EXHIBIT 47

Critical Areas Report, Buffer Modification, and Tree Preservation Plan
For
Green Mountain Mixed Use PRD - Phase 1
City of Camas, Washington

Prepared For:

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Attachments:

INTRODUCTION

Ecological Land Services, Inc. (ELS) has completed this critical areas report for Green Mountain Land (GML), LLC for use in designing a phased development within the general location of the existing Green Mountain Golf Course. The project site is located within Section 20, Township 2 North, Range 3 East of the Willamette Meridian near Camas, Washington (Figure 1). This report covers the critical areas associated with the Phase 1 Residential Subdivision (project) proposed at the project site. The Phase 1 Residential Subdivision covers approximately 53.0 acres and is located within portions of Clark County parcels 172557-000 and 172553000. The project site is located north of NE Goodwin Road/NE 28th Street and east of NE Ingles Road (Figure 2). The City of Camas has jurisdiction over the subject site. This report summarizes the findings of the critical areas according to the *City of Camas Municipal Code (CMC) Wetlands Chapter 16.53, Fish and Wildlife Habitat Conservation Areas Chapter 16.61*, and *Sensitive Areas and Open Space Chapter 18.31*.

METHODOLOGY

The wetlands were delineated by ELS following the Routine Determination Method according to the US Army Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (2010). The Routine Determination Method examines three parameters – vegetation, hydrology, and soils – to determine if wetlands exist in a given area. Hydrology is critical in determining what is wetland but is often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils exist, which would indicate that water is present for a duration that is long enough to support a wetland plant community. 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 US Army Corps of Engineers (USACE), as "Waters of the State" by the Washington Department of Ecology (WDOE), and locally by *City of Camas Municipal Code (CMC), Wetlands Chapter 16.53*.

ELS biologists evaluated the project site and immediate vicinity (within 300-feet) for jurisdictional wetlands and other critical areas on several occasions over 2013 and 2014. Wetland and stream boundaries were determined through breaks in topography, changes in vegetation, and evidence of surface or subsurface hydrology and were delineated onsite using a Trimble GPS handheld receiver. Vegetation, soil, and hydrology data were collected in test plots to verify the presence or absence of wetlands (Appendix A). Individual Oregon white oak (*Quercus garryana*) trees were also mapped using a Trimble GPS handheld receiver.

SITE CONDITIONS

The project site is located north of NE Goodwin Road/NE 28th Street and east of NE Ingle Road (Figure 2). The Phase 1 Subdivision is proposed within the northern portion of the active Green Mountain Golf Course. The Phase 1 site boundary consists of approximately 53.0 acres and is divided into two general areas described as "onsite" and "adjacent" and are discussed in the following sections of this report.

ONSITE CRITICAL AREAS

The majority of the Phase 1 site boundary is located within existing open groomed fairways, paved parking lot, and a clubhouse structure associated with the active golf course. The topography is gently to moderately sloping to the south-southwest towards NE Goodwin Road and NE Ingle Road. Green Mountain is located offsite to the northeast. A 100-foot wide Bonneville Power Administration (BPA) high voltage transmission line easement is located within the central portion of the site (Figures 2 and 8).

No wetlands are located onsite; however, four wetlands (Wetlands B, D, G and O) are located within 300 feet of the project (Figure 2). These wetlands are covered in more detail under the "Adjacent Critical Areas" section.

Four man-made ponds (H, I, and J) are located within the Phase 1 boundary. The man-made ponds located onsite were created to serve as both landscape amenities and irrigation purposes associated with the existing golf course. The man-made ponds have engineered slopes, rubber liners, and are fully maintained only for irrigation and landscape amenity. An irrigation piping system connects the water features to a pump house (south of the project area). This irrigation system is utilized by the golf course during the dry months of the year. Man-made Pond H (0.49 acres) is located to the northeast of the parking and clubhouse area and along the western edge of the golf course trail system. Man-made Pond I (0.73 acres) is located to the northwest of the parking and clubhouse area and parallels the main entrance to the golf course. Man-made Pond J (0.15 acres) is located to the south of the main entrance to the golf course and man-made Pond I.

Three man-made ditches (Q, R and S) are located within the Phase 1 project boundary. Man-made Ditch Q (0.38 acres in total size) consists of three sections. The three sections of ditch were excavated from uplands by the golf course to convey drainage/runoff to Wetland G. The northern section of ditch conveys hydrology south within a channel running north/south parallel to the property boundary. The eastern section of ditch conveys hydrology west within a channel running east-west parallel to the property boundary. The southern section of ditch conveys hydrology collected from where the northern and eastern sections of ditch converge at the property boundary corner by a ditch, then flowing southwest where it outfalls to Wetland G. Man-made Ditch R (0.07 acres) is located in the northeast corner of the project site. The ditch was excavated from uplands to catch seasonal run-off from the steep south-facing slope of Green Mountain. The ditch system was excavated to divert the hillside run-off to catch-basins located along the eastern edge of the existing tree-abutting the northeast corner of the active golf course. The run-off conveyed from man-made Ditch R is piped underground and southwesterly from these catch basins under the adjacent fairway and into the golf course drainage system. Man-made Ditch S (0.15 acres) is located directly east of the parking lot and clubhouse area near the central portion of the project site. This ditch collects stormwater run-off from the adjacent cart path and parking lot before conveying it northwest to a series of catchbasins located within the parking lot. It is ultimately conveyed to and detained in man-made Pond J (Figure 2).

ELS mapped twenty individual Oregon white oak trees within the northwest portion of the project site. The oak habitat is discussed further within the "Oregon White Oak Habitat" section of this report.

ADJACENT CRITICAL AREAS

The City of Camas code section *16.53.030-Critical Area Report*, requires that all wetlands, buffer zones, water features, and other critical areas within 300 feet of the project area (Phase 1 site boundary) be discussed within the critical area report. Wetlands located outside of Phase 1 site boundary, but within 300 feet include Wetlands B, D, G, and O. Wetland B (2.29 acres) is a slope, forested and scrub/shrub wetland that lies along the western edge of the golf course trail system. Wetland D (1.06 acres) is a depressional, emergent and scrub/shrub wetland located to the east of Wetland B and to the north of the golf course trail system. Wetland G (2.91 acres) is a slope, emergent and scrub/shrub wetland located to the west of the parking and clubhouse area. Wetland O (0.03 acres) is a slope, forested and scrub/shrub wetland located west of Man-made Pond J and south of the existing entrance to the golf course.

Stream O is a narrow non-fish bearing seasonal (Type Ns) stream located just west of the Phase 1 site boundary. The stream flows southwest to the roadside ditch along the east side of NE Ingles Road.

Man-made Ditch G (0.26 acres) is located along the southwest flank of Wetland G. This ditch was excavated from uplands when the golf course was originally constructed and serves to receive water from upslope areas.

TREE PRESERVATION

To meet tree retention requirements regulated by the City of Camas, a formal tree survey was performed. An inventory of the onsite tree habitat was tabulated and provided to the City of Camas within Exhibit E of the Development Agreement (DA). See Appendix B for a copy of the "Tree Preservation Plan" to be followed by the Phase 1 project. Additional Tree Preservation Plan details are provided in the "Tree Preservation Plan" section of this report.

OREGON WHITE OAK HABITAT

Oregon white oak habitat was also located onsite by ELS. A total of 20 Oregon white oak trees were inventoried within or immediately adjacent to the Phase 1 project boundary. Out of the twenty (20) total Oregon white oak trees, eight (8) measure 20 inches or greater diameter at breast height (dbh) and therefore are regulated by the Tree Preservation Plan within the Development Agreement, Exhibit E governing the project. Table 1 summarizes the Oregon white oak habitat and locations of individual oaks are depicted on Figures 2 and 7.

Table 1: Oregon white oak tree summary for the Phase 1 project boundary.

Oak #	Diameter at breast height (inches)
1	**25***
2	**22.5***
3	15
4	14.5
5	17.5
6	19.5
7	**31.7***
8a, 8b^	18, 18^
9	**22***
29	12
30	18
55	**21***
57	13
58	**26***
62	18
63	13
64	**25***
121	**26***
122	8
123	10
Total Quantity of Oaks within Phase 1 = 20 Total Jurisdictional Oaks within Phase 1 = 8	

^ Double trunk tree data listed

* Jurisdictional Oregon white oak tree > 20-inches DBH.

SOILS

The Natural Resources Conservation Service (NRCS) designates the soil within Phase 1 site boundary as Dollar loam (DoB) 0-5% slopes (Figure 3). Dollar loam (DoB) 0-5% slopes soils are characterized moderately deep, moderately well drained soil occurring on low ridges next to depressional areas and is not considered hydric (NRCS 2014). ELS field observations generally concur with the NRCS soil mapping.

NRCS soil series data and mapping practices are based on general, regional soil characteristics and may not accurately display variations in the local soil conditions. The presence or absence of hydric soil does not conclude an area as wetland or upland. Along with hydric soils, hydrology and wetland vegetation must also be present to determine an area as jurisdictional wetland. Due to localized, micro-variations in topography and hydrology, wetlands may be found in areas where hydric soils have not been mapped by the soil survey.

VEGETATION

The majority of the Phase 1 project site consists of maintained fairways and greens associated with the active golf course. In the perimeter and rough areas, the following list of dominant vegetation was observed. The indicator categories following the common and scientific names indicate the likelihood of a 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) – Almost always occur in wetlands.
- **FACW** (facultative wetland) – Usually occur in wetlands, but may occur in non-wetlands.
- **FAC** (facultative) – Occur in wetlands and non-wetlands.
- **FACU** (facultative upland) – Usually occur in non-wetlands, but may occur in wetlands.
- **UPL** (obligate upland) – Almost never occur in wetlands.
- **NI** (no indicator) – Status not yet determined.

Dominant vegetation in the onsite uplands consisted of trailing blackberry (*Rubus ursinus*, FACU), hairy brackenfern (*Pteridium aquilinum*, FACU), Oregon white oak (*Quercus garryana*, FACU), big leaf maple (*Acer macrophyllum*, FACU), colonial bentgrass (*Agrostis capillaris*, FAC), northern bentgrass (*Agrostis borealis*, FACU), snowberry (*Symphoricarpos albus*, FACU), vine maple (*Acer circinatum*, FAC), western swordfern (*Polystichum munitum*, FACU), bitter cherry (*Prunus emarginata*, FACU), cascara (*Frangula purshiana*, FAC), Oregon ash (*Fraxinus latifolia*, FACW), common velvetgrass (*Holcus lanatus*, FAC), tall fescue (*Festuca arundinacea*, FAC), Kentucky bluegrass (*Poa pratensis*, FAC), Canada thistle (*Cirsium arvense*, FAC), red alder (*Alnus rubra*, FAC), Himalayan blackberry (*Rubus armenicus*, FACU), orchardgrass (*Dactylis glomerata*, FACU), perennial ryegrass (*Lolium perenne*, FAC), red clover (*Trifolium pratense*, FACU), black cottonwood (*Populus balsamifera*, FAC), creeping buttercup (*Ranunculus repens*, FAC), beaked hazelnut (*Corylus cornuta*, FACU), geyer willow (*Salix geyeriana*, FACW), Canada thistle (*Cirsium arvense*, FAC), piggy-back plant (*Tolmiea menziesii*, FAC), Pacific ninebark (*Physocarpus capitatus*, FACW), red elderberry (*Sambucus racemosa*, FACU), holly (*Ilex aquifolium*, FACU), Indian plum (*Oemleria cerasiformis*, FACU), and Douglas fir (*Pseudotsuga menziesii*, FACU).

HYDROLOGY

The hydrology within the Phase 1 project site boundary is highly managed by the golf course. Hydrology is contained within four man-made ponds and conveyed through two man-made ditches and a series of pipes and catch-basins throughout the active golf course. Hydrology is supplied primarily by rainfall, surface run-off, and groundwater fed springs and small streams. The man-made ponds were created along with the original golf course to act as landscape amenities. The water levels within the ponds are manipulated as necessary utilizing an engineered system.

NATIONAL WETLAND INVENTORY

The National Wetland Inventory (NWI) map of the Phase 1 area indicates no mapped wetlands within the subject site (Figure 4). National Wetlands Inventory maps are typically used to gather wetland information about a region, and because of the large scale necessary for regional

mapping, they are limited in accuracy for localized analyses. ELS field observations found four man-made ponds and one man-made ditch located onsite which were not mapped by NWI.

PRIORITY HABITATS AND SPECIES MAPPING

The Washington Department of Fish and Wildlife (WDFW) maps priority Oregon white oak (*Quercus garryana)* stands and cave habitat within 300 feet of the Phase 1 project boundary. A biodiversity area and corridor is mapped by the WDFW northeast of the project site consisting of large mature conifer forest (Figure 7).

Clark County Geographic Information System (CCGIS) maps one wetland, one stream, one floodway, and a non-riparian habitat conservation area within or adjacent to the Phase 1 project boundary (Figure 5).

According to the confidential Washington State Department of Natural Resources (DNR) Natural Heritage Information obtained by ELS from the DNR, two state threatened species, dense sedge (*Carex densa*) and Hall's aster (*Symphyotrichum hallii*) and one state and federally endangered species, Bradshaw's lomatium (*Lomatium bradshawii*), have been documented in the vicinity of the subject site.

WILDLIFE

A wide variety of wildlife has been observed by ELS during the recent and previous 2009 field investigations at the project site. Although no formal wildlife survey was completed, ELS has observed medium and small mammals, birds, reptiles, amphibians, and invertebrates that utilize or inhabit the subject site.

CRITICAL AREAS SUMMARY

Critical Areas

No wetlands or streams are located within the proposed Phase 1 development (Figure 2). ELS identified twenty (20) individual Oregon white oak trees within the proposed Phase 1 development. Eight (8) of the Oregon white oak trees identified onsite are 20-inches DBH or greater and are therefore regulated by the City of Camas) within the Phase 1 boundary (Table 1; Figure 2).

Priority Habitat and Species

ELS field findings generally concur with the WDFW oak presence, as Oregon white oak habitat was identified onsite. ELS does not concur with the WDFW cave habitat or biodiversity areas as mapped by WDFW or DNR (confidential mapping). ELS did not identify cave or biodiversity habitat within the Phase 1 project boundary or the immediate vicinity. ELS does recognize the potential for cave rich habitat and biodiversity areas (large mature conifer forest habitat) across the other undisturbed portions of the Green Mountain formation outside of the Phase 1 project boundary, but after an intensive field review no caves or undisturbed mature conifer forests were located within the Phase 1 project boundary or the immediate vicinity. Additionally, ELS does not concur with the biodiversity mapping directly east of the Phase 1 project boundary, as this area has been historically logged, evidence of which is visible on recent Google aerial photos (Appendix C).

ELS field findings do not concur with the CCGIS mapping. The CCGIS-mapped wetland was confirmed by ELS to be Man-made Pond H. The CCGIS-mapped stream is not present onsite and is therefore inaccurately mapped. The CCGIS-mapped floodway is located within the same location as Man-made Pond I. The CCGIS non-riparian habitat conservation area mapped boundary northeast of the project site is not entirely accurate. ELS assumes that the WDFW biodiversity area mentioned above and the CCGIS non-riparian habitat conservation area are meant to represent generally the same habitat.

ELS did not identify the presence of rare state threatened plant species or federal endangered plant species within the Phase 1 project boundary during field work investigations conducted over 2013 and 2014.

Adjacent Wetland Buffers

The base buffer widths for the jurisdictional Category III wetlands (B, D, G, and O) located outside of the Phase 1 boundary, but within 300-feet of the project were determined using *CMC 16.53.040(B)* (Table 2). The base buffer width for Category III wetlands with a habitat function score equal to (or less than) 20 points and with a high land use intensity development is 80 feet. Category III Wetlands B, D, and G require a base buffer of 80 feet for the high intensity land use development proposed. The base buffer width for Category IV wetlands with high intensity land use development is 50 feet. Category IV Wetland O requires a base buffer of 50 feet.

Table 2: Wetland Buffer Summary.

Wetland Name	Category	Base Buffer Width with High Land Use
Wetland B	III	80
Wetland D	III	80
Wetland G	III	80
Wetland O	IV	50

Note: Base buffer widths per *CMC 16.53.040(B)*, (Table 2).

Stream Habitat

The ordinary high water mark (OHWM) of Stream O was delineated onsite and determined to be a non-fish bearing seasonal (Type Ns) stream and is regulated locally by *CMC 16.61*. According to *CMC 16.61.040(D)*, Stream O (Type Ns) requires a 25-foot base buffer.

Stream buffer widths can be reduced according to *CMC 16.61.040(D)(2)*. Buffer reduction options must comply with *CMC* by ensuring that the reduction does not reduce stream functions, the width is not reduced by more than 50 percent or to less than 15 feet, and that the reduction is not within another critical area. According to *CMC 16.61.040(D)(2)(f)*, stream buffers may be averaged if conducted in consultation with a qualified biologist and submitted to WDFW for comment.

Table 3: Stream Buffer Summary.

Stream Name	Classification	Base Buffer Width with High Land Use
Stream O	Type Ns	25

Man-Made Ponds and Ditches

ELS delineated three man-made ponds (H, I, and J) and four man-made ditches (G, R, S, and Q) on or adjacent to the project site (Figure 2). Rubber-lined and man-made ponds are considered non-jurisdictional by the City of Camas. These man-made aquatic features are exempt according to *CMC 16.53.010(C)(2)(b): Artificial. 'Wetlands created from non-wetland sites including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, stormwater facilities, farm ponds, and landscape amenities,*" and do not require buffers. The ponds and ditches associated with the golf course are not present on a 1990 Google Earth aerial photo of the project site (Figure 10); however, the ponds are present in a 2002 Google Earth aerial photo (Figure 11). Man-made Ditches G, R, S and Q are considered man-made drainage ditches excavated from uplands and therefore, are exempt according to *CMC 16.53.010(C)(2)* and do not require buffers.

Oregon White Oak Habitat

Oregon white oak individual trees exist throughout the subject site and are addressed in the Tree Preservation Plan within the Development Agreement governing the project site. See Figures 2, 9 and Appendix B.

BUFFER MODIFICATION

Buffer Averaging

Averaging of wetland buffer area for no net loss of area or function is allowed by *CMC 16.53.050(C)(2)* The project proposes to average the buffers and comply with the minimum buffer widths required by *CMC 16.53.050(C)(2)(c*).

Buffer averaging is allowed by CMC 16.53.050(2) when the following criteria are adhered to:

1. CMC 16.53.050 (C)(2(a) - The total area contained in the buffer after averaging is no less than that contained within the buffer prior to averaging;
2. CMC 16.53.050 (C)(2)(b) - Decreases in width are generally located where wetland functions may be less sensitive to adjacent land uses, and increases are generally located where wetland functions may be more sensitive to adjacent land uses, to achieve no net loss or a net gain in functions;
3. CMC 16.53.050 (C)(2)(c)- The averaged buffer, at its narrowest point, shall not result in a width less than seventy-five percent of the required width, provided that minimum buffer widths shall never be less than fifty feet for all Category I, Category II, and Category III wetlands, and twenty-five feet for all Category IV wetlands; and
4. CMC 16.53.050 (C)(2)(d) - Effect of Mitigation. If wetland mitigation occurs such that the rating of the wetland changes, the requirements for the category of the wetland after mitigation shall apply.

The project complies with the above criteria in the following ways:

1. The total area contained in the buffer after averaging is no less than that contained within the buffer prior to averaging. The buffer averaging "IN" (or replacement buffer area) matches the buffer averaging "OUT" area for Wetlands G, O and D (where averaging is proposed) Therefore, no net decrease in buffer area from that prior to averaging the base buffer width is proposed by the project (Figure 9).

The lot encroachment within 218 square feet of the 80-foot base buffer along the eastern boundary of Wetland D is proposed to allow construction of one residential lot (Lot #160). The buffer modification provides more than the 50-foot minimum buffer (60 feet) and replaces the encroachment area at a 1:1 replacement ratio by averaging. The buffer averaging proposed to offset the encroachment into the Wetland D buffer is 218 square feet. The buffer replacement area proposed consists of removing a section of existing golf course cartpath within the 80-foot base buffer that currently interrupts the buffer with impervious surface and therefore functionally isolates this portion of the southern Wetland D buffer, Figure 9. Therefore, the project proposes no net decrease in buffer area. The buffer averaging area is located within the same wetland as the impact, and provides an expansion in the buffer area that has not been present since construction of the golf course. The area directly south of this buffer replacement area is proposed as open green space.

The lot encroachment within 2,484 square feet of the 50-foot base buffer along the southern boundary of Wetland O is proposed to allow construction of three residential lots. The buffer modification will allow for the 25-foot minimum buffer, while replacing the encroachment area at a 1:1 replacement ratio by averaging 2,484 square feet. Therefore, the project proposes no net decrease in buffer area. The buffer averaging area is located within the same habitat corridor as Wetland O, and expands the narrow Stream O buffer to allow greater protection for both Wetland O and Stream O.

The encroachment of road (NE C Street), pedestrian trail, paved regional trail and gravel stornmwater access road to the Tract R Stormwater Facility within the 80-foot base buffer of Wetland G consists of 9,894 square feet, see Figure 9. The buffer averaging proposed to offset the encroachment into the Wetland G buffer while maintaining the 50-foot minimum buffer allowance is 9,894 square feet. No net loss of area is proposed for the Wetland G buffer onsite.

2. The decreases in buffer width are located within the outer portion of the buffer and within locations where the existing buffer is low functioning as part of the active golf course maintained grass fairway. Little to no function is provided to the adjacent wetlands by the buffer averaging areas proposed therefore, no loss of function will result from the buffer averaging proposed onsite. Design alterations avoided impacting wetlands and, stream habitat, and minimized encroachment to the wetland buffers to the full extent possible considering the variety of constraints posed to the site – wetlands, buffers, streams, Oregon white oak habitat, and the presence of the Bonneville Power Administration (BPA) overhead towers and lines that bisect the site.

3. The minimum buffer width of 50 feet for the Category III Wetland G, and 25 feet for the Category IV Wetland O associated with the project has been met (Figure 9).

4. No mitigation to offset wetland fill is required or proposed by the project. The current wetland categories will not be altered by the proposed project.

Table 4. Minimum Buffer Widths Allowed with Buffer Modification.

Wetland Name	Category	Base Buffer Width at High Land Use	Minimum Buffer Width Allowed with Buffer Modification
Wetland B	III	80	50
Wetland D	III	80	50
Wetland G	III	80	50
Wetland O	IV	50	25

NOTE: Buffer width modification from base buffer width to minimum buffer width allowed per CMC 16.53.050(C)(2)(c) Buffer Averaging and CMC 16.53.050(C)(1)(c) Combined Reductions.

Buffer Reduction with Enhancement

Combined reductions are allowed by *CMC 16.53.050(C)(c)* provided that the minimum buffer widths shall never be less than fifty feet for Category III wetlands. The combination of buffer reduction incentives and restoration are proposed for the southern buffer of Wetland D. The 80-foot base buffer will be reduced to the minimum 50-foot buffer allowed by increasing the functions through an enhancement effort. The enhancement effort will consist of invasive species control and the installation of native shrubs within an area dominated by grass and active golf course fairway. The result of the buffer enhancement will allow an increase in wetland buffer function by providing a dense scrub-shrub vegetation community, 50-feet in width between Wetland D and the proposed lots. The native shrub enhancement proposed has been designed to mimic an Oregon white oak understory vegetation community due to the Oregon white oak mitigation proposed within the same buffer. The total native shrub understory enhancement area proposed by the 50-foot buffer enhancement is approximately 11,768 square feet in size (Figure 9). Plant specifications are listed in Table 5.

Table 5. Wetland D Southern Buffer Enhancement.

Common Name	Scientific Name	Stock Size	Spacing	Quantity
Beaked hazelnut	*Corylus cornuta*	1 gallon, container	6 feet	80
Common snowberry	*Symphoricarpos albus*	1 gallon, container	6 feet	80
Nootka rose	*Rosa nutkana*	1 gallon, container	6 feet	80

Western swordfern	*Polystichum munitum*	1 gallon, container	6 feet	80
			Total =	320

The buffer enhancement area will be maintained and monitored for a period of 5-years following installation per the guidance listed in *CMC 16.53.050(E)(3)(d).*

Maintenance is to consist of invasive species control by mowing activities or herbicide application performed by a licensed herbicide applicator. Total percent cover of invasive species is to remain below 20-percent for the duration of the monitoring period. Invasive species presence is to be determined by ocular estimation across the buffer enhancement area and recorded in annual monitoring reports.

Monitoring activities are to consist of establishing two random monitoring plots across the buffer enhancement area. Vegetation density and cover data is to be collected from 15-foot minimum radius monitoring plots permanently established within the buffer enhancement area. A one hundred percent survival rate is required Year 1. By Year 5, the percent cover of the native shrub cover shall be 25-percent minimum. If by Year 5, or at any point the monitoring data determines that the buffer enhancement area is not on track to meet the Year 5 performance standard, a contingency plan must be created and implemented to ensure the native shrub cover is meeting the outlined criteria. Monitoring reports are to be submitted to the City of Camas by December 31 of each year associated with the 5-year monitoring period.

Stormwater Facility Allowance Within Wetland Buffers

A fill slope associated with the Trace Q Stormwater Facility is proposed within a portion of the Wetland G buffer. Stormwater facilities are allowed within the buffer of wetlands by *CMC 16.53.050(3)* when the following criteria are met:

1. *The associated wetland with low habitat function (less than twenty points on the habitat section of the rating system form),*
2. *The stormwater facility is built on the outer edge of the buffer and does not degrade the existing buffer function,*
3. *The stormwater facility is designed to blend with the natural landscape.*

The project complies with the above criteria in the following ways;

1. Wetland G scored 17 points on the habitat section of the rating system form), meeting the criteria for low habitat function.
2. The stormwater facility will be built on the outer edge of the buffer. The stormwater facility is proposed within the outer 30-feet of the 80-foot base buffer. The facility is further located within an area of buffer currently utilized and maintained as an active golf course. The buffer functions provided post-project will be equal to or greater than the functions currently present and therefore not degrade the existing buffer functions. The current buffer consists of monotypic grass that is maintained and fertilized as part of the actively groomed golf course fairway. Post development, the buffer habitat will not be maintained to the golf course standards, therefore allowing the dedicated open space to

naturally colonize with native trees, shrubs, and herbaceous groundcover. The reduction in maintenance operations across the buffer habitat will lead to more diverse and dense vegetation structure, which will provide higher function to the adjacent critical area habitat. Allowing natural recruitment of native vegetation within the buffers or outer perimeter of the wetland will also lead to wider habitat corridors over time with the growth of additional canopy cover etc. than currently present.

3. The stormwater facility will be constructed within an area dominated by grass within the active golf course fairway. By utilizing this open and fairly flat area of the site, the facility will not take away from the natural landscape. The proposed impervious surface of the maintenance access road has utilized the existing functionally isolated buffer associated with the golf course gravel cart path, (Figure 9). Functionally isolated buffer areas are defined by C*MC 16.53.050(B)(4)(b)* as areas that are functionally separated from a wetland, areas that do not protect the wetland from adverse impacts and generally consists of preexisting roads, structures or vertical separation. The golf course cart path meets the definition of a functionally isolated buffer and was utilized to minimize impacts to the wetland buffer and the overall existing landscape.

TREE PRESERVATION PLAN

The non Oregon white oak trees proposed for removal by the Phase 1 project have been inventoried and accounted for as part of the Development Agreement (DA) Exhibit E - Tree Preservation Plan (Appendix B). The Tree Preservation Plan encompasses the entire Green Mountain Land, LLC (GML) ownership area (approximately 200+ acres) as future development of the area surrounding Phase 1 is proposed by the landowner, GML. The GML ownership was divided into five "zones" that identify five distinct areas of future development. The zones were established to assure that acceptable numbers of trees were preserved throughout the property, not just in one isolated area rendering the remaining portions of the site bare of trees. The percentage of trees protected in a given zone varies from 34 percent to 77 percent, with the net result being that at least 50 percent of the existing trees across the overall property ownership will be preserved.

The Tree Preservation Plan outlines that Zone C will consist of development pods B1, B2, B3, C1, C2, D1, D2, D3, and E1 and will preserve 488 trees out of the 1,454 trees inventoried within the zone to provide a preservation of 34 percent of the trees within the zone. The Phase 1 development consists of all of the development pods listed under Zone C except B1, B2 and B3. That remaining area contains only 222 trees. The Phase 1 development fully complies with the Tree Preservation Plan, and with the future removal of the additional 222 trees when the remaining pods within the zone are developed, Zone C will still meet the full retention quantity of 488 trees (Figure 8 and Appendix B).

Oregon White Oak Impacts and Mitigation

The project design team worked to retain oak trees by altering the Phase 1 development and associated green space boundaries. Out of the twenty total Oregon white oak trees inventoried within the Phase 1 boundary, eight could not be avoided by the project (Figure 9). The eight individual Oregon white oak trees to be impacted consist of the following oak tree numbers as

referenced in Table 1 and depicted on Figure 9; Oak Tree Numbers – 1, 2, 7, 9, 121, 55, 58, 64, and 121. The oak impacts will be mitigated for following the Development Agreement (DA) Exhibit E - Tree Preservation Plan (Appendix B). Mitigation for the eight Oregon white oak trees will consist of installing 1.5-inch caliper minimum stock replacement oaks at a 2:1 replacement ratio, for a total of sixteen replacement Oregon white oak trees. The oak mitigation for Phase 1 oak impacts is proposed within the wetland buffer associated with Wetlands D over an area approximately 6,526 square feet in size to allow for 20-foot spacing of the sixteen trees allowing for mature canopy growth in the future (Figure 9).

The Oregon white oak mitigation area will be maintained and monitored for a period of 5-years. Maintenance activities are to consist of controlling invasive species with mowing activities or herbicide application performed by a licensed herbicide applicator. Total percent cover of invasive species is to remain below 20-percent for the duration of the monitoring period. Invasive species presence is to be determined by ocular estimation across the oak mitigation site and recorded in annual monitoring reports. Monitoring activities are to consist of providing an individual stem count for the Oregon white oak replacement trees specified for installation within the southern buffer of Wetland D and site photos showing the health of the oak trees. A one hundred percent survival rate (or sixteen trees in total) is required for the duration of the monitoring period. If at any point monitoring, identifies mortality or stressed oak trees, a contingency plan must be created and implemented. Monitoring reports are to be submitted to the City of Camas by December 31 of each year associated with the 5-year monitoring period.

LIMITATIONS

The opinions and recommendations contained in this report apply to conditions existing when services were performed. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report. ELS does not warrant the accuracy of supplemental information incorporated in this report that was supplied by others. This report is prepared solely for the use of our client and may not be used or relied upon by a third party for any purpose. Any such use or reliance will be at such party's risk.

The services described in this report were consistent with our agreement with our client and performed consistent with generally accepted professional consulting principles and practices. ELS personnel base the above listed conclusions on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with the findings presented in this report. There are no other warranties, express or implied.

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