CRITICAL AREAS REPORT & OREGON WHITE OAK MITIGATION PLAN

Project:

Monte Verde Subdivision

Applicant:

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

Prepared By:

Ash ECO SOLUTIONS, LLC

August 5, 2022

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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.

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SITE INFORMATION:

Parcel No(s):	173184000
Acreage:	8.84 acres
Local Jurisdiction:	City of Camas, Washington
Section/Township/Range:	SE ¼, S21, T2N, R3E, W.M.
Site Address:	22205 NE 28th Street, Camas, WA 98607
Legal Landowner:	Southern Dwight A ETAL *(Per Current GIS Parcel Info)*

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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 and develop a mitigation plan to offset project impacts. This Critical Areas Report and Oak Mitigation 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 34-lot subdivision within the 8.84-acre parcel.

After City of Camas preliminary review and collaboration with the Washington Department of Fish and Wildlife (WDFW), the proposed impacts and mitigation areas associated with this project have been updated. This report reflects the updated impact and mitigation area calculations and conclusions agreed to between City of Camas Community Development staff, WDFW, the client (PLH), and AES.

Project Location and Background Information

The subject site is under the jurisdiction of the City of Camas and is assigned Parcel Number 173184000. The site is located at 22205 NE 28th Street, Camas, Washington. The site is surrounded to the east and west by large lot residential and agricultural lots. North of the property is urban residential lots and south of the property is forest land owned by Clark County.

EXISTING CONDITIONS

A single-family residence, shop, and large barn are present within the northern section of the property. South of the barn the property is fenced and used as horse pasture. The subject site is generally open and has been used for agricultural purposes since at least the 1970s. Native and non-native trees are scattered throughout the property with most concentrated in the north and southwestern corner of the parcel. Little native understory exists within the property due to a history of horse grazing. A maintained overhead BPA powerline easement 100 feet wide crosses the subject property diagonally east/west, Figure 4.

CRITICAL AREAS MAP RESEARCH

Topography

The site generally consists of a southwest facing slope. Topography maps show that the site drops approximately forty-eight feet in elevation from NE 28th Street to the southwest corner of the parcel, Figure 2.

Soil Survey

Soils within the study area are mapped as non-hydric Lauren gravelly loam, 0 to 8 percent slopes (LgB) and non-hydric Lauren loam 0 to 8 percent slopes (LeB) by the NRCS USDA Soil Conservation Service, Soil Survey of Clark County (1972), Washington, 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 gravelly loam, 0 to 8 percent slopes (LgB) occurs on terraces. The slopes are generally less than 4 percent and approach 8 percent only along the terrace breaks. In a typical profile the surface layer is very dark brown gravelly and very gravelly loam about 20-inches thick. Below the surface layer is friable, dark-brown very gravelly loam about 13-inches thick. The next layer is dark-brown very gravelly coarse sandy loam about 11-inches thick. The underlying material, to a depth of 70-inches, is dark-brown very gravelly loamy coarse sand. Included in mapping were a few small areas where very gravelly loamy coarse sand is within 30-inches of the surface. Permeability generally is moderately rapid, but it is rapid in the substratum. The available water capacity is moderate. Surface runoff is slow, and the erosion hazard is slight. The LgB soil type is not listed on the Washington State Hydric Soils List for Clark County (NRCS 2022).

Lauren loam, 0 to 8 percent slopes (LeB) is similar to Lauren gravelly loam, 0 to 8 percent slopes, except that the surface layer is free of gravel. Surface runoff is slow, and the erosion hazard is slight. Included in mapping were a few small gravelly areas. The LeB 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. The onsite wetlands were identified within areas of the non-hydric mapped soil type LgB.

Wetlands

A wetland was mapped within the southwest corner of the parcel by the Clark County GIS MapsOnline software under the "potential wetland presence" layer. The National Wetland Inventory also maps a PFOA wetland within the same general location, Figure 3. Site reconnaissance by AshEco Solutions (AES) identified that the mapped wetland was actually located over 300-feet south of the subject parcel. No wetlands were identified within the subject parcel by AES.

WDFW Priority Habitat

The Washington Department of Fish and Wildlife (WDFW) maps "Cave or Cave-rich Areas" within the general area, though no evidence of caves or rock outcroppings were identified onsite by AES during site reconnaissance. AES did identify Oregon white oak habitat onsite. This oak habitat was not previously mapped by WDFW.

METHODOLOGY

Wetlands

The study area 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. No wetlands were identified onsite.

See Appendix B for formal test plot data collected onsite by AES. The data supports the findings of uplands located within the southwest corner of the property. The wetlands identified by GIS within the subject parcel were determined to be offsite, over 300 feet further south.

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. "Cave or Cave-rich Areas" were mapped onsite by the WDFW PHS online mapping system. Oregon white oak trees were identified within the subject parcel by AES.

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. Eleven individual Oregon white oak trees were identified within or immediately adjacent to the subject parcel. The subject site is within an incorporated city and is urban, therefore the onsite Oregon white oak trees are considered Priority Habitat by WDFW.

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 (twelve inches dbh), 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.

DOCUMENTED VEGETATION

The vegetation onsite has been disturbed through years of grazing by horses. The majority of the site was dominated in heavily grazed pasture grasses and herbs. Scattered trees and shrubs present in the onsite included, Douglas-fir (*Pseudotsuga menzisii* FACU), big leaf maple (*Acer macrophyllum* FACU), Oregon white oak (*Quercus garryana* FACU) Oregon ash (*Fraxinus latifolia* FACW), black cottonwood (*Populus trichocarpa* FAC), grand fir (*Abies grandis* FAC), bitter cherry (*Prunus emarginata* FACU), Pacific

crabapple(*Malus fusca* FACW), sword fern (*Polystichum munitum* FACU), trailing blackberry (*Rubus ursinus* FACU), vine maple (*Acer circinatum* FAC), Indian plum (*Oemleria cerasiformis* FACU), beaked hazelnut (*Corylus cornuta* FACU), piggy-back plant (*Tolmiea menzisii* FAC), lanceleaf spring beauty (*Claytonia lanceolata* FAC), dovefoot geranium (*Geranium mole* FACU), curly dock (*Rumex crispus* FAC), large leaf avens (*Geum macrophyllum* FACW), and snowberry (*Symphoricarpos albus* FACU). Non-native or invasive plants observed onsite included Himalayan blackberry (*Rubus armeniacus* FAC) and English holly (*Ilex aquifolium* FACU).

South of the subject parcel is a forested area owned by Clark County. This area is much more biologically diverse. Vegetation identified in this area and the associated offsite wetland buffer included tall Oregon grape (*Mahonia aquifolium* FACU), Pacific ninebark (*Physocarpus capitatus* FACW), red osier dogwood (*Cornus sericea* FACW), California false hellebore (*Veratrum californicum* FAC), small bedstraw (*Galium trifidum* FACW), prickly currant (*Ribes lacustre* FAC), salmonberry (*Rubus spectabilis* FAC), slough sedge (*Carex obnupta* OBL), and ocean spray (*Holodiscus discolor* FACU).

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

WDFW Priority Habitat

Eleven individual Oregon white oak trees were identified onsite or immediately offsite and numbered by the tree survey, Appendix C. Three oaks with over 20-inch dbhs were documented onsite north of the existing barn (Oak #s 14, 15, and 16). One non-jurisdictional oak is located centrally onsite (Oak #s 32). One oak is a hazard snag (Oak #27). Three oaks are located along parcel boundaries with partial canopies encroaching into the subject parcel (Oak #s 76, 79, and 126). The remaining three oaks identified were determined to be entirely offsite (Oak #s 31, 38, and 127). See Figure 4 and Appendix C. Six of the oak trees inventoried by the tree survey are jurisdictional and meet the WDFW criteria for "individual oak" Priority Habitats as they have dbh measurements of 20-inches or larger. 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 or dominated by Himalayan blackberry.

Habitats of Local Importance

Six Oregon white oak trees identified as onsite or immediately offsite (Oak #s 14, 15, 16, 31, 38, and 76) are over 20-inches dbh and therefore meet the criteria listed under CMC 16.61.010.A.3.a that defines Oregon white oak habitat of local importance:

i. Individual Oregon White Oak trees with a twenty-inch diameter at breast height (twenty inches dbh).

ii. 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 (twelve inches dbh), are used by priority species, or have a large canopy.
iii. All Oregon White Oak snags unless determined by an arborist to be a hazard.

However, only four of the above six trees are located onsite or have driplines that extend onsite, Figure 4. The project proposes the removal of three of these jurisdictional Oregon white oak trees (Oaks #14, 15, and 16). Therefore, mitigation to offset the removal of these jurisdictional trees under CMC is required. The following mitigation plan section details the mitigation measures proposed.

Table 1. Oregon White Oak Summary.

Oak Tree #	DBH	On-Site	Jurisdictional per WDFW PHS &/or CMC Local Habitats of Importance Criteria *(Individual oak tree >20" dbh)*	Proposed for Removal	Requires Mitigation
14	**20"**	**YES**	**YES**	**YES**	**YES**
15	**36"**	**YES**	**YES**	**YES**	**YES**
16	**30"**	**YES**	**YES**	**YES**	**YES**
27	10" (dead)	YES	NO[1]	YES[4]	NO
31	21"	NO	YES	NO	NO
32	10"	YES	N/A[2] (see note)	NO	NO
38	30"	NO	YES	NO	NO
76	20"	YES (dripline)	YES	NO	NO
79	19"	YES (dripline)	NO	NO	NO
126	14"	YES (partial)	NO	NO	NO
127	14"	NO	NO	NO	NO
Tree #					
39	20'	YES	NO[3]	YES[4]	NO

[1]This oak was noted by the arborist to have >90% dieback, is leaning, and has a poor taper. This tree is considered a dead snag and will be repurposed within the onsite mitigation areas as a woody habitat element.
[2] This oak "tree" consists of a trunk cut just above the ground surface with suckered "co-dominant growth and was noted to be in poor condition with cracks, visible decay" by the arborist report. The trunk is located directly on the southern boundary of the BPA utility easement onsite. Therefore, it is assumed that the tree canopy historically extended into the overhead powerline easement and it has been historically cut under standard maintenance activities implemented by BPA.
[3]Tree #39 is an on-site snag determined to be an apple tree species by the arborist/tree survey. This snag is 20 inches in DBH and does not meet the WDFW definition for Priority Habitat (which requires it to be > 20-inches dbh). The snag is non-jurisdictional and does not require mitigation for its removal. This snag will be repurposed within the onsite mitigation areas.
[4]Both snag #27 and #39 will be repurposed as woody debris within the onsite mitigation area OMA6.

MITIGATION PLAN

The below mitigation plan was developed following Camas Municipal Code (CMC) Section 16.61 Fish and Wildlife Habitat Conservation Areas. The project will offset the impacts proposed to allow for no net loss of habitat functions onsite.

The proposed subdivision will retain and protect three Oregon white oak trees present along western, southern, and eastern parcel boundaries (Oak #s 76, 79 and 126). The understories of these oaks will be

restored by removing invasive species (Himalayan blackberry and English holly) and enhancement of native shrubs. Additionally, the removal of adjacent Douglas-fir and big leaf maple trees will provide additional oak habitat enhancement as there will be greater sunlight and area for canopy growth in the future.

The project also proposes oak tree and native shrub plantings within onsite mitigation areas to offset the removal of three jurisdictional Oregon white oak trees located within the northern portion of the subject site (Oak #s 14, 15, and 16). The design has incorporated oak mitigation and enhancement into the open space landscaping areas of the project as well as use of the BPA utility corridor for additional native landscaping using shrubs associated with oak woodland habitat.

Avoidance and Minimization

Following the mitigation sequencing requirements outlined under CMC 16.51.170, the project has avoided and minimized impacts to the full extent practicable while still meeting the required design elements for a subdivision of this size within the city limits of Camas. The unavoidable impacts have been quantified, and appropriate mitigation proposed onsite for no net loss of habitat area or function onsite.

The project has been designed to avoid direct impacts to three Oregon white oak trees with driplines present onsite (Oak #s 126, 76, and 79). These three trees are located along the property lines and have critical root zones that extend into the subject parcel. The dripline of each tree will be located, staked, and fenced prior to construction to protect them during grading and site construction. Native shrubs will be added as understory plants within the driplines of the retained oaks, connecting the proposed mitigation areas to offsite oak habitat.

Avoidance of Oak trees #14, 15 and 16 was originally attempted by the project, however it was determined in order to meet the required design elements for site access and lot configuration, that the site plan would need to be altered resulting in the unavoidable impact of the three Oregon white oak trees (#14, 15, and 16). Jurisdictional Oak #s 15, and 16 are located within the proposed site access road and sidewalk. Alternate access road options into the subdivision were proposed by the applicant, but the City requires that the proposed access be located directly south of the existing North Hargrave Street and NE 28th Street intersection. The unavoidable impact to these oaks was required to meet the appropriate turning radius by the entrance road and associated sidewalk from the required access point in the northwest corner of the property into the central area of the subdivision. Oak #14 is within the construction limits of the northwestern lots also making avoidance infeasible. Additionally, three feet of fill is required within this area by the grading plan. The retention of this oak was considered, however the quantity of fill required over this area immediately surrounding the oak tree would be detrimental to the health of the tree, with mortality in the near future imminent. Therefore, removal of Oak #14 is also proposed. These three oaks are individual trees (not part of a larger oak grove/woodland) and are located within the northern section of the subject parcel, just north of the existing barn.

Oak #32 consists of a trunk cut just above the ground surface with suckered "co-dominant growth, and was noted to be in poor condition with cracks, visible decay" by the arborist report, Appendix C. The trunk is located directly on the southern boundary of the BPA utility easement onsite. Therefore, it is assumed that the tree canopy historically extended into the overhead powerline easement and it has been cut under standard maintenance activities implemented by BPA. The largest stem of the new growth is 10-inches. This oak is considered non-jurisdictional and does not require mitigation.

Oak # 27 was noted by the arborist to have >90% dieback, is leaning, and has a poor taper. This tree is considered dead and a vertical snag. It is proposed for removal and it will be repurposed as a woody habitat element within one of the onsite oak mitigation areas, Figure 5.

The majority of the subject parcel is historically disturbed due to horse grazing with little to no native scrub-shrub understory habitat present onsite. There is no native understory present within the area of the three oaks proposed for removal. The project will take advantage of these disturbed areas within the subject site, and no significant habitat outside of Oaks #14, 15, and 16 will be impacted. The proposed impacts will be offset through the planting of oaks and native shrubs onsite within all open areas available within the proposed development. Portions of the BPA powerline easement will also be utilized to provide additional connectivity across the onsite oak habitat areas by the addition of a dense native shrub layer. The proposed mitigation areas will create habitat corridors onsite and connect to existing habitat corridors offsite.

Oregon White Oak Impacts and Mitigation

The removal of three jurisdictional Oregon white oaks (Oak #s 14, 15, and 16, over 20-inch dbh) is unavoidable by the proposed project to meet the City development code requirements. The original mitigation plan quantified the oak tree removal impact and mitigation following CMC Section 16.51.120.C.5.b.iii and proposed a replacement ratio of two, two-inch caliper trees for each tree removed. However, upon further coordination with WDFW staff the oak habitat impacts were calculated by quantifying the total oak canopy habitat and functions to be removed from the site. See Appendix D for the Oregon White Oak Habitat Assessment documented for the three trees proposed for removal. The Oregon White Oak Habitat Assessment included quantifying the existing condition of the crown, size of the oak canopy, diameter at breast height (dbh), presence of galls, acorns, dead branches, cavities and condition of the understory.

The updated oak habitat mitigation was designed to follow the requirements of CMC 16.51.180 and will sufficiently offset the loss of this specific oak habitat lost. The mitigation has further been designed to offset the temporal loss of the oak habitat onsite, enhance the functions of the oak habitat to be retained on site, provide greater connectivity to the oak habitat present directly offsite, and will be managed by the HOA for perpetuity to ensure maintenance and survival of the habitat into the future. Previously the onsite oak habitat was grazed by horses, which led to a decline in the overall habitat present. The oak habitat to be impacted has no native understory shrub component and the oak habitat present along the perimeter of the site is dominated by Himalayan blackberry. By removing the grazing impacts from the horses, creating, enhancing and restoring areas of the onsite habitat, the proposed mitigation will provide a higher functioning Oregon white oak habitat as the area matures than that present onsite today. Additionally, the Oregon white oaks and snag to be removed will be repurposed within the onsite mitigation areas to provide additional enhancement by the addition of oak habitat woody elements. The total oak habitat canopy loss is 4,769 square feet, with 23,845 square feet of onsite mitigation proposed, providing a 5:1 mitigation offset ratio, see Figure 5.

The proposed Oregon white oak mitigation areas have been divided up into ten areas onsite. These spaces are open and will offer plenty of sunlight and adequate canopy area for the oak trees and native shrub growth post project completion. The multiple mitigation locations onsite will also help to provide greater connectivity for wildlife habitat, by providing shade, shelter, and food sources within multiple locations onsite while also providing greater contiguous habitat corridor connections to the offsite forested and mixed oak canopy than currently present. Protection will be put in place around the perimeter of the

mitigation areas during site grading and construction activities and after. Compensatory measures will need to be implemented if during construction the critical root mass of the retained oak trees are inadvertently impacted.

The mitigation proposed will offset the Oregon white oak Priority Habitat impacts onsite for no net loss of priority function or area following the CMC guidelines.

Table 2. Oak Impacts & Mitigation Summary.

Oak Label	Impact	Mitigation
Oak #s 14, 15, and 26	Oregon White Oak (over 20-inch dbh) 4,769 sf Canopy Loss	Oregon white oak mitigation areas at a 5:1 Ratio (Oak tree and native shrub installation) 23,845 sf

PLANTING PLAN

Site Preparation

1. Demarcate the on-site "Protected Oak Habitat" (Oregon white oak retention and mitigation area boundaries) and install tree protection fencing along the proposed planting areas and the perimeter of the existing oak canopy dripline, See Figure 4.
2. Maintain this tree protective fencing for the full duration of the project construction.
3. Mow grasses, herbaceous vegetation and invasive species present within mitigation areas prior to tree installation.

   Note: Excavation, fill or compaction of the native soils is not to take place within the protected oak habitat. No lawn or ornamental landscaping is to be located within the protected oak habitat.

Planting Methods

Plant in fall through early spring (October-April) at specified spacing following the planting plan.
Container/Ball and Burlap Stock

1. Dig hole using a tree shovel/auger/mini-excavator 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 and retained Oregon white oak trees to insulate plantings, maintain moisture content of soil and reduce invasive plant competition.
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 Winter/Spring of 2023 while onsite soils are more 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. Oregon White Oak Habitat Mitigation Areas Planting Plan.

Common Name	*Scientific Name*	*Stock*	*Spacing*	*Quantity*
OMA1 (1,721 sq. ft.)				
Oregon white oak, FACU	***Quercus garryana***	**2-inch caliper**	**14 ft.**	**3**
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	6
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	6
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	6
			Total =	**21**
OMA2 (1,329 sq. ft.)				
Oregon white oak, FACU	***Quercus garryana***	**2-inch caliper**	**14 ft.**	**3**
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	6
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	6
Ocean spray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	6
			Total =	**21**
OMA3 (2,155 sq. ft.)				
Oregon white oak, FACU	***Quercus garryana***	**2-inch caliper**	**14 ft.**	**4**
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	10
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	10
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	10
Ocean spray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	10
Indian Plum, FACU	*Oemleria cerasiformis*	1-gallon or 24-36" bare-root	6 ft.	10
Beaked hazelnut, FACU	*Corylus cornuta*	1-gallon or 24-36" bare-root	10 ft.	10
			Total =	**60**
OMA4 (1,638 sq. ft.)				

Oregon white oak, FACU	***Quercus garryana***	**2-inch caliper**	**14 ft**	**3**
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	6
Ocean spray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	6
Vine maple, FAC	*Acer circinatum*	1-gallon or 24-36" bare-root	10 ft.	6
			Total =	20
OMA4-A (3,223 sq. ft.)				
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	15
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	15
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	15
Ocean spray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	15
Vine maple, FAC	*Acer circinatum*	1-gallon or 24-36" bare-root	10 ft.	15
Beaked hazelnut, FACU	*Corylus cornuta*	1-gallon or 24-36" bare-root	10 ft.	15
			Total =	90
OMA4-B (406 sq. ft.)				
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	4
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	4
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	4
			Total =	12
OMA4-C (725 sq. ft.)				
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	6
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	6
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	6
			Total =	18
OMA4-D (2,104 sq. ft.)				
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	10
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	10
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	10
Ocean spray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	10
Vine maple, FAC	*Acer circinatum*	1-gallon or 24-36" bare-root	10 ft.	10

Beaked hazelnut, FACU	*Corylus cornuta*	1-gallon or 24-36" bare-root	10 ft.	10
			Total =	**60**
OMA5 (928 sq. ft.)				
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	8
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	8
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	8
			Total =	**24**
OMA6 (9,606 sq. ft.)				
Oregon white oak, FACU	***Quercus garryana***	**2-inch caliper**	**14 ft**	**3**
Oregon white oak, FACU	***Quercus garryana***	**1-gallon or 24-36" bare-root**	**14 ft**	**7**
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	50
Snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	50
Tall Oregon grape, FACU	*Mahonia aquifolium*	1-gallon or 24-36" bare-root	6 ft.	50
Ocean spray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	50
Vine maple, FAC	*Acer circinatum*	1-gallon or 24-36" bare-root	10 ft.	50
Beaked hazelnut, FACU	*Corylus cornuta*	1-gallon or 24-36" bare-root	6 ft.	50
			Total =	**250**
			Grand Total of Oregon White Oak (2-inch caliper) =	**16**
			Grand Total of Oregon White Oak (1-gallon container) =	**7**
			Grand Total of Native Shrubs =	**571**

Protective Signage

Post construction, install permanent signs along the boundary of a "Protected Oak Habitat" meeting city standards or conditions outlined under the permit. See Objective 2, Performance Standard 2b below.

Maintenance Plan

Maintenance at the on-site mitigation area covers a minimum of 5-years and will involve removing persisting invasive plant species in addition to watering and re-installing failed 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 5 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 Oregon white oak trees as described for the original installation to meet the minimum annual performance standard of 100% survival over the 5-year monitoring period. See Objective 1 for the full performance standards outlined by year.

Monitoring Plan

The mitigation site 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 event, representative monitoring plot locations and photo points will be selected within the mitigation areas and permanently marked with metal T-posts (or similar). Monitoring plot and photo point locations will be labeled on the As-built Map and included in the annual monitoring reports.

Monitoring Report Contents

The annual monitoring reports will contain at least the following:

- Location map and as-built drawing of Oregon white oak mitigation and retention areas as depicted on Figure 5 of this mitigation plan.
- Photographs from permanent photo points (10 minimum).
- Historic description of project, including dates of Oregon white oak tree installation, current year of monitoring, and restatement of mitigation goal.
- Documentation of plant survival, cover, and overall development of the plant community from the ten established monitoring plot locations.
- Photo evidence that the protective oak habitat signage is in place and legible along the outer perimeter of the mitigation areas onsite.
- Assessment of non-native, invasive plant species and recommendations for management.
- Summary of maintenance and contingency measures proposed for the next season and those completed over the past season.

Contingency Plan

If the performance standards are not met by the fifth year following project completion, 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 future Home Owners Association (HOA) Associated with the subdivision. The HOA will be responsible for managing and contracting out the annual monitoring of the on-site mitigation area (to AshEco Solutions, LLC or similar entity) for the initial 5-year monitoring period. Additionally, the HOA will be responsible for managing and contracting out the seasonal maintenance required to maintain the onsite mitigation areas in perpetuity, to ensure the onsite

Oregon white oak habitat is allowed to thrive. The applicant will establish and record a permanent and irrevocable conservation covenant over the onsite mitigation areas to protect the established habitat in the future.

MITIGATION GOALS, OBJECTIVES AND PERFORMANCE STANDARDS

The mitigation goal of protecting the onsite Oregon white oak habitat for no net loss of functional habitat onsite will be met when the below objectives and performance standards are met.

Objective 1: Replace the loss of three jurisdictional Oregon white oak trees with sixteen (16) large stock (2-inch caliper size) and 7 small stock (1 gallon container size) Oregon white oak trees onsite and 22,414 square feet of associated Oregon white oak native shrub enhancement plantings.

Performance Standard 1a. Document the removal of invasive species within the retained Oregon white oak tree habitat onsite and the boundary protection installed prior to grading activities. Submit photos within the As-built to document the completion of this mitigation site preparation.

Performance Standard 1b. Document the installation of the native Oregon white oak trees, native shrub enhancement and repurposing of oak woody elements as specified by Table 3 and Figure 5 within the defined mitigation areas onsite. Within 60 days of project completion, submit As-built Map and documentation to show that the mitigation plan has been implemented according to this plan, or as conditioned by permit. As-built documentation is to include; planting locations on an As-built Map, native nursery receipt showing plant species and quantities, representative photos of the ten (10) mitigation areas from a minimum of ten (10) established photo point locations, photos of the ten (10) established monitoring plot locations (permanently staked and labeled) across the ten mitigation areas onsite, photos to document that the protective oak habitat signage is in place and legible along the outer perimeter of the onsite mitigation areas, and photos of the repurposed oak woody elements installed within the onsite mitigation areas.

Performance Standard 1c. In Years 1-5, the Oregon white oak mitigation trees are to achieve 100-percent (100%) survival. (If dead trees are replaced to achieve the 100 percent survival rate, this performance standard will be met).

Performance Standard 1d. By Year 2, native woody shrub species within the onsite mitigation areas are to achieve ninety-percent (90%) survival of. (Native volunteer growth will count towards this cover requirement, as will the installation of new plants to offset mortality.)

Performance Standard 1e. By Year 3, native woody shrub species within the onsite mitigation areas are to achieve eighty-percent (80%) survival of native woody shrub species. (Native volunteer growth will count towards this cover requirement, as will the installation of new plants to offset mortality.)

Performance Standard 1f. By Year 5, native woody shrub species within the onsite mitigation areas are to achieve thirty percent (30%) aerial cover of native woody shrub species, or eighty percent (80%) survival. (Native volunteer growth will count towards this cover requirement, as will the installation of new plants to offset mortality.)

Performance Standard 1g. In All Years, non-native/invasive plant species will not exceed 20-percent (20%) aerial cover across the onsite mitigation area.

Objective 2: Provide long-term protection for the onsite mitigation area.

Performance Standard 2a. Record a conservation covenant with the City of Camas. This performance standard will be met when a copy is submitted with the As-built documentation (or prior as conditioned by the approved permit) .

Performance Standard 2b. Post permanent signage along the outer boundaries of the "Protected Oak Habitat" (oak mitigation and retention areas) . Signs are to read:

"Critical Area– Please Retain in a Natural State"

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

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.

CONCLUSIONS

The above sections outline how the proposed project will meet the Habitat Conservation Areas requirements of the CMC. All but three of the Oregon White Oaks trees will be retained. The oaks proposed for removal (Oak #s 14, 15, and 16) will be mitigated for onsite for no net loss of Oregon white oak habitat following CMC guidance and criteria. With issuance of the approved critical areas permits, the proposed Oregon white oak habitat mitigation plantings will be implemented, and a conservation covenant recorded to protect the onsite critical areas under the subdivision HOA into 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

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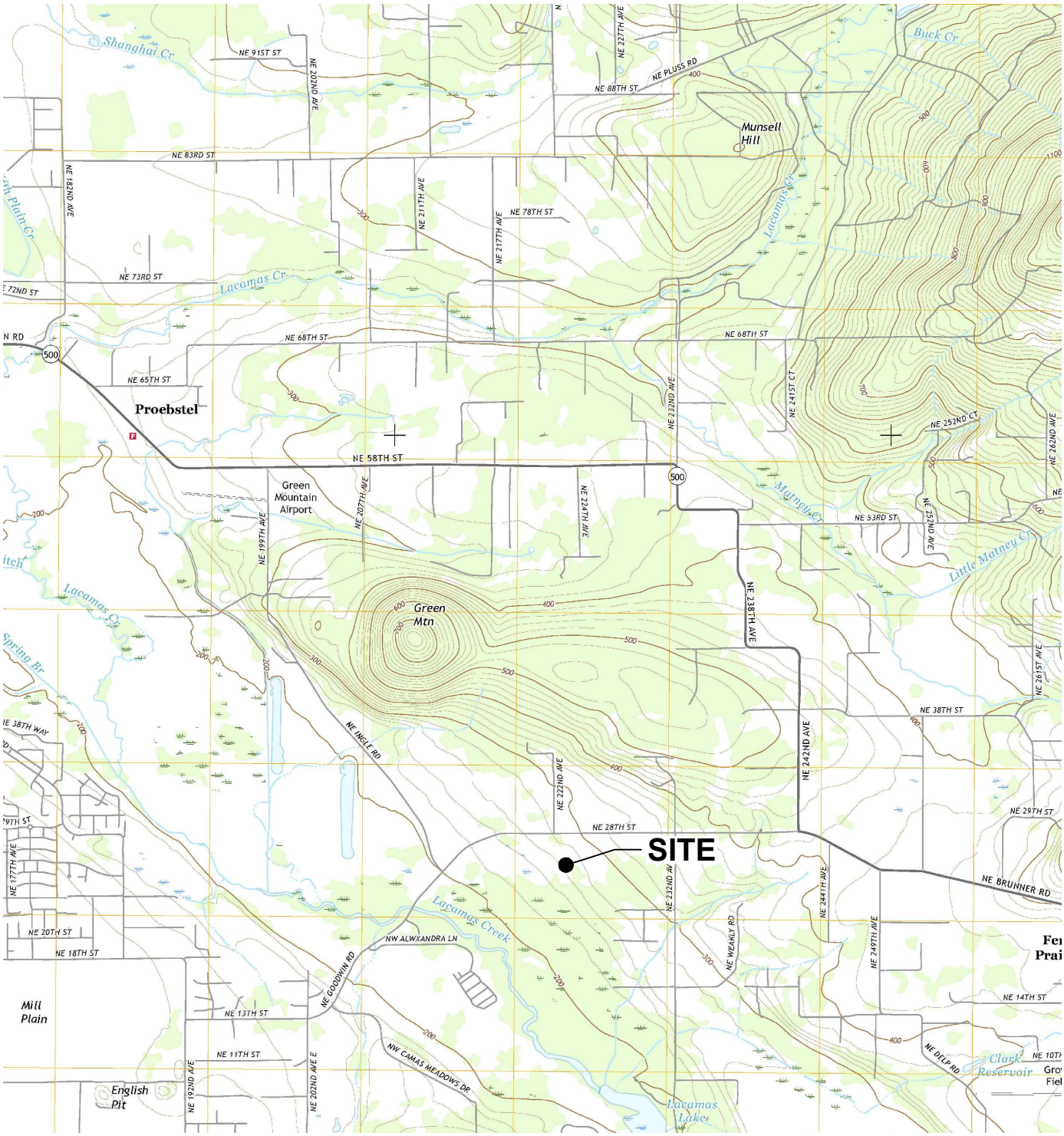

NOTE(S):
USGS, LACAMAS CREEK QUADRANGLE
WASHINGTON-CLARK CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

PURPOSE: XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	VICINITY MAP **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** Critical Areas Feasibility Map **PARCEL #:** 173184000 **SITE LOCATION ADDRESS:** 22205 NE 28th St.	**PROPOSED:** Monte Verde Subdivision **IN:** Camas **NEAR:** Lacamas Creek **COUNTY:** Clark **STATE:** WA **FIGURE:** 1 **DATE:** 7-8-22

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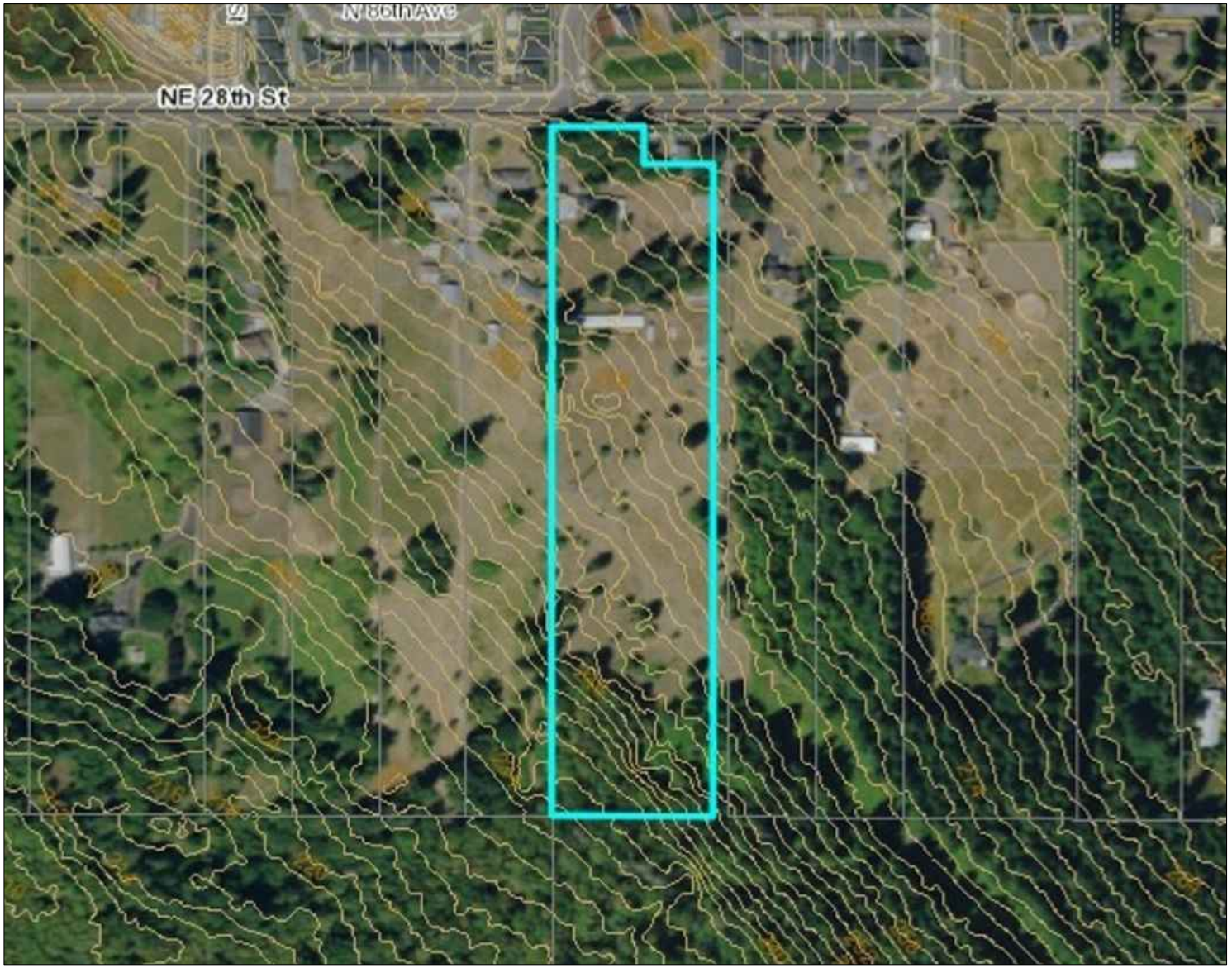

Legend

- Taxlots
- Contours Lines - 2 ft
- All Roads
  - Interstate
  - State Route
  - Arterial
  - Forest Arterial
  - Minor Collector
  - Forest Collector
  - Private or Other
- Cities Boundaries
- Urban Growth Boundaries

N

0 300 600

SCALE IN FEET
1" = 300'

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: Critical Areas Feasibility Map
PARCEL #: 173184000
SITE LOCATION ADDRESS:
22205 NE 28th St.

PROPOSED: Monte Verde Subdivision
IN: Camas
NEAR: Lacamas Creek
COUNTY: Clark **STATE:** WA
FIGURE: 2
DATE: 3-1-22

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Legend

- Taxlots
- Soil Type
- Hydric Soils
- NWI Wetland
- All Roads
  - Interstate
  - State Route
  - Arterial
  - Forest Arterial
  - Minor Collector
  - Forest Collector
  - Private or Other

LgB - Lauren gravelly loam, 0-8% slopes. Non-hydric

LeB - Lauren loam, 0-8% slopes. Non hydric

N

0 300 600

SCALE IN FEET
1" = 300'

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: Critical Areas Feasibility Map
PARCEL #: 173184000
SITE LOCATION ADDRESS:
22205 NE 28th St.

PROPOSED: Monte Verde Subdivision
IN: Camas
NEAR: Lacamas Creek
COUNTY: Clark **STATE:** WA
FIGURE: 3
DATE: 3-1-22

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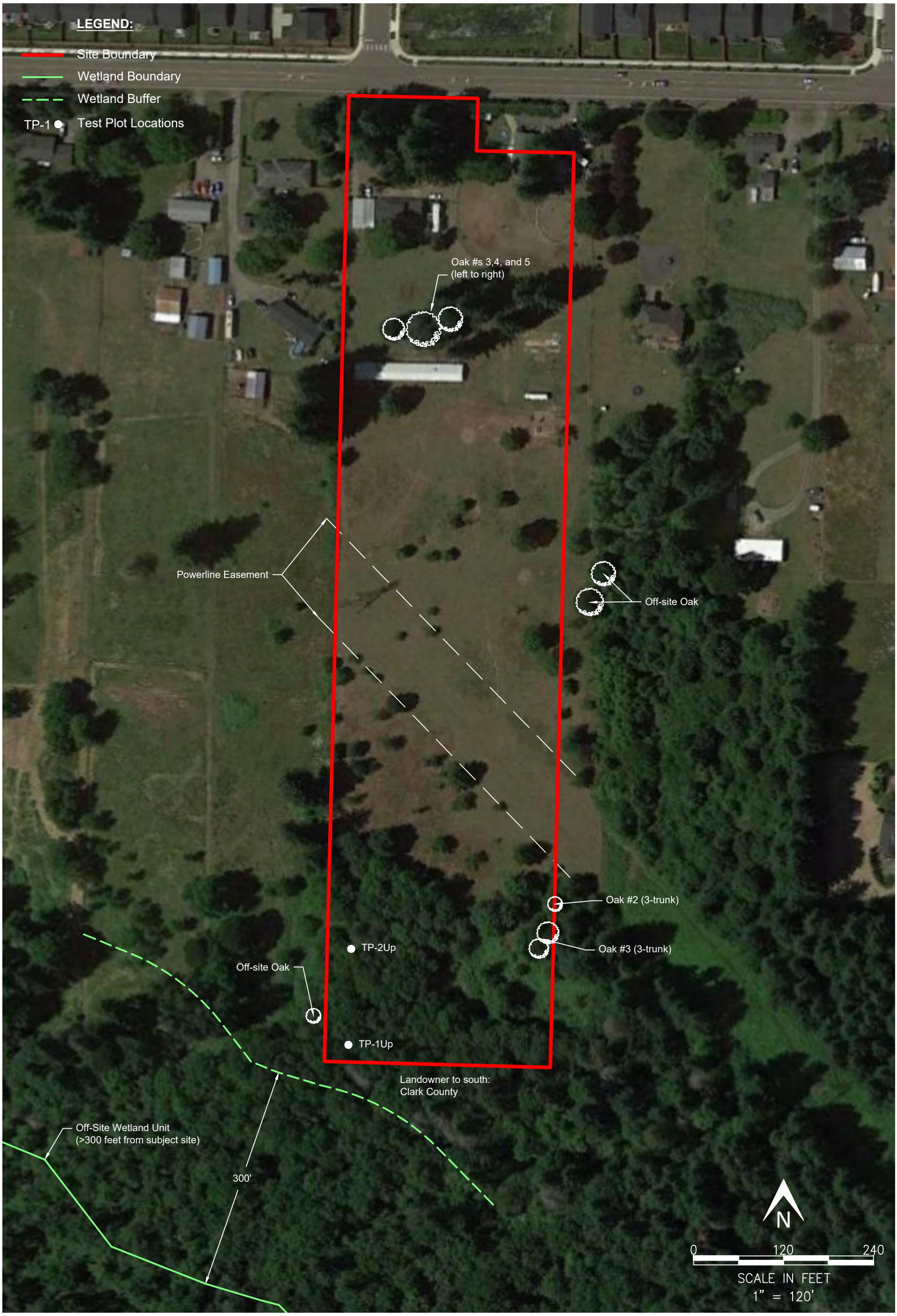

Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	EXISTING CONDITIONS MAP **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** Critical Areas Feasibility Map **PARCEL #:** 173184000 **SITE LOCATION ADDRESS:** 22205 NE 28th St.	**PROPOSED:** Monte Verde Subdivision **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 4 **DATE:** 7-8-22

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AshECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	PROPOSED PROJECT & OAK MITIGATION PLAN **APPLICANT:** Pacific Lifestyle Homes **PROJECT NAME:** Critical Areas Feasibility Map **PARCEL #:** 173184000 **SITE LOCATION ADDRESS:** 22205 NE 28th St.	**PROPOSED:** Monte Verde Subdivision **IN:** Camas **NEAR:** XX **COUNTY:** Clark **STATE:** WA **FIGURE:** 5 **DATE:** 10-11-22

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Appendix A

Site Photos

Monte Verde CAR & Oregon White Oak Mitigation Plan- Site Photos
Parcel: 173184000

Photo 1.
February 22, 2022 – View of the northwest corner of the subject site and the proposed site access from NE 28th Street. The three oaks (#s 14, 15, and 16) which will be removed are located just north of the white shed visible in this photo.

Photo 2.
February 22, 2022 – View south across the subject site. The site is highly impacted from years of animal grazing. Few native trees are present within the central portion of the property and it is dominated by grazed herbaceous cover.

Photo 3.
February 22, 2022 – View north across the central area of the subject site. Few native trees are present within the central portion of the property and there is no understory due to grazing. An overhead powerline tower located within the powerline easement onsite is visible at far right in this photo.

Photo 4.
February 22, 2022 – View north from the southwest corner of the property. The area is forested, but with little native understory or herbaceous layer due to grazing. Oak #76 is visible in this photo along the western parcel boundary. This tree will be retained and protected.

Photo 5.
February 22, 2022 – View east from the southwest corner of the property. The area is highly disturbed due to animal grazing. Test plot #1 was within this location. The area was determined to be an upland with non-hydric soils and no hydrology indicators.

Photo 6.
February 22, 2022 – Photo of the offsite wetland over 300-feet south of the subject parcel. The county owned property located south of the subject property is more biologically diverse and dominated in native vegetation.

Photo 7.
February 22, 2022 – View of Oak #127 along the eastern parcel boundary. The 3-trunk Oregon white oak is just offsite and will be retained.

Photo 8.
February 22, 2022 – View of Oak #126 along the eastern parcel boundary. The 3-trunk Oregon white oak will be retained and protected.

Appendix B

Test Plot Datasheets

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

Project/Site: Monte Verde Subdivision City/County: Clark Sampling Date: 2/22/2022
Applicant/Owner: Pacific 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 Slope (%): 2%
Subregion (LRR): LRR A Lat: 45.640939 Long: 122.444567 Datum: NAD 83
Soil Map Unit Name: Hydric / CvA, Non-Hydric / LeB, Non-Hydric / LgB 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 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**
Hydric Soils Present?	Yes ☐ No ☒	**within a Wetland?** **Yes☐ No☒**
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	50%	yes	FACW
2. *Acer macrophyllum*	10%	no	FACU
3. *Quercus garryana*	5%	no	FACU
4.	%		
Total Cover:	65%		
Sapling/Shrub Stratum			
1. *Symphoricarpos albus*	25%	yes	FACU
2. *Corylus cornuta*	10%	yes	FACU
3. *Acer circinatum*	5%	yes	FAC
4.	%		
5.	%		
Total Cover:	40%		
Herb Stratum			
1. *Tolmiea menziesii*	15%	yes	FAC
2. *Rubus ursinus*	5%	yes	FACU
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	20%		
Woody Vine Stratum			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum 80%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across All Strata: 6 (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	50	x 2=	100
FAC species	20	x 3=	60
FACU species	55	x 4=	220
UPL species		x 5=	
Column Totals:	125 (A)		380 (B)

Prevalence Index = B/A= 3.04

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Providing supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

Indicators of hydric soil and wetland hydrology must be present.

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	100%		%			L	
12-16	10YR 4/2	98%	10YR 4/6	2%	C	PL	L	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- ☐ Histosal
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (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

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):

Type: _____

Depth (inches):_____

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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)
- ☐ Water-Stained Leaves (B9) (**except NW coast**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes 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
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D2)
- ☐ Frost-Heave Hummocks (D4)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

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

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

Saturation Present? Yes ☐ No ☒ Depth (Inches): _____

(Includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

The three wetland criteria have NOT been met.

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

Project/Site: Monte Verde Subdivision City/County: Clark Sampling Date: 2/22/2022
Applicant/Owner: Pacific 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 Slope (%): 2%
Subregion (LRR): LRR A Lat: 45.640939 Long: 122.444567 Datum: NAD 83
Soil Map Unit Name: Hydric / CvA, Non-Hydric / LeB, Non-Hydric / LgB 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 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**
Hydric Soils Present?	Yes ☐ No ☒	**within a Wetland?** **Yes☐ No☒**
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	50%	yes	FACW
2.	%		
3.	%		
4.	%		
Total Cover:	50%		
Sapling/Shrub Stratum			
1. *Symphoricarpos albus*	20%	yes	FACU
2. *Malus fusca*	15%	yes	FACW
3. *Corylus cornuta*	5%	yes	FACU
4. *Salix sitchensis*	5%	yes	FACW
5.	%		
Total Cover:	45%		
Herb Stratum			
1. *Tolmiea menziesii*	10%	yes	FAC
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	10%		
Woody Vine Stratum			
1. *Rubus armeniacus*	20%	yes	FAC
2.	%		
Total Cover:	20%		

% Bare Ground in Herb Stratum 70%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: **5** (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 71% (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:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Providing supporting data In Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

Indicators of hydric soil and wetland hydrology must be present.

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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100%		%			L	
10-16	10YR 3/2	100%		%			L	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- ☐ Histosal
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (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

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):

Type: _____

Depth (inches):_____

Hydric Soil Present? Yes☐ No☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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)
- ☐ Water-Stained Leaves (B9) (**except NW coast**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes 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
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D2)
- ☐ Frost-Heave Hummocks (D4)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

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

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

Saturation Present? Yes ☐ No ☒ Depth (Inches): _____

(Includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

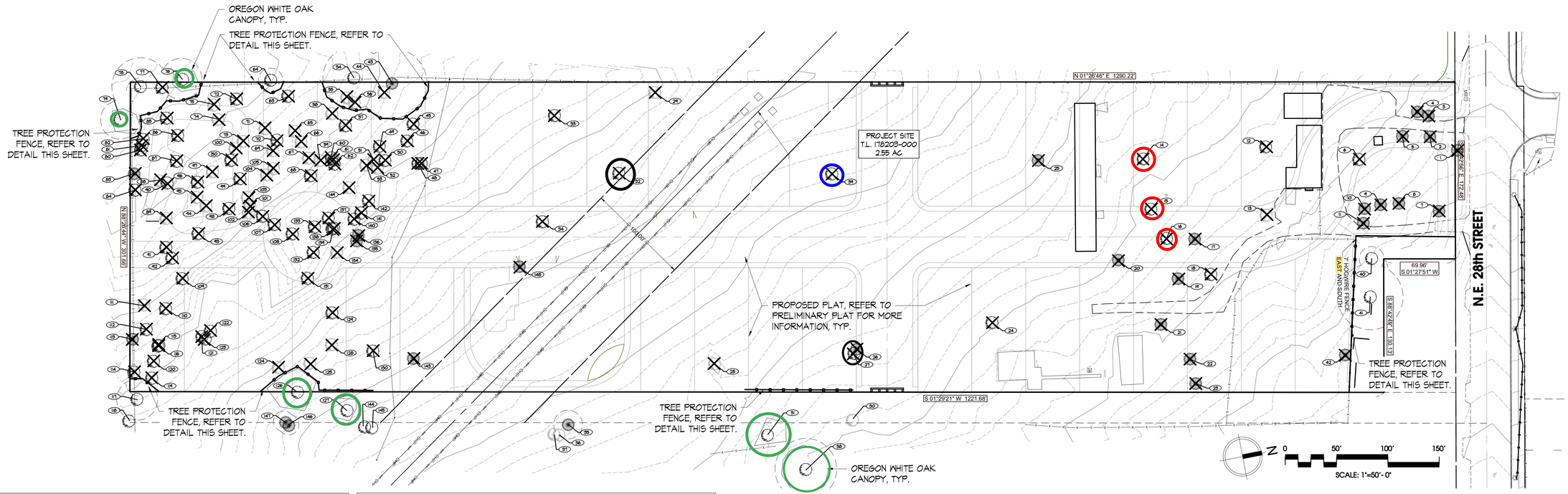
Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The three wetland criteria have NOT been met.

Appendix C

Tree Survey



Tree Data							
Tree No.	Species	DBH	RPZ	Tree Condition	Retain (R) Remove (X)	Units (retained only)	Condition Notes
1	Pseudotsuga menziesii (Douglas Fir)	11"	11'	poor	X		Branches Suppressed
2	Pseudotsuga menziesii (Douglas Fir)	43"	43'	fair	X		
3	Pseudotsuga menziesii (Douglas Fir)	42"	42'	fair	X		
4	Pseudotsuga menziesii (Douglas Fir)	36"	36'	fair	X		
5	Pseudotsuga menziesii (Douglas Fir)	44'	44'	fair	X		
6	Acer saccharinum (Silver Maple)	22"	22'	fair	X		
7	Pseudotsuga menziesii (Douglas Fir)	36"	36'	fair	X		
8	Pseudotsuga menziesii (Douglas Fir)	44"	44'	fair	X		
9	Pseudotsuga menziesii (Douglas Fir)	29"	29'	fair	X		
10	Pseudotsuga menziesii (Douglas Fir)	26"	26'	fair	X		
11	Pseudotsuga menziesii (Douglas Fir)	36"	36'	fair	X		
12	Ailanthus altissima (Tree-Of-Heaven)	34"	34'	fair	X		
13	Crataegus douglasii (Douglas Hawthorn)	10"	10'	poor	X		Co-dominant
14	Quercus garryana (Oregon White Oak)	20"	20'	fair	X		
15	Quercus garryana (Oregon White Oak)	36"	36'	fair	X		
16	Quercus garryana (Oregon White Oak)	30"	30'	fair	X		
17	Pseudotsuga menziesii (Douglas Fir)	38"	38'	fair	X		
18	Alnus rubra (Red Alder)	25"	25'	poor	X		Deback 30% - 60%, Leaning
19	Pseudotsuga menziesii (Douglas Fir)	42"	42'	fair	X		
20	Pseudotsuga menziesii (Douglas Fir)	36"	36'	fair	X		
21	Pseudotsuga menziesii (Douglas Fir)	34"	34'	fair	X		
22	Pseudotsuga menziesii (Douglas Fir)	36"	36'	fair	X		
23	Pseudotsuga menziesii (Douglas Fir)	30"	30'	fair	X		
24	Pyrus spp. (Apple)	18"	18'	fair	X		
25	Pseudotsuga menziesii (Douglas Fir)	20"	20'	fair	X		
26	Pseudotsuga menziesii (Douglas Fir)	16"	16'	fair	X		Co-dominant
27	Quercus garryana (Oregon White Oak)	14"	14'	dead	X		Deback ~90%, Leaning, Poor Taper
28	Pyrus spp. (Apple)	10"	10'	fair	X		Co-dominant
29	Pyrus spp. (Apple)	10"	10'	fair	X		Branch Failures, Co-dominant, Cracks, Leaning
30	Pyrus spp. (Apple)	10"	10'	poor	X		Co-dominant, Deback 30% - 60%
31	Quercus garryana (Oregon White Oak)	21"	21'	fair	R	offsite	
32	Quercus garryana (Oregon White Oak)	10"	10'	poor	X		Co-dominant, Cracks, Visible Decay
33	Alnus rhombifolia (White Alder)	14"	14'	fair	X		Missing Bark, Poor Taper
34	Pyrus spp. (Apple)	25"	25'	poor	X		
35	Pseudotsuga menziesii (Douglas Fir)	14"	14'	fair	R	offsite	
36	Acer macrophyllum (Bigleaf Maple)	10"	10'	dead	R	offsite	
37	Acer macrophyllum (Bigleaf Maple)	10"	10'	dead	R	offsite	
38	Quercus garryana (Oregon White Oak)	30"	30'	fair	R	offsite	
39	Pyrus spp. (Apple)	20"	20'	dead	X		
40	Acer rubrum (Red Maple)	12"	12'	fair	R	offsite	Co-dominant
41	Acer rubrum (Red Maple)	32"	32'	fair	R	offsite	
42	Pseudotsuga menziesii (Douglas Fir)	30"	30'	fair	X		
43	Pseudotsuga menziesii (Douglas Fir)	34"	34'	fair	R	13	Deback 30% - 60%
44	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Co-dominant
45	Acer macrophyllum (Bigleaf Maple)	17"	17'	fair	X		
46	Acer macrophyllum (Bigleaf Maple)	17"	17'	poor	X		Deback 30% - 60%, Leaning
47	Frangula purshiana (Cascara)	12"	12'	poor	X		
48	Acer macrophyllum (Bigleaf Maple)	20"	20'	fair	X		Deback 30% - 60%
49	Acer macrophyllum (Bigleaf Maple)	17"	17'	poor	X		Leaning
50	Alnus rubra (Red Alder)	15"	15'	fair	X		
51	Alnus rubra (Red Alder)	10"	10'	poor	X		Co-dominant
52	Alnus rubra (Red Alder)	10"	10'	poor	X		Poor Taper
53	Alnus rubra (Red Alder)	8"	8'	poor	X		Co-dominant
54	Salix scouleriana (Scouler's Willow)	30"	30'	fair	R	offsite	
55	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Co-dominant
56	Fraxinus latifolia (Oregon Ash)	9"	9'	poor	X		Co-dominant, Leaning
57	Acer macrophyllum (Bigleaf Maple)	14"	14'	poor	X		Deback 30% - 60%
58	Acer macrophyllum (Bigleaf Maple)	9"	9'	poor	X		Deback 30% - 60%, Leaning
59	Acer macrophyllum (Bigleaf Maple)	8"	8'	poor	X		Co-dominant, Deback 30% - 60%
60	Acer macrophyllum (Bigleaf Maple)	13"	13'	poor	X		Co-dominant, Deback 30% - 60%, Overextended Branches
61	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		Co-dominant, Deback 30% - 60%
62	Acer macrophyllum (Bigleaf Maple)	14"	14'	poor	X		Co-dominant, Deback 30% - 60%
63	Acer macrophyllum (Bigleaf Maple)	34"	34'	poor	X		Deback 60%-90%
64	Salix scouleriana (Scouler's Willow)	12"	12'	poor	R	offsite	Deback 30% - 60%, Multi-Stemmed
65	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Deback 60%-90%
66	Fraxinus latifolia (Oregon Ash)	8"	8'	poor	X		Co-dominant, Deback 60%-90%
67	Acer macrophyllum (Bigleaf Maple)	8"	8'	poor	X		Co-dominant, Deback 60%-90%
68	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		Deback 30% - 60%, Multi-Stemmed, Overextended Branches
69	Fraxinus latifolia (Oregon Ash)	8"	8'	poor	X		Co-dominant, Deback 30% - 60%
70	Fraxinus latifolia (Oregon Ash)	12"	12'	poor	X		Deback 60%-90%
71	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Co-dominant
72	Fraxinus latifolia (Oregon Ash)	17"	17'	fair	X		Deback 30% - 60%
73	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Deback 30% - 60%, Poor Taper
74	Acer macrophyllum (Bigleaf Maple)	10"	10'	poor	X		Co-dominant
75	Acer macrophyllum (Bigleaf Maple)	11"	11'	poor	X		Branch Failures, Branches Suppressed, Deback 30% - 60%
76	Quercus garryana (Oregon White Oak)	20"	20'	fair	R	offsite	Deback 30% - 60%
77	Fraxinus latifolia (Oregon Ash)	26"	26'	poor	X		Deback 60%-90%, Missing Bark
78	Fraxinus latifolia (Oregon Ash)	28"	28'	fair	R	10	Deback 30% - 60%
79	Quercus garryana (Oregon White Oak)	19"	19'	fair	R	offsite	
80	Acer macrophyllum (Bigleaf Maple)	13"	13'	poor	X		Branches Suppressed, Deback 30% - 60%
81	Acer macrophyllum (Bigleaf Maple)	14"	14'	poor	X		Branches Suppressed, Deback 30% - 60%
82	Acer macrophyllum (Bigleaf Maple)	15"	15'	poor	X		Branches Suppressed, Deback 30% - 60%
83	Pseudotsuga menziesii (Douglas Fir)	28"	28'	fair	X		Branches Suppressed, Deback 30% - 60%
84	Acer macrophyllum (Bigleaf Maple)	24"	24'	poor	X		Branches Suppressed, Deback 30% - 60%, Leaning
85	Fraxinus latifolia (Oregon Ash)	15"	15'	fair	X		Branches Suppressed
86	Acer macrophyllum (Bigleaf Maple)	18"	18'	fair	X		Branches Suppressed, Deback 30% - 60%
87	Fraxinus latifolia (Oregon Ash)	12"	12'	poor	X		Deback 30% - 60%, Leaning
88	Acer macrophyllum (Bigleaf Maple)	10"	10'	poor	X		Co-dominant, Deback 30% - 60%
89	Acer macrophyllum (Bigleaf Maple)	10"	10'	poor	X		Deback 30% - 60%
90	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		
91	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		Branches Suppressed, Co-dominant
92	Acer macrophyllum (Bigleaf Maple)	14"	14'	fair	X		Co-dominant
93	Acer macrophyllum (Bigleaf Maple)	13"	13'	poor	X		Branches Suppressed, Deback 30% - 60%
94	Acer macrophyllum (Bigleaf Maple)	11"	11'	poor	X		Branches Suppressed, Deback 30% - 60%
95	Acer macrophyllum (Bigleaf Maple)	10"	10'	poor	X		Branches Suppressed, Deback 30% - 60%
96	Fraxinus latifolia (Oregon Ash)	12"	12'	poor	X		Co-dominant, Deback 30% - 60%
97	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Co-dominant, Deback 30% - 60%
98	Fraxinus latifolia (Oregon Ash)	12"	12'	fair	X		Co-dominant
99	Fraxinus latifolia (Oregon Ash)	12"	12'	fair	X		Branches Suppressed
100	Fraxinus latifolia (Oregon Ash)	8"	8'	poor	X		Co-dominant
101	Acer macrophyllum (Bigleaf Maple)	10"	10'	fair	X		Co-dominant
102	Acer macrophyllum (Bigleaf Maple)	8"	8'	fair	X		Co-dominant
103	Acer macrophyllum (Bigleaf Maple)	8"	8'	fair	X		Branches Suppressed, Co-dominant

Tree Data							
Tree No.	Species	DBH	RPZ	Tree Condition	Retain (R) Remove (X)	Units (retained only)	Condition Notes
104	Fraxinus latifolia (Oregon Ash)	8"	8'	poor	X		Branches Suppressed, Co-dominant
105	Fraxinus latifolia (Oregon Ash)	8"	8'	poor	X		Branch Failures, Branches Suppressed, Co-dominant, Dieback 30% - 60%
106	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		Branches Suppressed, Deback 30% - 60%
107	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		
108	Fraxinus latifolia (Oregon Ash)	14"	14'	poor	X		Branch Failures, Co-dominant, Dieback 30% - 60%
109	Acer macrophyllum (Bigleaf Maple)	14"	14'	poor	X		Branch Failures, Co-dominant, Leaning
110	Fraxinus latifolia (Oregon Ash)	13"	13'	poor	X		Branch Failures, Branches Suppressed, Dieback 30% - 60%
111	Alnus rubra (Red Alder)	10"	10'	poor	X		Co-dominant, Leaning
112	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		Branches Suppressed, Leaning
113	Pseudotsuga menziesii (Douglas Fir)	14"	14'	poor	X		Branch Failures, Branches Suppressed, Deback 30% - 60%
114	Acer macrophyllum (Bigleaf Maple)	17"	17'	fair	X		Branches Suppressed, Deback 30% - 60%
115	Acer macrophyllum (Bigleaf Maple)	15"	15'	fair	X		Branches Suppressed, Deback 30% - 60%
116	Acer macrophyllum (Bigleaf Maple)	17"	17'	poor	X		Branch Failures, Branches Suppressed, Deback 30% - 60%
117	Acer macrophyllum (Bigleaf Maple)	20"	20'	fair	R	offsite	Dieback 30% - 60%
118	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	R	offsite	Co-dominant, Dieback 30% - 60%
119	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Branches Suppressed, Deback 30% - 60%
120	Acer macrophyllum (Bigleaf Maple)	12"	12'	poor	X		Branch Failures, Branches Suppressed, Deback 30% - 60%
121	Fraxinus latifolia (Oregon Ash)	12"	12'	poor	X		Branches Suppressed, Deback 30% - 60%, Heavy Leaning (>60%)
122	Fraxinus latifolia (Oregon Ash)	14"	14'	poor	X		Branch Failures, Co-dominant, Deback 30% - 60%
123	Fraxinus latifolia (Oregon Ash)	12"	12'	poor	X		Branches Suppressed, Co-dominant, Dieback 30% - 60%, Missing Bark
124	Acer macrophyllum (Bigleaf Maple)	10"	10'	fair	X		Deback 30% - 60%
125	Acer macrophyllum (Bigleaf Maple)	10"	10'	fair	X		Deback 30% - 60%
126	Quercus garryana (Oregon White Oak)	14"	14'	fair	R	1	Branch Failures, Co-dominant
127	Quercus garryana (Oregon White Oak)	14"	14'	fair	R	offsite	Co-dominant
128	Acer macrophyllum (Bigleaf Maple)	10"	10'	poor	X		Co-dominant, Deback 30% - 60%
129	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Co-dominant, Deback 30% - 60%, Multi-Stemmed
130	Acer saccharum (Sugar Maple)	20"	20'	poor	X		Branch Failures, Deback 60%-90%, Missing Bark
131	Acer macrophyllum (Bigleaf Maple)	14"	14'	fair	X		Deback 30% - 60%
132	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		
133	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Branches Suppressed
134	Alnus rubra (Red Alder)	8"	8'	fair	X		Co-dominant
135	Pseudotsuga menziesii (Douglas Fir)	16"	16'	fair	X		Branches Suppressed
136	Pseudotsuga menziesii (Douglas Fir)	12"	12'	fair	X		Branches Suppressed
137	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Branches Suppressed
138	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Branches Suppressed
139	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Branches Suppressed, Deback 30% - 60%
140	Acer macrophyllum (Bigleaf Maple)	12"	12'	fair	X		Branches Suppressed
141	Alnus rubra (Red Alder)	12"	12'	poor	X		Co-dominant, Deback 30% - 60%
142	Alnus rubra (Red Alder)	12"	12'	fair	X		Branches Suppressed
143	Pseudotsuga menziesii (Douglas Fir)	15"	15'	good	X		
144	Salix scouleriana (Scouler'S Willow)	13"	13'	poor	R	offsite	Branch Failures, Branches Suppressed, Deback 30% - 60%
145	Salix scouleriana (Scouler'S Willow)	13"	13'	poor	R	offsite	Co-dominant, Missing Bark, Multi-Stemmed
146	Pseudotsuga menziesii (Douglas Fir)	10"	10'	fair	R	offsite	
147	Pseudotsuga menziesii (Douglas Fir)	10"	10'	fair	R	offsite	
148	Pseudotsuga menziesii (Douglas Fir)	17"	17'	dead	X		Co-dominant
149	Fraxinus latifolia (Oregon Ash)	10"	10'	poor	X		Deback 30% - 60%
150	Acer macrophyllum (Bigleaf Maple)	17"	17'	poor	X		Deback 30% - 60%

AshEco Solutions Oregon White Oak Summary:

Tree #	DBH	Jurisdictional (20" DBH)	On-site	Proposed for Removal	Requires Mitigation
14	20"	YES	YES	YES	YES
15	36"	YES	YES	YES	YES
16	30"	YES	YES	YES	YES
27	10" (dead)	NO	YES	YES	NO
31	21"	YES	NO	NO	NO
32	10"	N/A	YES	NO	NO
38	30"	YES	NO	NO	NO
76	20"	YES	YES (dripline)	NO	NO
79	19"	NO	YES (dripline)	NO	NO
126	14"	NO	YES (partial)	NO	NO
127	14"	NO	NO	NO	NO

See Table 1 of Mitigation Plan for the Oregon White Oak Summary details.
Dead or impacted oaks will be repurposed on site as woody habitat elements.

SITE STATISTICS

8.84± AC	SITE AREA
177	TREE UNITS REQUIRED (20 / ACRE)
26	TREE UNITS RETAINED

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	EXISTING SIGNIFICANT DECIDUOUS TREE (12" CAL. OR GREATER)
	EXISTING SIGNIFICANT EVERGREEN TREE (8" CAL. OR GREATER)
	EXISTING DECIDUOUS (LESS THAN 12" CAL.) TO BE REMOVED
	EXISTING SIGNIFICANT TREE TO BE REMOVED
	ROOT PROTECTION ZONE AREA (RPZ)
	TREE PROTECTION FENCE LOCATION (4' CHAIN LINK, ORANGE PVC FENCE OR SILT FENCE) (ALSO DENOTES AREA WHERE NO IMPACTS TO THE ROOT PROTECTION ZONE SHALL OCCUR). SEE DETAIL THIS SHEET.

STATE OF WASHINGTON
ROBERT W. PHIPPS
EXP. 02/07/2023 NO. 161
LANDSCAPE ARCHITECT
7-29-2022

CERTIFIED ARBORIST
ISA
Robert Phipps, PN-8715A
7-29-2022

TREE PROTECTION TIME LINE & NARRATIVE

EXISTING ON-SITE AND OFF-SITE TREE LOCATIONS AND SIZES HAVE BEEN OBTAINED VIA SURVEY INFORMATION AND SITE OBSERVATIONS.

129 EXISTING TREES WITHIN THE PROJECT BOUNDARIES ARE PROPOSED TO BE REMOVED DUE TO CONFLICTS WITH THE PROPOSED SITE GRADING.

TREE PROTECTION FENCING SHALL BE PLACED AS SHOWN TO PROTECT THE TREES TO BE RETAINED.

TREE PROTECTION / EROSION CONTROL FENCING SHALL BE ESTABLISHED PRIOR TO EXCAVATION. IT IS RECOMMENDED TO BE INSTALLED AT THE SAME TIME EROSION CONTROL MEASURES ARE INSTALLED. WHERE TREE FENCE AND EROSION CONTROL FENCE ARE LOCATED AT THE SAME LOCATION, EROSION FENCE THEN SERVES AS TREE PROTECTION FENCE. SEE DETAIL THIS SHEET.

TREES DETERMINED TO BE A SAFETY HAZARD AT THE TIME OF CONSTRUCTION MAY BE REMOVED. THE SITE WILL MAINTAIN A MINIMUM TREE UNIT COUNT OF 20 TREES PER ACRE IN ACCORDANCE WITH CITY OF CAMAS MUNICIPAL CODE CC 18.13.051.

TREE PROTECTION NOTES

1) NO PERSON MAY CONDUCT ANY OF THE FOLLOWING ACTIVITIES WITHIN THE DRIP LINE OF THE TREES DESIGNATED TO REMAIN INCLUDING, BUT NOT LIMITED TO: PARKING EQUIPMENT, FUELING, SERVICING EQUIPMENT, PLACING SOLVENTS, STORING BUILDING MATERIAL AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT AND LOCATING BURN HOLES.
2) DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY OBJECT TO THE TREES DESIGNATED FOR PROTECTION.
3) THE CONTRACTOR SHALL FOLLOW THE GRADING PLAN PROVIDED BY THE PROJECT CIVIL ENGINEER. GRADING ACTIVITIES SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE IMPACTS TO THE TREES MARKED FOR PRESERVATION.
4) THE EXCAVATOR SHALL KEEP A SHARP PAIR OF LOPPERS AND A SHARP 12" PRUNING SAW ACCESSIBLE ON-SITE DURING GRADING OPERATIONS. ANY ROOTS LARGER THAN ½" SHALL BE PRUNED TO THE FACE OF THE CUT (USING A SHARP PAIR OF LOPPERS OR A SHARP 12" PRUNING SAW) AND SHALL NOT BE TORN FROM THE GROUND BY MECHANICAL EXCAVATION.
5) SPECIAL CARE SHALL BE EXERCISED IN WORKING NEAR THE TREES TO BE RETAINED. THIS INCLUDES HAND EXCAVATING THE ROOTS AT THE EDGE OF THE EXCAVATION AND CUTTING ROOTS WITH A LOPPER OR PRUNING SAW. PRUNING THE ROOTS AT THE EDGE OF EXCAVATION WILL MINIMIZE BREAKAGE OF HEALTHY ROOTS BEYOND THE EDGE OF THE PROPOSED EXCAVATION.
6) EXCEPT FOR THE PROPOSED IMPROVEMENTS SHOWN WITHIN THE DRIP LINES OF THE TREES NOTED TO BE RETAINED THE GRADE SHALL NOT BE ELEVATED OR REDUCED FROM EXISTING GRADE.
7) IF THE GRADE ADJACENT TO A PRESERVED TREE IS RAISED SUCH THAT IT COULD SLOUGH OR ERODE INTO THE TREE'S DRIP LINE, IT SHALL BE PERMANENTLY STABILIZED.
8) THE TREES NOTED TO RETAINED SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. CLEARING OPERATIONS SHALL BE CONDUCTED SO AS TO EXPOSE THE SMALLEST PRACTICAL AREA OF SOIL TO EROSION FOR THE LEAST POSSIBLE TIME. REFER TO THE PROJECT'S EROSION CONTROL PLAN FOR MORE INFORMATION.
9) THE PROJECT SHALL NOT INSTALL AN IMPERVIOUS SURFACE OTHER THAN THOSE SPECIFICALLY SHOWN ON THE PLANS WITHIN THE DRIP LINE OF THE TREES TO BE RETAINED.
10) UTILITY TRENCHES SHALL BE LOCATED OUTSIDE OF THE DRIP LINE OF THE TREES TO BE RETAINED.
11) ONGOING TREE MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE LAND OWNER. TREES SHALL BE MAINTAINED IN ACCORDANCE WITH ANSI AMERICAN NATIONAL STANDARDS INSTITUTE'S AS WELL AS OTHER APPLICABLE FEDERAL, STATE AND LOCAL STANDARDS PERTAINING TO TREE CARE OPERATIONS.

- ANSI Z133 ARBORICULTURAL OPERATIONS: SAFETY REQUIREMENTS
- ANSI A300 PART 1 PRUNING

Planning Solutions, Inc.
Creating Solutions to Complex Issues
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PRELIMINARY
NOT FOR CONSTRUCTION
SUBJECT TO APPROVAL
PBS ENGINEERING ENVIRONMENTAL SURVEYING PBSUSA.COM

MONTE VERDE SUBDIVISION

22205 NE 28TH Street
Camas, Washington

DRAWN: GB/RP | CHECKED: GB
SCALE: 1" = 50'-0" | DATE: 07.29.22
JOB #: 22-1719
ISSUED FOR: PLR
REVISIONS:
1
2
3
4
5
6

SHEET NAME: EXISTING TREE SURVEY

SHEET #: TP

SHEET 1 OF 2

Appendix D

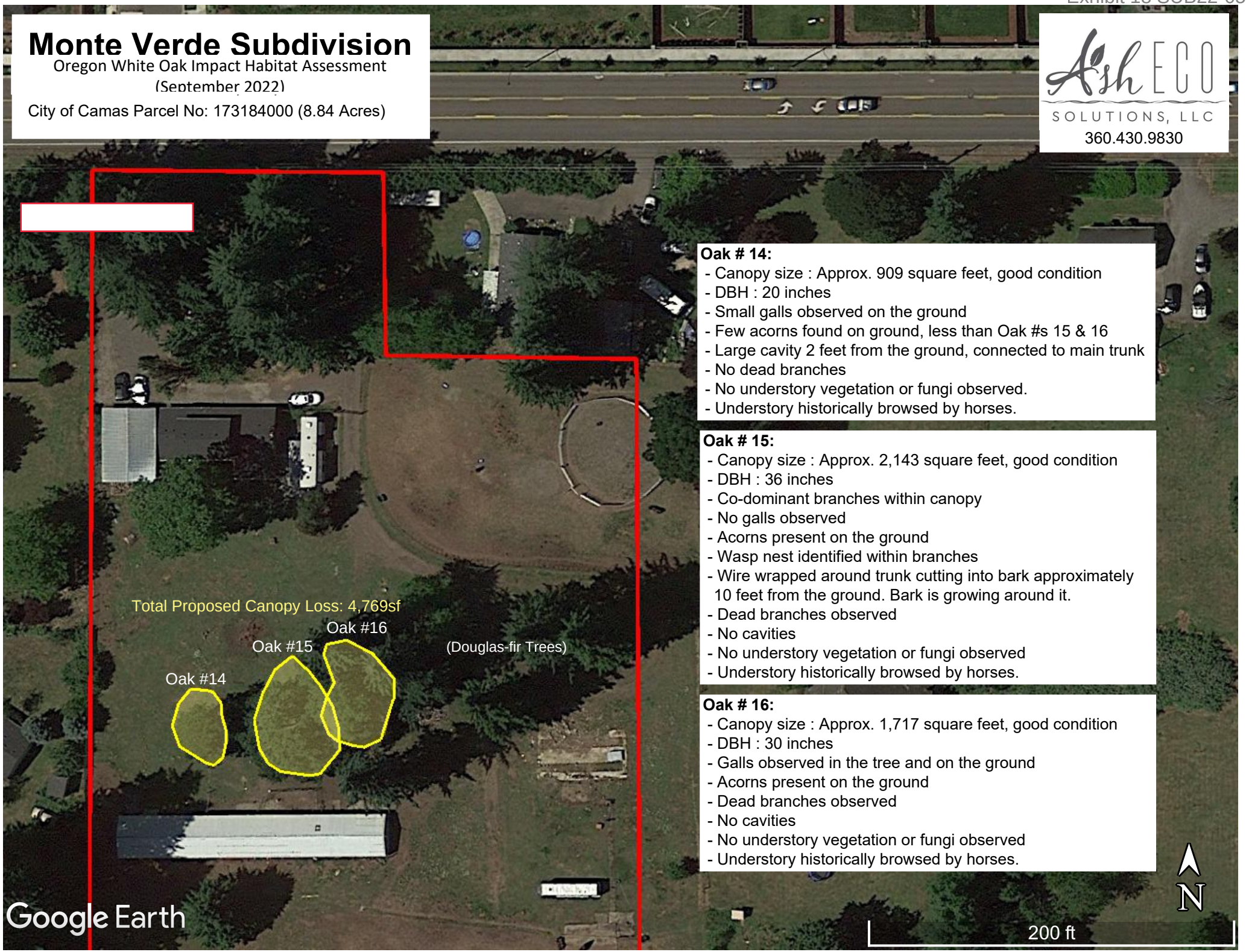
Oregon White Oak Habitat Assessment

Monte Verde Subdivision

Oregon White Oak Impact Habitat Assessment
(September 2022)

City of Camas Parcel No: 173184000 (8.84 Acres)

Ash ECO SOLUTIONS, LLC
360.430.9830



Oak # 14:
- Canopy size : Approx. 909 square feet, good condition
- DBH : 20 inches
- Small galls observed on the ground
- Few acorns found on ground, less than Oak #s 15 & 16
- Large cavity 2 feet from the ground, connected to main trunk
- No dead branches
- No understory vegetation or fungi observed.
- Understory historically browsed by horses.

Oak # 15:
- Canopy size : Approx. 2,143 square feet, good condition
- DBH : 36 inches
- Co-dominant branches within canopy
- No galls observed
- Acorns present on the ground
- Wasp nest identified within branches
- Wire wrapped around trunk cutting into bark approximately 10 feet from the ground. Bark is growing around it.
- Dead branches observed
- No cavities
- No understory vegetation or fungi observed
- Understory historically browsed by horses.

Oak # 16:
- Canopy size : Approx. 1,717 square feet, good condition
- DBH : 30 inches
- Galls observed in the tree and on the ground
- Acorns present on the ground
- Dead branches observed
- No cavities
- No understory vegetation or fungi observed
- Understory historically browsed by horses.

Monte Verde CAR & Oak Mitigation Plan- Oak Photos
Parcel: 173184000

Photo 1.
September 14, 2022 – View of Oak #s 14, 15, and 16 within the northern section of the subject parcel. All three are proposed for removal.

Photos 2-4 (Oak #14).
September 14, 2022
- Canopy size : Approx. 909 square feet, good condition
- DBH : 20 inches
- Small galls observed on the ground
- Few acorns found on ground, less than Oak #s 15 & 16
- Large cavity 2 feet from the ground, connected to main trunk
- No dead branches
- No understory vegetation or fungi observed

Monte Verde CAR & Oak Mitigation Plan- Oak Photos
Parcel: 173184000

Photos 5-7 (Oak #15).
September 14, 2022
- Canopy size : Approx. 2,143 square feet, good condition
- DBH : 36 inches
- Co-dominant branches within canopy
- No galls observed
- Acorns present on the ground
- Wasp nest identified within branches
- Wire wrapped around trunk cutting into bark approximately 10 feet from the ground. Bark is growing around it.
- Dead branches observed
- No cavities
- No understory vegetation or fungi observed

Monte Verde CAR & Oak Mitigation Plan- Oak Photos
Parcel: 173184000

Photos 8-10 (Oak #16).
September 14, 2022
- Canopy size : Approx. 1,717 square feet, good condition
- DBH : 30 inches
- Galls observed in the tree and on the ground
- Acorns present on the ground
- Dead branches observed
- No cavities
- No understory vegetation or fungi observed