DESERT CLAIM WIND POWER LLC.

DESERT CLAIM WIND POWER PROJECT
WETLAND DELINEATION AND ANALYSIS REPORT

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

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1 INTRODUCTION

Grette Associates is under contract to Desert Claim Wind Power, LLC (Desert Claim) to verify wetlands previously identified by another consultant within the Desert Claim Wind Power Project (Project) as well as identify and delineate any wetlands that were not captured previously. The Project Site (approximately 5,250 acres in size) is located in Kittitas County approximately eight miles northwest of Ellensburg, Washington (Figure 1) and encompasses portions of Sections 17, 18, 19, 20, 21, 29, and 30, Township 19 North, Range 18 East, W. M., and a portion of Section 13, Township 19 North, Range 17 East, W.M. The term "Project Site" is used to describe this large area.

The purpose of this report is to document the results of the wetland identifications and delineations that Grette Associates completed in 2017 and 2018. This included a verification of the previously delineated critical areas (i.e. wetlands and streams) that are within 200 feet of proposed turbines, roads, collection lines and buildings (Project footprint) in support of the Project obtaining state and federal environmental permits. This report is intended to provide baseline information with respect to wetlands and streams. Additional details regarding the Project, as well as proposed mitigation, will be provided under separate cover.

The Project includes improvements to county and federal road rights-of-way along U.S. Highway 97, Smithson Road, and Howard Road in order to provide adequate access for over-size construction and materials transport equipment (Figure 2). Road improvements to provide access to the Project site would be located within Sections 29 and 30, Township 19 North, Range 18 East, W.M. and Section 25, Township 19 North, Range 17 East, W.M.

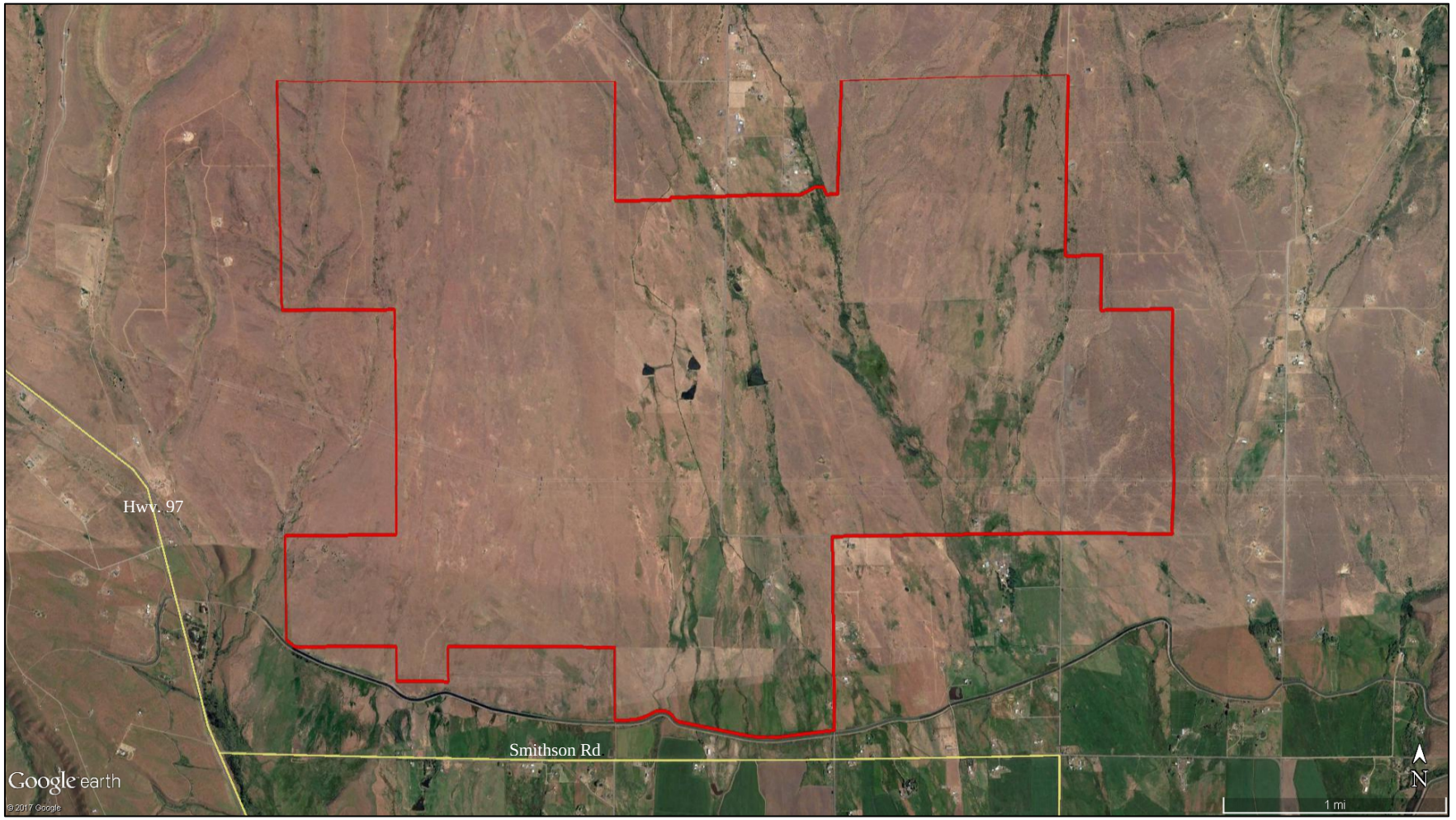
2 DELINEATION SUMMARY

Grette Associates wetland specialists visited the Project site on July 6, 7, 10, 11, and 13, September 20, 21, 27, and 28, and November 11, 29 and 30, 2017, as well as April 13, 2018, to verify the wetland status and locations of wetlands and streams as defined by Title 17A of the Kittitas County Code (KCC). All wetlands and streams within 200 feet of the Project footprint were verified and/or visually assessed.

During Grette Associates' field investigations, staff collected wetland delineation data on 74 wetland features (Table 1) that are situated in or near the Project footprint which contained all three wetland criteria defined in the U.S. Army Corps of Engineers' (USACE) *Federal Wetland Delineation Manual* (1987), and the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (2008).

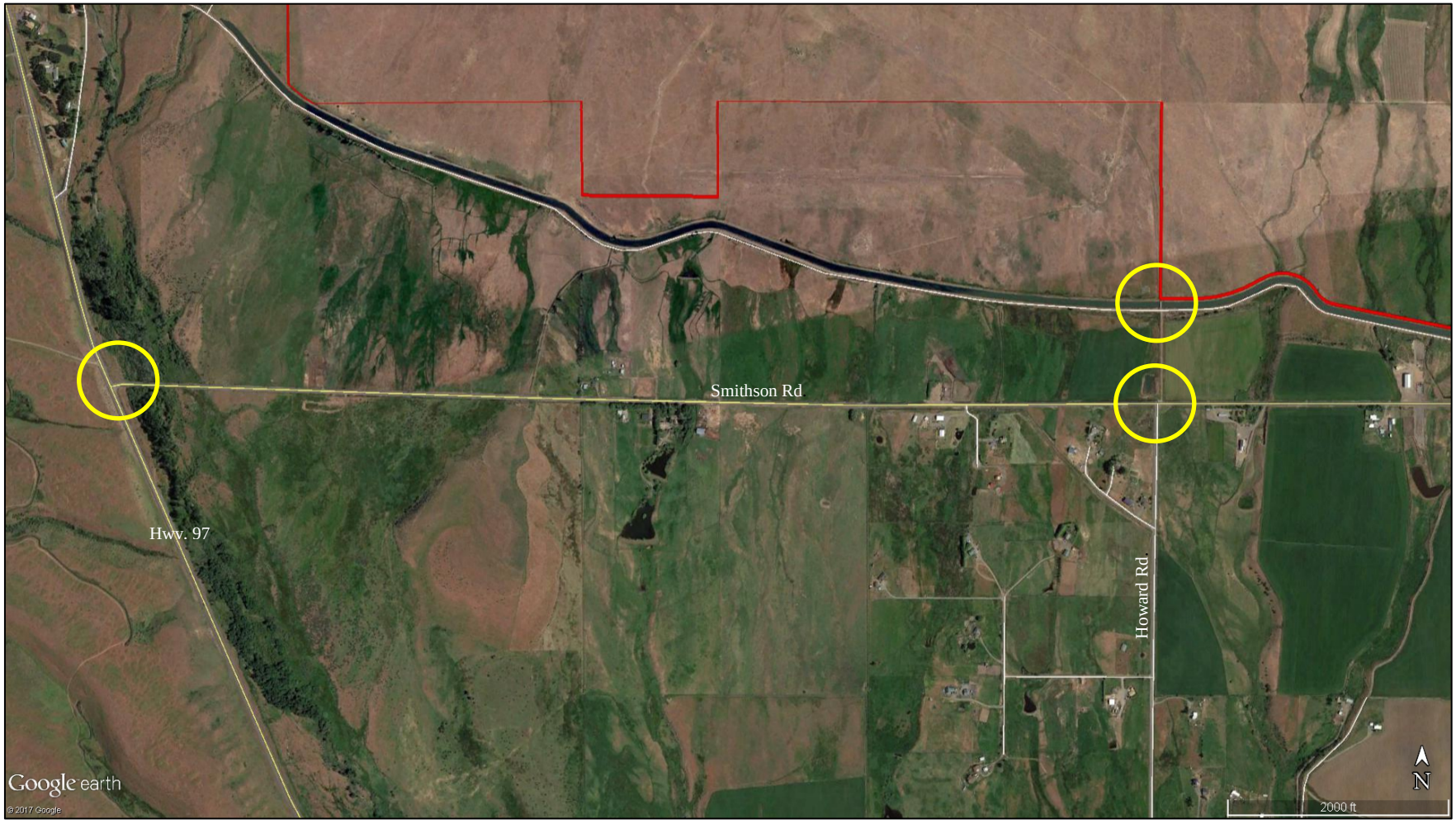
A wetland delineation map is provided for reference in Appendix A; copies of the field data sheets are provided in Appendix B; copies of the wetland rating forms are provided in Appendix C; and the queried database figures utilized for this report are provided in Appendix D.

Figure 1. Vicinity map



Note: Figure 1 identifies the Project site (approximate Project boundary shown in red).

Figure 2. Road improvement locations



Note: The yellow circles identify the locations of the necessary road improvements at the intersection of U.S. Highway 97 and Smithson Rd., at the intersection of Howard Rd. and Smithson Rd., and at the existing bridge crossing north of the intersection of Smithson Rd. and Howard Rd.

Wetlands were rated according to Section 17.32.035.01 of the KCC and the Washington State Department of Ecology's (Ecology) *Washington State Wetland Rating System for Eastern WA – 2014 Update* (Hruby 2014).

In addition to the identified wetlands, 22 streams were verified according to the guidance in Ecology's *Determining OHWM for Shoreline Management Act Compliance in Washington State* (Anderson et al. 2016). Please refer to Table 2 for a summary of the streams identified in or within 200 feet of the Project footprint.

Table 1. Wetland summary

Feature	Approx. Size (Acres)[1]	Cowardin Class[2]	HGM Class	Wetland Category	Buffer Width[3]
Reecer Cr.	238.12	PEM/SS/FO	Riverine	I	150 ft.
First Cr.[4]	39.34	PEM/SS	Riverine	II	100 ft.
N2	0.07	PME	Slope	III	75 ft.
R0	50.03	PEM/SS	Slope	III	75 ft.
R1	25.76	PEM/SS	Riverine	II	100 ft.
R3	1.99	PEM	Slope	III	75 ft.
R18	0.33	PEM	Slope	IV	50 ft.
R19	41.51	PEM/SS	Riverine	II	100 ft.
R20	0.18	PEM	Slope	IV	50 ft.
R22	0.05	PEM	Slope	IV	50 ft.
R23	12.69	PEM	Riverine	II	100 ft.
R25[4]	15.99	PEM/SS	Slope	III	75 ft.
R27[4]	26.67	PEM/SS	Riverine	II	100 ft.
R28	0.63	PEM	Slope	III	75 ft.
R29[4]	0.35	PEM	Slope	III	75 ft.
R31	0.15	PEM	Riverine	III	75 ft.
R35[4]	2.16	PEM/SS	Depressional	II	100 ft.
R41	3.55	PEM/SS	Depressional	II	100 ft.
R43[4]	2.30	PEM	Slope	III	75 ft.
R44[4]	11.74	PEM	Riverine	II	100 ft.
R45	11.62	PEM	Riverine	II	100 ft.
R51	2.06	PEM	Riverine	III	75 ft.
R58[4]	2.88	PEM/SS	Slope	III	75 ft.
R63[4]	11.00	PEM	Riverine	III	75 ft.
R67	0.04	PEM	Slope	III	75 ft.
R68	0.57	PEM/SS	Slope	III	75 ft.
R70[4]	0.49	PEM/SS	Slope	III	75 ft.
R72	9.95	PEM	Riverine	III	75 ft.
R77	0.51	PEM	Slope	III	75 ft.
R78	15.15	PEM	Riverine	III	75 ft.
R80	0.48	PEM	Slope	III	75 ft.
R81[4]	8.86	PEM	Depressional	III	75 ft.
R82	2.20	PEM	Depressional	III	75 ft.
R84	0.19	PEM	Slope	III	75 ft.
R85	0.23	PEM	Slope	III	75 ft.
R88[4]	0.62	PEM	Slope	III	75 ft.
R89	0.05	PEM	Slope	III	75 ft.
R90[4]	0.11	PEM	Slope	III	75 ft.

Feature	Approx. Size (Acres)[1]	Cowardin Class[2]	HGM Class	Wetland Category	Buffer Width[3]
R91	0.11	PEM	Riverine	III	75 ft.
R95N	7.17	PEM	Slope	III	75 ft.
R95S[4]	0.18	PEM	Slope	III	75 ft.
R97	0.82	PEM	Depressional	III	75 ft.
R101[4]	0.10	PEM/SS	Riverine	III	75 ft.
R104[4]	0.48	PEM	Riverine	III	75 ft.
R106	0.47	PEM	Slope	III	75 ft.
R108[4]	0.19	PEM	Riverine	III	75 ft.
R109	1.03	PEM	Slope	III	75 ft.
R112[4]	4.01	PEM	Slope	III	75 ft.
R113[4]	2.95	PEM	Riverine	III	75 ft.
R115	22.45	PEM	Riverine	III	75 ft.
R116[4]	4.14	PEM	Slope	III	75 ft.
R117[4]	0.31	PEM	Slope	III	75 ft.
R129	0.12	PEM	Slope	III	75 ft.
R131[4]	16.78	PEM	Slope	III	75 ft.
R133[4]	0.59	PEM	Slope	III	75 ft.
R135[4]	2.56	PEM	Riverine	III	75 ft.
R137	3.47	PEM	Riverine	III	75 ft.
R139[4]	138.67	PEM	Riverine	II	100 ft.
R154	0.28	PEM	Depressional	III	75 ft.
R169[4]	0.19	PEM	Riverine	II	100 ft.
R173	1.25	PEM	Slope	III	75 ft.
R301	0.22	PEM/SS	Slope	III	75 ft.
R302	0.40	PEM/SS	Slope	III	75 ft.
R400	0.47	PEM	Slope	III	75 ft.
R401[4]	4.39	PEM	Slope	III	75 ft.
R404[5]	0.05	PEM	Depressional	III	75 ft.
R405	0.02	PEM	Depressional	III	75 ft.
R406	0.16	PEM	Depressional	III	75 ft.
R407[5]	1.8	PEM	Depressional	III	75 ft.
R408[5]	3.2	PEM/SS	Depressional	III	75 ft.
R409[5]	0.40	PEM/SS	Depressional	III	75 ft.
R410[5]	17.19	PEM/SS/FO	Riverine	I	150 ft.
R411[5]	125.27	PEM/SS/FO	Riverine	I	150 ft.
R412	0.56	PEM	Slope	III	75 ft.

[1] Approximate size within the Project site.
[2]Classification based on Cowardin et. al. (1979).
[3] Based on KCC. A moderate land use intensity was used for determining the appropriate buffer width.
[4] Wetlands located within 80 ft. of Project footprint.
[5] Wetland located outside of the Project site. These features are situated within 200 feet of the necessary road improvements needed to access the site. Their sizes are approximate.

Table 2. Stream summary

Feature	Flow Regime	Stream Type[1]	Buffer Width[2]
S-1	Perennial	F	100 ft.
S-2	Seasonal	Ns	30 ft.
S-3	Seasonal	Ns	30 ft.
S-4 (First Creek)	Perennial	F	100 ft.
S-5	Seasonal	Ns	30 ft.
S-6N	Seasonal	Ns	30 ft.
S-6S	Perennial	F	100 ft.
S-7	Seasonal	Ns	30 ft.
S-8	Seasonal	Ns	30 ft.
S-9	Seasonal	Ns	30 ft.
S-10	Seasonal	Ns	30 ft.
S-11	Seasonal	Ns	30 ft.
S-12	Seasonal	Ns	30 ft.
S-13	Seasonal	Ns	30 ft.
S-14	Seasonal	Ns	30 ft.
S-15	Seasonal	Ns	30 ft.
S-16	Seasonal	Ns	30 ft.
S-17	Seasonal	Ns	30 ft.
S-18	Seasonal	Ns	30 ft.
S-19	Seasonal	F	100 ft.
S-20	Seasonal	F	100 ft.
S-21	Seasonal	Ns	30 ft.
S-22 (Dry Creek)	Perennial	F	100 ft.

[1] Stream typing was determined according to WAC 222-16-030.
[2] Stream buffers were determined according to KCC.

During the field efforts performed on April 12 and 13, 2018 Grette Associates completed a visual hydrology assessment and each of the wetland and/or stream crossing locations to verify surface water conditions during spring runoff. Photographs were taken at each location to illustrate site conditions (Appendix E).

3 BACKGROUND

3.1 National Wetlands Inventory

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) was queried to determine if previously-identified wetlands are present on or near the Project Site (USFWS 2017). According to the NWI Interactive Online Mapper, there are wetlands identified on or near the Project Site by the NWI (Appendix D). A majority of the identified wetlands appear to be associated with Reecer Creek and the unnamed perennial and seasonal streams.

3.2 Local Critical Areas Inventory

Kittitas County's Compass 3.0 online mapper was queried to determine if previously-identified wetlands and streams are on or near the Project Site (Kittitas County 2017). Based on the review of Kittitas' mapper, it appears that the county utilizes NWI's database to identify potential wetland areas (Appendix D). Wetlands and streams identified on the site by the County's mapper correspond to features identified by the NWI.

3.3 Sensitive Wildlife and Plants

The Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) database on-line mapper was queried to determine if state or federally listed fish or wildlife species occur on or near the Project Site (WDFW 2017a). According to the PHS database, the Project site is mapped as a priority area (concentration area, management buffer, etc.) for mule deer (*Odocoileus hemionus*), Northern spotted owl (*Strix occidentalis*), rainbow trout (*Oncorhynchus mykiss*), and Western small-footed myotis (*Myotis ciliolabrum*). In addition, the PHS database maps the potential wetland areas identified by NWI.

In addition to WDFW's PHS database, their SalmonScape on-line mapper was queried to determine if the identified streams are mapped as providing fish habitat for salmonids (WDFW 2017b). According to WDFW, no streams within the Project site are mapped as providing habitat for salmonids listed by SalmonScape (Appendix D).

The Washington Department of Natural Resources' (WDNR) Natural Heritage Information System was queried to determine if the Project site occurs in a location reported to contain high quality natural heritage wetland occurrences or occurrences of natural heritage features commonly associated with wetlands. According to WDNR data dated February 6, 2017, there are no records of rare plants or high quality native ecosystems occurring on or in the vicinity of the Project site.

3.4 Forest Practices Application Mapping

The Washington Department of Natural Resources' (WDNR) Forest Practices Application Mapping Tool on-line mapper was queried to identify the water typing of any streams mapped by WDNR (WDNR 2017). According to WDNR, there are perennial and seasonal fish habitat and non-fish habitat streams within the Project site (Appendix D). In general, the seasonal streams are mapped as non-fish habitat while the perennial streams are mapped as potential fish habitat (Table 2).

3.5 Soil Information

According to the Natural Resources Conservation Service's (NRCS) Web Soil Survey (NRCS 2017a), there are 21 mapped soil units within the general area of the Project site (Appendix D). Of the 21 mapped soil units, only Weirman-Kayak complex (0-5 percent slopes) is mapped as a hydric soil in Washington State (NRCS 2017a). Weirman-Kayak complex (Map Unit No. 882) is generally located in areas where streams are mapped (Appendix D).

3.6 Hydrology

Primary hydrologic support to the general area surrounding the Project is provided by seasonal runoff from snowmelt and direct precipitation. The Project site is situated on the foothills south of Table Mountain. As the snow melts on the site and from higher elevations in the spring, runoff flows south through swale (ephemeral) and channel (seasonal and perennial) features situated within the Project site. During seasonal high flows, some of these features overflow their banks due to the lack of gradient of the feature and the volume of flow.

In general, direct precipitation that falls on the site flows toward the numerous ephemeral, seasonal, and perennial streams, and ultimately toward the Yakima River approximately six miles south of the site.

4 METHODS

The Project Site was traversed and data were collected to confirm wetland boundaries. All wetlands within approximately 80 feet of the Project footprint were formally verified according to the procedures described in the U.S. Army Corps of Engineers (USACE) *Federal Wetland Delineation Manual* (1987), and the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (2008). Paired data plots and soil test pits were excavated to evaluate wetland and upland conditions. Guidance from the USACE's *Regional Supplement* was used to evaluate the data at each data point. Data plots were established in and adjacent to the wetlands. The location of each data plot was recorded using a differential global positioning system (dGPS).

Plants were determined to be more or less associated with wetlands based on their wetland indicator (FAC) status. The percent dominance for each plant strata was determined using the 50-20 Rule, which is the recommended method for selecting dominant species from a plant community in instances where quantitative data are available (USACE 2008). In utilizing this rule, dominants are the most abundant species that individually or collectively accounts for more than 50 percent of the total coverage of vegetation in the stratum plus any other species that, by itself accounts for at least 20 percent of the total.

In addition, the wetlands that are located beyond 80 feet of the Project footprint but within 200 feet were visually assessed for analysis and rating purposes only (Table 1). Paired data plots were not evaluated for the wetlands that are beyond 80 feet of the Project Site given the distance of the Project footprint from the applicable wetland buffers and the time frame of the previous wetland delineation work that occurred onsite (~ 2015 – 2016).

4.1 Hydrophytic Vegetation

The U.S. Fish and Wildlife Service (USFWS) and the NWI have established a rating system that has been applied to commonly occurring plant species on the basis of their frequency of occurrence in wetlands (Table 3). Species indicator status expresses the range in which plants may occur in wetlands and non-wetlands (uplands). Under this system, vegetation is considered hydrophytic when there is an indicator status of facultative (FAC), facultative wetland (FACW) or obligate wetland (OBL) (Table 3). The hydrophytic vegetation criterion for wetland determination is met when ***more than*** 50 percent of the dominant species in the plant community are FAC or wetter. The Corps' *National Wetland Plant List* (Lichvar 2016) was used to determine vegetation indicator status.

Table 3. Definitions for USFWS plant indicator status

Plant Indicator Status Category	Indicator Status Abbreviation	Definition (Estimated Probability of Occurrence)
Obligate Upland	UPL	Occur rarely (<1 percent) in wetlands, and almost always (>99 percent) in uplands
Facultative Upland	FACU	Occur sometimes (1 percent to <33 percent) in wetlands, but occur more often (>67 percent to 99 percent) in uplands
Facultative	FAC	Similar likelihood (33 percent to 67 percent) of occurring in both wetlands and uplands
Facultative Wetland	FACW	Occur usually in wetlands (>67 percent to 99 percent), but also occur in uplands (1 percent to 33 percent)
Obligate Wetland	OBL	Occur almost always (>99 percent) in wetlands, but rarely occur in uplands (<1 percent)
Not Listed	NL	Not listed due to insufficient information to determine status

4.2 Wetland Hydrology

Evidence of permanent or periodic inundation (water marks, drift lines, drainage patterns), or soil saturation to the surface for 14 consecutive days or more during the growing season meets the hydrology criterion. Oxidized root channels in the top 12 inches and hydrogen sulfide are primary indicators and water-stained leaves and geomorphic position are secondary indicators of wetland hydrology.

4.3 Hydric Soils

Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper soil horizons are considered hydric soils. Field indicators include histosols, the presence of a histic epipedon, a sulfidic odor, low soil chroma, and gleying. Soil conditions were compared to the Field Indicators of Hydric Soils detailed in the Corps' *Regional Supplement*.

5 PRECIPITATION ANALYSIS

Due to the timing of the site assessments (dry season), no formal precipitation analysis was completed. This section is intended to summarize the 2016/2017 climate conditions leading up to and including a portion of our field analysis, against the normal climatological conditions established by the National Oceanic and Atmospheric Administrations (NOAA [NOAA 2017a]).

The total precipitation recorded at the Ellensburg station (station ID No. USC00452505) from October 1, 2016 through September 30, 2017 (2016/2017 Water Year [12.4 inches]) was approximately 138 percent of normal (NOAA 2017a and 2017b). As referenced above, the 2017 field analyses were largely completed in the midst of the dry season. As a result, while climate conditions leading up to the site visits were wetter than normal, the data collected does not reflect those conditions.

6 RESULTS

Field investigations resulted in the verification and/or identification of 73 wetlands within 200 feet of the Project footprint. Paired data plots were sampled at each wetland within 80 feet to verify the location of the boundary between uplands and wetlands according to

the procedures defined by the USACE's *Regional Supplement* (2008). Wetlands that were identified between 80 and 200 feet of the Project footprint were visually assessed for rating purposes and to verify that the conditions have not changed since the wetlands were originally delineated in 2015.

For the purposes of this report, the descriptions of the wetlands are grouped by category due to the similarities of the wetlands.

6.1 Wetland Categorization

To determine the category of the wetlands identified within 200 feet of the Project footprint, the wetland classification guidelines in Ecology's wetland rating system (Hruby 2014) were used. Based on this guidance, wetlands were given a score for each of three functions: Water Quality, Hydrology, and Habitat (Table 4). The rating forms used to score each wetland are included in Appendix C.

Table 4. Wetland rating and categorization summary

Feature	Cowardin Class[1]	HGM Class	Water Quality	Hydrology	Habitat	Total	Category	Buffer[2]
Reecer Cr.	PEM/SS/FO	Riverine	6	8	8	22	I	150 ft.
First Cr.	PEM/SS	Riverine	6	7	8	21	II	100 ft.
N2	PME	Slope	6	4	6	16	III	75 ft.
R0	PEM/SS	Slope	6	5	7	18	III	75 ft.
R1	PEM/SS	Riverine	6	7	8	19	II	100 ft.
R3	PEM	Slope	6	4	6	16	III	75 ft.
R18	PEM	Slope	6	4	5	15	IV	50 ft.
R19	PEM/SS	Riverine	6	7	7	20	II	100 ft.
R20	PEM	Slope	6	4	5	15	IV	50 ft.
R22	PEM	Slope	6	4	5	15	IV	50 ft.
R23	PEM	Riverine	6	7	8	21	II	100 ft.
R25	PEM/SS	Slope	6	4	8	18	III	75 ft.
R27	PEM/SS	Riverine	6	6	8	20	II	100 ft.
R28	PEM	Slope	6	5	6	17	III	75 ft.
R29	PEM	Slope	6	4	6	16	III	75 ft.
R31	PEM	Riverine	6	6	6	18	III	75 ft.
R35	PEM/SS	Depressional	7	5	7	19	II	100 ft.
R41	PEM/SS	Depressional	6	6	8	20	II	100 ft.
R43	PEM	Slope	6	4	7	17	III	75 ft.
R44	PEM	Riverine	7	6	7	20	II	100 ft.
R45	PEM	Riverine	6	6	7	19	II	100 ft.
R51	PEM	Riverine	6	6	6	18	III	75 ft.
R58	PEM/SS	Slope	6	4	7	17	III	75 ft.
R63	PEM	Riverine	6	6	6	18	III	75 ft.
R67	PEM	Slope	6	4	6	16	III	75 ft.
R68	PEM/SS	Slope	6	4	6	16	III	75 ft.
R70	PEM/SS	Slope	6	4	7	17	III	75 ft.
R72	PEM	Riverine	6	6	6	18	III	75 ft.
R77	PEM	Slope	6	4	6	16	III	75 ft.
R78	PEM	Riverine	6	6	6	18	III	75 ft.
R80	PEM	Slope	6	4	6	16	III	75 ft.
R81	PEM	Depressional	6	4	6	16	III	75 ft.

Feature	Cowardin Class[1]	HGM Class	Water Quality	Hydrology	Habitat	Total	Category	Buffer[2]
R82	PEM	Depressional	6	4	6	16	III	75 ft.
R84	PEM	Slope	6	4	6	16	III	75 ft.
R85	PEM	Slope	6	4	6	16	III	75 ft.
R88	PEM	Slope	6	4	6	16	III	75 ft.
R89	PEM	Slope	6	4	6	16	III	75 ft.
R90	PEM	Slope	6	4	6	16	III	75 ft.
R91	PEM	Riverine	6	6	6	18	III	75 ft.
R95N	PEM	Slope	6	4	6	16	III	75 ft.
R95S	PEM	Slope	6	4	6	16	III	75 ft.
R97	PEM	Depressional	6	5	6	17	III	75 ft.
R101	PEM/SS	Riverine	6	6	6	18	III	75 ft.
R104	PEM	Riverine	6	6	6	18	III	75 ft.
R106	PEM	Slope	6	4	6	16	III	75 ft.
R108	PEM	Riverine	6	6	6	18	III	75 ft.
R109	PEM	Slope	6	4	6	16	III	75 ft.
R112	PEM	Slope	6	4	6	16	III	75 ft.
R113	PEM	Riverine	6	6	6	18	III	75 ft.
R115	PEM	Riverine	6	6	6	18	III	75 ft.
R116	PEM	Slope	6	4	6	16	III	75 ft.
R117	PEM	Slope	6	4	6	16	III	75 ft.
R129	PEM	Slope	6	4	6	16	III	75 ft.
R131	PEM	Slope	6	4	6	16	III	75 ft.
R133	PEM	Slope	6	4	6	16	III	75 ft.
R135	PEM	Riverine	6	6	6	18	III	75 ft.
R137	PEM	Riverine	6	6	6	18	III	75 ft.
R139	PEM	Riverine	6	6	7	19	II	100 ft.
R154	PEM	Depressional	7	5	6	18	III	75 ft.
R169	PEM	Riverine	6	6	8	20	II	100 ft.
R173	PEM	Slope	6	4	6	16	III	75 ft.
R301	PEM/SS	Slope	6	4	6	16	III	75 ft.
R302	PEM/SS	Slope	6	4	6	16	III	75 ft.
R400	PEM	Slope	6	4	6	16	III	75 ft.
R401	PEM	Slope	6	4	6	16	III	75 ft.
R404[3]	PEM	Depressional	7	6	5	18	III	75 ft.
R405	PEM	Depressional	7	6	5	18	III	75 ft.
R406	PEM	Depressional	7	6	5	18	III	75 ft.
R407[3]	PEM	Depressional	7	6	5	18	III	75 ft.
R408[3]	PEM/SS	Depressional	7	6	4	17	III	75 ft.
R409[3]	PEM/SS	Depressional	7	6	4	17	III	75 ft.
R410[3]	PEM/SS/FO	Riverine	7	8	7	22	I	150 ft.
R411[3]	PEM/SS/FO	Riverine	7	8	7	22	I	150 ft.
R412	PEM	Slope	6	4	6	16	III	75 ft.

[1] Classification based on Cowardin et. al. (1979).

[2] Based on KCC, moderate land use intensity was used for determining the appropriate buffer width.

[3] Wetland located outside of the Project site. These features are situated within 200 feet of the necessary road improvements needed to access the site.

6.2 Category I Riverine Wetlands

The Reecer Creek wetland complex and the two Riverine wetlands (R410 and R411) associated with Dry Creek are diverse Palustrine Emergent/Scrub-Shrub/Forested wetlands. The Reecer Creek wetland complex is approximately 238.12 acres in size and is located approximately 185 feet east of the nearest Project footprint (Appendix A). Wetlands R410 and R411 are approximately 17.19 acres and 125.27 acres, respectively, and are not located within the Project site. No additional Category I wetlands are within 200 feet of the Project.

6.2.1 Vegetation

The vegetation communities within these three wetlands contain similar characteristics. The dominant vegetation observed in the wetlands consists of bluegrasses (*Poa* sp.), bentgrasses (*Agrostis* sp.), baltic rush (*Juncus balticus*), common rush (*Juncus effusus*), cluster rose (*Rosa pisocarpa*), hawthorn (*Crataegus* sp.), and black cottonwood (*Populus balsamifera*).

6.2.2 Hydrology

Hydrologic support for the Reecer Creek wetland complex, R410, and R411 is primarily provided by seasonal overbank flooding associated with Reecer Creek and Dry Creek, seasonal snowmelt runoff, and direct precipitation. A shallow, perched groundwater table near the creeks also likely influences hydrology within the wetlands. While these wetlands are largely situated within the active floodplain of the creeks, the wetlands also contain areas that are hydrogeomorphically classified as slope wetland. The primary hydrologic support to these portions of the wetland(s) is provided by overbank flow during high precipitation events and snowmelt.

6.2.3 Hydric Soils

The soils within the Reecer Creek wetland complex, R410, and R411 were not evaluated to determine if the soils within the wetland would meet the hydric soil criteria defined in the USACE's *Regional Supplement* (2008). The Reecer Creek wetland complex is approximately 185 feet from the Project footprint and R410 and R411 are situated north and south of one of the areas where improvements to county and federal road rights-of-way along U.S. Highway 97 will be completed. Therefore, these wetlands were visually assessed for rating purposes only.

6.3 Category II Riverine Wetlands

The nine Category II Riverine wetlands consist of Palustrine Emergent wetlands and Palustrine Emergent/Scrub-Shrub wetlands (Table 4) ranging from approximately 11.62 acres to 138.67 acres in size.

6.3.1 Vegetation

The dominant vegetation observed in the emergent wetlands consists of bluegrasses, bentgrasses, baltic rush, and common rush. Vegetation observed in the emergent/scrub-shrub wetlands also includes shrub species dominated by cluster rose and hawthorn.

6.3.2 Hydrology

These wetlands are largely situated within the active floodplain of the perennial and seasonal fish habitat streams that flow through the Project site. As a result, the hydrologic support for these wetlands is primarily provided by seasonal overbank flooding associated with snowmelt runoff. In addition, some of the Category II wetlands also contain areas that are hydrogeomorphically classified as slope wetland. The primary hydrologic support to those portions of the wetland is largely provided by snowmelt runoff and direct precipitation. Please refer to Table 4 for a summary of the hydrogeomorphic (HGM) classes identified in each wetland.

6.3.3 Hydric Soils

In general, the primary hydric soil indicator observed within the Category II Riverine wetlands when soils were examined was the *Redox Dark Surface* (USACE 2008) hydric soil indicator. The wetland soils observed largely consisted of an upper layer (typically 0-12 inches) of very dark grayish brown silty loam (10YR3/2) with redox features ranging from distinct to prominent.

6.4 Category II Depressional Wetlands

Two Category II Depressional wetlands (Wetlands R35 and R41) are located within 80 feet of the Project footprint (Table 4 and Appendix A). No Category II Depressional wetlands beyond 80 feet but within 200 feet of Project footprint were identified. These features are classified as Palustrine Emergent/Scrub-Shrub wetlands and are associated with agricultural ponds.

6.4.1 Vegetation

The dominant vegetation observed is similar to the Category II Emergent/Scrub-Shrub Riverine wetlands that were identified. Vegetation within these wetlands largely consists of bluegrasses, bentgrasses, baltic rush, and common rush while the shrub areas were dominated by cluster rose and hawthorn.

6.4.2 Hydrology

Hydrologic support for Wetland R35 is primarily provided by flows that appear to be diverted from First Creek to support an agricultural pond. Similar to Wetland R35, hydrologic support to Wetland R41 is primarily provided by seasonal and perennial flows from Stream S-4 (perennial) and seasonal overflows from the First Creek wetland complex.

6.4.3 Hydric Soils

The soils observed within the Category II Depressional wetlands consisted of a shallow layer (approximately 0-6 inches) of very dark brown (10YR2/2) loam with hardpan beneath. While the soils observed in these wetlands did not meet a field hydric soil indicator (USACE 2008), given the predominance of hydrophytic vegetation and passing the FAC-Neutral Test, it is Grette Associates' professional opinion that the soils meet the hydric soils definition in the USACE's *Regional Supplement* (2008).

6.5 Category III Riverine Wetlands

There are 12 Category III Riverine wetlands that are located within 200 feet of the Project footprint (Appendix A). Unlike the Category II Riverine wetlands that are discussed above, the Category III Riverine wetlands are all associated with seasonal non-fish bearing streams. Additionally, these wetlands are all classified as Palustrine Emergent wetlands. These Category III Riverine wetlands range from approximately 0.15 acre to approximately 22.45 acres in size.

6.5.1 Vegetation

The dominant vegetation observed in these emergent wetlands consists of bluegrasses, bentgrasses, baltic rush, common rush, small-flowered woodland star (*Lithophragma parviflorum*), rough fescue (*Festuca campestris*), and yarrow (*Achillea millefolium*). In addition, several of these wetlands contained small camas (*Camassia quamash*).

6.5.2 Hydrology

These wetlands are largely situated within the active floodplain of the seasonal streams that flow through the Project site. As a result, the hydrologic support for these wetlands is primarily provided by seasonal overbank flooding associated with snowmelt flows and seasonal high precipitation events.

6.5.3 Hydric Soils

Due to restrictive layers, soils were not investigated in all of the Category III Riverine wetlands. The soils in these wetlands are extremely cobbly which restricted soil investigations. In these situations it was presumed that the soils within these wetlands would meet the definitions of hydric soils based on the predominance of hydrophytic vegetation and wetland hydrology indicators observed.

Soils that were able to be evaluated typically consisted of an upper layer (approximately 0-8 inches) of very dark grayish brown (10YR3/2) silty loam with distinct dark yellowish brown (10YR4/3) redox features. Soils beneath the upper layer consisted of hardpan.

6.6 Category III Slope Wetlands

The 34 Category III Slope wetlands consist of Palustrine Emergent wetlands and Palustrine Emergent/Scrub-Shrub wetlands (Table 4) ranging from approximately 0.02 acre to 16.78 acres in size. Of all the wetlands identified within 200 feet of the Project footprint, Category III Slope wetlands are the most prevalent type of wetland.

6.6.1 Vegetation

Similar to the Category III Riverine wetlands, the dominant vegetation observed in the emergent wetlands consists of bluegrasses, bentgrasses, baltic rush, common rush, small-flowered woodland star, rough fescue, and yarrow. Shrub species within the Emergent/Scrub-Shrub wetlands were largely dominated by cluster rose and hawthorn.

6.6.2 Hydrology

Hydrologic support for the wetlands is primarily provided by precipitation and localized snowmelt.

6.6.3 Hydric Soils

In general, the upper soil layer (0-6 inches) within these wetlands consists of a very dark brown (10YR2/2) silty loam with hardpan and/or cobble beneath. The soils appear to be problematic due to the lack of hydric soil indicators observed. According to the procedures defined in the USACE's *Regional Supplement* (2008), soils that do not exhibit hydric soil indicators may still meet the hydric soil definition when indicators of hydrophytic vegetation and hydrology are present. The presence of wetland hydrology is likely too brief for the soils to develop hydric soil indicators. In general, the landscape positions of these wetlands are within concave surfaces which likely collect or concentrate waters seasonally to these areas. Based on the predominance of hydrophytic vegetation and wetland hydrology indicators observed, it is Grette Associates' professional opinion that the soils meet the hydric soils definition in the USACE's *Regional Supplement* (2008).

6.7 Category III Depressional Wetlands

Category III Depressional wetlands (R81, R82, R97, and R154) were identified within 200 feet of the Project footprint. These four wetlands are classified as Palustrine Emergent wetlands and range from approximately 0.28 acres to approximately 8.86 acres in size.

6.7.1 Vegetation

The dominant vegetation observed within these wetlands largely consists of bluegrasses, bentgrasses, and baltic rush.

6.7.2 Hydrology

Hydrologic support for the wetlands is primarily provided by seasonally perched, shallow groundwater, snowmelt and direct precipitation. In addition, Wetland R81 contains a seasonal non-fish habitat stream which likely provides overbank flooding to portions of the wetland.

6.7.3 Hydric Soils

In general, the upper soil layer (0-6 inches) within these wetlands consists of a very dark brown (10YR2/2) silty loam with hardpan and/or cobble beneath. The soils appear to be problematic due to the lack of hydric soils observed. According to the procedures defined in the USACE's *Regional Supplement* (2008), soils that do not exhibit hydric soil indicators may still meet the hydric soil definition when indicators of hydrophytic vegetation and hydrology are present. Based on the primary hydrologic support for these wetlands, the presence of wetland hydrology is likely too brief for the soils to develop hydric soil indicators. Based on the predominance of hydrophytic vegetation and wetland hydrology indicators observed, it is Grette Associates' professional opinion that the soils meet the hydric soils definition in the USACE's *Regional Supplement* (2008).

6.8 Category IV Slope Wetlands

There are three Category IV wetlands (R18, R20, and R22) that were identified within 200 feet of the Project footprint. These wetlands are classified as Palustrine Emergent wetlands and range from approximately 0.05 acres to approximately 0.33 acres in size.

6.8.1 Vegetation

The dominant vegetation observed within these wetlands largely consists of bluegrasses, bentgrasses, baltic rush, common rush, small-flowered woodland star, rough fescue, and yarrow.

6.8.2 Hydrology

Hydrologic support for the wetlands is primarily provided by precipitation and localized snowmelt.

6.8.3 Hydric Soils

Similar to the soils observed in the Category III slope wetlands, the upper soil layer (0-6 inches) within these wetlands consists of a very dark brown (10YR2/2) silty loam with hardpan and/or cobble beneath. The soils appear to be problematic due to the lack of hydric soil indicators observed. According to the procedures defined in the USACE's *Regional Supplement* (2008), soils that do not exhibit hydric soil indicators may still meet the hydric soil definition when indicators of hydrophytic vegetation and hydrology are present. Similar to the other wetlands that likely contain problematic soils, the presence of wetland hydrology is likely too brief for the soils to develop hydric soil indicators. However, based on the predominance of hydrophytic vegetation and wetland hydrology indicators observed, it is Grette Associates' professional opinion that the soils meet the hydric soils definition in the USACE's *Regional Supplement* (2008).

6.9 Surface Water Features

Per KCC 17A.04.020, natural waters are typed according to the specifications defined in WAC 222-16-030. In addition to the identified natural water features, as defined per KCC 17A.04.020, several agricultural features were identified within 200 feet of the Project footprint.

6.9.1 Type F Streams

Type F streams are those streams which are within the bankfull widths of a defined channel that contain fish habitat (WAC 222-16-030). There are five streams (perennial and seasonal) that meet the definition of a Type F stream (Table 2). These streams originate from their headwaters north of the Project site, in the foothills associated with Table Mountain.

6.9.2 Type Ns Streams

Type Ns streams include all segments of natural waters within the bankfull width of a defined channel that do not meet the definition of a Type S, F, or Np stream (WAC 222-16-030). These are seasonal, non-fish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream of a Type Np stream (perennial non-fish habitat stream). There are 17 Type Ns streams (including ephemeral swales/channels) that are within 200 feet of the Project footprint (Table 2).

6.9.3 Agricultural Water Features

In addition to the Type F and Type Ns streams, there are several roadside ditches and an irrigation canal (KRD Canal) within 200 feet of the Project footprint or within 200 feet of

where the necessary road improvements will be completed (Appendix A). In general, the roadside ditches collect surface water from irrigated farm fields.

The KRD Canal was constructed by the Bureau of Reclamation to supply water for agricultural land uses. Water in the irrigation canal originates from a collection intake at the dam associated with Lake Easton.

7 DISCUSSION

7.1 Regulatory Considerations

Wetlands and drainage features are regulated by agencies at the local, state and federal levels. In Washington State, some energy facilities are permitted through the Energy Facility Site Evaluation Council (EFSEC) process. A project permitted through the EFSEC process receives a Site Certification Agreement, which takes the place of the permits and approvals that would otherwise be issued by state agencies and local jurisdictions. EFSEC has its own regulations that govern its process, Wash. Admin. Code Title 463, including a regulation concerning the impact and mitigation standards for wetlands. See WAC 463-62-050. EFSEC does not have regulations or guidance that address the identification and delineation of wetlands, so this report has considered the regulations and guidance of the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Washington Department of Ecology, as well as the Kittitas County Critical Areas Ordinance.

At the federal level, discharges of dredge or fill material into jurisdictional aquatic features are regulated by the USACE per its authority under CWA Section 404, 33 USC § 1344. Jurisdictional aquatic features regulated by the USACE—termed Waters of the US--include lakes, streams, rivers, and marine waters. Ditches, swales, canals, and wetlands that are adjacent to such aquatic features or otherwise have established hydrologic connections with them are also regulated Waters of the US.

While it is the regulatory agencies that make the final determination regarding jurisdictional status, project proponents can infer jurisdiction using the guidance provided by each agency, as has been done for Desert Claim as presented in this report. Upon receiving concurrence with such delineations from the USACE and, if applicable, Ecology, EFSEC or local regulatory agencies, project proponents can use the delineation information to design a project to avoid jurisdictional aquatic features or otherwise based on the anticipated regulatory constraints associated with any unavoidable impacts to such features.

7.2 Disclaimer

The findings and conclusions documented in this report have been prepared for specific application to this proposed project site. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes,

regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

Wetland boundaries are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland and/or drainage boundaries are validated by the appropriate jurisdictional agencies. Validation of the boundaries by the regulating agencies provide a certification, typically in writing, that the wetland boundaries verified are the boundaries that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulating agencies can provide this certification.

Since wetlands are dynamic communities affected by both natural and human activities, changes in wetland boundaries may be expected. Because of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

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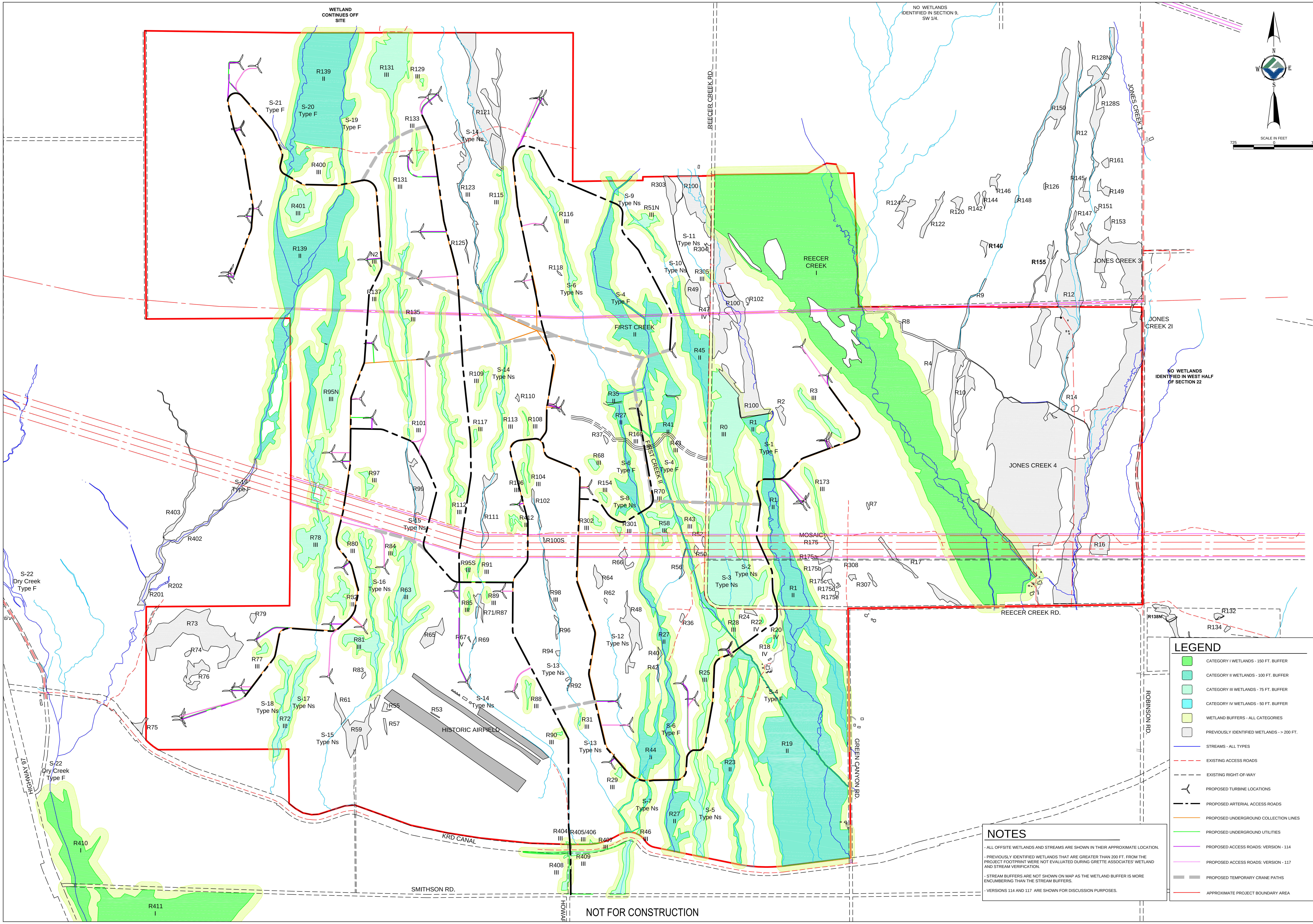
DESERT CLAIM WIND POWER PROJECT
WETLAND DELINEATION AND ANALYSIS REPORT

APPENDIX A: WETLAND DELINEATION MAP



NOTES

- ALL OFFSITE WETLANDS AND STREAMS ARE SHOWN IN THEIR APPROXIMATE LOCATION.
- PREVIOUSLY IDENTIFIED WETLANDS THAT ARE GREATER THAN 200 FT. FROM THE PROJECT FOOTPRINT WERE NOT EVALUATED DURING GRETTE ASSOCIATES' WETLAND AND STREAM VERIFICATION.
- STREAM BUFFERS ARE NOT SHOWN ON MAP AS THE WETLAND BUFFER IS MORE ENCUMBERING THAN THE STREAM BUFFERS.
- VERSIONS 114 AND 117 ARE SHOWN FOR DISCUSSION PURPOSES.

LEGEND

- CATEGORY I WETLANDS - 150 FT. BUFFER
- CATEGORY II WETLANDS - 100 FT. BUFFER
- CATEGORY III WETLANDS - 75 FT. BUFFER
- CATEGORY IV WETLANDS - 50 FT. BUFFER
- WETLAND BUFFERS - ALL CATEGORIES
- PREVIOUSLY IDENTIFIED WETLANDS - > 200 FT.
- STREAMS - ALL TYPES
- EXISTING ACCESS ROADS
- EXISTING RIGHT-OF-WAY
- PROPOSED TURBINE LOCATIONS
- PROPOSED ARTERIAL ACCESS ROADS
- PROPOSED UNDERGROUND COLLECTION LINES
- PROPOSED UNDERGROUND UTILITIES
- PROPOSED ACCESS ROADS: VERSION - 114
- PROPOSED ACCESS ROADS: VERSION - 117
- PROPOSED TEMPORARY CRANE PATHS
- APPROXIMATE PROJECT BOUNDARY AREA

NOT FOR CONSTRUCTION

DELINEATION MAP

DESERT CLAIM WIND POWER PROJECT

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PROJECT LOCATION:
KITTITAS COUNTY
ELLENSBERG, WA

PREPARED FOR:
EDF RENEWABLE DEVELOPMENT, INC.

PROJECT MANAGER:
BOYLE
DRAFTER:
WALLIN
CHECKED:
BOYLE

PROJECT NO:
3010.001

DATE: 12/18/17
REVISED: 05/10/18

SHEET SIZE:
24" X 36"

SHEET 1 OF 1

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DESERT CLAIM WIND POWER PROJECT
WETLAND DELINEATION AND ANALYSIS REPORT

APPENDIX B: WETLAND DATASHEETS

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APPENDIX C: WETLAND RATING FORMS

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APPENDIX D: QUERIED DATABASE FIGURES

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APPENDIX E: CROSSING PHOTO EXHIBIT