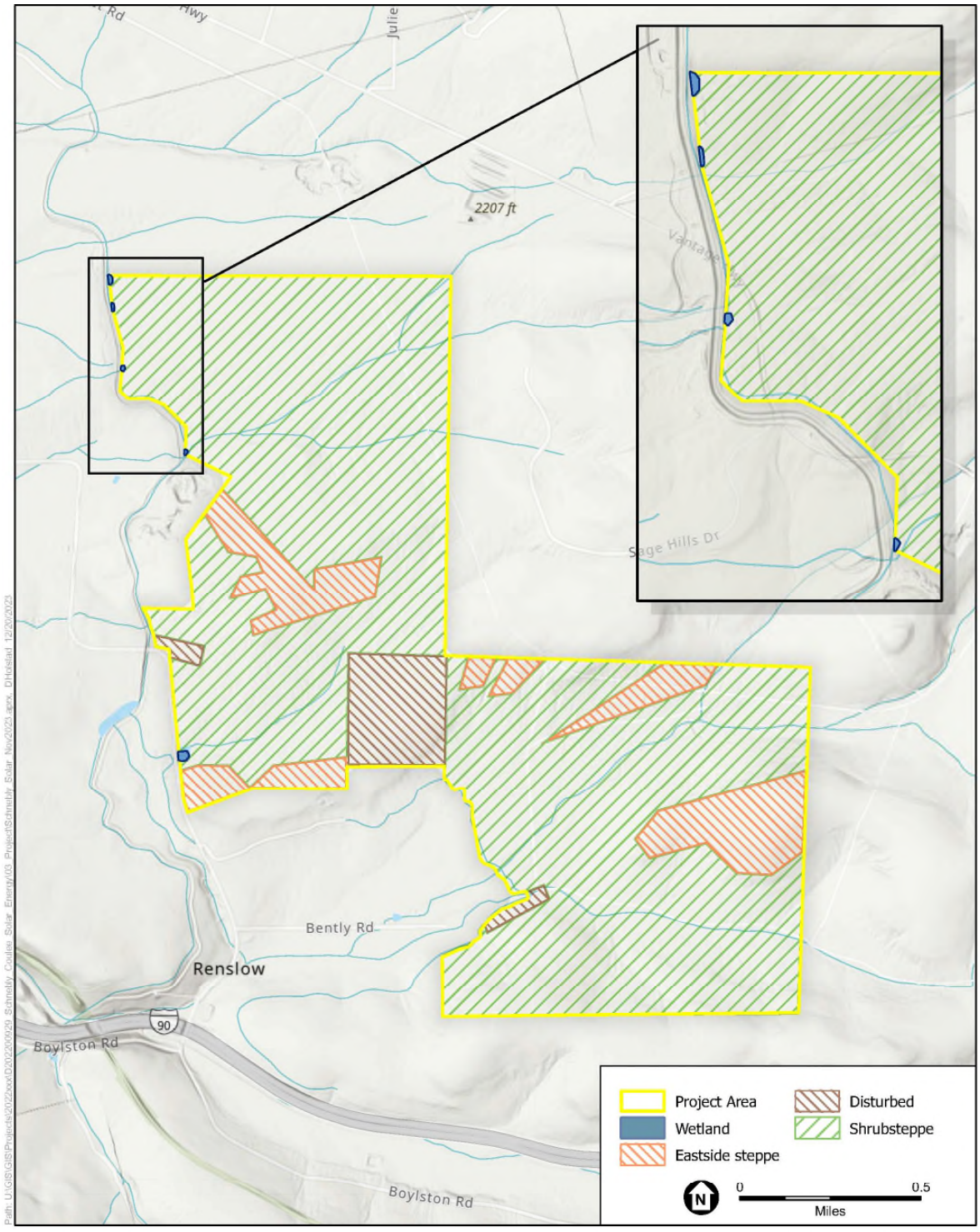
SOURCE: Imagery: Maxar, 2019; Landcover: USGS; Study Area: ESA.

Schnebly Coulee Solar Energy

NLCD Map

ESA

Figure 4.1. Land cover types within the Schnebly Coulee Solar Energy Project Area, Kittitas County, Washington (ESA 2023).



SOURCE: Basemap: Esri; Habitats & Study Area: ESA.

Schnebly Coulee Solar Energy

Habitats Map

ESA

Figure 4.2. Habitat types within the Schnebly Coulee Solar Energy Project Area, Kittitas County, Washington, as of April 2023 (ESA 2023).

4.2 Soil Properties

Soils within the Project Area are mostly loamy with a mix of naturally occurring silt and mineral material (Figure 4.3; ESA 2024). Regional soils originated from volcanic activity, glacial deposits, and alluvial deposition from the Yakima River watershed. Soil types in the Project Area will, in part, determine what plant species are included in seed mixes. Twenty-two soil map units were identified within the Project Area using the National Resource Conservation Service (NRCS) Web Soil Survey (USDA NRCS 2022, ESA 2024). The dominant soil type is the Terlan-Durtash-Selah complex (29.1%), followed by Selah loam (21.0%), Durtash gravelly loam (11.5%), and the Marlic-Zen-Laric complex (9.9%; USDA NRCS 2022, ESA 2024). Terlan-Durtash-Selah complex soils are well-drained loam or gravelly loam over a restrictive durapan. Soils in the Project Area generally fall within Hydrologic Soil Group C or D, which have moderately high to high runoff potential when wet (USDA NRCS 2007). Loamy soils have good infiltration rates and water storage capacity (Pyke et al. 2018).

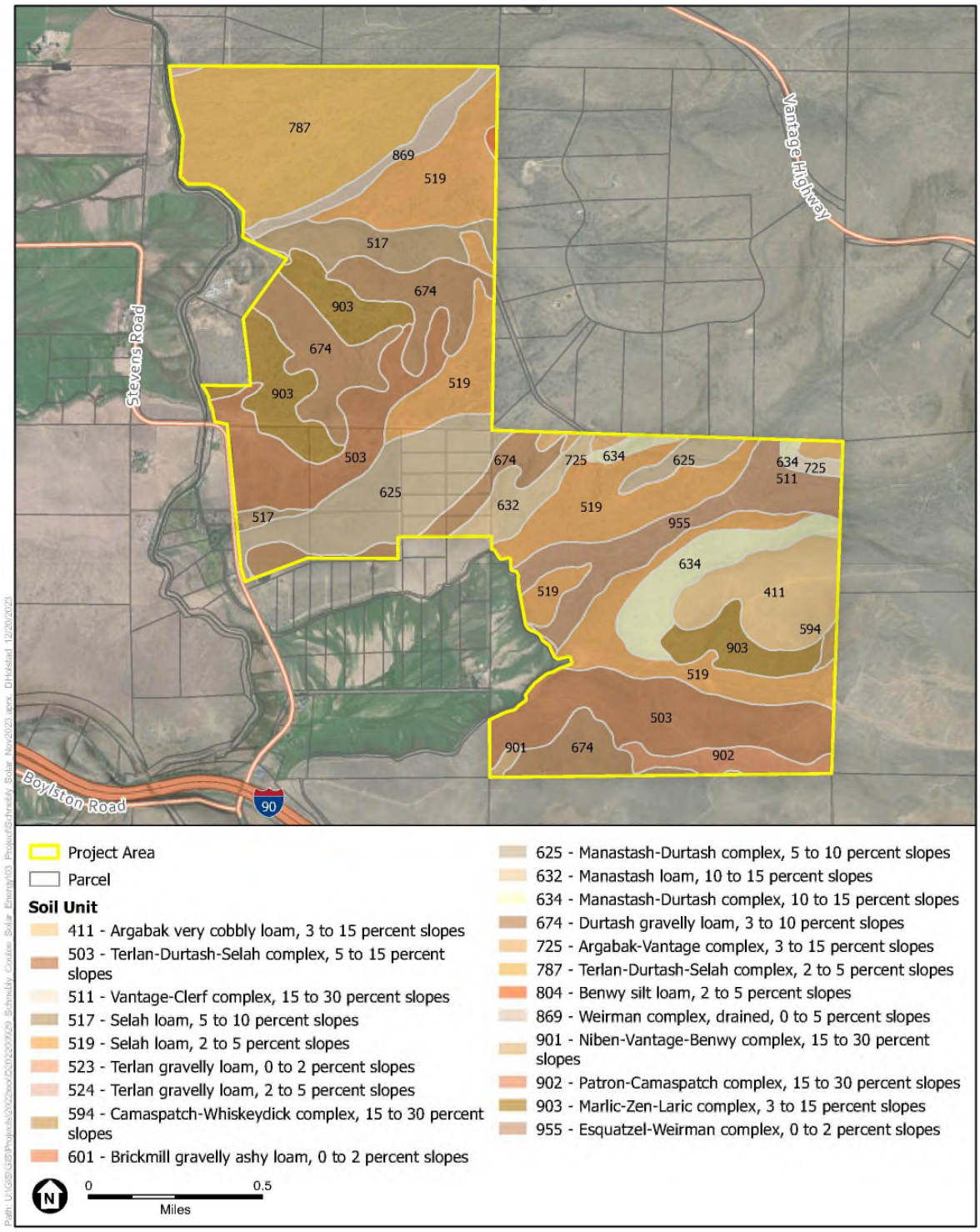
Soils in the Project Area are entirely non-hydric and there are no hydric soils within 5 mi of the Project. Hydric soils formed under sufficiently wet conditions during the growing season result in an anaerobic growing environment (USDA NRCS 2022, 2023; ESA 2024). Non-hydric soils, found in uplands, are dry soils that typically allow the downward movement of surface water into the soil. Vegetation in areas with non-hydric soils must tolerate drier soil conditions.

4.3 Geography

The Project is in the Columbia Plateau Ecoregion (Level III), which is characterized by arid sagebrush steppe and grassland habitats (USEPA 2013). The dominant ecological sites in the Project Area are shallow stoney sagebrush and loamy sagebrush (EDIT 2023a). Both ecological sites are underlain by basalt flows covered by up to 200 feet of loess and volcanic ash. Vegetation consists of a fire-sensitive shrub overstory with perennial bunchgrasses and forbs in between. Land use within the Columbia Plateau Ecoregion is predominantly dryland agriculture and rangeland or is enrolled in the Conservation Reserve Program.

4.4 Topography

Topography within the Project Area is generally flat with elevations ranging from 1,950 to 2,100 ft (Enercon 2019, ESA 2023). Steeper slopes are present in the southeast portion of the Project Area along an unnamed drainage. Flat topography reduces the need for grading and promotes soil stabilization because the area is less likely to experience significant soil erosion when combined with stormwater best management practices (BMPs). Flat topography also allows for the use of a seed drill to install seed mixes, which reduces the seeding rate required and distributes seed uniformly throughout the Project for successful groundcover establishment.



SOURCE: Imagery: Maxar, 2019; Roads: Open Street Map; Soil Data: USDA NRCS SSURGO; Study Area: ESA.

Schnebly Coulee Solar Energy

Soil Map Units

ESA

Figure 4.3. Soil map units within the Schnebly Coulee Solar Energy Project Area, Kittitas County, Washington (ESA 2024).

4.5 Hydrology

Five palustrine emergent wetlands were delineated in the Project Area in October 2022 (Figure 4.4; ESA 2024). Wetlands in the Project Area likely formed through subsurface seepage from a nearby irrigation canal created in the 1940s. Reed canarygrass (*Phalaris arundinacea*) was a dominant species within all wetlands. Wetlands are located on the western edge of the Project Area. Other features included six ephemeral drainages and one irrigation canal.

5 STATEMENT OF PROJECT OBJECTIVES

The following sections describe objectives that ensure that the Project is compliant with regulatory requirements from Section 3.

5.1 Effective Topsoil Management

The objective of topsoil management is to use BMPs as outlined in the *Stormwater Management Manual for Eastern Washington* (SWMMEW; WDOE 2019) and the Construction Environmental Plan (CEP; Invenergy 2022) in compliance with the WDOE construction stormwater general permit and 12 KCC 12.06. Naturally occurring soil and vegetation facilitate water infiltration, nutrient adsorption, and sediment and pollutant filtration (WDOE 2019). Biological soil crusts, an indicator of healthy shrubsteppe habitat that takes many years to establish, can reduce erosion, retain soil moisture, and increase soil productivity (Azerrad et al. 2011). Existing topsoil, vegetation, and biological soil crusts will be retained, to the extent feasible, by minimizing the construction footprint. Prior to stripping topsoil for stockpiles, field sampling will be conducted to determine topsoil depths and to collect soil samples for lab analysis. Soil fertilizers and amendments will be based on soil test results and seed mix requirements (WDOE 2010). However, native plants typically perform well under native soil conditions, reducing the need for these. Multiple seed mixes may be developed depending on the variability of soils on the site.

Any topsoil that must be graded will be stockpiled and stabilized in accordance with the Project's stormwater management plan (Stormwater Pollution Prevention Plan [SWPPP]) as required by the WDOE construction stormwater general permit (WDOE 2020), the SWMMEW, and Kittitas County *Storm Water Management Standards and Guidelines* (12 Kittitas County Code [KCC] 12.06). Debris from land-clearing will be chipped and stored on-site for erosion-control cover or mulch. In areas where the soil is graded or disturbed, topsoil will be promptly restored, as identified in the SWPPP, using stockpiled topsoil to meet the depth and quality specifications listed in the SWMMEW BMP F6.61 (WDOE 2019). Topsoil will be returned approximately to the original contours and depths prior to disturbance and will be conducive to the vegetation that will be established. Revegetated areas will be mulched after planting and organic debris left to maintain soil quality. Revegetated areas will be protected from compaction and the use of irrigation, fertilizers, and pesticides will be reduced where possible.

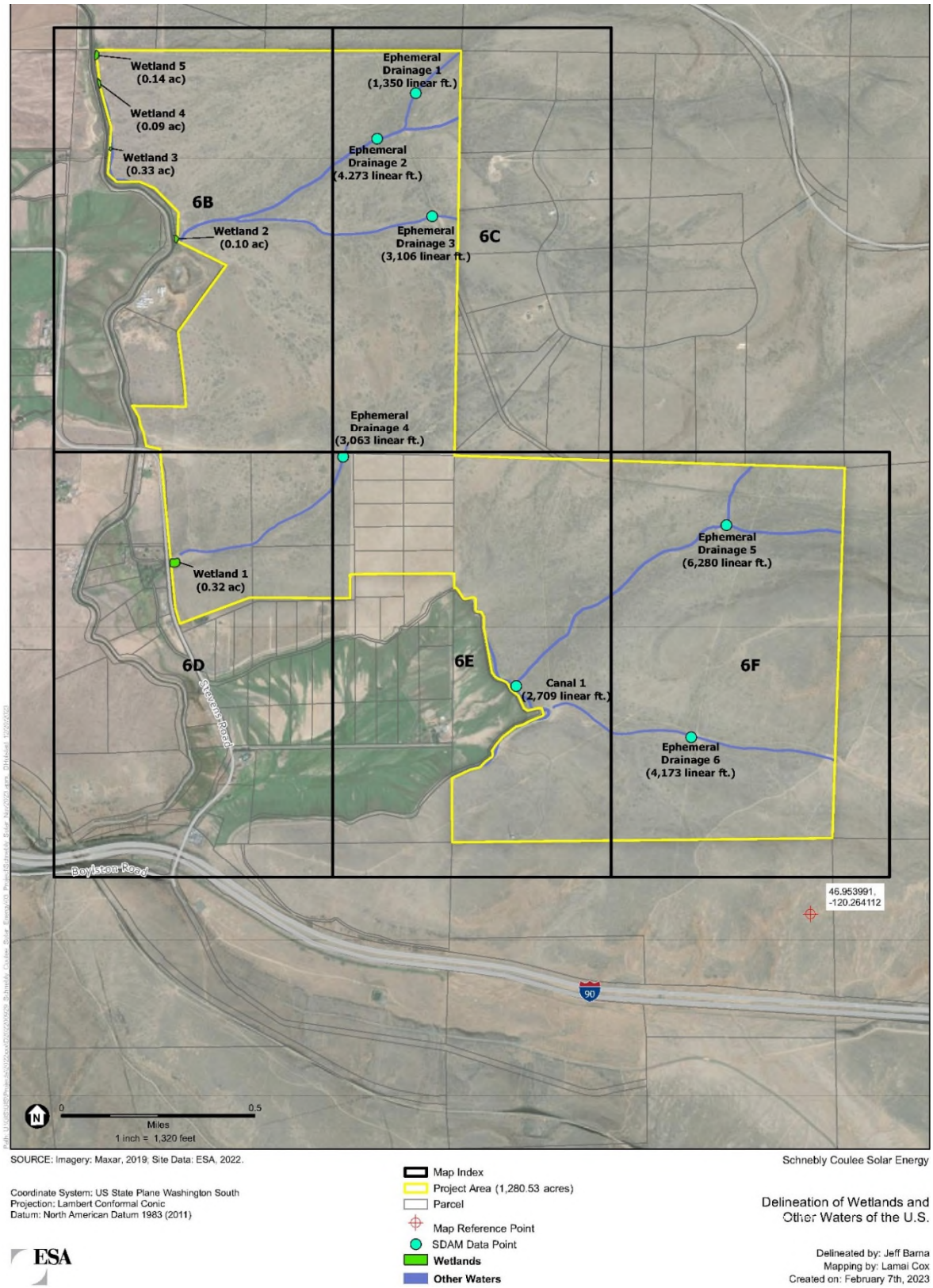


Figure 4.4. Delineation of wetlands and other waters on October 18 – 21, 2022, within the Schnebly Coulee Solar Energy Project Area, Kittitas County, Washington (ESA 2024).

5.2 Required Control/Management of Invasive or Noxious Weed Species

The objective of noxious weed management is to prevent and control the spread of noxious weeds in the Project Area in compliance with 17 RCW 17.10. Prior to any ground disturbance, Schnebly will conduct an undesirable plant survey and will consult with the Kittitas County Noxious Weed Control Board to discuss the survey results and determine suitable management approaches to implement. Following consultation with the Noxious Weed Control Board, Schnebly will develop a Noxious Weed Management Plan as part of the Vegetation and Soil Management Plan (VSMP) to guide the control of noxious weeds listed by the Kittitas County and Washington State NWCBs. The Noxious Weed Management Plan will outline methods for weed control, a maintenance schedule, and any potential soil viability impacts from treatments. Control and treatment of noxious weeds as part of an IVM program reduces the occurrence of noxious weeds and promotes establishment and persistence of sustainable vegetation during the life of the Project (USEPA 2008). IVM is accomplished through use of appropriate, environmentally sound, and cost-effective control methods, which can include a combination of chemical, biological, cultural, mechanical, and/or manual treatments.

Weed management should control known stands of noxious weeds in the Project Area prior to seeding or any ground disturbing activities, as well as any additional weed emergence from the seed bank where soil was disturbed during construction (Benson et al. 2011). Regular site inspections will provide guidance on treatment timing and location. Timing treatments to the appropriate growth stage for each target weed is essential to effective management (USDA NRCS 2020). Mechanical or chemical treatments may be recommended following site inspections.

5.2.1 Mechanical Control

Mechanical control of noxious weeds may include mowing, tilling, harrowing, or rod-weeding (Benson et al. 2011). The method used will depend on the growth habit of target species and previous land use. Previously unbroken ground or fallow areas should not be tilled or rod-weeded to maintain native biocrusts and prevent exposing weed seeds. Tilling is also not recommended for perennial weeds that spread by rhizomes. Mowing and harrowing should be completed in summer or fall to control grasses while rod-weeding should be done in the summer to target weeds with taproots. Often a combination of mechanical followed by chemical treatments are necessary to control noxious weeds.

5.2.2 Chemical Control

Following Project inspections and treatment recommendations, the IVM program may employ chemical treatment with approved herbicides to control target weeds if other management means are not feasible. Multiple treatments may be necessary to adequately control some noxious weeds. While targeted spot treatments are preferred, broadcast treatments with a pre-emergent herbicide may be necessary to control cheatgrass prior to seeding. In arid climates, cheatgrass germinates in the spring and fall; pre-emergent herbicide must be applied before germination to be effective. Pre-emergent herbicide should be applied in spring or by the end of summer at the latest to prevent cheatgrass germination with late-season precipitation (Pyke et al. 2018). Licensed applicators will be selected based upon qualifications to distinguish target species from

non-target species. Herbicides should only be applied during appropriate weather conditions (e.g., non-windy conditions) to minimize herbicide drift. With proper application, off-target damage and residual effects from herbicide use will be minimal and are not expected to outweigh the ecological benefits of controlling noxious weeds with herbicides. Operations and maintenance personnel will not use or store herbicides onsite unless licensed by the WSDA and authorized by Schnebly.

5.3 Achievement of Final Vegetative Stabilization

The objective of vegetation restoration is to stabilize the entire Project Area, including all areas disturbed by construction, with sustainable vegetation in compliance with the Project's VSMP and CEP (Invenergy 2022). Sustainable vegetation is defined as revegetation and management to establish resilient groundcover to prevent interference from noxious weeds, erosion, and stormwater problems (e.g., flooding, ponding), thereby reducing operational costs (Gann et al. 2019). A "Drive and Crush" method will be utilized when feasible in areas where grading is not required for Project construction to minimize disturbances to native vegetation. Drive and Crush involves crushing vegetation instead of mowing or grading to preserve perennial vegetation and the soil seed bank. Drive and Crush results in the fastest recovery time for native vegetation and reduces the likelihood of invasion by noxious weeds. Outside Project fences, sagebrush (*Artemisia* spp.) will be left intact, to the greatest extent possible. Contractor oversight is a critical component of successful vegetation establishment to ensure that sustainable vegetation practices are implemented.

The approach to vegetation restoration will follow the NRCS Conservation Practice Standard for Conservation Cover (Code 327; USDA NRCS 2015). Code 327 defines conservation cover as "establishing and maintaining permanent vegetative cover" to reduce erosion, improve water quality by reducing runoff, improve soil health, and enhance wildlife and pollinator habitat. Code 327 provides useful guidance for vegetation establishment including:

- Select species that are adapted to local soil and climate conditions
- Choose planting dates and methods that ensure an acceptable survival rate
- Control weeds that impede establishment of desirable species
- Plant seed to maintain sufficient cover to reduce wind and water erosion
- Plant a diverse seed mix to promote biodiversity
- Use certified source-identified seed and plants, when available
- Mow to reduce competition from weeds
- Use appropriate native species
- Apply natural mulches to conserve soil moisture and suppress weeds during vegetation establishment

5.3.1 Seedbed Preparation

An ideal seedbed is weed-free and firm to allow good seed-soil contact, but loose enough to facilitate root growth. Contractors should avoid construction on wet surfaces to reduce risk of compaction. Soil de-compaction can increase seed establishment success, increase water infiltration, and reduce runoff (Benson et al. 2011). Compacted soil layers can be identified by checking for resistance with a shovel or soil probe. If necessary, soils should be de-compacted to

a minimum depth of 3 in and up to 24 in deep depending on the depth of compaction (Benson et al. 2011). Soils should be de-compacted when dry with an agricultural disc, winged subsoiler, soil ripper, or similar equipment to create a uniform surface in preparation for seeding. Soils with a clay component can harden and become difficult to work with if they are de-compacted immediately before rain events. If soils are not compacted, minimal seedbed preparation is needed when using a no-till drill because no-till drills penetrate the residue layer to achieve seed-soil contact. For broadcast seeding, the ground should be firmed using a cultipacker after decompaction. In areas where sagebrush may be seeded, seedbed preparation techniques may vary slightly as sagebrush establishes better on a firm seedbed (Pyke et al. 2018).

5.3.2 Erosion Control

The Project will use BMPs for erosion control as described in the SWPPP and CEP in compliance with 12 KCC 12.06. The SWPPP will include any proposed ground disturbance and mitigation measures to contain stormwater runoff. Temporary stabilization of disturbed areas will occur as soon as feasible after disturbance, according to the SWPPP. Stabilization may include temporary seeding with a sterile cover crop followed by straw, hydromulch, or erosion control blanketing (WDOE 2019). In addition, the Project will follow BMPs for soil erosion and sediment control at industrial sites as outlined in the SWMMEW. Perennial vegetation will be established to minimize soil exposure to water and wind erosion, reducing runoff and promoting water infiltration. Natural vegetation will be preserved on steep slopes and near surface waters.

5.3.3 Vegetation Establishment

Permanent seeding will occur as soon as earth-disturbing activities are complete with no other planned construction activities scheduled for those areas (Invenergy 2022). Seeding in late fall before the soil freezes is most successful for native grasses and forbs (Benson et al. 2011). When additional broadleaf weed control is required, grasses may be seeded the first fall and forbs seeded the second fall to allow for treatment of broadleaf weeds with selective herbicide during the growing season. If pre-emergent herbicide is used to control cheatgrass, seeding must be carefully timed to ensure herbicide residuals do not interfere with germination and growth of seeded species. Seed mixes will be developed based on habitat and land use goals, soils, and other factors. To the maximum extent practicable, plant species selected for the Project will be native to shrubsteppe and eastside steppe habitat as plants native to the region are better adapted to local soil and climate (USDA NRCS 2015). In some instances, naturalized species may be included in seed mixes to increase vegetation establishment success. Seeding should only take place when forecasted weather conditions are favorable to successful seeding and establishment. Seeding should not occur when excessive wind could carry material beyond the designated work area or result in material not being uniformly applied and no work should take place on unusually wet surface areas.

Seeding methods include no-till drill seeding or broadcast seeding followed by harrowing (Benson et al. 2011). No-till drill seeding is preferred over broadcast seeding because it creates the best seed-soil contact, requires lower seeding rates, and typically results in better seedling establishment (Benson et al. 2011). Hydroseeding (applying seed with a hydromulch slurry) is not recommended in arid climates because seed can germinate in the mulch and desiccate due to

lack of seed-soil contact and moisture; however, applying hydromulch *after* drill or broadcast seeding promotes germination and establishment. Seeding rates and application windows will be determined after selection of seed mixes and when the construction schedule is determined.

5.3.4 Mulching

Natural mulch, such as wood-strand erosion control material (forestconcepts 2023), certified weed free straw, or hydromulch, will be applied to seeded areas within 24 hours of seed placement (Invenergy 2022). Certified weed-free straw mulch may be applied by hand or machine. Straw mulch must be stabilized either by crimping with a mechanical stabilizer with dull blades or over-sprayed with a hydraulic mulch or organic tackifier. Hydromulch is preferred in areas with high wind erosion potential or poor growing conditions.

5.3.5 Vegetation Maintenance

Vegetation maintenance is vital to the success of vegetation restoration. Operational efficiencies and long-term cost benefits are tied to seed and plant establishment. After seeding and successful vegetation establishment at the Project, vegetation maintenance transitions to contractual arrangements and trained facility personnel for long-term management. This section summarizes expected maintenance.

5.3.5.1 Mechanical Control

Perennial plants have relatively slower germination and above-ground growth rates compared to cover crops and many weed species. Shading of seedlings by other vegetation can reduce viability and prevent successful establishment (Code 327). If undesirable weeds overtop seedlings, weeds can be spot mowed to a height of 6 to 8 in during the growing season (USDA NRCS 2006). Mowing should occur outside of the WDFW-recommended period of April 1 – June 30 to provide for nesting habitat and to allow grasses and forbs time to pollinate and set and drop seed, which will in turn provide food to birds and wildlife (Ritter 2021). Mowing outside of this period will also prevent damage to native bunchgrasses during the critical growing period (EDIT 2023b).

Spot mowing can be used during the growing season to control weeds and rotational mowing during the dormant season to reduce thatch. Mowing for weed control must be completed just prior to or during pollen production and before weeds set seed. Rotational mowing retains standing dormant vegetation for pollinator overwintering and larvae development. Rotational mowing involves mowing only portions of the Project Area at a time to allow insects and wildlife to take refuge in un-mowed areas (Jordan et al. 2020). Some standing vegetation should be left year-round, as many insect larvae require a full year to mature.

5.3.5.2 Remedial Seeding or Planting

Project personnel will inspect and identify areas that require remedial seeding or container planting to achieve vegetation stabilization objectives. The timing of remedial seeding or planting will be within acceptable revegetation windows. A temporary sterile cover crop seeding will be performed until the acceptable window for remedial revegetation opens. Container planting may

be used to add sagebrush into areas seeded with perennial grass. Planting sagebrush bareroot stock or container plants often has a higher success rate than seeding (Pyke et al. 2018).

5.4 Opportunistic Wildlife Habitat

The objective of opportunistic wildlife habitat actions is to improve the quality and diversity of shrubsteppe and eastside steppe habitat in the Project Area to benefit wildlife. Four state candidate species were observed during threatened, endangered, and sensitive species (TESS) surveys: sage thrasher (*Oreoscoptes montanus*), sagebrush sparrow (*Artemisiospiza nevadensis*), loggerhead shrike (*Lanius ludovicianus*), and black-tailed jackrabbit (*Lepus californicus;)*. Mule deer sign and elk (*Cervus elaphus*) were also documented during TESS surveys (ESA 2023). Shrubsteppe retained in the Project Area has the potential to continue to provide habitat and forage for these species. In addition, management actions such as weed treatments and revegetation can improve existing native plant communities and/or establish new shrubsteppe habitat in perimeter areas of the Project. Activities to establish, improve, or minimize impacts to wildlife habitat may include:

- Cheatgrass control throughout the Project Area.
- Minimizing impacts to existing shrubsteppe habitat during Project construction, when feasible, with low-impact solar development strategies such as drive and crush and habitat avoidance measures.
- Utilizing seed mixes with competitive native species that can compete with cheatgrass.
- Seeding panel arrays with a diverse mix of short-stature native forbs and grasses.
- When feasible, plant big sagebrush in buffer areas outside panel arrays to augment existing shrubsteppe habitat.
- Establishing forb islands—areas with increased native forb diversity to provide wildlife forage and provide a propagule source for native plants (Benson et al. 2011). Forb islands can be linked with unmowed corridors such as along fences to allow protected wildlife movement.
- Retaining woody debris, such as stumps and branches, on site, when feasible, to provide cover for amphibians and reptiles (Pilliod and Wind 2008).
- Utilize wildlife permeable fencing to allow jackrabbit and other small wildlife to move through the Project Area (Hanophy 2009, Paige 2012).
- Control reed canarygrass and establish a buffer of native vegetation around wetlands.

6 MONITORING AND ADAPTIVE MANAGEMENT

A monitoring plan will be established based on IVM principles to ensure the Project meets objectives and remains on track with topsoil management, noxious weed treatments, and vegetation stabilization (Bureau of Land Management 2008, USEPA 2008). Effectiveness monitoring may be developed to assess revegetation progress towards performance standards. Effectiveness monitoring should begin the first growing season and continue through the

operations period. Noxious weeds should be monitored every growing season to recognize and treat new invasive species.

Schnebly will develop a vegetation monitoring plan that outlines effectiveness monitoring methods. Vegetation monitoring may assess plant species composition, abundance, and/or structure (Benson et al. 2011). Monitoring may consist of photomonitoring and/or meandering surveys. Timed meandering surveys are a quick way to qualitatively assess plant communities and create a list of species present (Bohnen and Galatowitsch 2016). Meandering surveys involve wandering through the Project Area for a specified amount of time and recording plant species observed.

Adaptive management will be employed following evaluation of the Project Area to ensure the Project meets objectives and performance standards. If monitoring indicates that Project objectives and performance standards are not met, Schnebly will propose remedial actions that may include additional noxious weed treatments, supplemental planting or seeding, or other vegetation management, as needed.

7 REFERENCES

7.1 Literature Cited

Azerrad, J. M., K. A. Divens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011. Management Recommendations for Washington's Priority Habitats: Managing Shrubsteppe in Developing Landscapes. Washington Department of Fish and Wildlife, Olympia, Washington. September 2011. Updated September 2020, correction May 2022. Available online: https://wdfw.wa.gov/sites/default/files/publications/01333/wdfw01333.pdf

Benson, J. E., R. T. Tveten, M. G. Asher, and P. W. Dunwiddie. 2011. Shrub-Steppe and Grassland Restoration Manual for the Columbia River Basin. Washington Department of Fish and Wildlife, Olympia, Washington, in colaboration with the Bonnevile Power Administration and Bureau of Land Management. October 21, 2011. Available online: https://wdfw.wa.gov/sites/default/files/publications/01330/wdfw01330.pdf

Bohnen, J. and S. Galatowitsch. 2016. Restoration Evaluation Project. Vegetation Monitoring Tool, University of Minnesota, Minneapolis, Minnesota. July 1, 2016. Available online: https://www.lccmr.mn.gov/pm_info/restoration_evaluations/restoration_evaluation_project_vegetation_monitoring_protocol_part_1.pdf

Bureau of Land Management (BLM). 2008. Integrated Vegetation Management Handbook. Hanbook H-1740-2. BLM. March 25, 2008. Available online: https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_Handbook_H-1740-2.pdf

Ecosystem Dynamics Interpretive Tool (EDIT). 2023a. Columbia Plateau: ESG Catalog: MLRA 008X. Ecological site descriptions, Major Land Resource Area. U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, USDA Agricultural Research Service Jornada Experimental Range, and New Mexico State University. Accessed December 2023. Available online: https://edit.jornada.nmsu.edu/catalogs/esg/008X

Ecosystem Dynamics Interpretive Tool (EDIT). 2023b. Loamy Sagebrush: Ecological Site R008XY130WA. Ecological site descriptions, Major Land Resource Area. U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, USDA Agricultural Research Service Jornada Experimental Range, and New Mexico State University. Accessed December 2023. Available online: https://edit.jornada.nmsu.edu/catalogs/esd/008X/R008XY130WA

Elzinga, C. L., D. W. Salzer, and J. W. Willoughby. 2001. Measuring and Monitoring Plant Populations. U.S. Bureau of Land Management, Denver, Colorado. Available online: https://www.ntc.blm.gov/krc/system/files/legacy/uploads/3342/technical%20reference.pdf

Enercon Services, Inc. (Enercon). 2019. Site Characterization Study Schnebly Coulee Solar Energy Project Kittitas County, Washington. Final Report March 2019. Prepared for Invenergy Solar Project Development LLC, Chicago, Illinois. Prepared by Enercon, Portland, Oregon. March 2019.

Environmental Science Associates (ESA). 2023. Draft Schnebly Coulee Solar Energy Project Wildlife and Habitat Survey Report. Prepared for Schnebly Coulee Solar Energy LLC. Prepared by ESA, Portland, Oregon. August 2023.

Environmental Science Associates (ESA). 2024. Schnebly Coulee Solar Energy Project Wetlands and Other Waters Delineation Report. Prepared for Schnebly Coulee Solar Energy LLC. Prepared by ESA, Portland, Oregon. March 2023.

Esri. 2020. World Terrain Base. ArcGIS Resource Center. Environmental Systems Research Institute (Esri), producers of ArcGIS software, Redlands, California. Basemap created July 1, 2009. Last Updated May 27, 2020. Accessed November 2023. Available online: https://www.arcgis.com/home/item.html?id=c61ad8ab017d49e1a82f580ee1298931

forestconcepts. 2023. Wood Strand Erosion Control Mulch. WoodStraw ECM. forestconcepts, Auburn, Washington. Accessed December 2023. Available online: https://forestconcepts.com/product/woodstraw-ecm/

Gann, G. D., T. McDonald, B. Walder, J. Aronson, C. R. Nelson, J. Jonson, J. G. Hallett, C. Eisenberg, M. R. Guariguata, J. Liu, F. Hua, C. Echeverría, E. Gonzales, N. Shaw, K. Decleer, and K. W. Dixon. 2019. International Principles and Standards for the Practice of Ecological Restoration. Second Edition. Restoration Ecology 27(S1): S1-S46. doi: 10.1111/rec.13035.

Hanophy, W. 2009. Fencing with Wildlife in Mind. Colorado Division of Wildlife, Denver, Colorado. Available online: https://wildlifefriendly.org/wp-content/uploads/2015/09/fencingwithwildlifeinmind_coloradodow.pdf

Invenergy Renewables LLC (Invenergy). 2022. Construction Environmental Plan for Utility-Scale Solar Facilities. Invenergy, Chicago, Illinois.

Jordan, S. F., J. Hopwood, and S. Morris. 2020. Nesting & Overwintering Habitat for Pollinators & Other Beneficial Insencts. Xerces Society, Portland, Oregon. June 23, 2020. Available online: https://xerces.org/sites/default/files/publications/18-014.pdf

Kittitas County. 2021. Comprehensive Plan. Kittitas County, Washington. December 2021. Available online: https://www.co.kittitas.wa.us/uploads/documents/cds/comp-plan/2021/2021%20Comprehensive%20Plan.pdf

Kittitas County. 2023. Comprehensive Plan and Development Regulations. Community Development Services, Kittitas County, Washington. Accessed December 2023. Available online: https://www.co.kittitas.wa.us/cds/comp-plan/default.aspx

Kittitas County Ordinance. 2018. Ordinance No. 2018-018. Kittitas County, Board of Commissioners, Washington. October 2, 2018. Available online: https://www.co.kittitas.wa.us/uploads/bocc/ordinances/2018-018-ordinance.pdf

Kittitas County Ordinance. 2019. Ordinance No. 2019-004. Kittitas County, Board of Commissioners, Washington. May 7, 2019. Available online: https://www.co.kittitas.wa.us/uploads/bocc/ordinances/2019-004-ordinance.pdf

Martin, M., T. Mabee, R. Sattler, T. Lawes. In prep. Habitat Management Plan, Schnebly Coulee Solar Energy Project, Kittitas County, Washington. Western EcoSystems Technology, Inc., Corvallis, Oregon.

National Land Cover Database (NLCD). 2019. National Land Cover Database 2019 - Landcover & Imperviousness (Nlcd2019). Available online: https://www.mrlc.gov/data. As cited includes:

Homer, C., J. Dewitz, S. Jin, G. Xian, C. Costello, P. Danielson, L. Gass, M. Funk, J. Wickham, S. Stehman, R. Auch, and K. Riitters. 2020. Conterminous United States Land Cover Change Patterns 2001–2016 from the 2016 National Land Cover Database. ISPRS Journal of Photogrammetry and Remote Sensing 162(5): 184-199. doi: 10.1016/j.isprsjprs.2020.02.019.

Jin, S., C. Homer, L. Yang, P. Danielson, J. Dewitz, C. Li, Z. Zhu, G. Xian, and D. Howard. 2019. Overall Methodology Design for the United States National Land Cover Database 2016 Products. Remote Sensing. 2971. doi: 10.3390/rs11242971.

Wickham, J., S. V. Stehman, D. G. Sorenson, L. Gass, and J. A. Dewitz. 2021, Thematic Accuracy Assessment of the NLCD 2016 Land Cover for the Conterminous United States: Remote Sensing of Environment 257: 112357. doi: 10.1016/j.rse.2021.112357.

and

Yang, L., S. Jin, P. Danielson, C. Homer, L. Gass, S. M. Bender, A. Case, C. Costello, J. Dewitz, J. Fry, M. Funk, B. Granneman, G. C. Liknes, M. Rigge, and G. Xian. 2018. A New Generation of the United States National Land Cover Database: Requirements, Research Priorities, Design, and Implementation Strategies. ISPRS Journal of Photogrammetry and Remote Sensing 146: 108-123. doi: 10.1016/j.isprsjprs.2018.09.006.

Paige, C. 2012. A Landowner's Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind. Second Edition. Montana Fish, Wildlife and Parks, Helena, Montana. Available online: https://fwp.mt.gov/binaries/content/assets/fwp/conservation/land-owner-wildlife-resources/a_landowners_guide_to_wildlife_friendly_fences.pdf

Pilliod, D. S. and E. Wind. 2008. Habitat Management Guidelines for Amphibians and Reptiles of the Northwestern United States and Western Canada. Partners in Amphibian and Reptile Conservation, Technical Publication HMG-4, Birmingham, Alabama. 139 pp.

Pyke, D. A., J. C. Chambers, M. Pellant, R. F. Miller, J. L. Beck, P. S. Doescher, B. A. Roundy, E. W. Schupp, S. T. Knick, M. Brunson, and J. D. McIver. 2018. Restoration Handbook for Sagebrush Steppe Ecosystems with Emphasis on Greater Sage-Grouse Habitat—Part 3. Site Level Restoration Decisions. Version 1.1. U.S. Geological Survey Cicular 1426. Prepared in cooperation with U.S. Joint Fire Science Program and National Interagency Fire Center, Bureau of Land Management, Great Northern Landscape Conservation, and Western Association of Fish and Wildlife Agencies. March 2018. doi: 10.3133/cir1426. Available online: https://pubs.usgs.gov/circ/1426/cir1426.pdfRitter, M. 2021. Personal Communication. Recommended Survey Protocols Provided by Washington Department of Fish and Wildlife. Spring 2021.

U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 2006. CRP Mowing Guidelines for Grass Establishment. Pest Management (595) CRP Guide Sheet. Colorado. USDA NRCS. August 2006. Available online: https://efotg.sc.egov.usda.gov/references/Delete/2006-8-26/595_CRP_mowing_guidelines.pdf

U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 2007. Chapter 7: Hydrologic Soil Groups. Part 630 Hydrology National Engineering Handbook. USDA NRCS. May 2007. Available online: https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba

U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 2015. Conservation Cover. Conservation Practice Standard Code 327. USDA NRCS. February 2015. Available online: https://efotg.sc.egov.usda.gov/api/CPSFile/23036/327_NC_CPS_(Con)servation_Cover_2015

U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 2020. Herbaceous Weed Treatment. Conservation Practice Standard Code 315. USDA NRCS. October 2020. Available online: https://www.nrcs.usda.gov/sites/default/files/2022-09/Herbaceous_Weed_Treatment_315_CPS_10_2020.pdf

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. USDA NRCS, Washington, D.C. Accessed August 2023. Available online: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2023. Hydric Soils. Available online: https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/soil/hydric-soils

U.S. Environmental Protection Agency (USEPA). 2008. Integrated Vegetation Management Fact Sheet. USEPA, Office of Pesticide Programs. October 2008. Available online: https://www.epa.gov/sites/default/files/2016-03/documents/ivm_fact_sheet.pdf

U.S. Environmental Protection Agency (USEPA). 2013. Level III and Level IV Ecoregions of the Continental United States. Ecosystems Research, USEPA. April 16, 2013. Accessed October 2023. Available online: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states

Washington Department of Ecology (WDOE). 2010. Building Soil: Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13. Stormwater Management Manual for Western Washington, WDOE, Olympia, Washington. Available online: https://ecology.wa.gov/getattachment/4569b90a-217a-40d2-a997-49adb8db5d86/SoilBMP.pdf

Washington Department of Ecology (WDOE). 2019. Stormwater Management Manual for Eastern Washington. WDOE, Water Quality Program, Olympia, Washington. August 2019. Available online: https://fortress.wa.gov/ecy/ezshare/wq/Permits/Flare/2019SWMMEW/Content/Resources/DocsForDownload/2019SWMMEW_8-13-19.pdf

Washington Department of Ecology (WDOE). 2020. Construction Stormwater General Permit. WDOE, Olympia, Washington. Issued November 18, 2020. Expires December 31, 2025. Available online: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit

Washington Department of Ecology (WDOE). 2023. SEPA Checklist Guidance. WDOE, Lacey, Washington. Accessed December 2023. Available online: https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance

Washington Department of Fish and Wildlife (WDFW). 2008. Priority Habitat and Species List. WDFW, Olympia, Washington. August 2008. Updated June 2023. Available online: https://wdfw.wa.gov/sites/default/files/publications/00165/wdfw00165.pdf

Washington Department of Fish and Wildlife (WDFW). 2009. Wind Power Guidelines. WDFW, Olympia, Washington. April 2009. 30 pp. Available online: https://wdfw.wa.gov/publications/00294

Washington Department of Fish and Wildlife (WDFW). 2021. Priority Habitats and Species (PHS). WDFW, Species and Habitat, Olympia, Washington. Last Update November 1, 2021. Accessed December 2023. Available online: https://wdfw.wa.gov/species-habitats/at-risk/phs

Washington State Noxious Weed Control Board (NWCB). 2023. Washington's Noxious Weed Laws. Washington State NWCB, Olympia, Washington. Accessed December 2023. Available online: https://www.nwcb.wa.gov/washingtons-noxious-weed-laws

7.2 Laws and Regulations

12 Kittitas County Code (KCC) 12.06. Title12 - Roads and Bridges; Chapter 12.06 - Storm Water Mangement Standards and Guidelines. Available online: https://www.co.kittitas.wa.us/boc/countycode/title12.aspx#Chapter_12.6

16 United States Code (USC) § 1531. 1973. Title 16 - Conservation; Chapter 35 - Endangered Species; Section (§) 1531 - Congressional Findings and Declaration of Purposes and Policy. 16 USC 1531. December 28, 1973. [Public Law (P.L.) 93-205, Section (§) 2, December 28, 1973, 87 Statute [Stat.] 884; P.L. 96-159, § 1, December 28, 1979, 93 Stat. 1225; P.L. 97-304, § 9(a), October 13, 1982, 96 Stat. 1426; P.L. 100-478, Title I, § 1013(a), October 7, 1988, 102 Stat. 2315.]. Available online: https://www.gpo.gov/fdsys/pkg/USCODE-2011-title16/pdf/USCODE-2011-title16-chap35-sec1531.pdf

16 United States Code (USC) § 1532. 1973. Title 16 - Conservation; Chapter 35 - Endangered Species; Section (§) 1532 - Definitions. 16 USC 1532. December 28, 1973. [Public Law (PL) 93-205, § 3, December 28, 1973, 87 Statute (Stat.) 885; PL 94-359, § 5, July 12, 1976, 90 Stat. 913; PL 95-632, § 2, November 10, 1978, 92 Stat. 3751; PL 96-159, § 2, December 28, 1979, 93 Stat. 1225; PL 97-304, § 4(b), October 13, 1982, 96 Stat. 1420; PL 100-478, Title I, § 1001, October 7, 1988, 102 Stat. 2306.]. Available online: https://www.govinfo.gov/content/pkg/USCODE-2011-title16/pdf/USCODE-2011-title16-chap35-sec1532.pdf

16 Washington Administrative Code (WAC) 16-750-011. Title 16 - Department of Agriculture; Chapter 16-750 - State Noxious Weed List and Schedule of Monetary Penalties; Section 16-750-011 - State Noxious Weed List-Class B Noxious Weeds. Available online: https://app.leg.wa.gov/WAC/default.aspx?cite=16-750-011

16 Washington Administrative Code (WAC) 16-750. Title 16 - Department of Agriculture; Chapter 16-750 - State Noxious Weed List and Schedule of Monetary Penalties. Available online: https://apps.leg.wa.gov/wac/default.aspx?cite=16-750

16 Washington Administrative Code (WAC) 16-752. Title 16 - Department of Agriculture; Chapter 16-752 - Noxious Weed Seed and Plant Quarantine. Available online: https://app.leg.wa.gov/WAC/default.aspx?cite=16-752

17 Kittitas County Code (KCC) 17.61C.070. Title 17 - Zoning; Chapter 17.61c - Solar Power Production Facilitites; Section 17.61c.070 - Submittal Requirements. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17.aspx#17.61C.070

17 Kittitas County Code (KCC) 17.61C.090. Title 17 - Zoning; Chapter 17.61c - Solar Power Production Facilitites; Section 17.61c.090 - Development Standards. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17.aspx#17.61C.090

17 Kittitas County Code (KCC) 17A.0-07. Title 17A - Critical Areas; Chapters 17A.01-17A.07. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17a.aspx#Chapter_17A.01

17 Kittitas County Code (KCC) 17A.01.010. Title 17A - Critical Areas; Chapter 17A.01 - General Provisions; Section 17A.01.010 - Purpose and Intent. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17a.aspx#17A.01.010

17 Kittitas County Code (KCC) 17A.02.590. Title 17A - Critical Areas; Chapter 17A.02 - Definitions; Section 17A.02.590 - Priority Habitat. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17a.aspx#17A.02.590

17 Kittitas County Code (KCC) 17A.02.600. Title 17A - Critical Areas; Chapter 17A.02 - Definitions; Section 17A.02.600 - Priority Species. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17a.aspx#17A.02.600

17 Kittitas County Code (KCC) 17A.04.020. Title 17A - Critical Areas; Chapter 17A.04 - Fish and Wildlife Habitat Conservation Areas; Section 17A.04.020 - Designation, Mapping, and Classification. Available online: https://www.co.kittitas.wa.us/boc/countycode/title17a.aspx#17A.04.020

17 Revised Code of Washington (RCW) 17.10. 2022. Title 17 - Weeds, Rodents, and Pests; Chapters 17.10 - Noxious Weeds-Control Boards. Last updated June 29, 2022. Available online: https://apps.leg.wa.gov/rcw/default.aspx?cite=17.10

17 Revised Code of Washington (RCW). 2022. Title 17 - Weeds, Rodents, and Pests; Chapters 17.04-17.34. Last updated June 29, 2022. Available online: https://app.leg.wa.gov/RCW/default.aspx?cite=17

33 United States Code (USC) §§ 1251-1387. 1972. Title 33 - Navigation and Navigable Waters; Chapter 26 - Water Pollution Prevention and Control. Known as the Clean Water Act. 33 USC 1251-1387. October 18, 1972.

36 Revised Code of Washington (RCW) 36.70a. 2022. Title 36 - Counties; Chapter 36.70a - Growth Management - Planning by Selected Counties and Cities. Last updated June 29, 2022. Available online: https://app.leg.wa.gov/rcw/default.aspx?cite=36.70a

43 Revised Code of Washington (RCW) 43.21C. Title 43 - State Government-Executive; Chapter 43.21C - State Environmental Policy. Available online: https://app.leg.wa.gov/rcw/default.aspx?cite=43.21c

50 Federal Register (FR) 189: 39861-39691. 1985. Endangered and Threatened Wildlife and Plants; Prohibitions and Permits; Final Rule. 50 CFR Parts 13 and 17. Department of the Interior, Fish and Wildlife Service. 50 FR 39681. September 30, 1985. Available online: https://archives.federalregister.gov/issue_slice/1985/9/30/39676-39691.pdf#page=6

80 Revised Code of Washington (RCW) 80.50. 2022. Title 80 - Public Utilities; Chapter 80.50 - Energy Facilities-Site Locations. Last updated June 29, 2022. Available online: https://app.leg.wa.gov/rcw/default.aspx?cite=80.50

197 Washington Administrative Code (WAC) 197-11. 2016. Title 197 Department of Ecology (Concil on Environmental Council), Chapter 197-11 Sepa Rules. 197-11 WAC (formerly 197-10 WAC). June 2, 2016. Available online: https://app.leg.wa.gov/WAC/default.aspx?cite=197-11

365 Washington Administrative Code (WAC) 365-190-130. Title 365 - Department of Commerce; Chapter 365-190 - Minimum Guidelines to Classify Agriculture, Forest, Mineral Lands and Critical Areas; Section 365-190-130 - Fish and Wildlife Conservation Areas. Available online: https://app.leg.wa.gov/WAC/default.aspx?cite=365-190-130

365 Washington Administrative Code (WAC) 365-195. Title 365 - Department of Commerce; Chapter 365-195 - Growth Management Act - Best Available Science. Available online: https://apps.leg.wa.gov/wac/default.aspx?cite=365-195

463 Washington Administrative Code (WAC) 463-60-322. Title 463 - Energy Facility Site Evaluation Council; Chapter 463-60 - Applications for Site Certification; Section 463-60-322 - Natural Environment-Habitat, Vegetation, Fish and Wildlife. Available online: https://app.leg.wa.gov/wac/default.aspx?cite=463-60-332

Endangered Species Act (ESA) § 3. 1973. Section 3 - Definitions. [As amended by Public Law (PL) 94-325, June 30, 1976; PL 94-359, July 12, 1976; PL 95-212, December 19, 1977; PL 95-632, November 10, 1978; PL 96-159, December 28, 1979; PL 97-304, October 13, 1982; PL 98-327, June 25, 1984; and PL 100-478, October 7, 1988; PL 107-171, May 13, 2002; PL 108-136, November 24, 2003.].

Appendix A. Permit Matrix

Appendix A1. Federal, state, and county environmental permits and approvals pertaining to vegetation management for the proposed Schnebly Coulee Solar Energy Project, Kittitas County, Washington.

Act/Law [1]	Permit/Approval	Permit Trigger	Agency/Contact
Federal			
Clean Water Act of 1972 (CWA), Section 404, 33 U.S. Code (USC) 1344 (1972)	Joint Aquatic Resource Permit Application Individual, General, or Nationwide Permits (NWP)	Construction or operation of the Project may impact waters of the United States	U.S. Army Corps of Engineers Seattle Regulatory District
State			
State Environmental Policy Act; Chapter 43.21C RCW; Chapter 197-11 Washington Administrative Code (WAC) Kittitas County Code (KCC) 15.04	Public Agency Project Review	Environmental review is required for any proposal that involves a government action, including state permitting or approvals	Lead Agency varies by Project (assumed Kittitas County)
Chapter 17.10 of the RCW Chapter 17.24 of the RCW	Noxious Weeds – Control Boards Insect Pests and Plant Diseases	Dependent on class of weeds (e.g., Class A top priority/immediate eradication) Includes regulation of movement and quarantines of infested areas to protect the forest, agricultural, horticultural, floricultural, and apiary industries of the state; plants and shrubs within the state; and the environment of the state from the impact of insect pests, plant pathogens, noxious weeds, and bee pests and the public and private costs that result when these infestations become established.	Kittitas County Noxious Weed Control Board (along with Washington State Weed Board and Washington State Department of Agriculture)
CWA, Section 402, 33 USC 1251 et seq. Chapter 90.48 RCW; Chapter 173-201A WAC KCC 12.06	National Pollution Discharge Elimination System (NPDES) Permit, Construction Stormwater Permit	Clearing, grading, and excavating activities that disturb one or more acres of land and may discharge stormwater from the site into surface water(s) of the state or into storm drainage systems, including ditches; NPDES permits are issued individually or through general permit coverage	Washington Department of Ecology (following Storm Water Management Manual for Eastern Washington [2019])

Appendix A1. Federal, state, and county environmental permits and approvals pertaining to vegetation management for the proposed Schnebly Coulee Solar Energy Project, Kittitas County, Washington.

Act/Law [1]	Permit/Approval	Permit Trigger	Agency/Contact
County			
Conditional Use Permit (CUP) KCC 15A and 17, 17.61C	Kittitas County CUP	Placement or construction of a Solar Power Production Facility (SPPF) in Solar Overlay Zone 2 requires CUP approval; or placement or construction of SPPF that would generate greater than seven megawatts in Solar Overlay Zone 3 shall require administrative CUP approval	Kittitas County Community Development Services

[1] In additon to applicable act and/or law, list includes applicable KCC, ordinance, statute, rule, or regulation.