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MEMO

To:	Brian Varricchione, P.E., Land Use Planning, Mackenzie
From:	Sue Brady, Biologist SB
Subject:	Columbia County Land Use Planning - Wetland Significance
Date:	December 8, 2021
Job/File No.	1199-727-224 (w/encl.)
cc:	Chris Efird, NEXT Renewable Fuels Oregon (w/encl.) Garrett Stephenson, Schwabe, Williamson, & Wyatt (w/encl.) Laurie Parry, Stewardship Solutions (w/encl.)

This memo is being provided as a guide for determining the significance of wetlands located at the proposed NEXT Renewable Fuels Oregon facility site. The information provided in this document is derived from the Wetland Delineation Report (WDR) for NEXT Renewable Fuels Oregon, prepared by Anderson Perry & Associates, Inc. The wetland delineation was performed in accordance with the 1987 U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. The WDR was submitted to the Oregon Department of State Lands (DSL), who issued a concurrence of the findings on September 21, 2021 (WD 2020-0663).

Establishing Significance

According to Columbia County Zoning Code (CCZC), Section 1180: Wetland Area Overlay, Section 1182: The purpose of the zone is to "protect significant wetlands *within the identified Wetland Areas as shown on the State Wetland Inventory and Local Wetland Inventories*, from filling, drainage, or other alteration which would destroy or reduce their biological value" (emphasis added).

The County's definition of "wetland" can be found in Article 10, Section A.1 of the Columbia County Comprehensive Plan. The Comprehensive Plan defines a wetland as "Primarily lowlands covered by shallow and sometimes temporary or intermittent waters. Often, they are referred to as marshes, bogs, swamps, wet meadows, sloughs, and overflow lands. Plant and animal communities in wetlands are dependent on at least periodic saturation by water." Significant wetlands are defined in both the Comprehensive Plan and in the CCZC, Section 1183 as follows: "A significant wetland is an area that is inundated or saturated by surface water or ground water 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." This is the general description of a wetland, as defined by the USACE and the DSL, and does not address the question of significance.

Statewide Planning Goal 5 directs local governments to inventory the resources in their jurisdiction, including wetlands, and identify which resources are “significant” to their planning goals. Historically, the antiquated Oregon Freshwater Wetland Assessment Methodology (OFWAM) was utilized by planning departments as a planning tool to better understand the value of wetlands. OFWAM is not a regulatory tool. Once wetlands are identified and values are assigned, the planners identify wetlands that are “significant” based on their value and how they fit into the overall planning goals. Ultimately, the DSL must concur with the findings and establish a Local Wetland Inventory (LWI).

In accordance with State Planning Goal 5, the City of Clatskanie has an LWI that catalogs wetlands within the urban growth boundary. The LWI identifies some wetlands of “significance” based on the functions and values of those wetlands and the planning goals of the City. Not all wetlands were identified as significant. It would be wrong to classify a wetland as "significant" simply because it is a wetland.

Columbia County does not have an LWI outside the City of Clatskanie. As previously stated, the wetlands present at the NEXT facility site are not classified “significant” on any LWI recognized or approved by the DSL. In addition, the Statewide Wetlands Inventory does not identify any “significant” wetlands near the NEXT facility site. See Attachment 1, Oregon Rapid Wetland Assessment Protocol Report (ORWAP), which determined that no rare wetland types and no special protected areas are located within the facility site.

Also, no wetlands within the facility site were identified as being among “Oregon’s Greatest Wetlands.” The “Oregon’s Greatest Wetlands” designation identifies the most biologically and ecologically significant wetlands in the State of Oregon. “Oregon's Greatest Wetlands” were identified in a top-down manner, with wetland experts from throughout Oregon identifying the most significant wetlands (The Wetlands Conservancy and the Institute for Natural Resources, Portland, Oregon). The closest area that is part of the “Oregon’s Greatest Wetlands” designation is the western half of Wallace Island, approximately 4 miles west of the facility site.

Portions of the NEXT facility site are shown on the National Wetlands Inventory (NWI) map; however, the NWI map is not an absolute designation of wetland areas or their significance. The NWI map merely suggests that wetlands are likely to be present, and the presence or absence of wetlands is not “official” until a delineation by a consultant is performed and concurrence from the DSL is received. As per the CCZC purpose statement, the Wetland Area Overlay zone necessarily requires an on-site investigation of areas identified as potential wetland areas on the NWI and a site-specific determination of whether any wetlands on a property may be “significant.”

Wetland Quality at the Facility Site

Currently, functions and values of wetlands are determined utilizing ORWAP. The DSL was directed by the Oregon legislature to establish the criteria that rate the functions and values of wetlands and, in 2006, the DSL began using ORWAP. The term “significant” is not utilized by the USACE or the DSL in determining the quality of a wetland. ORWAP assesses 17 functions and/or values of a wetland by rating them higher, moderate, and lower.

Of the assessed functions for the wetlands at the NEXT facility site, seven received a rating of “lower,” five received a rating of “moderate,” and four received a rating of “higher.” The functions rated “higher”

were habitats for amphibians, waterfowl, and pollinators. The functions rated "moderate" included phosphorus retention plants; songbird, raptor, and mammal habitat; organic nutrient transport; and carbon sequestration. The functions rated "lower" included water storage, sediment retention and stabilization, nitrate removal, aquatic invertebrate habitat, water cooling, and fish habitat. The two function scores for fish habitat were both zero, as the drainage ditches above McLean Slough do not have a free and open connection to natural waterways.

Vegetation and Riparian Areas

The NEXT facility site has been an over-grazed, compacted cattle pasture with relatively low biodiversity for more than 30 years. Based on the wetland data collected during the delineation, the plants on site consist of approximately 65 percent native and non-native meadow grasses that grow in both wetlands and non-wetlands. Of the 65 percent, approximately 30 percent cover is reed canarygrass (invasive), 20 percent cover is fowl bluegrass, 10 percent cover is ryegrass, and 5 percent cover is Kentucky bluegrass. After grasses, the next highest coverages are 10 percent Himalayan blackberry (invasive), 7 percent Baltic rush, and 5 percent hybrid poplar. The remaining approximately 13 percent coverage is composed of more than 20 species including white clover, tall fescue, curly dock, Nebraska sedge, bulrush, western bittercress, and other grasses and forbs. All these listed species, with the exception of Nebraska sedge and bulrush, can be found in both wetlands and non-wetlands. The presence of plants adapted solely to wetlands is very low.

The edges of the fields, bordering adjacent agricultural areas, have extensive non-native blackberry thickets and reed canarygrass. There is little or no presence of quality riparian habitat. This reduces the value of the riparian buffers along the ditches and does not contribute to increasing the "significance" of these wetlands.

In conclusion, while there is wetland vegetation on site, plants not solely wetland-specific compose the majority of vegetation coverage within delineated wetlands. As noted above, the County's definition of "significant wetlands" refers to "an area that is inundated or saturated by surface water or ground water 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," which is a general description of wetland vegetation and does not specifically define significant wetlands. Vegetation solely adapted to wetland conditions is not prevalent in the delineated wetlands, which are dominated by pasture grasses and invasive species that are able to grow in both wetland and non-wetland conditions. In addition, the wetlands did not show consistently high scores for functions and values and have minimal riparian buffer habitat along the ditches.

Based on these findings, the wetlands located at the proposed NEXT facility site should not be considered "significant" under the CCZC, nor are the wetlands identified as significant on the State Wetland Inventory, any LWI, or the "Oregon's Greatest Wetlands" designation list.

SB/ct
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Oregon Rapid Wetland Assessment Protocol (ORWAP) Report

Report Generated: October 28, 2020 02:02 PM

Assessment Area: 178 Acres

Location Map

Location Information

Latitude	46.1667679158424	Longitude	-123.163463650944
Elevation	11 ft	Annual precipitation	53 in
Watershed (HUC12)		Lower Beaver Creek-Frontal Columbia River (170800030407)	
Presettlement Vegetation Class		Marsh/Wetland	
Rare Wetland Type(s)		None	
Hydrologic Landscape Class		Wet	
In Special Protected Area?		No	

View Salinity Maps (pdf)

Soil Information

Soil Name	Udipsamments, nearly level, protected
Soil Symbol	61
Hydric Rating	Yes
Hydric Percent	97
Percent Area	82.9%
Erosion Hazard	Slight

This report was generated using the ORWAP Map Viewer, a tool of the Oregon Explorer (http://oregonexplorer.info).

Dom. Cond. Non-irrigated Capability Class	Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Soil Name	Wauna-Locoda silt loams, protected
Soil Symbol	68
Hydric Rating	Yes
Hydric Percent	94
Percent Area	8.5%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	Wauna silt loam, protected
Soil Symbol	66
Hydric Rating	Yes
Hydric Percent	98
Percent Area	3.1%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Soil Name	Crims silt loam, protected
Soil Symbol	15
Hydric Rating	Yes
Hydric Percent	99
Percent Area	2.6%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	Locoda silt loam, protected
Soil Symbol	29
Hydric Rating	Yes

Hydric Percent	97
Percent Area	1.4%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	Crims silt loam, protected
Soil Symbol	15
Hydric Rating	Yes
Hydric Percent	99
Percent Area	1.3%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	Wauna silt loam, protected
Soil Symbol	66
Hydric Rating	Yes
Hydric Percent	98
Percent Area	0.1%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Soil Name	Crims silt loam, protected
Soil Symbol	15
Hydric Rating	Yes
Hydric Percent	99
Percent Area	0.1%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Watershed Information

HUC Best

HUC Code	HUC Name	Is HUC Best?	Greatest Criteria met	FW, s/f, lg (Acres)	FW, em, lg (Acres)	EST, em, lg (Acres)	EST, s/f, lg (Acres)
HUC8: 17080003	Lower Columbia-Clatskanie	Yes	proportional	330.6	784.6	57.6	0
HUC10: 1708000304	n/a	No	n/a	n/a	n/a	n/a	n/a
HUC12: 170800030407	Lower Beaver Creek-Frontal Columbia River	No	n/a	n/a	n/a	n/a	n/a

[abbreviations: FW- freshwater (wetland); em- Emergent; lg- largest; s/f- Shrub/Forested; EST- Estuarine (wetland)

HUC 12 Functional Deficit

HUC Code	HUC Name	WS	SR	NT	WC	INV	AM	FH	WB
HUC12: 170800030407	Lower Beaver Creek-Frontal Columbia River								

[abbreviations: WS= Water Storage, SR= Sediment Retention, NT= Nutrient Retention (PR or NR), WC= Water Cooling (Thermoregulation), INV= Invertebrate Habitat, AM= Amphibian Habitat, FH= Fish Habitat (FA or FR), WB= Waterbird Habitat (WBF or WBN)]

Rare Species Scores

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0	0	None
Nesting Waterbirds	0	0	None
Songbirds, Raptors, and Mammals	0	0	None
Invertebrate Species	0	0	None
Plant Species	0	0	None

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the "certainty" that ORBIC assigns to each of those records.

Element of Occurrence (Rare Species)

View wildlife list for Lower Beaver Creek-Frontal Columbia River (170800030407)

Within Assessment Area	No EO Records
Within 1 mile	No EO Records
In HUC12 watershed	4 EO Records

Element of Occurrence Record(s) in HUC12

1 Chinook salmon (Lower Columbia River ESU, fall run) [2 occurences]
Oncorhynchus tshawytscha pop. 22
ORBIC State Status: S2
ORBIC Global Status: G5T2Q
ODFW Strategy Species: Yes

2 Steelhead (Southwest Washington ESU, winter run) [1 occurences]
Oncorhynchus mykiss pop. 35
ORBIC State Status: S2
ORBIC Global Status: G5T3Q
ODFW Strategy Species: Yes

3 Coho salmon (Lower Columbia River ESU) [1 occurences]
Oncorhynchus kisutch pop. 1
ORBIC State Status: S2
ORBIC Global Status: G5T2Q
ODFW Strategy Species: No

• *HUC Best: Oregon watersheds (HUC8, HUC10, HUC12) with greatest type diversity, proportional area, or density of wetlands according to available National Wetland Inventory maps.*

"Type diversity" is the number of unique NWI codes in the watershed (e.g., PEMA, PEMC, PEMCx) and excluded types that have no vegetation component (e.g., PUBH, R3US2).

"Density" is the number of vegetated NWI polygons divided by the acreage of the watershed; many of these polygons may be contiguous with each other, forming a single wetland.

"Proportional Area" is the proportion of the watershed's total area occupied by vegetated wetlands as mapped by NWI.

• *The digital maps used to determine this do not show many wetlands or cover the entire state. Data were compiled only from watersheds that have been at least 90% mapped by NWI (see worksheets for HUC8, 10, and 12). Data were received in November 2008 from ORBIC.*

• *METHODS: The above 3 metrics can be strongly correlated with watershed size and with each other. To minimize that bias, the rankings of the residuals from a regression analysis were used, rather than simply the top-ranking watersheds, to identify the most "important" watersheds for each metric at each scale. That is, the watersheds were identified that were in the top 5% in terms of variety of mapped wetland types for watersheds of that size, the largest area of mapped wetlands as a proportion of the watershed area for watersheds of that size, and/or the greatest number of mapped wetland polygons for watersheds with that much wetland area.*

• *Global rank. ORBIC participates in an international system for ranking rare, threatened and endangered species throughout the world. The system was developed by The Nature Conservancy and is now maintained by NatureServe in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries. The ranking is a 1-5 scale, primarily based on the number of known occurrences, but also including threats, sensitivity, area occupied, and other biological factors. In this book, the ranks occupy two lines. The top line is the Global Rank and begins with a "G". If the taxon has a trinomial (a subspecies, variety or recognized race), this is followed by a "T" rank indicator. A "Q" at the end of this line indicates the taxon has taxonomic questions. The second line is the State Rank and begins with the letter "S". The ranks are summarized as follows: 1 = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences; 2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences; 3 = Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences; 4 = Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences; 5 = Demonstrably widespread, abundant, and secure; H = Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered; X = Presumed extirpated or extinct; U = Unknown rank; ? = Not yet ranked, or assigned rank is uncertain.*

• *This report contains both centroid-based and polygon-based data. The Location Information and Watershed Information sections of the report contain centroid based data (determined by the center point of the polygon), while the remaining sections are polygon-based (determined from the entire polygon).*