

Attachment L. Vegetation Management Plan

March 24, 2022

High Top Solar, LLC Project

Prepared for:

Cypress Creek Renewables, LLC
3402 Pico Blvd
Santa Monica, CA

Prepared by:

TRC
Fort Collins, CO



Table of Contents

Acronyms and Abbreviations	ii
1.0 INTRODUCTION	1
1.1 Project Description	1
2.0 PURPOSE OF THIS PLAN	1
3.0 EXISTING PROJECT CONDITIONS	3
3.1 Noxious Weeds	3
4.0 VEGETATION MANAGEMENT	5
4.1 Construction	5
5.0 OPERATIONS & MAINTENANCE	6
6.0 NOXIOUS WEED MANAGEMENT	6
6.1 Cultural Weed Controls	7
6.2 Mechanical Weed Controls	7
6.3 Chemical Weed Controls	7
7.0 REFERENCES	8

Figures

Figure 1-1. High Top Project Overview Map	2
Figure 3-1 Habitats in the Project Area	4

Attachments

Appendix A. 2019 Yakima County Noxious Weed List and Control Policy
Appendix B. Noxious Weed Species Known to Occur in Yakima County
Appendix C. Integrated Weed Management

Acronyms and Abbreviations

Notation	Definition
BESS	Battery Energy Storage System
BMP	Best Management Practice
CCR	Cypress Creek Renewables, LLC
EFSEC	Washington Energy Facility Site Evaluation Council
MPE	Maximum Project Extent; defined as the area that contains the Project Footprint and additional construction areas. The larger extent of the MPE will allow for the shifting of project components, known as micro-siting, based on a final approved project design.
O&M	Operations and Maintenance
Project	High Top Solar, LLC Project
kV	kilovolt
RCW	Revised Code of Washington
SR	State Route
Study Area	A smaller area, within the Project Site Control Boundry, that was defined for biological, cultural, and physical resource surveys.
TRC	TRC Environmental Corporation

1.0 Introduction

Cypress Creek Renewables, LLC (CCR) proposes to construct and operate the High Top Solar, LLC Project (Project). TRC Environmental Corporation (TRC) and CCR have developed the Vegetation Management Plan in support of siting and permitting for an Application for Site Certification to the Washington State Energy Facility Site Evaluation Council (EFSEC) for the proposed Project.

1.1 Project Description

The Project is situated north of Washington State Route 24 (SR-24), south of the Yakima Training Center, and approximately 22 miles east of the town of Moxee, in Yakima County, Washington (Figure 1-1). The Project Site Control Boundary (~1,564 acres) is defined as the total of the leased areas and easements for the Project (Figure 1-1). Within the Project Site Control Boundary, a smaller Study Area was defined for biological, cultural, and physical resource surveys. The Maximum Project Extent (MPE) is defined as the area that contains the Project Footprint and additional construction areas. The larger extent of the MPE will allow for the shifting of project components, known as micro-siting, based on a final approved project design.

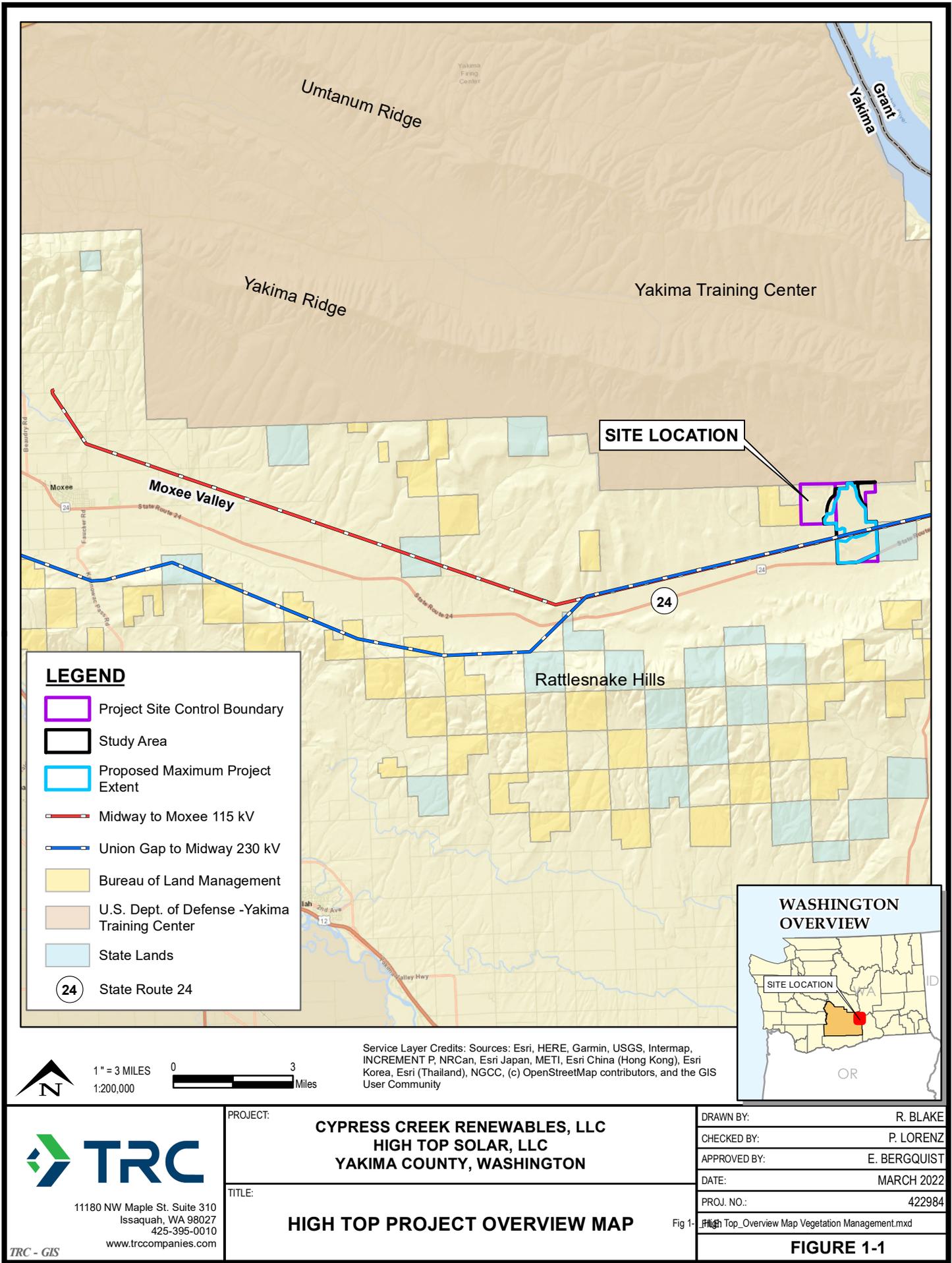
The Project will use solar photovoltaic panels organized in arrays and aggregated to an injection capacity limited to 80 megawatts of alternating current solar capacity at the point of interconnection to the electric power grid. It will interconnect through a dedicated switchyard located on the Project adjacent to PacifiCorp's Union Gap-Midway 230 kilovolt (kV) transmission line that runs through the southern part of the Project. PacifiCorp's Union Gap-Midway 230 kV transmission line connects to PacifiCorp's shared Midway substation, which is approximately nine miles east and north of the Project and to PacifiCorp's Union Gap substation, which is approximately 25 miles west of the Project. A security fence will be installed within 20 feet of the final approved locations of the panel arrays. The exact fence line located will be micro-sited based on the final approved design for the Project.

A Battery Energy Storage System (BESS) may be required for the Project. The BESS system will store energy from the Project or grid, which will be supplied to the electrical grid when needed. If required, the BESS will be located next to the Project substation (for alternating current coupled) or as smaller battery cabinets collocated throughout the Project Area at the inverter pad locations (for direct current coupled).

An Operations and Maintenance (O&M) trailer and employee parking will be located next to the Project substation. The trailer will be permanently located during the life of the Project and will include a bathroom. During construction, the employee parking area and the O&M trailer footprint will be used as a construction laydown yard for the Project. Access to the Project will be from SR-24 on the east side of the Project Area. The life of the Project is anticipated to be 40 years.

2.0 Purpose of this Plan

The vegetation management plan has been prepared to avoid or mitigate impacts to vegetation resources in the MPE and Project Footprint anticipated to result from construction and operation of the Project. The vegetation management plan provides best management practices (BMPs)



and objectives for the construction and operation activities. The vegetation management plan also includes noxious weed control methods to be implemented.

3.0 Existing Project Conditions

The Project is currently active rangeland. Three habitats were identified within the Project Area: cheatgrass dominated pasture and mixed environs, shrub-steppe, and disturbed/reclaimed (Figure 3-1). The cheatgrass dominated pasture and mixed environs habitat is the dominant habitat type in the MPE. The cheatgrass dominated pasture and mixed environs is located in previous cropland areas. Dominant vegetation includes weedy invasive forb and grass species such as cheatgrass (*Bromus tectorum*), flixweed (*Descurainia sophia*), tumbled mustard (*Sisymbrium altissimum*), and Russian thistle (*Salsola tragus*).

The shrub-steppe habitat is located outside areas that have been historically plowed in the Project Area. These areas have a higher cover of native grass, forb, and shrub species. This community is grazed and has a high cover of non-native invasive and weedy species including cheatgrass, blue mustard (*Chorispora tenella*), and bindweed (*Convolvulus arvensis*).

The disturbed/reclaimed vegetation area is located along the existing transmission line route and its associated access road. This habitat area is dominated by non-native invasive species including crested wheatgrass (*Agropyron cristatum*), cheatgrass, flixweed, and bulbous blue grass (*Poa bulbosa*).

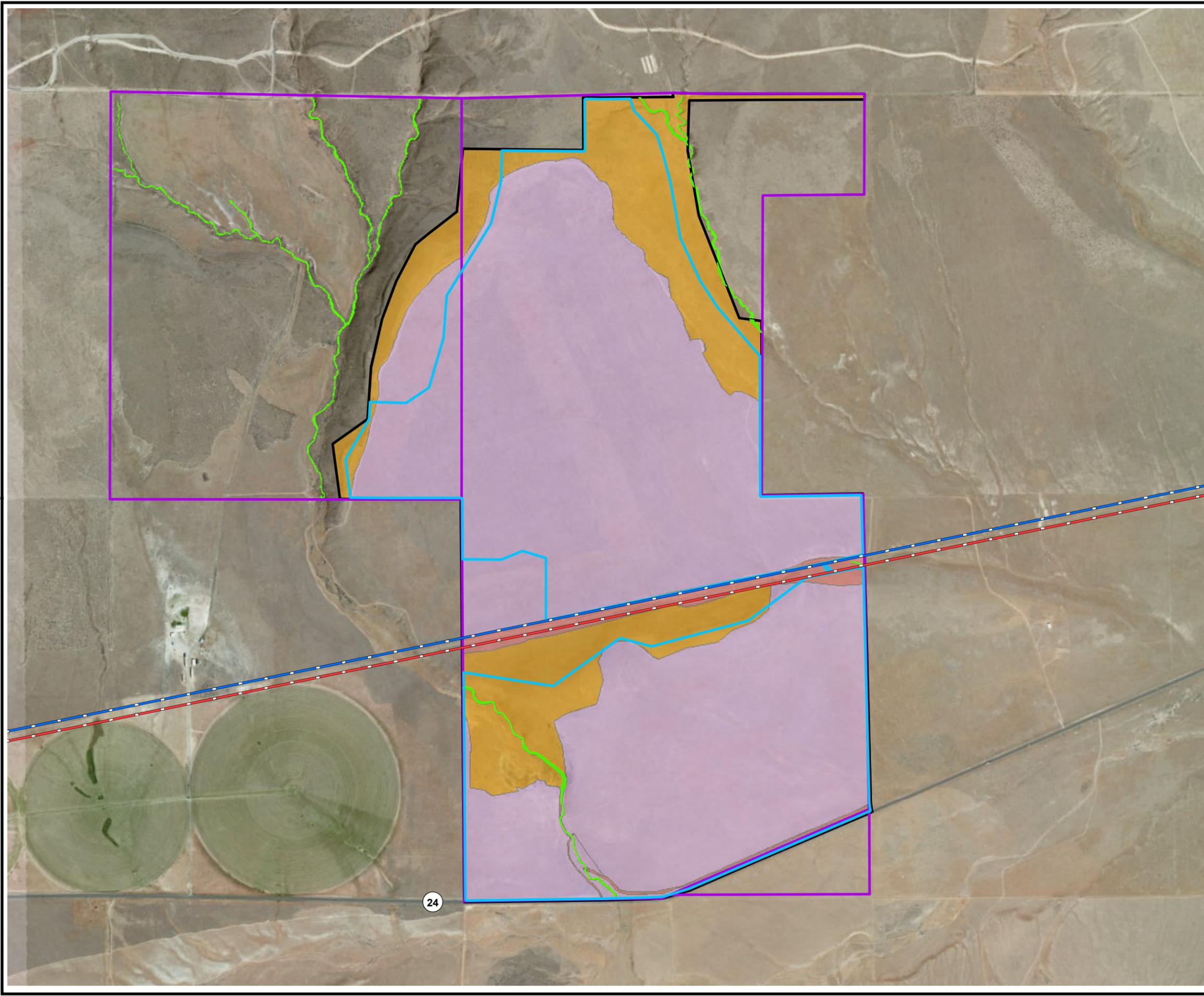
As noted in the draft Geotechnical Report (ANS 2020, ASC Attachment G), topsoil in the Project Area is approximately 4 to 12 inches throughout the Project Site Control Boundaries. Below the topsoil, the most common subsurface layer was a light brown silt with varying amounts of sand, gravel, and clay. Dense silty gravel and/or cobbles were frequently beneath the silt layer. A strong, slightly weathered basalt bedrock was found between one to 7.5 feet below grade.

3.1 Noxious Weeds

Noxious weeds are regulated pursuant to the Plant Protection Act (Pub. L. 106-224; superseded Federal Noxious Weed Act of 1974); Federal Executive Order 13751; Revised Code of Washington (RCW) 17.10 (Noxious Weeds – Control Boards); Washington Administrative Code Chapter 16-750 (State Noxious Weed List and Schedule of Monetary Penalties); RCW 17.04 (Weed Districts); and RCW 17.06 (Intercounty Weed Districts). The Washington State Noxious Weed Control Board advises the Washington State Department of Agriculture about noxious weed control, and coordinates and supports the Yakima County Weed Control Board, who enforces the control of noxious weeds on private and public lands (Washington State Noxious Weed Control Board 2021a).

The Washington State Noxious Weed Control Board categorizes noxious weed species into three classes; Class A, Class B, and Class C. Class A noxious weeds (totaling 38 species) are non-native species whose distribution in Washington State is still limited.

Class B noxious weeds (totaling 66 species) are non-native species whose distribution is limited to portions of Washington State but may be widespread in other parts. Class B noxious weeds are designated for mandatory control in regions where they are not yet widespread. Prevention of new infestations in these areas is the primary goal. In regions where a Class B species is already abundant, control is decided at the local level. Containment of these weeds is the primary goal so that they do not spread into uninfested regions. The Washington State Noxious



LEGEND

-  Project Site Control Boundary
-  Study Area
-  Proposed Maximum Project Extent
-  Cheatgrass Dominated Pasture and Mixed Environs
-  Disturbed/Reclaimed
-  Ephemeral Channel
-  Shrub-steppe
-  Midway to Moxee 115 kV
-  Union Gap to Midway 230 kV
-  State Route 24

NOTES

1. BASE MAP IMAGERY FROM ESRI/MAXAR 2019.



PROJECT:		CYPRESS CREEK RENEWABLES, LLC HIGH TOP SOLAR, LLC YAKIMA COUNTY, WASHINGTON	
TITLE:		HABITAT TYPES PRESENT IN THE HIGH TOP STUDY AREA	
DRAWN BY:	R. BLAKE	PROJ. NO.:	422984
CHECKED BY:	P. LORENZ	FIGURE 3-1	
APPROVED BY:	E. BERGQUIST		
DATE:	MARCH 2022		
		11180 NW Maple St. Suite 310 Issaquah, WA 98027 425-395-0010 www.trccompanies.com	
FILE NO.:	Fig 3-1 High Top Habitats Vegetation Management.mxd		

Weed Board or Yakima County Noxious Weed Board can designate a Class B noxious weed for mandatory control.

Class C noxious weeds (totaling 51 species) are either already widespread in Washington or are of special interest to the agricultural industry. The Class C status allows a county to enforce control if it is beneficial to that county, whereas other counties may choose to provide education or technical support for the removal or control of these weeds (Washington State Noxious Weed Control Board 2021b). Control is defined as the prevention of the dispersal of all propagating parts capable of forming new plants, including seeds. If the landowner does not control noxious weeds after receiving several notifications, the Yakima County Weed Board may control the weeds and bill the landowner or issue a civil infraction (Washington State Noxious Weed Control Board 2021a).

The 2019 Yakima County Noxious Weed List and Control Policy for all Class A, B, and C species is presented in Appendix A. Appendix A further identifies the noxious weed species known to occur in Yakima County, and which species require mandatory control or require education only (i.e., control not mandatory) (Yakima County Noxious Weed Control Board 2019). Appendix B lists only those noxious weed species known to occur in Yakima County and their associated control requirements.

The Washington State and Yakima County Noxious Weed Control Boards require that noxious weeds are actively managed on private lands. Species present in the MPE were recorded during the rare plant surveys. Based on the list of species observed, two invasive species were observed within the MPE: kochia (*Bassia scoparia*, Class B) and hoary cress (*Lepidium draba*, Class C). Kochia is present throughout the MPE, but predominantly is found in the cheatgrass dominated pasture and mixed environs. Hoary cress was found in limited quantities in the cheatgrass dominated pasture and mixed environs.

4.0 Vegetation Management

4.1 Construction

Actions will be taken to minimize impacts during construction including implementing BMPs and erosion control measures. Grading will be restricted to access roads (as needed), concrete pads, and facility footprints. Vegetation clearing will occur in construction areas, areas that are graded, and access roads. Vegetation clearing will be minimized to extent feasible to minimize surface disturbance and maintain existing vegetation communities. Erosion control measures will be implemented to avoid, minimize, or mitigate effects from surface-disturbing activities. Once surface disturbance activities have been completed, permanent stabilization measures will be initiated.

To the extent feasible, construction will maintain existing topography, natural drainage patterns and infiltration across the MPE. To restore the temporarily disturbed areas as a result of construction activities, reclamation measures will be implemented. If required, disturbed areas will be re-seeded with a native seed mix developed in consultation with Washington Department of Fish and Wildlife. Timing of reseeded will be dependent on the seed mix, site conditions, and weather. Additional reclamation measures will be determined at the end of construction and will be dependent on site conditions.

5.0 Operations & Maintenance

Vegetation management during O&M will be minimal and will predominantly consist of vegetation clearing. Vegetation clearing including mowing or stripping will be conducted in areas of permanent disturbance including the access roads, concrete pads for inverters and transformers, and facility foundations. Vegetation clearing timing will be determined by the weather, season, and site conditions and will seek to eliminate shading of the panels, vegetation touching the panels, maintain internal access for O&M, and emergency response, limit fire risk around transformers, inverters, and collectors, and promote native vegetation communities as feasible. O&M staff will routinely monitor the vegetation on site and determine the clearing schedule, noxious weed management timing, and vegetation restoration success.

To additionally minimize fire risks, the following BMPs will be implemented:

- Exposed electrical wires will run under the solar panels at the midpoint or higher than the center of the panel, and
- Gravel will be placed around the concrete pads under the inverters and transformers.

Additional fire minimization BMPs will be identified in consultation with the Yakima Fire Marshal. Noxious weed species will be controlled as described in Section 6.0 Noxious Weed Management.

6.0 Noxious Weed Management

An integrated approach to noxious weed management is critically important to the effective control of noxious weeds (Dewey et al. 2006). CCR will use an integrated noxious weed management strategy, using a combination of cultural, mechanical, and chemical controls throughout all phases of Project implementation, as applicable. Focus will be preventing the spread of noxious weeds as this is the most effective measure in controlling weed infestations (Dewey et al. 2006). Appropriate species- and site-specific treatments will be implemented in accordance with Yakima County Weed Board, the Washington Department of Agriculture, the Washington Department of Ecology requirements, and landowner agreements. A summary of species-specific treatment recommendations is included in Appendix C.

The following measures will be implemented during construction to minimize the spread and establishment of noxious weeds:

- Project construction personnel will undergo training on the identification of common noxious weeds in the region, weed management measures, and the importance of prevention prior to beginning work on the Project.
- Noxious weed locations will be marked prior to the start of site clearing activities.
- Cleared vegetation will not be placed or stored within known noxious weed locations.
- Stabilization and/or reclamation of disturbed ground will be implemented immediately after construction, or as soon as practicable during construction.
- Chemical or mechanical weed control measures may be implemented prior to construction, during construction, following surface disturbance, or during operation based on the noxious weed species and its associated growth habit and phenology.

-
- Appropriate species- and site-specific treatments will be implemented in accordance with Washington Department of Agriculture and Yakima County Board requirements and recommendations and landowner agreements.

6.1 Cultural Weed Controls

Cultural weed controls refer to any technique that involves maintaining field conditions such that noxious weeds are less likely to become established or spread. Cultural controls include soil stabilization, maintaining good soil fertility, selection of native seed mixes appropriate for various site conditions (including selection of well-adapted competitive forage species), over-seeding of desirable species, avoiding over-grazing to the extent practicable, and quarantines for identified noxious weed locations (Oregon State University 2020).

6.2 Mechanical Weed Controls

Mechanical weed controls refer to physical measures to remove noxious weeds, including mowing, chopping, and disking. These are effective as short-term measures for controlling noxious weeds and are especially effective when used repeatedly and in concert with other measures (Dewey et al. 2006). Implementing mechanical controls early in the growing season may prevent certain species from going to seed and spreading (Connett et al. 2017). Areas treated with mechanical controls may be subsequently treated with herbicide to ensure the species does not recolonize before native species can become established.

6.3 Chemical Weed Controls

Chemical weed controls refer to herbicide application. There are many types of herbicide and no one herbicide treatment is effective for all weed species. Selection of the appropriate chemical treatment methods must take the species life cycle and timing of treatment into account. In general, herbicide treatments tailored for specific species are most effective for controlling noxious weeds, especially when integrated with other weed control methods (Dewey et al. 2006).

CCR will select herbicides and treatment strategies that will be most effective against noxious weeds and least detrimental to desirable species. The herbicides used will follow recommendations and guidance from the U.S. Environmental Protection Agency (USEPA), Washington State Department of Agriculture, and the Yakima County Weed Board.

The following BMPs will be implemented for herbicide application.

- Herbicide application will be conducted by a certified pesticide applicator.
- Herbicide application will not occur during precipitation or when a precipitation event is forecasted within 24 hours.
- The use of herbicides will be limited within 200 feet of the mapped populations of Columbia milkvetch (*Astragalus columbianus*). The mapped populations are located outside the Project Area. The mapped populations will be flagged/fenced prior to construction.
- No herbicide spraying will occur when winds are greater than 15 miles an hour.
- CCR will consider impacts of herbicide application on sensitive areas, such as those containing suitable habitat for special status species, wetlands, and waterbodies, and

may elect to use mechanical control methods in these areas to provide additional short-term weed control and limit the establishment of noxious weed populations.

Species-specific preventative measures for kochia and hoary cress are provided in Appendix C. Monitoring of noxious weeds will also be conducted as part of ongoing operation inspections. Operations personnel will be trained in noxious weed identification and will document observations of noxious weeds during normal operations and maintenance inspections. Monitoring will be conducted at least annually. Identified noxious weed populations will be treated consistently with those measures applied post-construction.

7.0 References

- ANS. 2020. *High Top Draft Geotechnical Report*. Prepared for Cypress Creek Renewables, Santa Monica, CA.
- Connett, J.F., Latchinsky, A.V., and S.P. Schnell. 2017. *Wyoming Weed Control in Turf and Ornamentals: A Comprehensive IPM Approach for Commercial, Residential, and Schools*. B-1257. Accessed at: <https://wyoextension.org/parkcounty/wp-content/uploads/2016/03/Weed-Control-in-Turf-and-Ornamentals.pdf>
- Dewey, S.A., Enloe S.F., Menalled, F.D., Miller, S.D., Whitesides, R.E., and L. Johnson. 2006. *Weed Management Handbook 2006-2007: Montana, Utah, Wyoming*. Accessed at: http://www.uwyo.edu/uwe/programs/weed_management_handbook_files/weed_management_handbook.pdf
- Oregon State University. 2020. *Forage Information System, National Forage and Grasslands Curriculum*. Accessed at: <https://forages.oregonstate.edu/nfgc/eo/onlineforagecurriculum/instructormaterials/availabletopics/weeds/control>
- Washington State Noxious Weed Control Board. 2021a. *Washington's Noxious Weed Laws*. Accessed October 1, 2021, at: <https://www.nwcb.wa.gov/washingtons-noxious-weed-laws>
- _____. 2021b. *2021 Washington State Noxious Weed List*. Accessed October 1, 2021, at: https://www.nwcb.wa.gov/pdfs/2021-State-Weed-List_Common_Name-8.5x11.pdf
- Yakima County Noxious Weed Control Board. 2019. *Yakima County Noxious Weed List and Control Policy*. Accessed October 1, 2021, at: <https://www.nwcb.wa.gov/pdfs/2019-Yakima-County-Weed-List-Control-Policy.pdf>

Appendix A. 2019 Yakima County Noxious Weed List and Control Policy

2019
YAKIMA COUNTY NOXIOUS WEED LIST
& CONTROL POLICY

The YAKIMA COUNTY NOXIOUS WEED BOARD (here in after referred to as the BOARD) shall promote weed control by personal contact with LANDOWNERS and through public media. The BOARD will also promote weed control through public seminars, hearings, demonstrations, field tours, school lectures, and at regularly scheduled board meetings. LANDOWNERS are responsible for the control of noxious weeds on their property as per RCW 17.10.140 prior to blooming stage, seed maturity and the development of a root system that would enable said weeds to propagate and spread.

The BOARD shall encourage landowners to control noxious weeds on their own property through their own means, or by means commercially available. Control is defined as stopping all seed production, and containing the noxious weeds to the current infested locations. The Weed Board Coordinator and Inspectors will assist landowners in locating and identifying noxious weeds and encourage the landowner to report to the BOARD other noxious weed infestations. The BOARD, or AUTHORIZED STAFF, has the authority to enter all property within the jurisdiction of this BOARD for the purpose of administering the weed laws of the State of Washington under R.C.W. Chapter 17.10.160.

If the property owner does not promptly act to control the noxious weeds in accordance with R.C.W. 17.10 and this policy, the YAKIMA COUNTY NOXIOUS WEED BOARD may cause their being controlled at the expense of the landowner as per R.C.W. 17.10.170. Charges for regulatory work shall be incurred by the landowner based on the cost, including labor and materials and, if necessary, legal and administrative fees. Such expenses when necessary shall constitute a lien against the property after a hearing and determination has been made on such expense and approved by the BOARD.

The W.A.C. Chapter 16.750 constitutes the Washington State Noxious Weed List, which is classified as “A”, “B”, and “C” weeds. The following shall constitute Yakima County’s Noxious Weed List and control is required within Yakima County.

- All Class “A” Weeds
- Class “B” Weeds, (All designated & those listed)
- Class “C” Weeds, (listed)
- All underlined weeds are educational only & no control is required

The Yakima County Noxious Weed Board will conduct regularly scheduled meetings and will encourage public attendance and participation.

Resolution #55: The following requirements will be the policy for placing a weed on the County’s Noxious Weed List:

- A. The Weed Board shall announce the noxious weed list within the guidelines set forth in R.C.W. 17.10.090.
- B. The order in which a weed be submitted to the Board for consideration to be placed on the noxious weed list, the following information must be submitted to the Noxious Weed Board.
 - 1. Location of weed, with an estimation of acreage.
 - 2. Verification that adjacent property owners have been notified on the intent to have the weed placed on the Noxious Weed List.
 - 3. Characteristics of the weed in consideration.
- C. The Weed Board has the right to place the weed in question on a review and study list for a set period of time not to exceed one year and, at that time, make a policy statement on the weed in question.

YAKIMA COUNTY NOXIOUS WEED LIST FOR 2019

In accordance with R.C.W. 17.10 a County Noxious Weed List comprising the names of the following plants, which have been declared noxious by the State of Washington Noxious Weed Board, and Yakima County Weed Control Board. Said Board finds these plants to be weedy; highly destructive, competitive, or difficult to control by cultural or chemical practices. Said weeds shall comprise the NOXIOUS WEED LIST for Yakima County for 2019 or until another list is adopted by this Board.

YAKIMA COUNTY lies in REGION 5

ALL CLASS "A" NOXIOUS WEEDS (Mandatory Control) (** Known to be in Yakima County)

COMMON NAME:	SCIENTIFIC NAME:
common crupina	<i>Crupina vulgaris</i>
cordgrass, common	<i>Spartina anglica</i>
cordgrass, dense flower	<i>Spartina densiflora</i>
cordgrass, salt meadow	<i>Spartina patens</i>
cordgrass, smooth	<i>Spartina alterniflora</i>
dyer's woad**	<i>Isatis tinctoria</i>
eggleaf spurge	<i>Euphorbia oblongata</i>
false brome	<i>Brachypodium sylvaticum</i>
floating primrose-willow	<i>Ludwigia peploides</i>
flowering rush	<i>Butomus umbellatus</i>
French broom**	<i>Genista monspessulan</i>
garlic mustard	<i>Alliaria petiolata</i>
giant hogweed	<i>Heracleum mantegazzianum</i>
goatsrue	<i>Galega officinalis</i>
hydrilla	<i>Hydrilla verticillata</i>
Johnsongrass**	<i>Sorghum halepense</i>
knapweed, bighead**	<i>Centaurea macrocephala</i>
knapweed, Vochin	<i>Centaurea nigrescens</i>
kudzu	<i>Pueraria montana var. lobata</i>

COMMON NAME:	SCIENTIFIC NAME:
meadow clary	<i>Salvia pratensis</i>
oriental clematis**	<i>Clematis orientalis</i>
purple starthistle	<i>Centaurea calcitrapa</i>
reed sweetgrass	<i>Glyceria maxima</i>
ricefield bulrush	<i>Schoenoplectus mucronatus</i>
sage, clary	<i>Salvia sclarea</i>
sage, Mediterranean**	<i>Salvia aethiopis</i>
silverleaf nightshade	<i>Solanum elaeagnifolium</i>
Small-flowered jewelweed	<i>Impatiens parviflora</i>
Spanish broom**	<i>Spartium junceum</i>
Syrian bean-caper	<i>Zygophyllum fabago</i>
Texas blueweed**	<i>Helianthus ciliaris</i>
thistle, Italian	<i>Carduus pycnocephalus</i>
thistle, milk**	<i>Silybum marianum</i>
thistle, slenderflower	<i>Carduus tenuiflorus</i>
variable-leaf milfoil	<i>Myriophyllum heterophyllum</i>
wild four o'clock**	<i>Mirabilis nyctaginea</i>

CLASS "B" NOXIOUS WEEDS (**Known to be in Yakima County) (Class B designate-bd require mandatory control) (All underlined weeds are educational only & no control is required)

COMMON NAME:	SCIENTIFIC NAME:
blueweed bd	<i>Echium vulgare</i>
Brazilian elodea bd	<i>Egeria densa</i>
bugloss, annual bd	<i>Anchusa arvensis</i>
bugloss, common bd	<i>Anchusa officinalis</i>
camelthorn bd	<i>Alhagi maurorum</i>
common fennel bd, (except bulbing fennel)	<i>Foeniculum vulgare</i> (except <i>F. vulgare</i> var. <i>azoricum</i>)
common reed** bd (nonnative genotypes only)	<i>Phragmites australis</i>
<u>Dalmatian toadflax**</u>	<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>
European coltsfoot bd	<i>Tussilago farfara</i>
fanwort bd	<i>Cabomba caroliniana</i>
gorse bd	<i>Ulex europaeus</i>
grass-leaved arrowhead bd	<i>Sagittaria graminea</i>
hairy willow-herb** bd	<i>Epilobium hirsutum</i>
hawkweed oxtongue bd	<i>Picris hieracioides</i>
hawkweed, orange** bd	<i>Hieracium aurantiacum</i>
hawkweeds: All nonnative species and hybrids of the meadow subgenus	<i>Hieracium</i> , subgenus <i>Pilosella</i>
hawkweeds: All nonnative species and hybrids of the wall subgenus	<i>Hieracium</i> , subgenus <i>Hieracium</i>
herb-Robert bd	<i>Geranium robertianum</i>
hoary alyssum bd	<i>Berteroa incana</i>
houndstongue** bd	<i>Cynoglossum officinale</i>
indigobush bd	<i>Amorpha fruticosa</i>
knapweed, black bd	<i>Centaurea nigra</i>
knapweed, brown bd	<i>Centaurea jacea</i>
<u>knapweed, diffuse **</u>	<i>Centaurea diffusa</i>
Knapweed, spotted**bd	<i>Centaurea stoebe</i>
knapweed, meadow** bd	<i>Centaurea x moncktonii</i>
<u>knapweed, Russian **</u>	<i>Rhaponticum repens</i>
<u>knotweed, Bohemian</u>	<i>Polygonum x bohemicum</i>

COMMON NAME:	SCIENTIFIC NAME:
knotweed, giant **bd	<i>Polygonum sachalinense</i>
knotweed, Himalayan bd	<i>Persicaria wallichii</i>
<u>kochia **</u>	<i>Bassia scoparia</i>
knotweed, Japanese** bd	<i>Polygonum cuspidatum</i>
loosestrife, garden bd	<i>Lysimachia vulgaris</i>
loosestrife, purple** bd	<i>Lythrum salicaria</i>
loosestrife, wand bd	<i>Lythrum virgatum</i>
Malta starthistle bd	<i>Centaurea melitensis</i>
parrotfeather** bd	<i>Myriophyllum aquaticum</i>
<u>perennial pepperweed**</u>	<i>Lepidium latifolium</i>
<u>poison hemlock **</u>	<i>Conium maculatum</i>
policeman's helmet bd	<i>Impatiens glandulifera</i>
<u>puncturevine **</u>	<i>Tribulus terrestris</i>
ravenna grass**	<i>Saccharum ravennae</i>
rush skeletonweed** bd	<i>Chondrilla juncea</i>
saltcedar **bd (unless intentionally planted pre 2004)	<i>Tamarix ramosissima</i>
Scotch broom **bd	<i>Cytisus scoparius</i>
shiny geranium bd	<i>Geranium lucidum</i>
spurge flax bd	<i>Thymelaea passerine</i>
spurge laurel bd	<i>Daphne laureola</i>
spurge, leafy bd	<i>Euphorbia virgata</i>
spurge, myrtle** bd	<i>Euphorbia myrsinites</i>
<u>sulfur cinquefoil **</u>	<i>Potentilla recta</i>
tansy ragwort** bd	<i>Jacobaea vulgaris</i>
thistle, musk** bd	<i>Carduus nutans</i>
thistle, plumeless bd	<i>Carduus acanthoides</i>
thistle, Scotch** bd	<i>Onopordum acanthium</i>
water primrose bd	<i>Ludwigia hexapetala</i>
white bryony bd	<i>Bryonia alba</i>
wild chervil **bd	<i>Anthriscus sylvestris</i>
yellow archangel** bd	<i>Lamiastrum galeobdolon</i>
yellow floating heart** bd	<i>Nymphoides peltata</i>
<u>yellow nutsedge **</u>	<i>Cyperus esculentus</i>
yellow starthistle ** bd	<i>Centaurea solstitialis</i>

Appendix B. Noxious Weed Species Known to Occur in Yakima County

Common Name ¹	Scientific Name	Species Designation	Control Requirement
Wild chervil	<i>Anthriscus sylvestris</i>	B	Mandatory Control
Absinth wormwood	<i>Artemisia absinthium</i>	C	Educational Only; No Control Required
Italian arum	<i>Arum italicum</i>	C	Educational Only; No Control Required
Kochia ¹	<i>Bassia scoparia</i>	B	Educational Only; No Control Required
Musk thistle	<i>Carduus nutans</i>	B	Mandatory Control
Diffuse knapweed	<i>Centaurea diffusa</i>	B	Educational Only; No Control Required
Bighead knapweed	<i>Centaurea macrocephala</i>	A	Mandatory Control
Yellow starthistle	<i>Centaurea solstitialis</i>	B	Mandatory Control
Spotted knapweed	<i>Centaurea stoebe</i>	B	Mandatory Control
Meadow knapweed	<i>Centaurea x moncktonii</i>	B	Mandatory Control
Rush skeletonweed	<i>Chondrilla juncea</i>	B	Mandatory Control
Canada thistle	<i>Cirsium arvense</i>	C	Mandatory Control
Oriental clematis	<i>Clematis orientalis</i>	A	Mandatory Control
Old man's beard	<i>Clematis vitalba</i>	C	Mandatory Control
Poison hemlock	<i>Conium maculatum</i>	B	Mandatory Control
Jubata grass	<i>Cortaderia jubata</i>	C	Educational Only; No Control Required
Pampas grass	<i>Cortaderia selloana</i>	C	Educational Only; No Control Required
Smoothseed alfalfa dodder	<i>Cuscuta approximata</i>	C	Educational Only; No Control Required
Houndstongue	<i>Cynoglossum officinale</i>	B	Mandatory Control
Yellow nutsedge	<i>Cyperus esculentus</i>	B	Educational Only; No Control Required
Scotch broom	<i>Cytisus scoparius</i>	B	Mandatory Control
Hairy willow-herb	<i>Epilobium hirsutum</i>	B	Mandatory Control
Myrtle spurge	<i>Euphorbia myrsinites</i>	B	Mandatory Control
French broom	<i>Genista monspessulan</i>	A	Mandatory Control
Texas blueweed	<i>Helianthus ciliaris</i>	A	Mandatory Control
Orange hawkweed	<i>Hieracium aurantiacum</i>	B	Mandatory Control
Black henbane	<i>Hyoscyamus niger</i>	C	Mandatory Control
Dyer's woad	<i>Isatis tinctoria</i>	A	Mandatory Control

Common Name ¹	Scientific Name	Species Designation	Control Requirement
Tansy ragwort	<i>Jacobaea vulgaris</i>	B	Mandatory Control
Yellow archangel	<i>Lamium galeobdolon</i>	B	Mandatory Control
Hairy whitetop	<i>Lepidium appelianum</i>	C	Educational Only; No Control Required
Hoary cress ¹	<i>Lepidium draba</i>	C	Educational Only; No Control Required
Perennial pepperweed	<i>Lepidium latifolium</i>	B	Mandatory Control
Oxeye daisy	<i>Leucanthemum vulgare</i>	C	Mandatory Control
Dalmatian toadflax	<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	B	Educational Only; No Control Required
Purple loosestrife	<i>Lythrum salicaria</i>	B	Mandatory Control
Scentless mayweed	<i>Matricaria perforata</i>	C	Educational Only; No Control Required
Wild four o'clock	<i>Mirabilis nyctaginea</i>	A	Mandatory Control
Parrotfeather	<i>Myriophyllum aquaticum</i>	B	Mandatory Control
Yellow floating heart	<i>Nymphoides peltata</i>	B	Mandatory Control
Scotch thistle	<i>Onopordum acanthium</i>	B	Mandatory Control
Common reed	<i>Phragmites australis</i>	B	Mandatory Control
Japanese knotweed	<i>Polygonum cuspidatum</i>	B	Mandatory Control
Giant knotweed	<i>Polygonum sachalinense</i>	B	Mandatory Control
Sulfur cinquefoil	<i>Potentilla recta</i>	B	Educational Only; No Control Required
Russian knapweed	<i>Rhaponticum repens</i>	B	Educational Only; No Control Required
Ravenna grass	<i>Saccharum ravennae</i>	B	Mandatory Control
Mediterranean sage	<i>Salvia aethiopsis</i>	A	Mandatory Control
Cereal rye	<i>Secale cereale</i>	C	Mandatory Control
Milk thistle	<i>Silybum marianum</i>	A	Mandatory Control
Perennial sowthistle	<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	C	Mandatory Control
Johnsongrass	<i>Sorghum halepense</i>	A	Mandatory Control
Spanish broom	<i>Spartium junceum</i>	A	Mandatory Control
Swainsonpea	<i>Sphaerophysa salsula</i>	C	Mandatory Control
Saltcedar (unless intentionally planted)	<i>Tamarix ramosissima</i>	B	Mandatory Control

Common Name¹	Scientific Name	Species Designation	Control Requirement
Puncturevine	<i>Tribulus terrestris</i>	B	Educational Only; No Control Required
Spiny cocklebur	<i>Xanthium spinosum</i>	C	Mandatory Control

1 - Noxious weed species identified within Project Area.

Source: Yakima County Noxious Weed Control Board. 2019. Yakima County Noxious Weed List and Control Policy. Accessed October 1, 2021, at: <https://www.nwcb.wa.gov/pdfs/2019-Yakima-County-Weed-List-Control-Policy.pdf>

Appendix C. Integrated Weed Management

High Top Solar, LLC Project Integrated Weed Management

C-1.0 Kochia

C-1.1 Description

Kochia (*Bassia scoparia*) is an annual, drought-tolerant forb with a deep root. Kochia has erect, branched stems that are three to seven feet long, and typically smooth below but hairy above. The species has alternate simple leaves, one to two inches long with hairy margins, with small green flowers in late summer, which lack petals and are found in clusters. Kochia has small fruits with an oval, brown to black seed. When the species becomes mature the plant breaks off at the base and becomes a tumbleweed which assists the plant with seed dispersal (Washington Invasive Species Council 2016; USDA NRCS 2009).

Kochia was introduced to the United States in the early 1900s as a garden ornamental native to central and eastern Europe and Asia. Kochia is particularly adapted to arid and semi-arid regions and can be found in a very wide range of temperatures and climatic regions. The species is common in rangelands, pastures, cultivated fields, disturbed sites, gardens, roadsides, ditch banks, and in soils with high salinity (Washington Invasive Species Council 2016; Washington State Noxious Weed Control Board 2021a; USDA NRCS 2009).



Figure C-1 (left): Young kochia plant (Photo courtesy of Washington Invasive Species Council)

Figure C-2 (right): Kochia stem and flowers (Photo courtesy of Washington Invasive Species Council)



Figure C-3 (left): Mature kochia plants. (Photo courtesy of Washington State Noxious Weed Control Board)

Figure C-4 (right): Kochia infestation. (Photo courtesy of Washington State Noxious Weed Control Board)

According to the Washington State Noxious Weed Law, RCW 17.10, kochia is a Class B noxious weed. Yakima County chooses to provide education or technical support to facilitate the identification and control of this species. Eradication of this species is not required in Yakima County, and therefore, treatment methods are not presented for this species herein (Washington State Noxious Weed Control Board 2021b).

C-2.0 Hoary Cress

C-2.1 Description

Hoary cress (*Lepidium draba*, *Cardaria draba*) is a deep-rooted perennial forb with a spreading root system from which many aerial shoots are produced. Leaves are blue-green in color and lance-shaped. Plants can grow up to two feet tall. Plants emerge very early in the spring, bloom between April and July, and set seed by mid-summer. Plants have many somewhat flat-topped clusters of white flowers; each flower has four petals. Seed pods (silicles) are inflated and generally rounded to somewhat heart-shaped (especially at the base) and hairless. Seeds are dark brown and two millimeters long. One mature plant can produce 1,200 to 4,800 seeds. Hoary cress reproduces from both root fragments and seed (Washington State Noxious Weed Control Board 2021c).

Hoary cress is a highly competitive plant forming a monoculture, and once established, it easily displaces native vegetation. The species occupies disturbed areas, pastures, roadsides, alkaline and saline soils, and along riverbanks and other waterways (Washington State Noxious Weed Control Board 2021c).



Figure C-5 (left): Hoary cress flowering individuals. (Photo courtesy of Washington State University)

Figure C-6 (right): Hoary cress seeding individual. (Photo courtesy of Washington State University)



Figure C-7: Hoary cress infestation. (Photo courtesy of Washington State University)

According to Washington State Noxious Weed Law, RCW 17.10, hoary cress is a Class C noxious weed. Yakima County chooses to provide education or technical support to facilitate the identification and control of this species. Eradication of this species is not required in Yakima County, and therefore, treatment methods are not presented for this species herein (Washington State Noxious Weed Control Board 2021b).

C-6.0 References

King County. 2010. King County Noxious Weed Control Program, Common Reed (*Phragmites australis*) Best Management Practices. January 2010. Available online at: <https://your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/common-reed-phragmites-control.pdf>

-
- _____. 2018. Phragmites Identification and Control. Available online at:
<https://kingcounty.gov/services/environment/animals-and-plants/noxious-weeds/weed-identification/phragmites.aspx>
- Penn State (Penn State) College of Agricultural Sciences. 2021. Invasive Plant Species Management – Common Reed (*Phragmites australis*). Available online at:
file:///C:/Users/abcornell/Downloads/ISM_QS_2_PHRCO-3.pdf
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2009. Plant Fact Sheet - Burningbush (*Bassia scoparia*). Available online at:
https://plants.usda.gov/DocumentLibrary/factsheet/pdf/fs_basc5.pdf
- Washington Invasive Species Council. 2016. Kochia (*Bassia scoparia*). Available online at:
<https://invasivespecies.wa.gov/wp-content/uploads/2019/07/Kochia-FactSheet.pdf>
- Washington State Noxious Weed Control Board. 2021a. Kochia (*Bassia scoparia*) Fact Sheet. Available online at: <https://www.nwcb.wa.gov/weeds/kochia>
- _____. 2021b. Washington State Noxious Weed List. Available online at:
https://www.nwcb.wa.gov/pdfs/2021-State-Weed-List_Common_Name-8.5x11.pdf
- _____. 2021c. Hoary Cress (*Lepidium draba*) Fact Sheet. Available online at:
<https://www.nwcb.wa.gov/weeds/hoary-cress>
- _____. 2021d. Common Reed (*Phragmites australis*) Fact Sheet. Available online at:
<https://www.nwcb.wa.gov/weeds/common-reed>