CRITICAL AREAS REPORT & BUFFER MITIGATION PLAN

Project:

The Reserve at Green Mountain

Applicant:

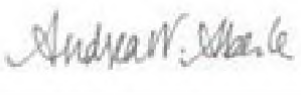
Pacific Lifestyle Homes
11815 NE 99th Street,
Vancouver WA, 98682

Prepared By:

Ash ECO SOLUTIONS, LLC

May 1 , 2025

The information in this report was compiled to meet the requirements of the City of Camas Municipal Code (CMC) Sections 16.53 Wetlands and 16.61 Fish and Wildlife Habitat Conservation Areas. This report has been prepared under the supervision and direction of the undersigned, a qualified professional following CMC Section 16.61.020.A.



Andrea W. Aberle, Sr. Biologist
AshEco Solutions, LLC

SITE INFORMATION:

Parcel No(s):	173192000
Acreage:	11.67 acres
Local Jurisdiction:	City of Camas, Washington
Section/Township/Range:	SW¼, S21, T2N, R3E, W.M.
Site Address:	2625 Goodwin Road Camas, WA 98607
Legal Landowner:	Marwan Bahu

TABLE OF CONTENTS

INTRODUCTION **10**
Project Description **10**
Project Location and Background Information **10**
EXISTING CONDITIONS **10**
CRITICAL AREAS MAP RESEARCH **10**
Topography **10**
Soil Survey **10**
Wetlands **11**
Riparian Habitat **12**
Shorelines **12**
WDFW Priority Habitat **12**
METHODOLOGY **12**
Wetlands **12**
Riparian Habitat **13**
WDFW Priority Habitat **13**
Habitats of Local Importance **13**
DOCUMENTED VEGETATION **14**
CRITICAL AREA CONCLUSIONS **14**
Wetlands **14**
Wetland Buffer **14**
BUFFER MITIGATION PLAN **15**
Avoidance and Minimization **15**
PLANTING PLAN **18**
Site Preparation **18**
Plant Materials **19**
Container Stock **19**
Bareroot Species **19**
Planting Methods **19**
Planting Specifications **19**
Maintenance Plan **21**
Monitoring Plan **21**
Monitoring Report Contents **22**

Contingency Plan **22**
Site Protection **22**
MITIGATION GOALS, OBJECTIVES AND PERFORMANCE STANDARDS **22**
CONCLUSIONS **24**
DISCLAIMER **24**
REFERENCES **25**

TABLES

Table 1. Critical Areas Summary 15
Table 2. Impacts & Mitigation Summary 18
Table 3. Native Planting Plan 20
Table 4. Performance Standards by Monitoring Year 23

FIGURE SET

Figure 1 – Vicinity Map
Figure 2 – Aerial & Topography Map
Figure 3 – Soil Survey & National Wetlands Inventory (NWI) Map
Figure 4 – Riparian Habitat & Species Map
Figure 5 – Shorelines Map
Figure 6 – Priority Habitat & Species Map
Figure 7 – Forest Practices Application Review System (FPARS) Map
Figure 8 – Existing Conditions Map
Figure 9 – Proposed Site Plan
Figure 10 – Tree Plan

APPENDICES

Appendix A – Site Photos
Appendix B – Wetland Determination Datasheets
Appendix C – Wetland Rating Form & Figures
Appendix D – Tree Survey & Table

INTRODUCTION

Project Description

AshEco Solutions, LLC (AES) was contracted by Pacific Lifestyle Homes (PLH) to assess the potential critical areas present within the subject parcel that comprises the proposed subdivision site and develop a mitigation plan to offset project impacts. This Critical Areas Report and Buffer Plan follows the City of Camas Municipal Code (CMC) Sections 16.53 Wetlands and 16.61 Fish and Wildlife Habitat Conservation Areas. PLH proposes construction of 38-lot single family residence subdivision within a parcel of land comprised of 11.67-acres.

Project Location and Background Information

The subject parcel addressed as 2625 Goodwin Road, Camas, Washington (Figure 1), is under the jurisdiction of the City of Camas and is assigned Parcel Number 173192000. The site is surrounded to the east and west by large residential and agricultural lots. North of the property is urban residential lots and south of the property is forest park land owned by Clark County.

EXISTING CONDITIONS

A single-family residence is located within the southern section of the subject parcel. A large accessory building/shop, and another smaller accessory building adjacent to the larger building, are present within the northern section of the property. The residence is accessed from NE Goodwin Road from a paved and gated driveway. Topography, onsite and in the vicinity of the site, consistently falls in elevation from NE Goodwin Road in the north to the south/southwest offsite. Seasonal hydrology ultimately flows southwest to the valley floor where Lacamas Creek is located offsite. A constructed pond is located in the southwest parcel corner inside the wetland boundary onsite. Scattered individual trees, and groups of trees, including Oregon white oak are present throughout the subject parcel. However, otherwise the parcel is generally open, with the northern section historically used for equine and agricultural purposes and the south reserved for the existing residence and expansive lawn area that surrounds it. Little native understory exists within the bulk of the parcel due to a history of grazing of the open pastures and maintained lawn present surrounding the residence. Forested habitat becomes predominant near the southern parcel boundary as the subject parcel abuts Clark County owned lands located directly south of the subject site. It should be noted that a series of trails and a maintained access/logging road is present to the south on the county property with connection ultimately south to Lacamas Lake and Camp Currie park lands.

CRITICAL AREAS MAP RESEARCH

Topography

Topography generally consists of a south facing slope on a terrace above the Lacamas Creek valley. Topography maps show that the overall area drops in elevation from Goodwin Road to the south (Figure 2).

Soil Survey

Soils within the subject parcel are mapped by the NRCS USDA Soil Conservation Service, Soil Survey of Clark County Washington (1972), as Lauren gravelly loam, cemented substratum, 3 to 15 percent slopes (LrC), Cove silty loam, 0 to 3 percent slopes (CvA), and Dollar loam, 0 to 5 percent slopes (DoB) (Figure 3).

The Lauren series consists of deep, somewhat excessively drained, nearly level to gently sloping soils on terraces 50 to 300 feet above the Columbia River. In a few places, on terrace fronts, the soils are steep to very steep. These are very gravelly soils that formed in mixed Columbia River alluvium that contained some volcanic ash. Lauren soils are in the southwestern part of the county, in the vicinity of Mill Plain, Orchards, and Fourth Plain. The original vegetation was Douglas-fir, grand fir, bigleaf maple, vine maple, salal, and ferns. The average annual precipitation is about 48-inches.

Lauren loam, cemented substratum, 3 to 15 percent slopes (LrC) is similar to Lauren gravelly loam, 0 to percent slopes, except that the cementation in this soil is outside the defined range for this soil series. In a typical profile the surface layer is about 14 inches thick. It is very dark brown gravelly loam in the upper part, and very dark brown grayish-brown gravelly clay loam in the lower part. Below the surface layer is firm, dark brown very gravelly clay loam about 21 inches thick. The next layer, to a depth of 60 inches, is dark yellowish-brown very gravelly clay loam. It is weakly cemented. This soil is moderately well drained, surface runoff is slow to medium and the erosion hazard is slight to moderate. Native Oregon white oak and Oregon ash are the predominate with native trees present within this soil series, with Douglas fir predominate in the better drained areas. The Lauren loam 3 to 15 percent slopes is not listed as a hydric soil by the Washington State Hydric Soils List for Clark County (NRCS 2022).

The Cove series consists of deep, very poorly drained, mostly nearly level soils. These soils formed in water-laid deposits in old lakes and ponds and have a clayey subsoil. Typical native vegetation is deciduous trees, sedges, reeds, and water-tolerant shrubs and grasses. Cove

Cove silty loam, 0 to 3 percent slopes (CvA), is found in concave drainageways and in large, flat, old lakebeds. The slope is generally less than 1 percent. In a typical profile the surface layer is very dark graysilty clay about 4 inches thick. Below this is firm clay about 32 inches thick. It is black in the upper part and very dark gray and mottled in the lower part. The underlying material, to a depth of 54 inches, is mottled, light olive-gray gravelly silty clay loam. This soil is very poorly drained and very slowly permeableSurface runoff is very slow, and ponding is common in winter unless drainage is provided. There is no hazard of erosion. The CvA 0 to 3 percent slopes soil type is listed on the Washington State Hydric Soils List for Clark County (NRCS 2022). AES does not agree with the hydric soils mapping over the subject site entirely, but wetlands were identified near the western parcel boundary and the southwest corner of the subject site (Figures 3 and 8).

The Dollar series consists of deep, moderately well drained, nearly level to gently sloping soils. These are medium textured soils that developed in deposits of old Columbia River alluvium. They are on low terraces that adjoin the poorly drained, depressional McBee, coarse variant, soils and the Cove soils. Typical native vegetation is mainly Douglas-fir, grand fir, and some western redcedar, and an understory comprised of salal, Oregon grape, vine maple, and ferns. In areas of transitional to wet soils, the vegetation is red alder and Oregon ash.

Dollar loam, 0 to 5 percent slopes (DoB) can be identified easily by its slightly raised relief with scattered stands of Douglas-fir. In a typical profile the surface layer is dark-brown loam about 6 inches thick. Below this is friable heavy loam about 26 inches thick. It is dark reddish brown in the upper part and dark brown in the lower part. The next layer, to a depth of 60 inches, is very firm and brittle, dark yellowish-brown heavy loam. This soil is moderately well drained. Surface runoff is slow, and the erosion hazard is slight. The DoB soil type is not listed on the Washington State Hydric Soils List for Clark County (NRCS 2022).

Mapped hydric soils do not necessarily mean that the area is a wetland; hydrology and wetland vegetation must be present to classify an area as a wetland. The same is true for soils that are not mapped as hydric. Wetlands can be found in areas without mapped hydric soils.

Wetlands

Potential wetland presence is mapped within the southwest corner of the parcel by the Clark County GIS MapsOnline (Figure 3). The National Wetland Inventory (NWI) also maps wetlands within the same general area

(Figure 3). Wetlands were identified within the subject parcel by AshEco Solutions (AES) near the western property line and far southwest portion of the site (Figure 8). An additional offsite wetland was also mapped just offsite from the southeastern property corner, Figure 8.

Riparian Habitat
Clark County GIS does not map Riparian Habitat onsite (Figure 4). Within the southeast corner of the subject parcel AES identified an unnamed seasonal, non-fish bearing (Type Ns) stream (Figures 8 and 9). The stream is not mapped by the WA State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (Figure 7).

Shorelines
An offsite Type S Water (Lacamas Creek) is located approximately 0.25 miles southwest of the subject parcel. Type S Waters are considered Shorelines of the State and governed by the City of Camas and Washington State Department of Ecology (ECY). The "Urban Conservancy" shoreline designation is mapped by the Clark County GIS shoreline layer as intruding into the southwest parcel corner, which roughly corresponds with the location of the onsite portion of Wetland A (Figure 5 and Figures 8-9). Wetland A is therefore considered to be an "associated wetland" to the shoreline and governed by the local SMP. The project does not propose direct impacts to this associated wetland to the shoreline and has applied the standard wetland buffer widths as required by the local code.

WDFW Priority Habitat
The Washington Department of Fish and Wildlife (WDFW) maps Oregon white oak habitat within the southeast corner of the subject parcel, Figure 4. AES identified Oregon white oak habitat onsite, both within the southeast corner as well as the central portion of the site. AES also mapped individual oaks onsite in areas not previously mapped by WDFW, Figure 8.

WDFW also indicates that "Cave or Cave-rich Areas" occur within the general area surrounding the subject parcel, though no evidence of caves or rock outcroppings were identified onsite by AES during site reconnaissance.

No riparian habitat was mapped by WDFW, DNR or Clark County GIS within the subject parcel however AES did identify a short section of seasonal stream that contained a well-defined stream channel. It appears this channel conveys seasonal hydrology between the two wetlands mapped by AES during storm events, Figure 8.

METHODOLOGY

Wetlands
The study area and immediate offsite vicinity was evaluated for the presence of wetlands using the Routine Determination Method per the U.S. Army Corps of Engineers' (USACE's) *Wetland Delineation Manual* (1987), the *Washington State Wetlands Identification and Delineation Manual* (1997), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (USACE 2010). The Routine Determination Method examines three parameters to determine if wetlands exist in a given area: vegetation, hydrology, and soils. The presence of hydrology is critical in identifying wetlands; however, since hydrologic conditions can change periodically (hourly, daily, or seasonally), it is necessary to determine if hydrophytic vegetation and hydric soils are also present. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of

vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as "Waters of the United States" by the USACE, "Waters of the State" by Washington State Department of Ecology (ECY), and locally by CMC section 16.53 Wetlands. Wetlands were identified by AES in the southwest corner of the subject parcel (extending offsite to the west), and just offsite from the southeast corner of the subject parcel, Figure 8.See Appendix B for formal test plot data collected onsite by AES. See Appendix A for representative site photos.

Riparian Habitat

The methodology used for determining the location of the OHWM of the unnamed seasonal, non-fish bearing (Type Ns) stream followed the Washington State Department of Ecology's (ECY) Determining the OHWM on Streams in Washington State (2010). See Appendix A for representative site photos.

WDFW Priority Habitat

The subject site was evaluated for the presence of Priority Habitats as defined by WDFW Priority Habitats and Species (PHS) List 2008. WDFW PHS system maps Oregon white oak habitat onsite and adjacent to the subject parcel and the PHS system indicates that "Cave or Cave-rich Areas" occur in areas surrounding the subject parcel (Figure 6).

WDFW defines Caves as, *"A naturally occurring cavity, recess, void, or system of interconnected passages (including associated dendritic tubes, cracks, and fissures) which occurs under the earth in soils, rock, ice, or other geological formations, and is large enough to contain a human. Mine shafts (a human-made excavation in the earth usually used to extract minerals) may mimic caves and abandoned mine shafts with actual or suspected occurrences of priority species should be treated in a manner similar to caves."*

WDFW defines Oregon White Oak Woodlands as, "*stands of oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%; or where total canopy coverage of the stand is <25%, but oak accounts for at least 50% of the canopy coverage. The latter is often referred to as oak savanna. In non-urbanized areas west of the Cascades, priority oak habitat consists of stands > 0.4 ha (1.0 ac) in size. East of the Cascades, priority oak habitat consists of stands > 2 ha (5 ac) in size. In urban or urbanizing areas, single oaks or stands < 0.4 ha (1 ac) may also be considered a priority when found to be particularly valuable to fish and wildlife (i.e., they contain many cavities, have a large diameter at breast height [dbh]* (generally 20-inches dbh and greater)*, are used by priority species, or have a large canopy). Oak woodlands in western Washington may contain understory plants indicative of Prairie*."

No caves were identified onsite or immediately offsite near the subject parcel. Oregon white oak habitat consisting of individual oak trees were identified within or immediately adjacent to the subject parcel (Figure 8). The subject site is within an incorporated city and is urban, therefore the individual Oregon white oak trees are considered Priority Habitat by WDFW. There are areas onsite where the oak trees are more densely populated and/or located within areas of shared Douglas-fir canopy, but these areas do not meet the above definition for oak woodland or savanna. The outer dripline of the canopy for the individual oak trees measuring 20-inches dbh or greater onsite were therefore mapped and professionally surveyed by PLS Engineering, Figures 8-10 and Appendix D. See Appendix A for representative site photos. The project does not propose impacts to the onsite oak habitat. The wetland buffer mitigation plan includes the restoration and enhancement of the onsite oak habitat, Figure 9

Habitats of Local Importance

Following CMC Chapter 16.61 - Fish And Wildlife Habitat Conservation Areas, Section: 16.61.010.A.3.a,

individual Oregon white oak trees with a twenty-inch diameter at breast height (20-inches dbh), stands of Oregon white oak trees greater than one acre when they are found to be valuable to fish and wildlife (i.e., may include trees with cavities, large diameter breast height, are used by priority species, or have a large canopy), and all Oregon white oak snags unless determined by an arborist to be a hazard, are considered Habitats of Local Importance and therefore are regulated by CMC. The tree survey identified approximately sixteen (16) jurisdictional Oregon white oak trees onsite that had greater than 20-inch dbh measurements, See Appendix D.

DOCUMENTED VEGETATION

The vegetation onsite has been disturbed by equestrian use and historic mowing activities, with non-native and invasive grasses and herbs dominate throughout areas historically grazed within the northern and central sections of the parcel. Scattered trees present within the onsite central section include Douglas-fir (*Pseudotsuga menzisii* FACU) and Oregon white oak (*Quercus garryana* FACU).

South of the subject parcel is a forested wetland mosaic area owned by Clark County. This area is much more biologically diverse and slightly overlaps with onsite areas along the southern parcel boundary and corners. Vegetation identified in this area includes Douglas-fir (*Pseudotsuga menzisii* FACU), Oregon white oak (*Quercus garryana* FACU), and Oregon ash (*Fraxinus latifolia* FACW) in the overstory with vine maple (*Acer circinatum* FAC), beaked hazelnut (*Corylus cornuta* FACU), snowberry (*Symphoricarpos albus* FACU), red osier dogwood (*Cornus sericea* FACW), trailing blackberry (*Rubus ursinus* FACU) and salmonberry (*Rubus spectabilis* FAC) in the shrub stratum and sword fern (*Polystichum munitum* FACU), piggy-back plant (*Tolmiea menzisii* FAC), lanceleaf spring beauty (*Claytonia lanceolata* FAC), dovefoot geranium (*Geranium mole* FACU), large leaf avens (*Geum macrophyllum* FACW), and slough sedge (*Carex obnupta* OBL) in the herbaceous stratum.

The indicator categories following the common and scientific name of each vegetation species indicate the likelihood of the species to be found in wetlands. Listed from most-likely to least-likely to be found in wetlands, the indicator categories are:

- **OBL (obligate wetland) –** Occur almost always under natural conditions in wetlands.
- **FACW (facultative wetland) –** Usually occur in wetlands but occasionally found in non-wetlands.
- **FAC (facultative) –** Equally likely to occur in wetlands or non-wetlands.
- **FACU (facultative upland) –** Usually occur in non-wetlands but occasionally found in wetlands.
- **UPL (obligate upland) –** Occur almost always under natural conditions in non-wetlands.
- **NI (no indicator) –** Insufficient data to assign to an indicator category.

CRITICAL AREA CONCLUSIONS

Wetlands

AES identified two wetlands, one partially located onsite and the second located just offsite. Wetland Ais located near the western parcel boundary and within the southwest parcel corner and continues offsite to the west (Figures 8 and 9). Wetland A was rated under the Slope Hydrogeomorphic Classification (HGM) and is considered a Category II wetland that scored high on for habitat functions (8), Appendix C. Wetland B is located just offsite from the southeastern corner of the parcel and was rated under the Depressional HGM classification due to the large area of ponding observed. Wetland B rated as a Category II wetland with a habitat functions score of 8 (Appendix C).

Wetland Buffers

Under the Camas Municipal Code (CMC), wetland buffer widths are established by comparing the wetland rating habitat function score and overall category, and the intensity of proposed land use. Under CMC Table 16.53.040-4 residential use with density higher than 1-unit per acre is considered High Land Use Intensity (LUI). The proposed 38-lot single family residential subdivision will match the current zoning, Single-Family Residential (R-7.5) of the subject parcel comprised of 11.67 acres. The proposed density of the subdivision meets the definition of High LUI under the CMC. Under CMC Table 16.53.040-2, Category II wetlands with a habitat function score of 8 adjacent to proposed High LUI require 260-foot buffers, 195-foot buffers for Moderate LUI, and 130-foot buffers for Low LUI.

Riparian Habitat

Within the southeast corner of the subject parcel AES identified an unnamed seasonal, non-fish bearing (Type Ns) stream (Figures 8 and 9). Type Ns streams require a 25 ft riparian buffer under CMC 16.61.040.D. The areas flanking this stream to the north and south reflect upland conditions. It appears that seasonal hydrology flows from east to west have over time carved out a defined channel within this location.

WDFW Priority Habitat

Oregon white oak woodland and individual Oregon white trees were identified onsite and immediately offsite (Figures 8 and 9). Oregon white oak Priority Habitat is protected by WDFW and also jurisdictional under the local CMC habitat code. The understory and herbaceous layer associated with the onsite oak habitat is highly disturbed due to grazing, lawn mowing or areas dominated by Himalayan blackberry. The dripline of each oak tree canopy was located by survey and is depicted on Figure 8.

Table 1. Critical Areas Summary.

Critical Area	Buffer Width	
Wetland A Category II Wetland (Habitat Score: 8)	***Standard Wetland Buffer***	***LUI Wetland Buffer Reduction***
	260 ft = High LUI Buffer	195 ft = Moderate LUI Buffer
Type Ns Stream	25 ft Riparian Buffer	

BUFFER MITIGATION PLAN

The buffer mitigation plan was developed following Camas Municipal Code CMC) Sections 16.53 Wetlands to offset the project impacts proposed and allow for no net loss of habitat functions onsite.

Avoidance and Minimization

The construction of this residential subdivision within the appropriate zoning location will provide housing for the southwest Washington market, specifically high density residential within the City of Camas where the market demand is high. Following the mitigation sequencing, the project has avoided and minimized impacts to the full extent practicable while still meeting the required design and engineering elements for a subdivision of this size. To utilize the subject site to the fullest following the zoning defined by the city, a large footprint is required to allow for the residential lots, required stormwater facility, internal roadways and the development entrance/exit adequate to accommodate the subdivision. However, the subject site is highly constrained due to due to Category II wetlands and Oregon white oak habitat (Figures 8 and 9).

Despite the large constraints that the critical areas impose, the proposed project has been designed to avoid direct impacts to the wetlands, Oregon white oak habitat, and the highest functioning mature forested buffer habitat present onsite. Additionally, the project proposes extensive wetland buffer enhancement and Oregon

white oak habitat restoration – including habitat corridor connectivity between these historically separated habitats. Therefore, the unavoidable impacts will be offset with adequate mitigation onsite for no net loss of habitat function or values.

The offsite portion of the Wetland A unit provides moderately high to high functions. However, the onsite portion of Wetland A has had historic impacts due to excavation to create a pond within the wetland. The buffer habitat onsite within the southwestern corner of the subject parcel has also been degraded by historic agricultural use/grazing, mowing and is generally dominated by monotypic vegetation including invasive reed canarygrass, lawn grasses, and non-native Himalayan blackberry. This has resulted in a lack of biodiversity and special habitat features, with minimal plant community structure for the onsite wetland and buffer. The project has shown avoidance and minimization of impacts by avoiding direct impacts to the highest functioning buffer habitat and oak habitat while utilizing the historically impacted areas of the subject site for development (existing building footprints, parking and driveway areas, maintained lawn areas, and historic agriculture fields that have been highly managed over the history of the site due to equestrian use). The southern and southwest areas of the subject site are the most constrained due to the significant wetland buffers and oak habitat located in this area. These critical areas highly constrain this portion of the site, thereby making full use of this open area impossible without buffer impacts of some degree. Where the site is less constrained in the east, the project was designed to hold the standard base wetland buffer widths (Figure 9).

The proposed single-family residence subdivision has been designed to avoid onsite critical areas to the extent possible while still providing a residential subdivision meeting the density and design requirements required by the City of Camas. The onsite wetland, stream buffer, and Oregon white oak habitat present have been avoided by the proposed development. However, with the majority of the southern subject parcel encumbered by a substantial wetland buffer (260 feet), impacts to this buffer area are unavoidable. Therefore, the project proposes to modify the buffer area over an area of historically impacted and maintained lawn surrounding the existing house in the southwest portion of the subject parcel.

Wetland Buffer Reduction

CMC 16.53.050.C.1.a.i-ii allows the standard High LUI wetland buffer width (260 ft) to be reduced to the Moderate LUI buffer (195 ft) if a relatively undisturbed corridor at least 100-ft feet wide is protected between the wetland and any other priority habitats present (as defined by the WDFW) and measures to minimize the impacts of the land use adjacent to the wetlands are applied.

In addition to the wetland and buffer habitat identified onsite, Oregon white oak habitat is present onsite and is classified by WDFW as a priority habitat (Figures 8 and 9). Though there are portions of Wetland A offsite that provide moderate to high functions due the scrub-shrub and forested habitat present, the onsite portions of the onsite wetland buffer habitat is degraded from historic residential mowing and overall lacks diversity of the vegetation and habitat structure. The project proposes reduction of the 260 ft High LUI wetland buffer to the 195 ft Moderate LUI buffer by establishing 100 ft minimum corridor between Category II wetlands and the onsite Oregon white oak priority habitat (Figure 9). In many areas the proposed corridor exceeds 100 ft width, see Figure 9. The proposed habitat corridor connectivity is quite extensive, as it will essentially connect the central oak habitat west and south to the Wetland A buffer, then continue east connecting to the Wetland B buffer and multiple individual oak trees present within this area along the eastern property line.

Additionally, the restoration of the central oak habitat area is proposed as the existing asphalt driveway will be removed and be replaced with native vegetation/understory enhancement. By removing this section of

paved driveway, an even more extensive habitat corridor connection between the onsite oak habitat and the wetland will be provided as the driveway has acted to fragment this oak habitat for many years.

The project has also been designed to minimize the impacts of the land use adjacent to the wetlands in accordance with CMC 16.53.050.C.1.a.ii. The proposed project includes stormwater infiltration and has been designed so that development is located outside of areas currently dominated by native vegetation, areas of mature native forested buffer vegetation and the Oregon white oak habitat present onsite. The development has also been designed to be located as far as possible from the onsite wetland to avoid and minimize noise and light directed to the wetland. After implementing the above buffer reduction allowance, the modified base buffer width is considered to be the Moderate LUI buffer or 195 feet.

Wetland Buffer Impacts to the Modified Buffer

After modifying the standard buffer from 260 feet to 195 feet and applying the above outlined avoidance and minimization measures to the onsite critical areas, the project will have unavoidable impacts to two portions of the outer 195-foot wetland buffer over a total area of 25,983 sf. These impact areas can be offset by enhancement over 74,831 sf of the adjacent buffer at a 2.88:1 ratio to the impact area, Figure 9. As outlined by CMC, buffer reduction is allowed over degraded areas when invasive species removal (of the Himalayan blackberry present) and native enhancement is provided to offset the potential loss of buffer functions and values.

Wetland Buffer Impacts due to Stormwater Facility

To allow for the stormwater pond within the buffer of the Category II wetland with a high habitat score (8), additional buffer impacts and mitigation are proposed. Even though the offsite portions of the wetland unit provide higher functions, this onsite buffer area where the stormwater facility is proposed is degraded and consists of monotypic lawn grasses with no significant vegetation to be impacted. The area of buffer impact imposed by the stormwater facility has been quantified to be 11,010 sf, Figure 9. The project proposes to offset this buffer impact area at approximately a 1.24:1 ratio by buffer averaging nearby (and north of the standard 260-foot base buffer width otherwise held by the project along the eastern property boundary) over an area totaling 13,698 sf in size, Figure 9.

Additionally, this buffer averaging area (as well as the adjacent buffer to the south) will be enhanced resulting in a 3:1 mitigation ratio to the impacts. A total of 33,030 sf of buffer habitat will be enhanced and when combined with the averaging area (which exceeds the standard 1:1 ratio) these mitigation measures will ensure that the construction of the stormwater facility within the outer portion of the Category II buffer will have no net loss of buffer area or functions. Additionally, the area surrounding the stormwater facility to the south will be enhanced as it is part of the overall buffer enhancement previously outlined. Under CMC 16.53.050.2, wetland buffer averaging is allowed in conjunction with other reductions in buffer width.

This buffer averaging and enhancement area also contains individual Oregon white oak habitat that can be connected to the central and southern oak habitat/wetland buffer vegetated corridor when combined with the native buffer enhancement activities allowing for the maximum onsite corridor connection possible between the various habitats.

Habitat Enhancement Summary

In total, the habitat enhancement proposed will cover 126,908 sf. This total enhancement area is comprised by the onsite wetland buffer areas totaling 107,861 (74,831 sf + 33,030 sf) and the Oregon white oak habitat restoration area of 19,047 sf. See Table 2 for a detailed summary of the proposed impacts and mitigation. By

enhancing this entire wetland buffer habitat with native trees and shrubs, it will not only upgrade the diversity of the vegetation and structure from the existing lawn, but it will provide a vegetated habitat corridor connection between all the critical areas; Wetlands A and B, Type Ns stream, and Oregon white oak habitat where no connection has historically been present. The buffer enhancement will include the addition of Oregon white oak trees, as well as other native trees and understory shrubs commonly found within oak woodland habitat. This will ultimately create a habitat that will meet the WDFW oak woodland criteria and will upgrade the buffer functions including shielding, habitat and overall diversity to the degraded buffer habitat onsite. As a result the mitigation proposed will provide greater connectivity for wildlife habitat, by increasing shade, shelter, and food sources within multiple locations onsite while also providing greater contiguous habitat corridor connections to the offsite forested wetland (Wetland A) associated with the Lacamas Creek habitat corridor.

Table 2. Impacts & Mitigation Summary.

Critical Area	Impact	Mitigation (Area) 107,861 sf.
Wetlands A & B Buffer Habitat	Buffer Reduction from High to Mod Buffer	**Provide Native Vegetated Corridor Connection Between Category II Wetlands and WDFW PHS** (minimum 100' in width) *Native enhancement of onsite wetland buffers to connect to Oregon white oak habitat* ***Total Habitat Corridor Enhancement Area:*** *"Wetland Buffer" (107,861 sf)* + *"Oak Restoration Area" (19,047 sf)* ***= 126,908 sf***
		Oak Habitat Restoration Area *Removal of Exist. Driveway & Native Enh.* (19,047 sf)
	Lot Impact to 195' Buffer **(25,983 sf)**	**Buffer Enhancement** @ 2.88:1 Ratio **(74,831 sf)**
	Stormwater Pond Impact to 195' Buffer **(11,010 sf)**	Buffer Averaging @ 1.24:1 Ratio (13,698 sf)
		Combined w/ Buffer Enhancement (Averaging area and adjacent buffer) @ 3:1 Ratio **(33,030 sf)**

Note: The total "Wetland Buffer Enhancement" Area includes (74,831 sf + 33,030 sf) = 107,861 as depicted by the aqua hatch on Figure 9.

PLANTING PLAN

Site Preparation

1. Stake or flag the on-site mitigation area boundaries and install tree protection fencing if necessary.

2. Aggressively mow grasses and/or remove invasive species present within the mitigation area prior to planting, paying particular attention to the removal and control of any Himalayan blackberry as requried.

Plant Materials

The plants specified for the buffer mitigation are native species designed to diversify the existing plant community, provide an increase in woody structure and wildlife habitat on a short- and long-term basis, thereby increasing the ecological functions of the riparian habitat. The specified shrubs will grow quickly, forming an intertwining understory layer within the mitigation areas, and over time the specified trees will provide structural and biological diversity.

Container Stock

Plants will be purchased from a native-plant nursery and meet size specifications outlined under the planting plan, see Table 3.

Bareroot Species

1. Plants will be purchased from a native plant nursery and meet size specifications outlined under the planting plan, see Table 3.
2. Bareroot sock will be kept cool and moist prior to being planted.
3. Bareroot stock will have well-developed roots and sturdy stems with a good root-to-shoot ratio.
4. No damaged or desiccated roots or diseased plants will be used.
5. Unplanted bareroot stock will be stored properly at end of planting day(s) to prevent desiccation.

Planting Methods

Plant in fall through early spring (October-April) at specified spacing following the planting plan.

Container/bareroot stock

1. Dig hole using a tree shovel/auger or comparable tool 16-inches wide and 4-inches deeper than the root system, scarify sides of hole to 4 inches. Remove plant from container and loosen roots with hand or score vertically on sides and bottom with knife. Set plant upright and plumb in hole so the crown is just above the finish grade. Ensure that roots are extended down entirely and do not bend upward.
2. Replace loose soil around plant and firmly compact the soil around the plant to eliminate air spaces. Do not use frozen soil for backfilling.
3. Firmly compact the soil around the planted species to eliminate air spaces.
4. Install woody mulch around the base of planted species to insulate plantings, maintain moisture content of soil and reduce invasive plant competition (when deemed necessary).
5. Irrigate according to performance standards for the first three summers after planting or as site and weather conditions warrant.

Planting Specifications

Planting will begin in Fall of 2025, or Winter/Spring of 2026 or Fall of 2026, while onsite soils are saturated (and stock is dormant). The following tables summarize the native plant selection, spacing, size, and quantity for the on-site mitigation area:

Table 3. Native Planting Plan.

Wetland Buffer Enhancement 107,861 sq. ft.				
Common Name	*Scientific Name*	*Stock*	*Spacing*	*Quantity*
Trees				
Oregon white oak	*Quercus garryana*	1-gallon or 24-36" bare-root	20 ft.	50
Douglas fir	*Pseudotsuga menziesii*	1-gallon or 24-36" bare-root	10 ft.	100
Big leaf maple	*Acer macrophyllum*	1-gallon or 24-36" bare-root	10 ft	100
Bitter cherry	*Prunus emarginata*	1-gallon or 24-36" bare-root	10 ft.	100
			Trees =	350
Shrubs				
Beaked hazelnut	*Corylus cornuta*	1-gallon or 24-36" bare-root	6 ft.	150
Nootka rose	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	200
Ocean spray	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	100
Serviceberry	*Amelanchier alnifolia*	1-gallon or 24-36" bare-root	6 ft.	100
Snowberry	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	200
Vine maple	*Acer circinatum*	1-gallon or 24-36" bare-root	6 ft.	100
			Shrubs =	850
			Grand Total =	**1,200**
Oregon White Oak Habitat Restoration 19,047 sq. ft.				
Common Name	*Scientific Name*	*Stock*	*Spacing*	*Quantity*
Trees				
Bitter cherry	*Prunus emarginata*	1-gallon or 24-36" bare-root	10 ft.	10
Cascara	*Frangula purshiana*	1-gallon or 24-36" bare-root	10 ft.	10
			Trees =	20
Shrubs				
Beaked hazelnut	*Corylus cornuta*	1-gallon or 24-36" bare-root	6 ft.	35
Nootka rose	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	35
Oceanspray	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	35
Serviceberry	*Amelanchier alnifolia*	1-gallon or 24-36" bare-root	6 ft.	35
Snowberry	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	50
			Shrubs =	190
			Grand Total =	**210**

Oak Restoration Driveway Removal Area Seeding :	
Native Uplands Mix	**Recommended Seeding Rate**
Mix Includes: California Brome - *Bromus carinatus* Blue Wildrye - *Elymus glaucus* Streambank Lupine - *Lupinus rivularis* Western Yarrow - *Achillea millefolium*	1 lb. per 1,000 square feet

Notes:
1. The "Native Uplands" mix can be sourced from Sunmark Seeds. An adequate substitution is the "Native Upland Mix with Color" sourced from ProTime (PT 404).
2. (Buffer Reduction Area in Mod LUI Buffer (25,983 sf.) Mitigated for by Buffer Enhancement @ 2.88:1 ratio to Impacts or 74,831 sf.)(Storm Water Pond (11,010 sf.) Mitigated for by Buffer Enhancement @ 3:1 ratio to Impacts or 33,030 sf.)

Maintenance Plan
Maintenance of the buffer mitigation area(s) is a five-year process and will involve removing persisting invasive plant species in addition to watering and re-installing failed native species as necessary. The maintenance will include the following activities when necessary:

1. Remove and control non-native/noxious vegetation around all newly installed plants. During years 1 through 3 invasive species will be removed and suppressed as often as necessary to meet a performance standard of no greater than 20 percent cover by invasive species, measured by monitoring plots.

2. Irrigate planted species as necessary during the dry season, approximately July 1 through October 15. Irrigation is recommended to occur on a two-week cycle (minimum) during the dry season for the first three years. Water will be provided by a temporary above-ground irrigation system or a water truck.

3. Replace dead or failed plants as described for the original installation to meet the minimum annual performance standard of 100% survival in the first year, 90% survival in the second year, and 80% survival in years 3-5.

Monitoring Plan
The buffer mitigation area(s) will be monitored for a 5-year period following project construction; monitoring will take place in years 1, 2, 3 and 5. Monitoring reports will be submitted to the City of Camas by the end of each monitored year. The goal of monitoring is to determine if the previously stated performance standards are being met. The mitigation area will be monitored once during the growing season, preferably during the same two-week period each year to better compare the data.

During the first annual monitoring and maintenance event, two representative photo plots will be selected in the mitigation areas permanently marked with metal posts. Monitoring photo plot locations will be placed on an as-built drawing and included in the annual monitoring reports.

Vegetation
Vegetative monitoring will document the woody scrub-shrub canopy developing within the mitigation area. The following information will be included at each sample plot:

- Percent cover and frequency of sapling/shrub species
- Species composition of herbs, shrubs, and trees, including non-native/noxious, invasive species

- Photo documentation of vegetative changes over time

Monitoring Report Contents
The annual monitoring reports will contain at least the following:

- Location map and as-built drawing.
- Photographs from permanent photo points (x2 minimum).
- Historic description of project, including dates of plant installation, current year of monitoring, and restatement of mitigation goal.
- Documentation of plant survival, cover, and overall development of the plant community.
- Assessment of non-native, invasive plant species and recommendations for management.
- Summary of maintenance and contingency measures proposed for the next season and completed for the past season.

Contingency Plan
If the performance standards are not met by the fifth year following project completion, or at an earlier time if specified above, a contingency plan will be developed and implemented. All contingency actions will be undertaken only after consulting and gaining approval from the City of Camas. The applicant will be required to complete a contingency plan that describes (1) the causes of failure, (2) proposed corrective actions, (3) a schedule for completing corrective actions, and (4) whether additional maintenance and monitoring are necessary.

Site Protection
The on-site mitigation area will be owned and managed by the applicant or assignee. AshEco Solutions, LLC or similar entity will be responsible for supervising the maintenance and conducting the monitoring of the on-site mitigation area for the 5-year period at expense of the applicant. The applicant will establish and record a permanent and irrevocable conservation covenant on the mitigation property.

MITIGATION GOALS, OBJECTIVES AND PERFORMANCE STANDARDS

Objective 1: Provide a native vegetated habitat corridor between the wetlands and Oregon white oak habitat, and enhance 107,861 sf of the wetland buffer with natives following Table 3.
Performance Standard 1a. Document the installation of the native plant species specified by Table 3. Submit As-built documenting planting locations, plant species, and plant quantities. *Site prep is to include the removal of invasive species as needed.*
Performance Standard 1b. In Year 1, planted species are to achieve 100 percent (100%) survival one year after the site is planted. The survival rate is to be determined by comparison of baseline vegetation data collected during production of the As-built Map. (If dead plants are replaced in Year 1 to achieve the 100 percent survival rate, this performance standard will be met).
Performance Standard 1c. In Year 2, mitigation plant communities will achieve the densities listed in Table 4.
Performance Standard 1d. In Year 5, the mitigation plant community will achieve 30-percent (30%) aerial cover of woody species. (If plants are added, that achieve this cover requirement, this performance standard will be met).
Performance Standard 1e. In All Years, non-native/invasive plant species will not exceed 20-percent (20%) aerial cover across the onsite mitigation area.

Objective 2: Provide the Oregon white oak habitat restoration over 19,047sf (as depicted on Figure 9) to provide full connectivity between the wetland and oak habitat onsite and enhance with natives as outlined in Table 3.
Performance Standard 2a. Document the removal of the existing paved driveway and the installation of the native grass seed within old driveway footprint and install native shrub species as specified by Table 3. Submit As-built documenting planting locations, plant species, and plant quantities.
Performance Standard 2b. In Year 1, planted species are to achieve 100 percent (100%) survival one year after the site is planted. The survival rate is to be determined by comparison of baseline vegetation data collected during production of the As-built Map. (If dead plants are replaced in Year 1 to achieve the 100 percent survival rate, this performance standard will be met).
Performance Standard 2c. In Year 2, mitigation plant communities will achieve the densities listed in Table 4.
Performance Standard 2d. In Year 5, the mitigation plant community will achieve 30-percent (30%) aerial cover of woody species. (If plants are added, that achieve this cover requirement, this performance standard is met).
Performance Standard 2e. In All Years, non-native/invasive plant species will not exceed 20-percent (20%) aerial cover across the onsite mitigation area.

Objective 3: Provide 13,698 sf buffer averaging area to offset the location of the stormwater facility within the buffer at a 1.24:1 ratio.
Performance Standard 3a. Document the buffer averaging area (as depicted on Figure 9) within the conservation covenant.
Performance Standard 3b. Enhance the buffer averaging area as part of the total buffer enhancement proposed under Objective 1, following the outlined performance standards for Objective 1.

Objective 4: Provide long-term protection for the buffer enhancement areas.
Performance Standard 4a. Record a conservation covenant with the City of Camas. This performance standard will be met when the Year 1 monitoring report is submitted that includes a copy of the approved and recorded conservation covenant.
Performance Standard 4b. Post permanent boundary signage every 200 feet along the outer edge of the onsite mitigation boundary or as otherwise determined by the Shoreline Administrator. Signage will remain in legible condition; if they are missing or illegible, they will be replaced. This performance standard will be met when signs are documented to be in place and of good condition within the final monitoring report.

Signs are to read:

"Critical Area – Please Retain in a Natural State"

or as otherwise determined by the City of Camas permit conditions.

Table 4. Performance Standards by Monitoring Year.

Habitat Type	Performance Standards by Year			
	Year 1	Year 2	Year 3	Year 5
Wetland Buffer and Oak Woodland Enhancement Areas				
Planted Vegetation Survival	100%	---	---	---
Woody Species Density	---	10-14' respectively (on center)	10-14' respectively (on center)	---
Woody Species Aerial Cover	---	---	---	30%
Invasive Plant Species				
Invasive/Non-native plant species	< 10%	< 20%	< 20%	< 20%

CONCLUSIONS

The above sections outline how the proposed project will meet the CMC Sections 16.53 Wetlands and 16.61 Fish and Wildlife Habitat Conservation Areas. The project will not impose direct impact the onsite wetlands, unnamed seasonal stream or buffer and will also retain all of the Oregon white oak habitat present onsite. The buffer mitigation proposal will ultimately result in an ecological uplift of the onsite wetland buffers and oak habitat while providing extensive connectivity by providing a native vegetated corridor connecting all critical area habitats over degraded areas that have been historically fragmented the habitat connectivity. With issuance of the approved critical areas permits, the proposed buffer mitigation activities will be implemented, and a conservation covenant will be recorded to protect the onsite critical areas and critical area buffers, under the applicant's ownership, in perpetuity.

DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigator. It is correct and complete to the best of our knowledge. It should be considered a preliminary mitigation plan and used at your own risk until it has been reviewed and approved in writing by the local agency with jurisdiction over the site. AES personnel base the above listed conclusions on standard scientific methodology and best professional judgment.

REFERENCES

City of Camas Municipal Code. 2008 (Amended). Section 16.53 Wetlands.

City of Camas Municipal Code. 2008 (Amended). Section 16.61 Fish and Wildlife Habitat Conservation Areas.

Clark County Geographic Information Systems. Available at: http:/gis.clark.wa.gov/mapsonline/ [Accessed 2025].

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Online edition. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

Olson, P. & Stockdale, E. 2010. Washington State Department of Ecology: Determining the Ordinary High Water Mark on Streams in Washington State. Second Review Draft. Ecology Publication #08-06-001.

U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 1974. Soil Survey of Clark County Area. Online document. Available at: http://websoilsurvey.nrcs.usda.gov/app/. [Accessed August 2022]

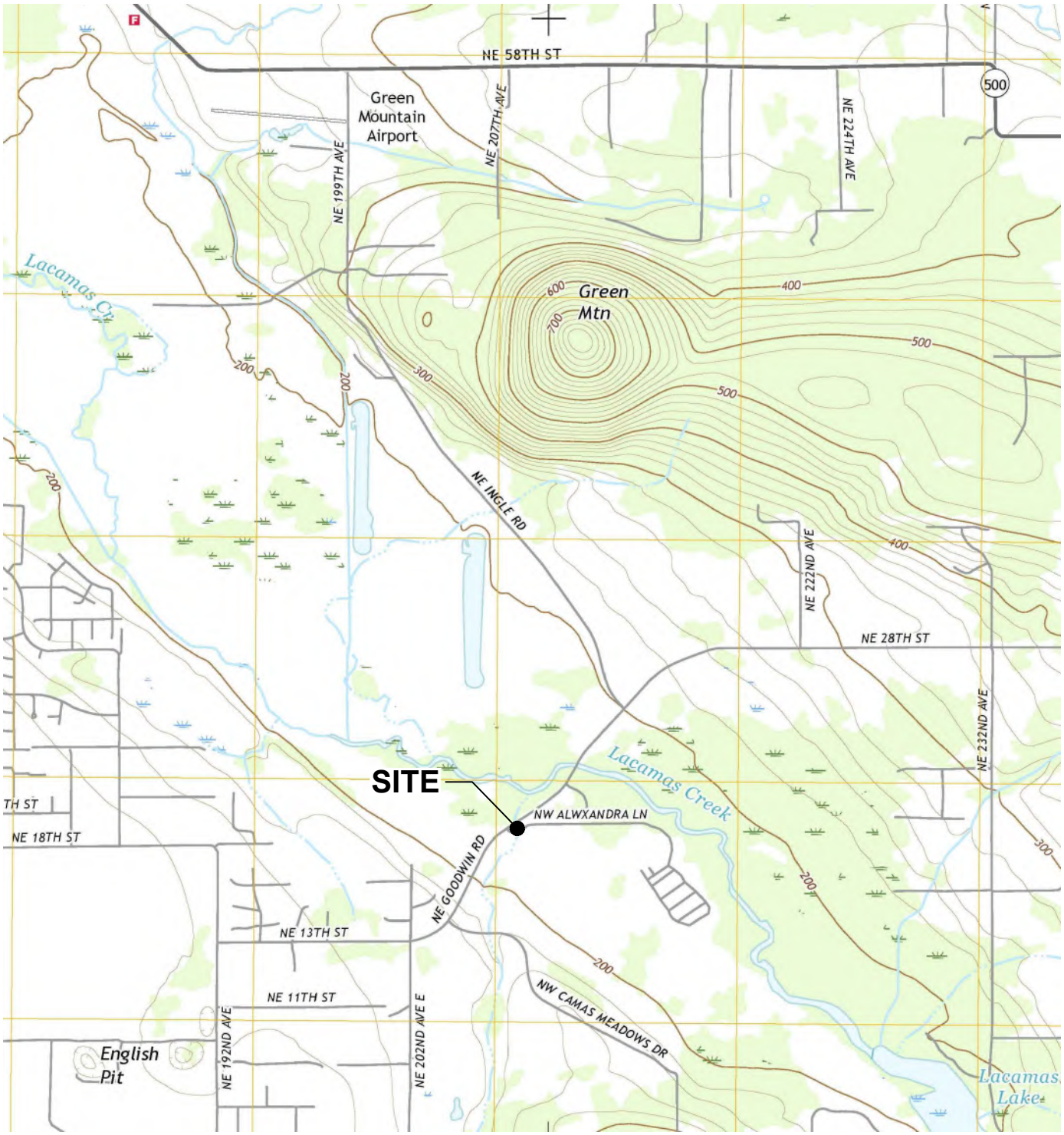
U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 2022. Washington State Hydric Soils List. Available at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. [Accessed 2025].

U. S. Fish & Wildlife Service. 2022. National Wetlands Inventory. Online document. Available at: http:www.wetlandsfws.er.usgs.gov/NWI/index.html. [Accessed 2025].

Wakeley, J.S.; R.W. Lichvar; and C.V. Noble, eds. U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Washington State Department of Ecology (WDOE). 1997. Washington State Wetlands Identification and Delineation Manual. Publication #96-94. Olympia, Washington.

Washington State Department of Fish and Wildlife (WDFW). Management Recommendations for Washington's Priority Habitats – Oregon White Oak Woodlands (Larsen, 1998).



NOTE(S):
USGS, LACAMAS CREEK QUADRANGLE
WASHINGTON-CLARK CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

PURPOSE: XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	VICINITY MAP **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 1 **DATE:** 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Legend

- Taxlots
- Contours Lines - 2 ft
- Contour Lines - 10 ft
- Contour Lines - 100 ft

N

0 250 500

SCALE IN FEET
1" = 250'

AshECO SOLUTIONS, LLC

PURPOSE: XX
Line 1
Line 2
DATUM: NAVD 88
ADJACENT PROPERTY OWNERS:
Adj 1
Adj 2

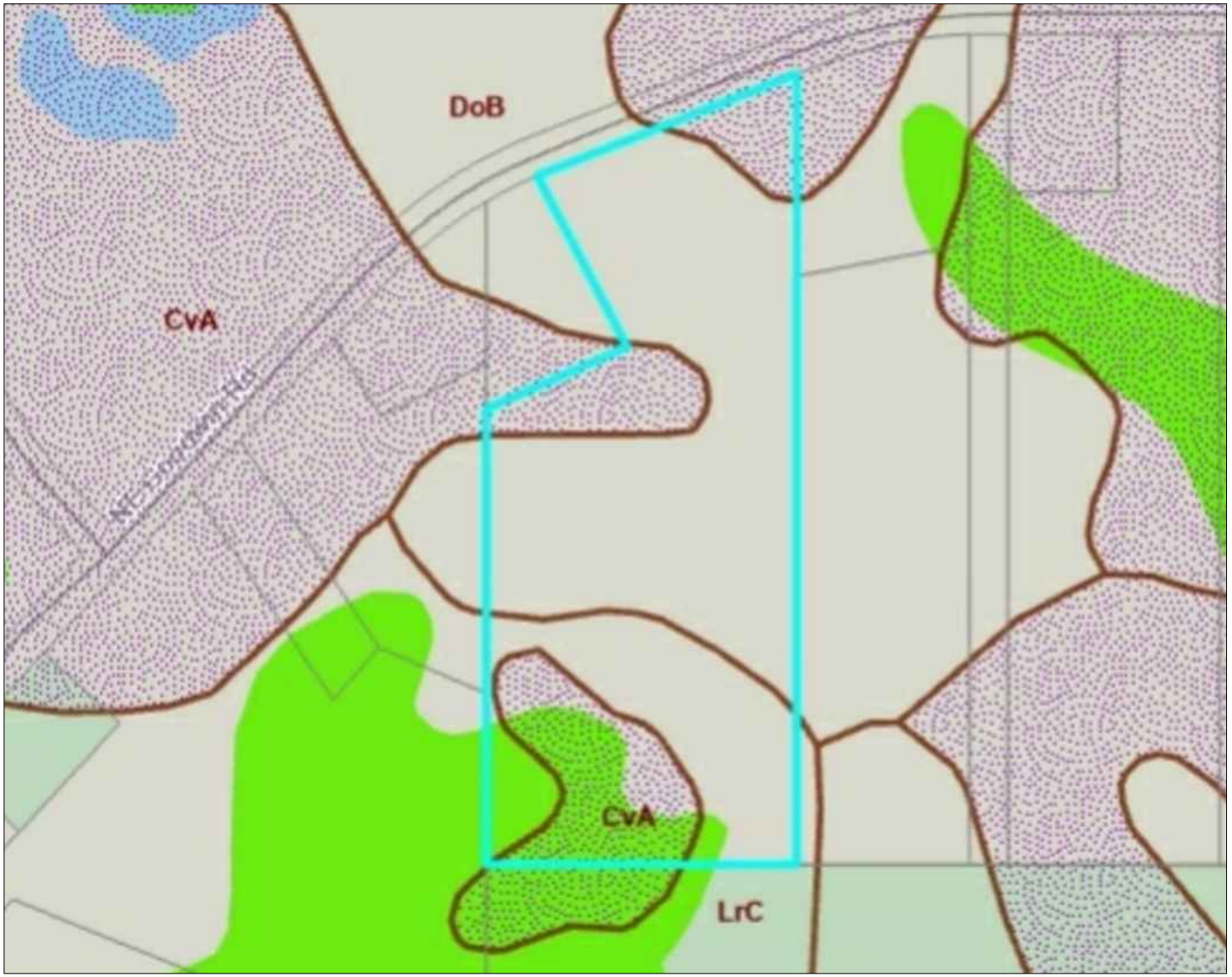
AERIAL PHOTO & TOPO MAP

APPLICANT: Pacific Lifestyle Homes
PROJECT NAME: PLH Goodwin Rd.
PARCEL #: 173192000
SITE LOCATION ADDRESS:
2625 NE Goodwin Rd.

PROPOSED: XX
Add 2
IN: Camas
NEAR: XX
COUNTY: Clark **STATE:** WA
FIGURE: 2
DATE: 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Exhibit 5 SUB25-1004



Legend

- Taxlots
- Soil Type
- Hydric Soils
- Potential Wetlands Presence
- Permitted Wetland
- NWI Wetland

CvA - Cove silty loam, 0 to 3 percent slopes

DoB- Dollar loam, 0 to 5 percent slopes

LrC - Lauren gravelly loam, cemented substratum, 3 to 15 percent slopes

N

0 250 500

SCALE IN FEET
1" = 250'

Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	SOIL SURVEY & NATIONAL WETLANDS INVENTORY MAP **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 3 **DATE:** 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Exhibit 5 SUB25-1004

Legend

- Taxlots
- Species
  - Species Area
  - Adjacent to Species Area
- Habitat
  - Habitat Area
  - Adjacent to Habitat Area
- Riparian Habitat
- Stream
- Lake

N

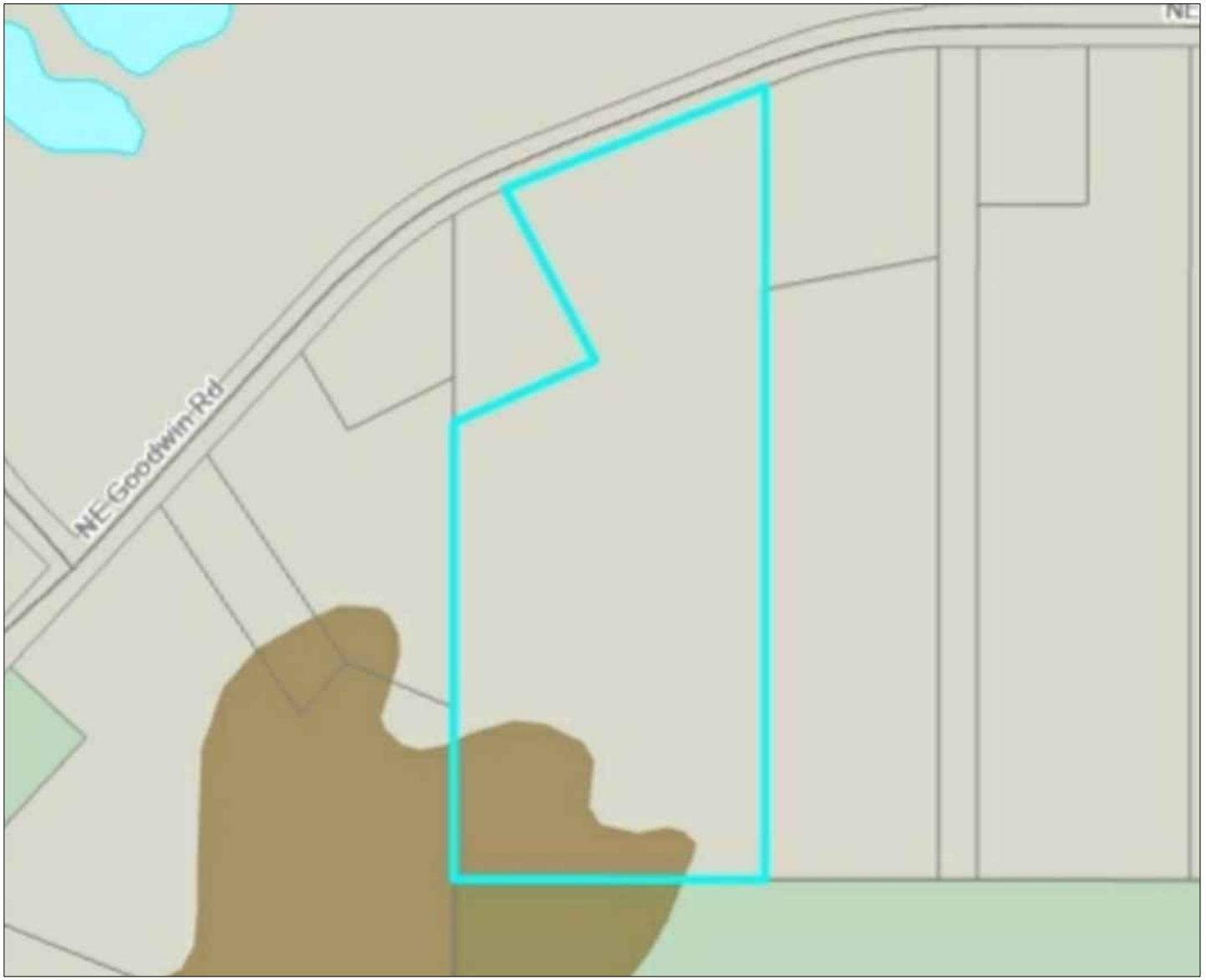
0 250 500

SCALE IN FEET
1" = 250'

Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	RIPARIAN HABITAT & SPECIES MAP **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 4 **DATE:** 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Exhibit 5 SUB25-1004



Legend

- Taxlots
- Stream
- Lake

Shoreline Designations

- Aquatic
- Natural
- Urban Conservancy
- Medium Intensity
- High Intensity
- Rural Conservancy Residential
- Rural Conservancy Resource Land

N

0 250 500

SCALE IN FEET
1" = 250'

Ash ECO SOLUTIONS, LLC

PURPOSE: XX
Line 1
Line 2
DATUM: NAVD 88
ADJACENT PROPERTY OWNERS:
Adj 1
Adj 2

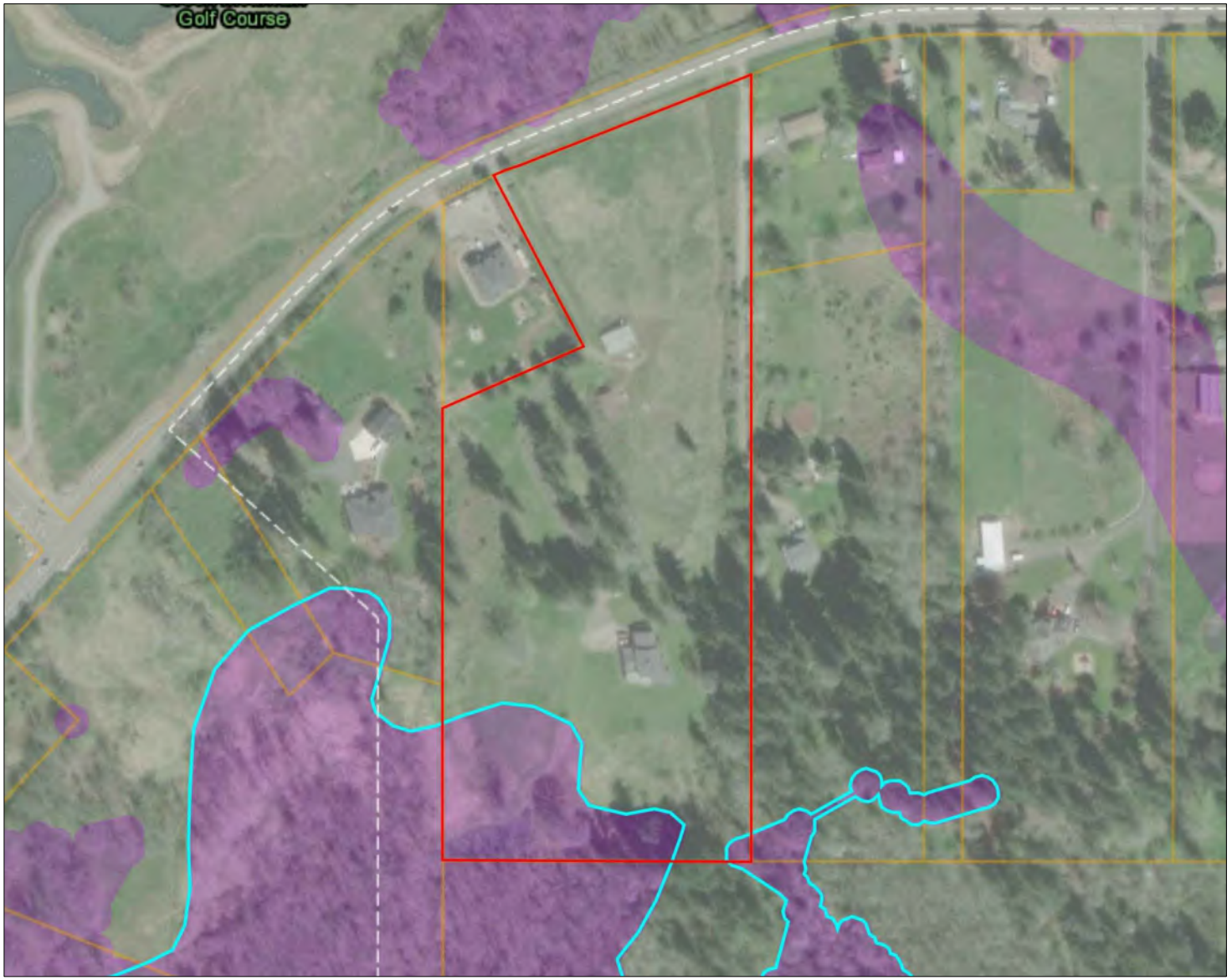
SHORELINES MAP

APPLICANT: Pacific Lifestyle Homes
PROJECT NAME: PLH Goodwin Rd.
PARCEL #: 173192000
SITE LOCATION ADDRESS:
2625 NE Goodwin Rd.

PROPOSED: XX
Add 2
IN: Camas
NEAR: XX
COUNTY: Clark **STATE:** WA
FIGURE: 5
DATE: 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Exhibit 5 SUB25-1004



Legend

Parcels

Parcels

PHS on the Web

PHS Public Points

PHS Public Lines

PHS Public Polygon Outlines

AS MAPPED

Masked

PHS Public Polygons

AS MAPPED

SECTION

QTR-TWP

TOWNSHIP

N

0 250 500

SCALE IN FEET

1" = 250'

AshECO SOLUTIONS, LLC

PURPOSE: XX
Line 1
Line 2
DATUM: NAVD 88
ADJACENT PROPERTY OWNERS:
Adj 1
Adj 2

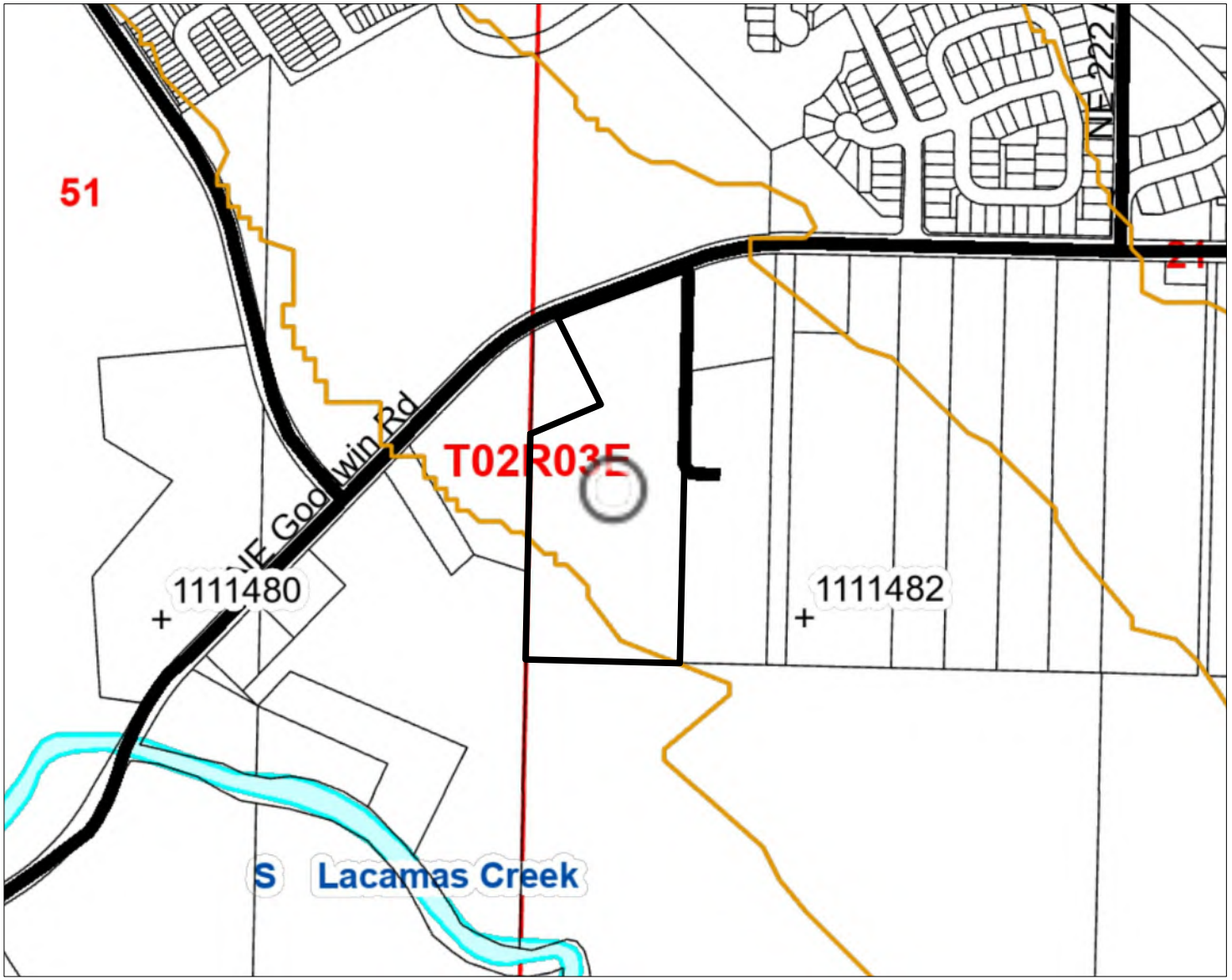
PRIORITY HABITAT & SPECIES MAP

APPLICANT: Pacific Lifestyle Homes
PROJECT NAME: PLH Goodwin Rd.
PARCEL #: 173192000
SITE LOCATION ADDRESS:
2625 NE Goodwin Rd.

PROPOSED: XX
Add 2
IN: Camas
NEAR: XX
COUNTY: Clark **STATE:** WA
FIGURE: 6
DATE: 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Exhibit 5 SUB25-1004



N

0 500 1000

SCALE IN FEET
1" = 500'

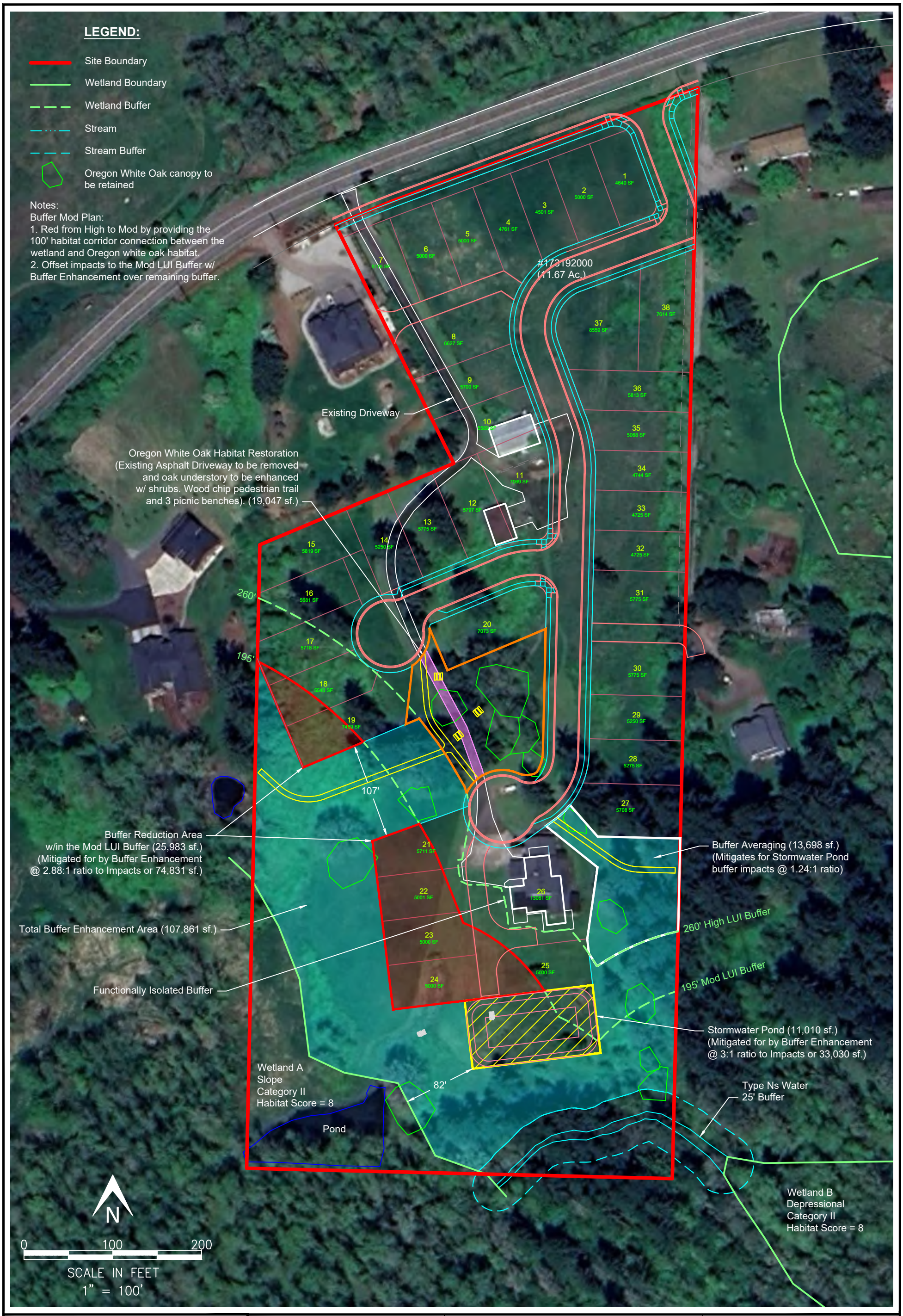
Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	FPARS MAP **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 7 **DATE:** 4-15-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-041425.dwg

Exhibit 5 SUB25-1004

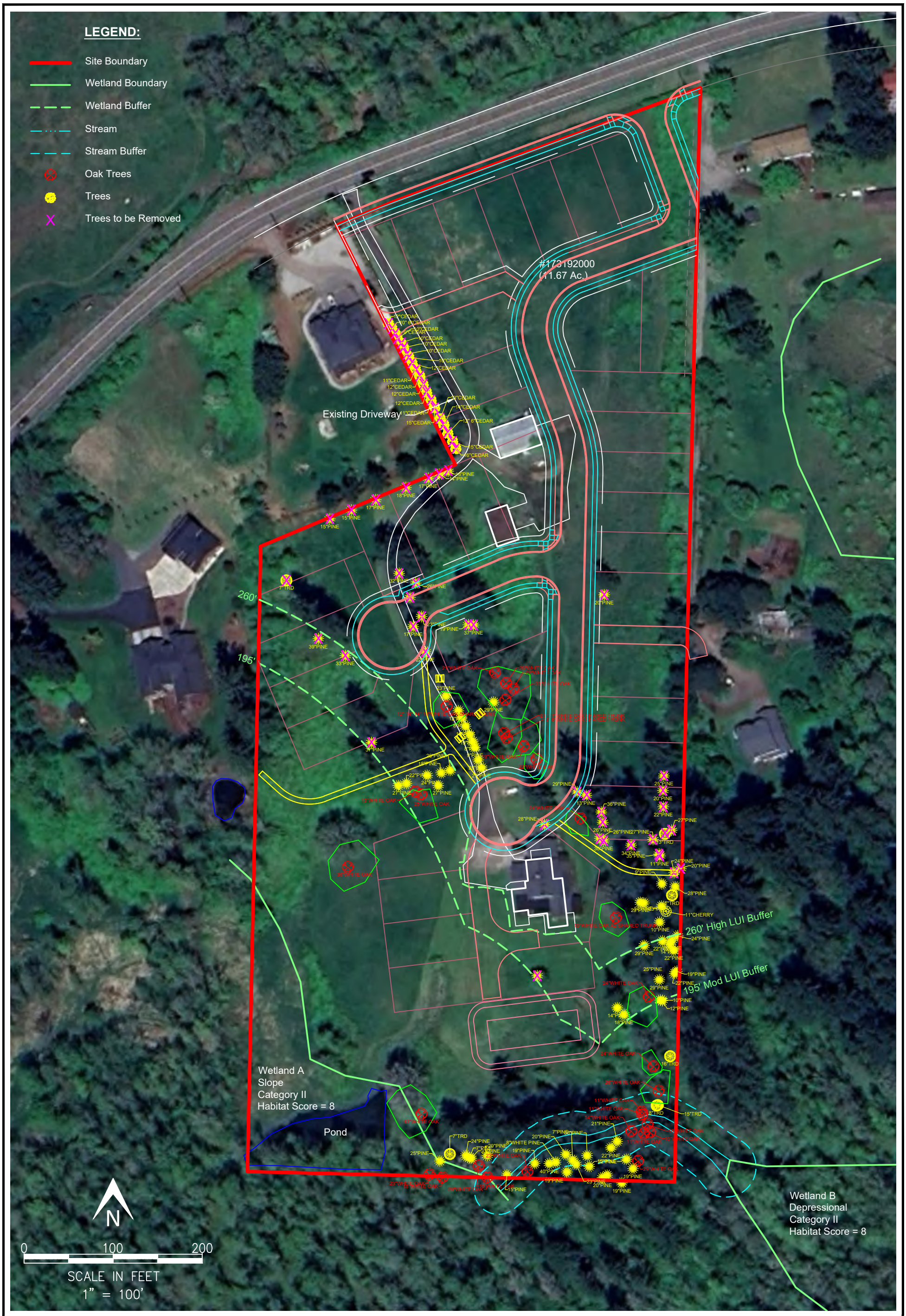
Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	EXISTING CONDITIONS **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 8 **DATE:** 4-30-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-043025.dwg



Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	PROPOSED SITE PLAN **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 9 **DATE:** 5-6-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-050625.dwg



Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	TREE PLAN **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** PLH Goodwin Rd. **PARCEL #:** 173192000 **SITE LOCATION ADDRESS:** 2625 NE Goodwin Rd.	**PROPOSED:** XX Add 2 **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 10 **DATE:** 5-6-25

I:\Autocad Files\AshECO Autocad\PLH Goodwin Road\Goodwin_BM-050625.dwg

Appendix A

Site Photos

Reserve at Green Mountain - Site Photos

Photo 1.
View of the existing residence located within the southern portion of the proposed development. This southern open area of the parcel generally degraded from landscape mowing activities as it is dominated by grass lawn.

Photo 2.
View of the general area, north of the existing residence, within the proposed development.

Photo 3.
View into a portion of Wetland A dominated by invasive reed canarygrass. The eastern extent of this wetland along the western parcel boundary of the subject parcel is dominated by Himalayan blackberry.

Reserve at Green Mountain - Site Photos

Photo 4.
View east over the man-made pond excavated within Wetland A, located in the southwest corner of the subject parcel. An individual Oregon white oak tree present directly northeast of the pond is visible in upper/central portion of this photo.

Photo 5.
View into Oregon white oak located with central area of the site. This oak habitat will be retained and the understory enhanced with native shrubs.

Photo 6.
View of the individual Oregon white oak located along the western property boundary. Wetland A is located directly west from this oak tree, at left of photo view. This oak will be retained and a habitat corridor connection will be created by implementing the buffer mitigation plan. This includes retention of this oak and other adjacent oaks and the enhancement of the surrounding habitat corridor to provide a vegetated wildlife corridor where none has historically been present due to the existing maintained lawn and driveway.

Reserve at Green Mountain - Site Photos

Photo 7.
View south down the existing paved residential driveway that has bisected the Oregon white oak habitat located within the central portion of the parcel. The driveway will be removed and the understory habitat restored with native plantings to provide a vegetated corridor connecting the mature oak habitat onsite as well as connect it to the nearby wetland habitat. corridor to provide a vegetated wildlife corridor where none has historically been present due to the existing maintained lawn and driveway.

Photo 8.
View west down the Type Ns stream that conveys seasonal hydrology down slope from Wetland B in the east to Wetland A in the west.

Photo 9.
View into the central ponded portion of Wetland B located just off site to the east.

Appendix B

Wetland Determination Datasheets

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

Project/Site: The Reserve at Green Mt - Wetland A City/County: Camas/Clark Sampling Date: _____

Applicant/Owner: Pacfic Lifestyle Homes State: WA Sampling Point: TP-1

Investigator(s): Andrea Aberle Section, Township, Range: SW 1/4, S21, T2N, R3E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-3

Subregion (LRR): LRRA Lat: 45.639463° Long: -122.451880° Datum: _____

Soil Map Unit Name: Cove silty clay loam, 0-3% slopes NWI classification: PFOA - South of subject site

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Test plot is located in upland. Only one of 3-wetland indicators is present. Dominate vegetation is faculative.
No hydric soils or hydrology indicators occur within plot.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: 30ft diameter)			
1. Rubus armeniacus	100%	Y	FAC
2.			
	100% = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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: TP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 4/2	100%						

[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:

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:

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

Project/Site: The Reserve at Green Mt - Wetland A City/County: Camas/Clark Sampling Date: _____

Applicant/Owner: Pacfic Lifestyle Homes State: WA Sampling Point: TP-2

Investigator(s): Andrea Aberle Section, Township, Range: SW 1/4, S21, T2N, R3E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-3%

Subregion (LRR): LRRA Lat: 45.639463° Long: -122.451880° Datum: _____

Soil Map Unit Name: Lauren gravelly loam, cemented substratum, 3% to 15% slopes NWI classification: PFOA - South of subject site

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Test plot is located in upland. Only one of 3-wetland indicators is present. Dominate vegetation is faculative.
No hydric soils or hydrology indicators occur within plot.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30ft diameter)			
1. Salix sitchensis	40%	Y	FACW
2.			
3.			
4.			
5.			
	40% = Total Cover		
Herb Stratum (Plot size: 5ft diameter)			
1. Phalaris arundinacea	90%	Y	FACW
2. Juncus effusus	10%	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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: TP-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 4/2	98%	5YR 3/2	2%	C	M	clay loam	
							clay loam	

[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:

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): 2" BGS

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:

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

Project/Site: The Reserve at Green Mt - Wetland A City/County: Camas/Clark Sampling Date: _____

Applicant/Owner: Pacfic Lifestyle Homes State: WA Sampling Point: TP-3

Investigator(s): Andrea Aberle Section, Township, Range: SW 1/4, S21, T2N, R3E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-3

Subregion (LRR): LRRA Lat: 45.639463° Long: -122.451880° Datum: _____

Soil Map Unit Name: Cove silty clay loam, 0-3% slopes NWI classification: PFOA - South of subject site

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 ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Test plot is located in upland. Only one of 3-wetland indicators is present. Dominate vegetation is faculative. No hydric soils or hydrology indicators occur within plot.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	60%	Y	FACU
2. Tsuga heterophylla	20%	Y	FACU
3.			
4.			
	80% = Total Cover		
Sapling/Shrub Stratum (Plot size: 30ft diameter)			
1. Symphoricarpos albus	20%	Y	FACU
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5ft diameter)			
1. Polystichum munitum	20%	Y	FACU
2. Tellima grandiflora	20%	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40% = Total Cover		
Woody Vine Stratum (Plot size: 30ft diameter)			
1. Rubus armeniacus	30%	Y	FAC
2.			
	30% = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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: TP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16"	10YR 4/1	100%					loamy clay	mixed matrix
	10YR 4/2	100%					loamy clay	mixed matrix

[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:

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:

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

Project/Site: The Reserve at Green Mt - Wetland A City/County: Camas/Clark Sampling Date: _____

Applicant/Owner: Pacfic Lifestyle Homes State: WA Sampling Point: TP-4

Investigator(s): Andrea Aberle Section, Township, Range: SW 1/4, S21, T2N, R3E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-3%

Subregion (LRR): LRRA Lat: 45.639463° Long: -122.451880° Datum: _____

Soil Map Unit Name: Lauren gravelly loam, cemented substratum, 3% to 15% slopes NWI classification: PFOA - South of subject site

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Test plot is located in upland. Only one of 3-wetland indicators is present. Dominate vegetation is faculative.
No hydric soils or hydrology indicators occur within plot.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30ft diameter)			
1. Symphoricarpos albus	40%	Y	FACU
2. Rosa nutkana	20%	Y	FACU
3.			
4.			
5.			
	40% = Total Cover		
Herb Stratum (Plot size: 5ft diameter)			
1. Phalaris arundinacea	40%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40% = Total Cover		
Woody Vine Stratum (Plot size: 30ft diameter)			
1. Rubus armeniacus	20%	Y	FAC
2.			
	20% = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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: TP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 4/2	98%	5YR 3/2	2%	C	M	clay loam	

[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:

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): 0.5-1"

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:

Appendix C

Wetland Rating Form & Figures

Wetland name or number Wetland A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): The Reserve at Green Mt - Wetland A Date of site visit: 3/25

Rated by Andrea Aberle Trained by Ecology? ✓ Yes ___No Date of training 10/16

HGM Class used for rating slope Wetland has multiple HGM classes? ___Y ✓ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27
✓ **Category II** – Total score = 20 - 22
_____**Category III** – Total score = 16 - 19
_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M **L**	H **M** L	**H** M L	
Landscape Potential	H **M** L	H **M** L	H **M** L	
Value	**H** M L	H **M** L	**H** M L	**TOTAL**
Score Based on Ratings	6	6	8	20

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	

Wetland name or number Wetland A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	Figure 1
Hydroperiods	H 1.2	Figure 1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	Figure 1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	Figure 1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	Figure 1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	Figure 2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	Figure 3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	Figure 3

Wetland name or number Wetland A

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ✓ The wetland is on a slope (slope can be very gradual),
   ✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   ✓ The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number Wetland A

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

Wetland name or number Wetland A

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (A 1% slope has a 1 ft vertical change in elevation for every 100 ft of horizontal distance.) Slope is 1% or less — points = 3 Slope is > 1%-2% — points = 2 Slope is > 2%-5% — points = 1 Slope is greater than 5% — points = 0	2
S 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed, and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	3
Total for S 1 — Add the points in the boxes above	5

Rating of Site Potential If score is: ___**12 = H** ___**6-11 = M** ✓ **0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources adjacent septic systems Yes = 1 No = 0	1
Total for S 2 — Add the points in the boxes above	2

Rating of Landscape Potential If score is: ✓ **1-2 = M** ___**0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? (At least one aquatic resource in the basin is on the 303(d) list.) Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which unit is found.) Yes = 2 No = 0	1
Total for S 3 — Add the points in the boxes above	3

Rating of Value If score is: ✓ **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number Wetland A

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	1

Rating of Site Potential If score is: ✓ **1 = M** ___ **0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	1

Rating of Landscape Potential If score is: ✓ **1 = M** ___ **0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately downgradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	1
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above	1

Rating of Value If score is: __ **2-4 = H** ✓ **1 = M** ___ **0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number Wetland A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac. **2**

____Aquatic bed	4 structures or more: points = 4
____Emergent	3 structures: points = 2
☑ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
☑ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

☑ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods **3**

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

☑ Permanently flooded or inundated	4 or more types present: points = 3
☑ Seasonally flooded or inundated	3 types present: points = 2
____Occasionally flooded or inundated	2 types present: points = 1
☑ Saturated only	1 type present: points = 0
☑ Permanently flowing stream or river in, or adjacent to, the wetland	
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

H 1.3. Richness of plant species **2**

Count the number of plant species in the wetland that cover at least 10 ft^2.

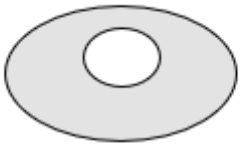
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

H 1.4. Interspersion of habitats **3**

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.

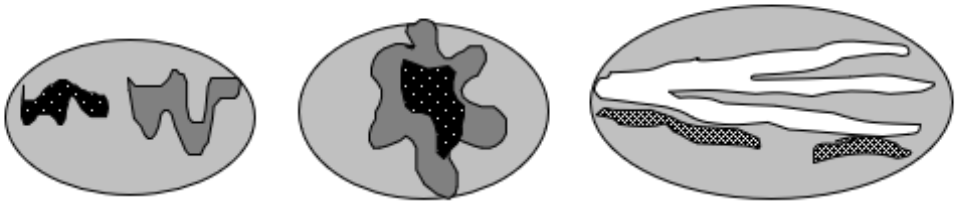
None = 0 points



Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



Wetland name or number Wetland A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✓ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✓ Standing snags (dbh > 4 in.) within the wetland ✓ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ✓ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ✓ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ___ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	5
Total for H 1 Add the points in the boxes above	15

Rating of Site Potential If score is: ✓ **15-18 = H** ___ **7-14 = M** ___ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat ~~16%~~ **+** [(~~18%~~ moderate and low intensity land uses)/2] = ~~17%~~ Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon < 10% of 1 km Polygon	7% Accessible + (31/2) 15.5% = 22.5% points = 3 points = 2 points = 1 points = 0	2
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat ~~20%~~ **+** [(~~18%~~ moderate and low intensity land uses)/2] = ~~22%~~ Total habitat > 50% of Polygon Total habitat 10-50% and in 1-3 patches Total habitat 10-50% and > 3 patches Total habitat < 10% of 1 km Polygon	20% Undist + (15.5%) = 35.5 (4 patches) points = 3 points = 2 points = 1 points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	High LUI = 42 points = (- 2) points = 0	0
Total for H 2 Add the points in the boxes above		~~3~~ 1

Rating of Landscape Potential If score is: ___ **4-6 = H** ✓ **1-3 = M** ___ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ✓ It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ✓ **2 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number Wetland A

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

✓ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number Wetland A

✓ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

✓ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

✓ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 3/25

Rated by Andrea Aberle Trained by Ecology? ✓ Yes ___ No Date of training 10/06

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y _X_ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

_____ **Category I** – Total score = 23 - 27

_X_ **Category II** – Total score = 20 - 22

_____ **Category III** – Total score = 16 - 19

_____ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	(H) M L	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	(H) M L	H (M) L	(H) M L	**TOTAL**
Score Based on Ratings	7	6	8	21

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	✓

Wetland name or number B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number B

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   *If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
   ___At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   ✓ The wetland is on a slope (*slope can be very gradual*),
   ✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
   X The water leaves the wetland **without being impounded**. (Dependant on beaver activity)

   NO – go to 5 **YES** - The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.

Wetland name or number B

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12-16 = H** ✓ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ✓ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	1
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: ✓ **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	8

Rating of Site Potential If score is: ___ **12-16 = H** ✓ **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	0
Total for D 5 Add the points in the boxes above	1

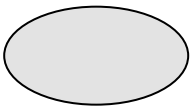
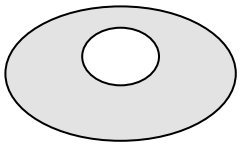
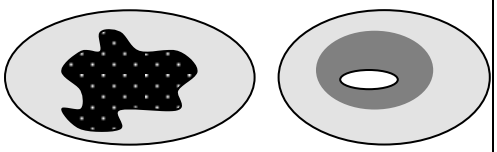
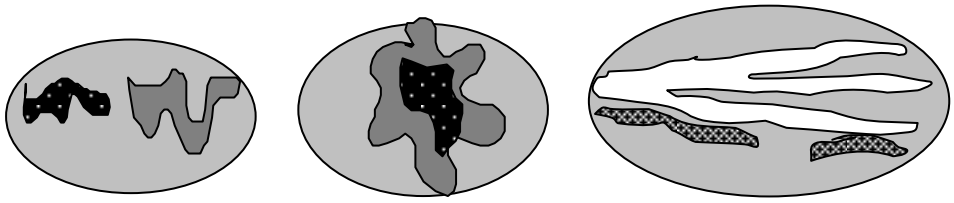
Rating of Landscape Potential If score is: ___ **3 = H** ✓ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ___ **2-4 = H** ✓ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number B

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* __X__Aquatic bed — 4 structures or more: points = 4 __X__Emergent — 3 structures: points = 2 __X__Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 __X__Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	4
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 __X__Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 __X__Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland __X__Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	2
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	2
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	2

Wetland name or number B

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). X Standing snags (dbh > 4 in) within the wetland X Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* X Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
Total for H 1 Add the points in the boxes above	15

Rating of Site Potential If score is: ✓ **15-18 = H** ___ **7-14 = M** ___ **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat___ **+** [(% moderate and low intensity land uses)/2]___ **=** _____% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 7% Accessible + (31/2) 15.5% = 22.5% points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat___ **+** [(% moderate and low intensity land uses)/2]___ **=** _____% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches 20% Undist + (15.5%) = 35.5 (4 patches) points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use High = 42% points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: ___ **4-6 = H** ✓ **1-3 = M** ___ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 X It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ✓ **2 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number B

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

✓ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

✓ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

✓ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** No **–** Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes **= Category I** No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 2.4** No **= Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No **= Is not a bog**	**Cat. I**

Wetland name or number _____

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number _____

This page left blank intentionally

The Reserve

Wetland Unit Map

Legend

Wetland A
Slope Wetland Unit
(Hydrology collects in small depressions throughout, seasonal sheet flow south over unit to Lacamas Creek, overbank flooding doesn't appear to extend over this full area).

Wetland B
Depressional Wetland Unit
(Ponding throughout, unidirectional flow southwest via stream channel, sits higher in elevation that the wetland to west).

Cowardin Plant Classes:
Forested
Scrub/Shrub
Dense Ridge Plant Cover

Hydroperiods:
Permanently flooded,
Seasonally flooded,
aturated Adjacent to
Permanently Flowing Stream
(Lacamas Creek)

Cowardin Plant Classes:
Aquatic
Emergent
Forested
Scrub/Shrub

Hydroperiods:
Seasonally flooded,
Saturated,
Adjacent to Seasonally Flowing Stream

NE 28th St

Goodwin Rd

Unit Break

Riverine Unit
(Due to overbank
flooding from Lacamas Cr)

Unit Break

Lacamas Church of God Campground

Lacamas Cr.

Unit Break

Riverine Unit
(Due to overbank
flooding from Lacamas Cr)

Keith Upkes Coaching

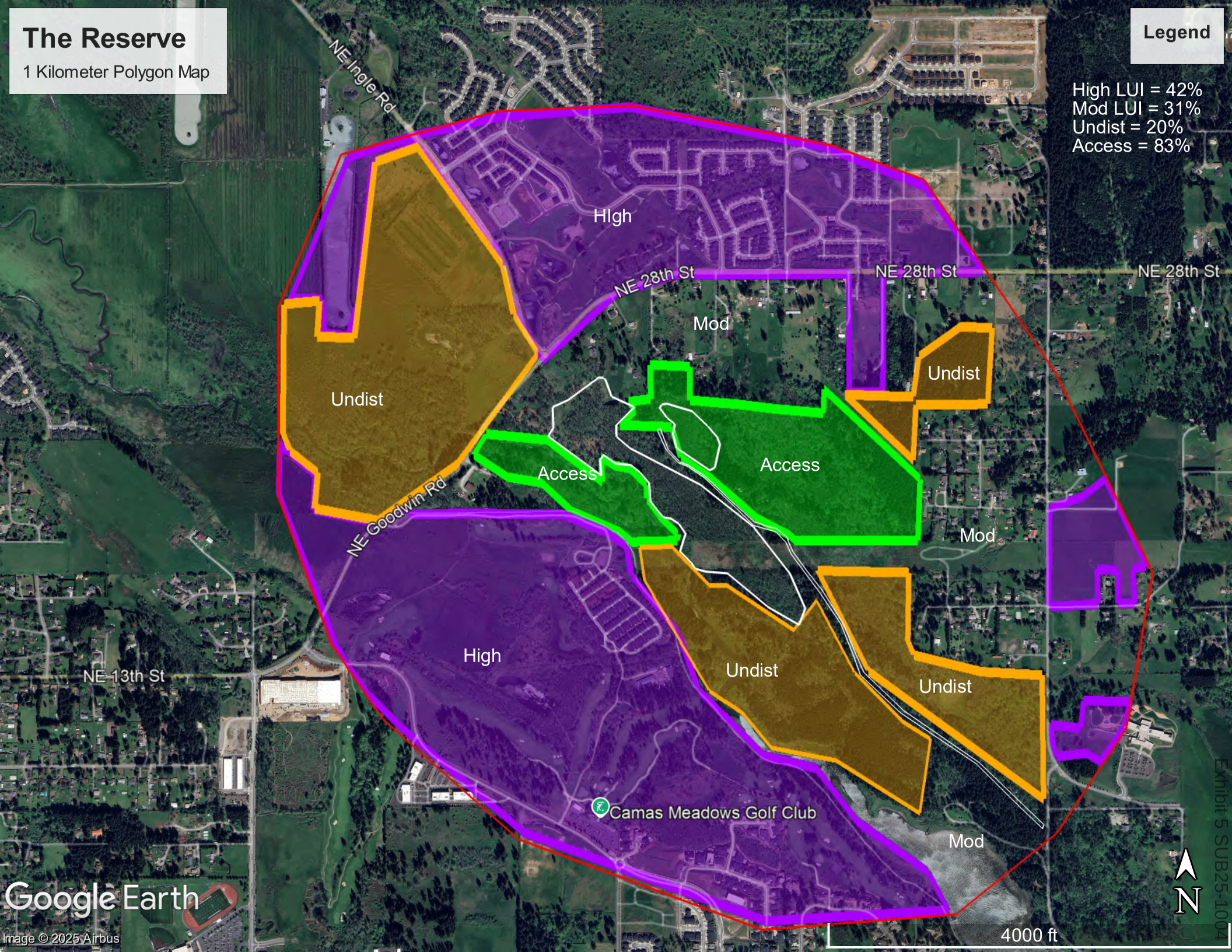
Barrett & Co. CPA's

Google Earth

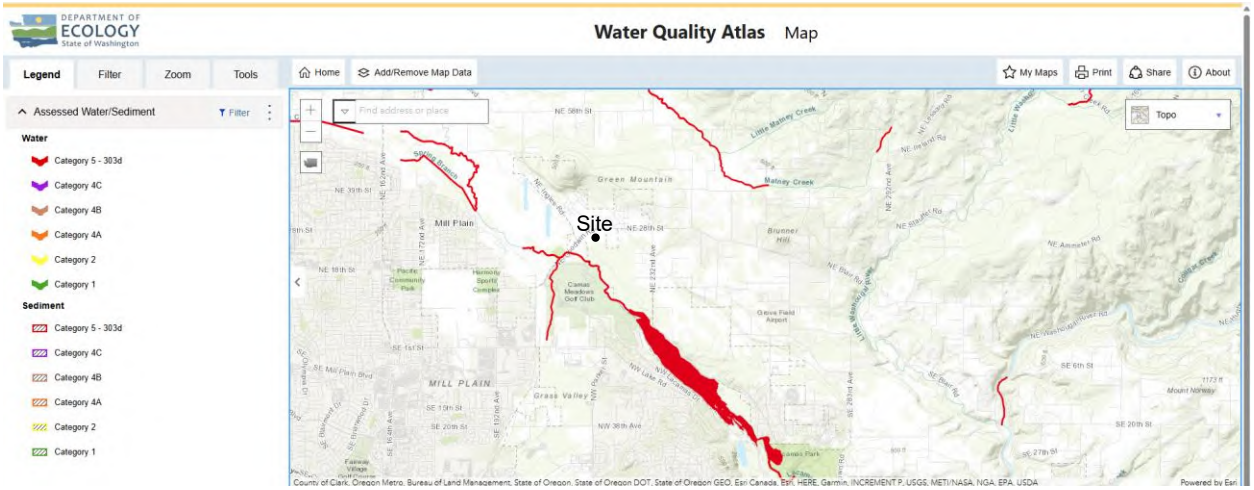
Image © 2025 Maxar Technologies

N

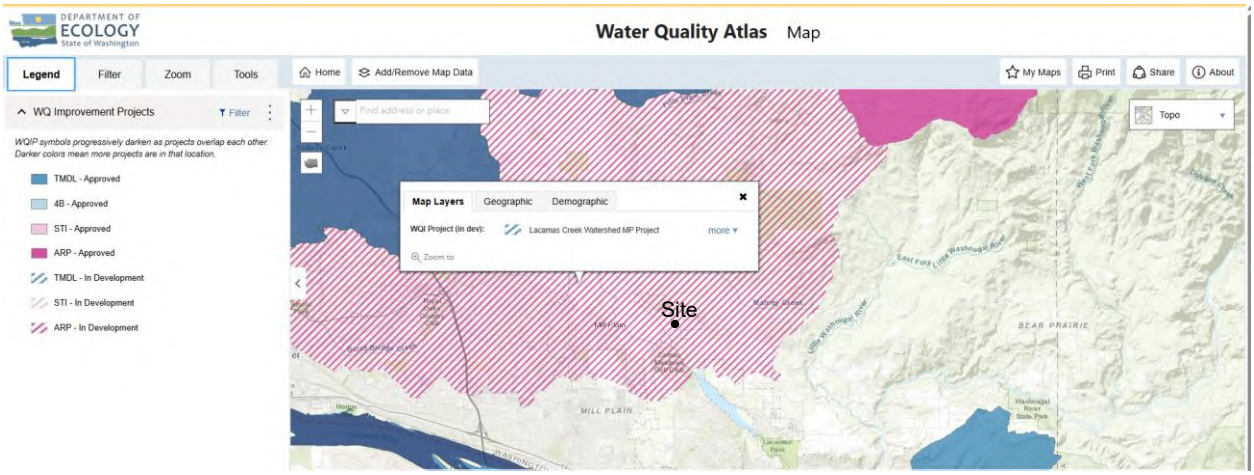
1000 ft


The Reserve
1 Kilometer Polygon Map
Legend
High LUI = 42%
Mod LUI = 31%
Undist = 20%
Access = 83%
NE Ingle Rd
HIgh
NE 28th St
NE 28th St
NE 28th St
Mod
Undist
Undist
Access
Access
NE Goodwin Rd
Mod
High
Undist
Undist
NE 13th St
Camas Meadows Golf Club
Mod
Google Earth
Image © 2025 Airbus
N
4000 ft
Exhibit 5 SUB25-1004

The Reserve at Green Mt.
WRF Figure 3



↑Screen capture of map of 303(d) listed waters in basin (from Ecology website).



↑Screen capture of list of TMDLs for WRIA in which unit is found (from Ecology website).

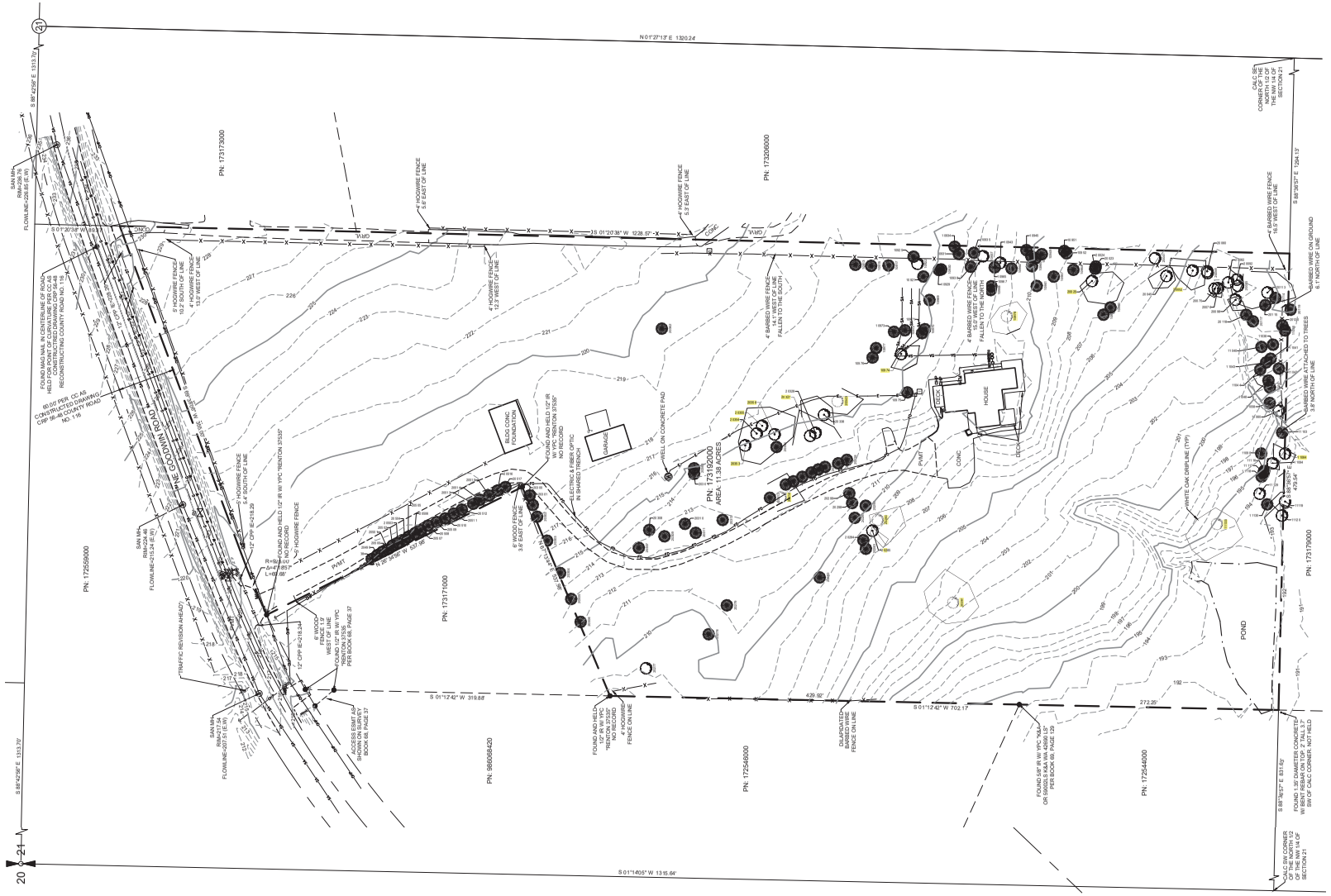
Appendix D

Tree Plan (Map & Table)

EXISTING CONDITIONS SURVEY

IN THE NW 1/4 OF THE SW 1/4
SECTION 21, T. 2 N., R. 3 E., W.M.
CITY OF CAMAS
CLARK COUNTY WASHINGTON

JOB NO.: 3927
DATA COLLECT: MARCH 2025
DRAWING DATE: 03-20-2025
SHEET 1 OF 1



LEGEND:

- INDICATES WATER VALVE
- INDICATES FIRE HYDRANT
- INDICATES WATER STAND PIPE
- INDICATES WELL
- INDICATES SANITARY SEWER MANHOLE
- INDICATES SEPTIC SYSTEM LID
- INDICATES POWER POLE WITH DIRECTION OF OVERHEAD LINES
- INDICATES GUY ANCHOR
- INDICATES ELECTRIC METER
- INDICATES TRANSFORMER
- INDICATES HEAT PUMP
- INDICATES GAS VALVE
- INDICATES SIGN
- INDICATES WETLAND FLAG
- INDICATES EVERGREEN TREE WITH TRUNK DIAMETER AND TYPE
- INDICATES DECIDUOUS TREE WITH TRUNK DIAMETER AND TYPE
- INDICATES FIBER OPTIC PEDESTAL
- INDICATES MAIL BOX

- INDICATES BOUNDARY
- INDICATES EDGE OF ASPHALT
- INDICATES EDGE OF CONCRETE
- INDICATES EDGE OF GRAVEL
- INDICATES 5 FOOT INTERVAL CONTOUR
- INDICATES 1 FOOT INTERVAL CONTOUR
- INDICATES FENCE LINE
- INDICATES EDGE OF WATER
- INDICATES PAINT STRIPE
- INDICATES OVER HEAD POWER
- INDICATES TREE DRIP LINE

ADAM B. THOMSON — STATE OF WASHINGTON — 21032302 — REGISTERED PROFESSIONAL LAND SURVEYOR

60 30 0 60 90 120
SCALE 1 INCH = 60 FEET

HORIZONTAL DATUM:

NAD 83 (2011)
WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S SURVEY FEET. BASED ON REAL TIME KINEMATIC CORRECTIONS FROM THE WASHINGTON STATE REFERENCE NETWORK.

VERTICAL DATUM:

NGVD29(47) CLARK COUNTY DATUM, DERIVED BY WSRN OBSERVATIONS, NAVD(88) TO NGVD 29(47)=-3.21'

NOTES:

1. BOUNDARIES WERE DRAWN PER PLAT, SURVEY RECORDS AND MONUMENTS FOUND. THIS IS NOT INTENDED TO BE A BOUNDARY SURVEY. NO PROPERTY CORNERS WERE SET IN THIS SURVEY.

2. NO WARRANTIES ARE MADE AS TO MATTERS OF UNWRITTEN TITLE, SUCH AS ADVERSE POSSESSION, ESTOPPEL, ACQUIESCENCE, ETC.

3. A PRIVATE UTILITY LOCATE WAS CALLED FOR ON 03-26-2025. THE UNDERGROUND UTILITIES AS SHOWN HEREON ARE AS MARKED AT THE TIME OF THIS SURVEY. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. M.G.S. ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.

PLS ENGINEERING
Engineering - Surveying - Planning
604 W. Evergreen Blvd., Vancouver, WA 98660
PH: (360) 944-6519 Fax: (360) 944-6539

EXISTING CONDITIONS SURVEY

IN THE NW 1/4 OF THE SW 1/4
SECTION 21, T. 2 N., R. 3 E., W.M.
CITY OF CAMAS
CLARK COUNTY WASHINGTON

JOB NO.: 3927
DATA COLLECT: MARCH 2025
DRAWING DATE: 03-20-2025
SHEET 1 OF 1

Point Table	
Point #	Raw Description
10937	7"TRD
10938	9"FIR
10943	11"CHERRY
10944	25"FIR
10945	24"FIR
10948	14"FIR
10949	22"FIR
10951	19"FIR
10952	22"FIR
10954	29"FIR
10960	22"FIR
10961	29"FIR
10964	10"FIR
10965	10"FIR
10967	23"FIR
10968	29"FIR
10969	34"FIR
10970	30"FIR
10971	26"FIR
10972	26"FIR
10973	36"FIR
10975	28"FIR
10976	29"FIR
10977	13"FIR
10979	14"FIR
10980	18"FIR
11036	20"FIR
11038	15"FIR
11040	36"FIR
11041	23"FIR
11043	7"FIR
11044	20"FIR
11047	19"FIR
11054	40"FIR
11058	19"FIR
11090	29"FIR
11103	15"FIR
11116	21"FIR
11117	7"FIR
11118	24"FIR

Point Table		
Point #	Raw Description	
11129	7"TRD	
11130	2"FIR	
20023	12"FIR	
20024	10"FIR	
20041	16"TRD	
20059	8"TRD	
20060	15"TRD	
20114	19"FIR	
20115	2"FIR	
20117	2"FIR	
20118	2"FIR	
20119	19"FIR	
20120	12"FIR	
10974	24"WHITE OAK	
10978	19"WHITE OAK X2 SHARED TRUNK	<20" DBH
11060	23"WHITE OAK	
11064	29"WHITE OAK	
11094	18"WHITE OAK	<20" DBH
11119	18"WHITE OAK	<20" DBH
11120	23"WHITE OAK	
11133	43"WHITE OAK	
20025	24"WHITE OAK	
20045	24"WHITE OAK	
20052	28"WHITE OAK	
20070	1"WHITE OAK	<20" DBH
20076	1"WHITE OAK	<20" DBH
20082	18"WHITE OAK	<20" DBH
20092	10"WHITE OAK	<20" DBH
20093	1"WHITE OAK	<20" DBH
20098	14"WHITE OAK	<20" DBH
20113	29"WHITE OAK	
11048	8"WHITE PINE	

Point Table		
Point #	Raw Description	
20301	14"FIR	
20303	18"FIR	
20304	17"FIR	
20305	15"FIR	
20277	7"TRD	
20278	39"FIR	
20279	33"FIR	
20280	37"FIR	
20281	36"WHITE OAK	
20283	27"FIR	
20284	22"FIR	
20290	25"WHITE OAK	
20296	27"FIR	
20297	24"FIR	
20298	18"FIR	
20299	26"FIR	
20300	18"FIR	
20306	18"FIR	
20307	32"FIR	
20308	26"FIR	
20309	22"FIR	
20310	23"FIR	
20311	17"FIR	
20312	22"FIR	
20313	23"FIR	
20314	12", 14", 14", 18" WHITE OAK SHARE TRUNK	
20319	12"FIR	
20320	8"FIR	
20321	18"FIR	
20322	19"FIR	
20323	8"FIR	
20324	9"FIR	
20325	28"FIR	
20326	27"FIR	
20327	21", 17" WHITE OAK SHARED TRUNK	
20328	9", 6" WHITE OAK SHARED TRUNK	<20" DBH
20285	13" WHITE OAK	<20" DBH
20302	17"FIR	<20" DBH
20338	19" WHITE OAK	<20" DBH
20343	22"WHITE OAK	

Point Table	
Point #	Raw Description
20344	29"FIR
20353	21"WHITE OAK
20354	25"WHITE OAK
20355	22"WHITE OAK
20356	23"WHITE OAK
20362	20"FIR
20363	37"FIR
20364	19"FIR
20498	12"CEDAR
20499	10", 6" CEDAR
20500	9"CEDAR
20501	10"CEDAR
20502	10"CEDAR
20503	10"CEDAR
20504	10"CEDAR
20505	10"CEDAR
20506	12"CEDAR
20507	11"CEDAR
20508	12"CEDAR
20509	12"CEDAR
20510	12"CEDAR
20511	11"CEDAR
20512	15"CEDAR
20513	13"CEDAR
20514	14"CEDAR
20515	12", 6" CEDAR
20516	15"CEDAR
20517	16"CEDAR
10957	25"FIR
10913	25"FIR
10915	20"FIR
10917	22"FIR
10921	27"FIR
10922	13"TRD
10925	27"FIR
10929	35"FIR
10930	11"FIR
10931	24"FIR
10934	20"FIR
10935	28"FIR

LEGEND:

- WV — INDICATES WATER VALVE
- FH — INDICATES FIRE HYDRANT
- INDICATES WATER STAND PIPE
- W — INDICATES WELL
- S — INDICATES SANITARY SEWER MANHOLE
- SEPTIC — INDICATES SEPTIC SYSTEM LID
- INDICATES POWER POLE WITH DIRECTION OF OVERHEAD LINES
- INDICATES GUY ANCHOR
- ELEC — INDICATES ELECTRIC METER
- INDICATES TRANSFORMER
- GAS — INDICATES HEAT PUMP
- GV — INDICATES GAS VALVE
- INDICATES SIGN
- INDICATES WETLAND FLAG
- TYPE — INDICATES EVERGREEN TREE WITH TRUNK DIAMETER AND TYPE
- TYPE — INDICATES DECIDUOUS TREE WITH TRUNK DIAMETER AND TYPE
- INDICATES FIBER OPTIC PEDESTAL
- MBOX — INDICATES MAIL BOX

- INDICATES BOUNDARY
- INDICATES EDGE OF ASPHALT
- INDICATES EDGE OF CONCRETE
- INDICATES EDGE OF GRAVEL
- INDICATES 5 FOOT INTERVAL CONTOUR
- INDICATES 1 FOOT INTERVAL CONTOUR
- X — X — INDICATES FENCE LINE
- INDICATES EDGE OF WATER
- INDICATES PAINT STRIPE
- OHP — INDICATES OVER HEAD POWER
- INDICATES TREE DRIP LINE

Note: Tree survey reflects
16 jurisdictional Oregon white oak
present onsite (>20" DBH).

The project will retain all 16 Oregon white oak.

ADAM B. THOMSON — STATE OF WASHINGTON — 21032302 — REGISTERED PROFESSIONAL LAND SURVEYOR

HORIZONTAL DATUM:
NAD 83 (2011)
WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S SURVEY FEET. BASED ON REAL TIME KINEMATIC CORRECTIONS FROM THE WASHINGTON STATE REFERENCE NETWORK.

VERTICAL DATUM:
NGVD29(47) CLARK COUNTY DATUM, DERIVED BY WSRN OBSERVATIONS, NAVD(88) TO NGVD 29(47)=-3.21'

NOTES:
1. BOUNDARIES WERE DRAWN PER PLAT. SURVEY RECORDS AND MONUMENTS FOUND. THIS IS NOT INTENDED TO BE A BOUNDARY SURVEY. NO PROPERTY CORNERS WERE SET IN THIS SURVEY.

2. NO WARRANTIES ARE MADE AS TO MATTERS OF UNWRITTEN TITLE, SUCH AS ADVERSE POSSESSION, ESTOPPEL, ACQUIESCENCE, ETC.

3. A PRIVATE UTILITY LOCATE WAS CALLED FOR ON 03-26-2025. THE UNDERGROUND UTILITIES AS SHOWN HEREON ARE AS MARKED AT THE TIME OF THIS SURVEY. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. M.G.S. ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.

60 30 0 60 90 120
SCALE 1 INCH = 60 FEET

PLS ENGINEERING
Engineering - Surveying - Planning
604 W. Evergreen Blvd., Vancouver, WA 98660
PH: (360) 944-6519 Fax: (360) 944-6539