Raedeke Associates, Inc.

Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

TECHNICAL MEMORANDUM

September 24, 2024

To:	Scott Lien Kamiak 1700 Westlake Avenue N. Suite 200 Seattle WA. 98109
From:	Kolten Kosters, M.S., SPWS Wetland Scientist Raedeke Associates, Inc.
RE:	Bullfrog Housing Cle Elum Critical Area Report (RAI Project No. 2024-079-001)

Raedeke Associates, Inc. visited the Bullfrog Housing site on September 20, 2024. The purpose of our site visit was to collect data to characterize the existing site conditions and document any fish and wildlife habitats, streams, and wetlands on or in the vicinity of the project site. The project site consists of a 1.72-acre property that is currently developed and is surrounded by residential or commercial developments. During our site investigation, we did not identify the presence of any sensitive fish and wildlife habitat, streams, or wetlands in the vicinity of the project site.

PROJECT LOCATION

The 4240 Bullfrog Housing project site is an approximately 1.72-acre site located at 4240 Bullfrog Road in the City of Cle Elum, Washington. The project site is identified as Kittitas County Tax Parcel No. 11360. This places the project site in a portion of Section 21, Township 20 North, Range 15 East, W.M. Parcel maps retrieved online from Kittitas County depict the property boundaries.

The project site is bordered to the north by an undeveloped lot that currently contains paved parking areas, to the east and south by the Cle Elum School District maintenance and operations buildings, and to the west by Bullfrog Road and commercial developments. The project site is accessed by way of a paved driveway from Bullfrog Road.

METHODS

Wetlands

The U.S. Army Corps of Engineers (COE) wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions, including the City of Bellevue. As outlined in the COE wetland delineation manual, wetlands are distinguished by the presence of three diagnostic characteristics: hydrophytic vegetation (wetland plants), hydric soil (wetland soil), and wetland hydrology.

Streams

The ordinary high water mark (OHWM) of streams will be determined using definitions provided by the Washington State Shorelines Management Act of 1971: "that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation." (RCW 90.58.030(2)(c) and WAC173-22-030(5). The OHWM will be delineated using procedures outlined in the 1994 Washington Department of Ecology Shoreline Administrators Manual.

BACKGROUND REVIEW

Before our site visit, we collected maps and information from the U.S.D.A Natural Resources Conservation Service (2024) Web Soil Survey and U.S. Fish and Wildlife Service (USFWS 2024) National Wetland Inventory online mapper, Kittitas County (2024) Compas map, and the Washington Department of Fish and Wildlife (2024) habitats and species (PHS) database.

FIELD SAMPLING PROCEDURES AND DATA ANALYSIS

Raedeke Associates, Inc. staff visited the study area on September 20, 2024. We visually examined vegetation, soils, and hydrology in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010).

Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (2018), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (COE 2020). We estimated the percent coverage of each plant species. Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

RESULTS

Existing Conditions

During our September 20, 2024, site investigation we did not find any wetlands, streams, or sensitive, endangered, or threatened fish and wildlife habitat in the vicinity of the project site. Most of the project site is developed and contains existing single-family and/or commercial buildings, paved parking areas and driveways, and landscaping. The only existing native vegetation is located along the west margin of the site situated between a paved parking lot and Bullfrog Road. The undeveloped portion of the site currently contains an overstory of ponderosa pine (*Pinus ponderosa*, FACU) and Douglas-fir (*Psedotsuga mensezii,* FACU) trees with an understory of dull oregongrape (*Mahonia nervosa*, FACU), snowberry (*Symphoricarpos albus*, FACU), creeping bentgrass (*Agrostis stolonifera*, FAC), bluebunch wheatgrass (*Pseudoroegneria spicata*, FACU), and cheatgrass (*Bromus tectorum*, FACU) (Sample Plot 1).

Soils throughout the project site are not hydric and consist of up to 6 inches of dark grayish brown (10YR 3/2) sandy loam soils over dark yellowish brown (10YR 4/3) sandy

loam soils to a depth of greater than 12 inches. We did not observe any indicators of wetland hydrology throughout the project site (Sample Plot 1).

Fish and Wildlife Habitat

During our site investigation, we did not observe any streams within at least 300 feet of the Bullfrog Housing project site. The site has been historically graded and is relatively flat. A slight topographic draw is located approximately 500 feet south of the project site. Based on our visual observations from the public right away along Bullfrog Road this ravine does not appear to contain a stream channel and was dominated by forested upland plant species.

The project site is mapped on the WDFW (2024) Priority Habitat and Species map as being within a quarter section that contains elk concentrations. As noted above, the project site has been historically developed and other than the few ponderosa pine trees along the west margin does not provide significant elk habitat. During our site investigation, we noted that there appeared to be some potential historic elk antler rub on at least two of the ponderosa trees. Despite this minimal evidence of historic use, we did not observe any current indicators of elk use on the site including recent forage/browse of low-lying vegetation, scent marking, bedding depressions, or the presence of scat or game trails. As the site is currently developed and maintained as housing and is located within an urbanized area it is unlikely that elk currently routinely utilize the site.

We did not observe any endangered, threatened, or endangered species or their habitats on or near the project site.

CONCLUSION

During our site investigation, we did not find any wetlands, streams, or priority or sensitive fish and wildlife habitat in proximity to the Bullfrog Housing project site. The site has been previously developed and contains existing single-family homes, roads, and driveways. The proposed project would redevelop the project site to include the development of new apartment buildings along with parking infrastructure (see attached site plan). Based on the current plans, the west margin of the site would remain undeveloped and would preserve most of the existing ponderosa pine and Douglas-fir trees. As such, it does not appear that the proposed project will result in any adverse impacts on fish and wildlife habitat, including elk concentrations in proximity to the site.

LIMITATIONS

We have prepared this report for the exclusive use of Kamiak and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Kamiak.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

Thank you for the opportunity to prepare this material for you. If you have any questions about this information, please call me at (206) 525-8122.

LITERATURE CITED

Cowardin, L., F. Golet, V. Carter, and E. LaRoe. 1992. Classification of wetlands and deepwater habitats of the United States. U.S.D.I. Fish and Wildlife Service Publ. FWS/OBS-79/31. 103 pp.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bullfrog Housing City/County: Cle Elum Sampling Date:9-20-2024

Applicant/Owner: Kamaika State: WA Sampling Point: SP1

Investigator(s): Kolten Kosters Section, Township, Range: S21 T20N R15E WM

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 1-3

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.205561° Long: -120.980916° Datum: WGS1984

Soil Map Unit Name: Roslyn ashy sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: Sample Plot 1 is located in the west portion of the site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa (ponderosa pine)	60	Y	FACU
2. Psedotsuga mensezii (Douglas-fir)	20	Y	FACU
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Symphoricarpos albus (snowberry)	20	Y	FACU
2. Mahonia nervosa (Oregon grape)	10	Y	FACU
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Pseudoroenera spictata (bluebunch wheatgrass)	30	Y	FAC
2. Agrostis stolonifera (creeping bent)	10	N	FAC
3. Bromus tectorum (cheatgrass)	10	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum BG

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	160 (A)		590 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2						S.L.	
6 - 12+	10YR 4/3						S.L.	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No indicators of hydric soils observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

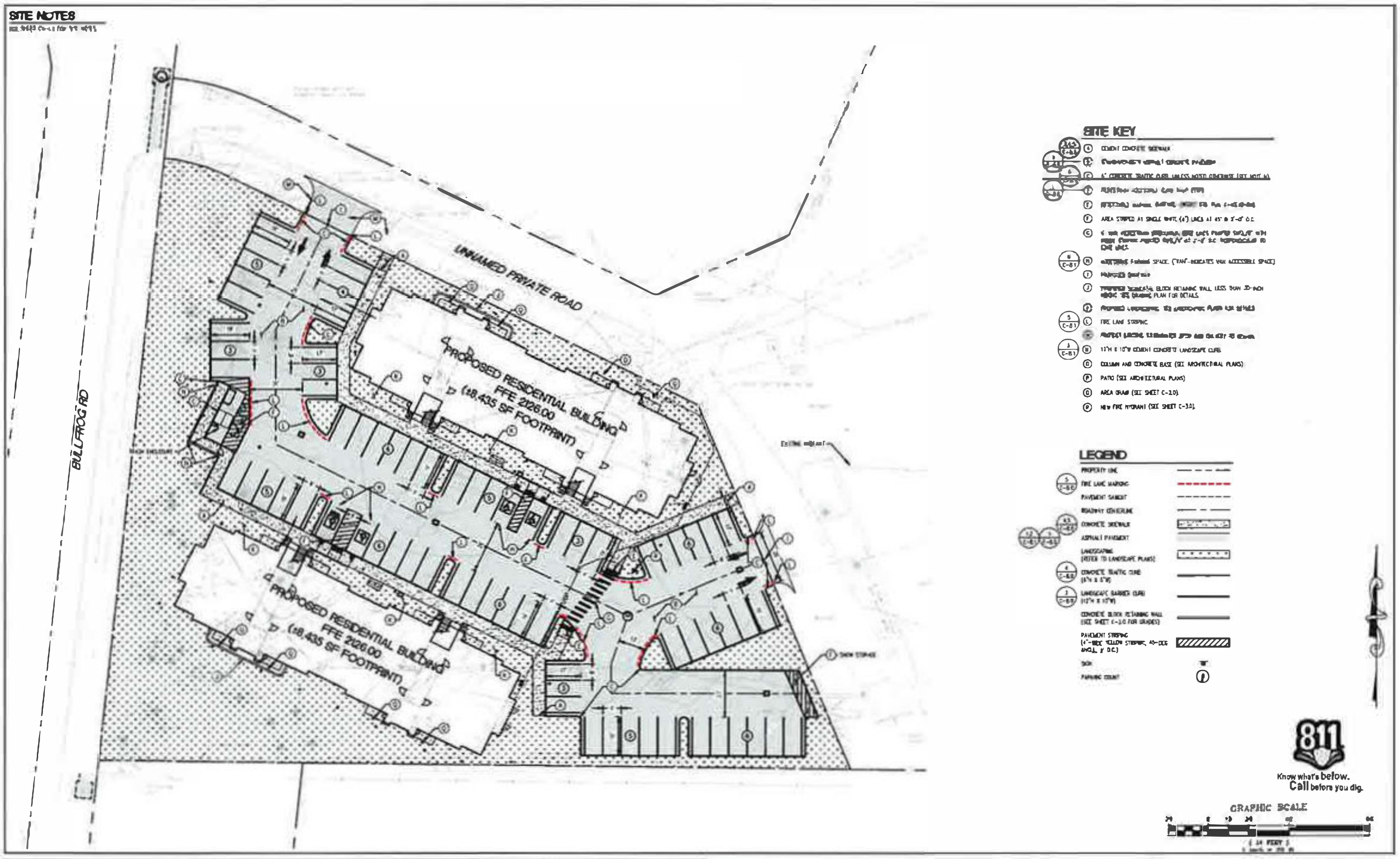
Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of hydrology observed



No.	Date	By	Revision Description

KAMIAK
4240 BULLFROG ROAD
CLE ELUM, WA 98922

SITE PLAN

C-1.0