CRITICAL AREAS REPORT

&

BUFFER RESTORATION PLAN

Project:

Valentina's Villas

Applicant:

Jonathan Christopher
PO Box 1690
Brush Prairie, WA 98606

Prepared By:

Ash EGO
SOLUTIONS, LLC

Date:

September 16, 2024

The information in this report was compiled to meet the requirements of the City of Kelso Municipal Code (KMC) Chapters 17.26.050 Wetlands and 17.26.060 Fish and Wildlife Habitat Conservation Areas. This report has been prepared under the supervision and direction of the undersigned, a qualified professional following KMC Section 17.26.040.2.

Andrea W. Aberle
Sr. Biologist
AshEco Solutions, LLC

SITE INFORMATION:

Parcel No(s):	243570101
Acreage:	2.52 acres
Local Jurisdiction:	City of Kelso, Washington
Section/Township/Range:	SE ¼ S25, T8N, R2W
Site Address:	North of 114 Corduroy Rd. Kelso, WA 98626
Legal Landowner:	Van Hanson

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INTRODUCTION

Project Description

AshEco Solutions, LLC (AES) was contracted by Jonathan Christoper (the applicant) to assess critical areas at an unaddressed subject parcel located immediately north of 114 Corduroy Road and south of Harris Street Road in Kelso, Washington (Figure 1). Years ago, the subject parcel was cleared, graded, and left with a compacted fill and gravel pad (Figure 7). The applicant proposes construction of an apartment complex (Valentina's Villas), within the limits of the historic graded area (Figure 8). This Critical Areas Report and Buffer Mitigation Plan follows the Kelso Municipal Code (KMC) Chapters 17.26.040 Critical Areas Reports, 17.26.050 Wetlands, and 17.26.060 Fish and Wildlife Habitat Conservation Areas.

Project Location and Background Information

The subject parcel (site) is approximately 2.52-acres in size, is assigned Parcel Number 243570101, and is under the jurisdiction of the City of Kelso. Site access is currently provided from Corduroy Road, using the adjacent southern parcels improved site access (Highlander Place assisted living facility). Historic aerial imagery shows that the site had been cleared, graded, and graveled by May of 1994. The proposed project has been designed to utilize the existing historically impacted footprint.

EXISTING CONDITIONS

The subject parcel is located within an urban area of the City of Kelso developed with single family residences on large lots and apartment complexes. An assisted living facility and church are located south of the subject parcel. Except for small areas in the north and east associated with an unnamed stream and wetland, the entirety of the subject parcel is impacted by historic grading and fill. The site topography is generally flat with the exception of the stream channel that flanks the flat graded area to the north and east. The central graded area of the parcel has limited vegetation with a few scattered clusters of tree saplings, with Himalayan blackberry dominating the perimeter. Himalayan blackberry generally dominates the narrow vegetated berm west of the stream channel, and reed canary grass dominates the wetland in the north. The onsite critical areas are degraded and would benefit from restoration activities.

CRITICAL AREAS MAP RESEARCH

Soil Survey

Soils within the subject parcel are mapped by the Natural Resource Conservation Service (NRCS) Soil Survey of Cowlitz County (2006) as (65) Godfrey silt loam, 0 to 3 percent slopes, (95) Kalama gravelly loam, 15-30 percent slopes, and (103) Kelso silt loam, 30 to 50 percent slopes (Figure 2).

The Godfrey series consists of very deep, poorly drained soils formed in recent alluvium on flood plains. The (65) Godfrey soils, 0 to 3 percent slopes, typically occur on flood plains and concave basin-like areas at elevations of 20 to 300 feet. Godfrey soils are poorly drained with very slow permeability, the average annual precipitation where this series occur is 40 to 65 inches. Native vegetation that typically grows within this soil series consists of black cottonwood, red alder, western redcedar, and bigleaf maple with an understory of vine maple, willow, salmonberry, western swordfern, salal, western brackenfern, rose, Douglas spirea, sedges, and rushes. The (65) Godfrey soils, 0 to 3 percent slopes, soil type is listed on the Washington State Hydric Soils List for Cowlitz County (NRCS 2024).

Kalama soils formed in old gravelly alluvium from mixed origin and consist of very deep, moderately well drained soils. The (95) Kalama gravelly loam, 15-30 percent slopes, typically occurs on terraces and terrace escarpments at elevations of 100 to 500 feet. Kalama soils are moderately well drained with moderately low permeability, the average annual precipitation where this series occurs is 40 to 65 inches. Native

vegetation that typically grows within this soil series consists of Douglas- fir, red alder, western redcedar, western hemlock, and bigleaf maple; with an understory of vine maple, salmonberry, salal, western bracken fern, cascade Oregon-grape, cascara buckthorn, western swordfern, red huckleberry, trillium, violet, and twinflower. The (95) Kalama gravelly loam, 15-30 percent slopes, soil type is not listed on the Washington State Hydric Soils List for Cowlitz County (NRCS 2024).

The Kelso soils formed in old alluvium and consist of very deep, moderately well drained soils. The (103) Kelso silt loam, 30 to 50 percent slopes, typically occurs on high terraces at elevations of 50 to 200 feet. Slopes are 0 to 50 percent. Kelso soils are moderately well drained with slow runoff and permeability, the average annual precipitation where this series occurs is about 50 inches. Native vegetation that typically grows within this soil series consists of Douglas-fir, red alder, western redcedar, and bigleaf maple, with an understory of western brackenfern, western swordfern, salal, western hazel, red huckleberry, trailing blackberry, and red elderberry. The (103) Kelso silt loam, 30 to 50 percent slopes, soil type is not listed on the Washington State Hydric Soils List for Cowlitz County (NRCS 2024).

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 also be found in areas without mapped hydric soils.

Wetlands

A narrow wetland corridor is mapped offsite to the east and northeast sections of the subject parcel by the National Wetland Inventory (NWI). NWI maps Freshwater Emergent Wetland in the northeastern section of the subject parcel (Figure 3). AES observed that the NWI mapping actually represents the defined stream channel onsite with no fringe wetlands present. AES did however observe slope wetland north of the stream channel in the far northeastern portion of the subject parcel.

Riparian Habitat

Washington State Department of Natural Resources (DNR) mapping shows an unnamed Type F Water along the eastern parcel boundary and within the northern section of the subject parcel (Figure 4). AES observed a defined stream channel within this same general location, flanking the eastern parcel boundary. The stream flows south through a culvert under Harris Street Road and continues along the eastern parcel boundary of the subject site.

WDFW Priority Habitat

The Washington Department of Fish and Wildlife (WDFW) maps Aquatic Habitat along the eastern parcel boundary and within the northern section of the subject parcel (Figure 5). WDFW Aquatic Habitat mapping corresponds with the location of the stream along the eastern parcel boundary and within the north portion of the parcel, mapped by DNR as a Type F Water. AES did not identify any other habitat meeting WDFW Priority Habitat and Species criteria.

Floodplain Designation

Federal Emergency Management Agency (FEMA) regulated floodplain is mapped in association with the Coweeman River south and east of the subject site. The mapped floodplain does not extend west of the stream channel onsite (Figure 6). Regulated Floodplain is generally referred to as the land area susceptible to inundation/flooding during the 100-year recurrence interval defined as the one percent (1%) chance that a flood of that magnitude, or greater, will inundate susceptible land in any given year. The limit of the 100-year flood susceptible land area is based on federal and/or local jurisdiction flood maps. The susceptible land must remain relatively free from obstruction so that the 100-year flood can be conveyed downstream.

Shoreline Designation
Shoreline jurisdiction is defined as the area extending 200 feet outward from the ordinary high-water mark (OHWM) and/or 200 feet from a FEMA identified Floodway of a designated shoreline. Designated Shorelines of the State are governed by the WA Department of Ecology, the Washington State Department of Fish and Wildlife (WDFW), and in addition, by the Cowlitz County Shoreline Management Program (SMP). No shorelines are located onsite or adjacent to the site (Figure 7).

METHODOLOGY

Wetlands
The subject parcel 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 KMC Chapter 17.26.050 Wetlands. Wetlands were identified onsite north of the stream channel within the northeastern limits of the subject parcel (Figure 8).

Riparian Habitat
The methodology used for determining the location of the ordinary high-water mark (OHWM) of the Type F stream followed the Washington State Department of Ecology's (ECY) Determining the OHWM on Streams in Washington State (2010). AES delineated the onsite OHWM of the stream as depicted on Figure 8.

DOCUMENTED VEGETATION
Invasive species dominate the berm that flanks the northern and eastern limits of the open graded area. The onsite portion of the emergent wetland was observed to be dominated with invasive reed canarygrass (*Phalaris arundinacea*, FACW). Invasive Himalayan blackberry (*Rubus armeniacus*, FAC) generally dominates the existing stream buffer habitat. 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

AES rated the wetland within the northern extent of the subject site using the Washington State Department of Ecology Wetland Rating System (2014), AES rated the wetland as a Category III Slope wetland with a habitat score of 7 (Appendix B). Under the KMC wetland buffer widths are established by comparing the wetland rating category and the habitat score. Following KMC 17.26.050, Category III wetlands with a habitat score of 7 warrant a standard 105-foot buffer width. Standard buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species it does not perform the necessary functions to protect wetlands. There is little to no vegetated buffer for the onsite wetland as it is flanked by a degraded stream channel in the south and steep gravel slope associated with Harris Street Road in the north.

The bulk of the subject parcel has been impacted by historic grading and fill. The stream present parallel to the eastern parcel boundary and the wetland in the north are generally degraded with invasive species dominate and little to no vegetated buffer present. Under KMC 17.26.050.D.7, proposed development may utilize an existing impacted footprint (historic fill) as it functionally isolates the wetland habitat. Additionally, reduced buffer widths are allowed when site-specific, abrupt topographical changes or human-made features indicate that extending the buffer beyond such features will not improve protection. The onsite wetland buffer is degraded and functionally isolated by the historic grade and fill activities. The outer limits of the buffer have compacted and gravel soils that do not support vegetation growth.

DNR identifies the unnamed stream that occurs along the eastern parcel boundary and within the northern section of the subject parcel as a Type F Water (fish bearing), (Figures 4 and 8). The Type F Water meets the “Class 5” water classification listed by KMC 17.26.060. KMC does not identify a standard buffer width for Class 5. However, KMC does recommend the development of a Habitat Management Plan as deemed necessary for the project under review or habitat type.

Table 1. Critical Areas Summary.

Critical Area	Designation	Buffer Width
Wetlands	Category III Slope (7 Habitat Score)	Standard: Wetland buffer = 105-feet
		Functionally Isolated: Buffer extends to edge of existing impacted footprint Proposed Buffer: 121-feet (Average Width)
Unnamed Stream	Type F Water	No Standard Buffer Width *(Encourages Development of a Habitat Mgmt. Plan)*

BUFFER RESTORATION PLAN

Avoidance and Minimization

The subject parcel is highly constrained due to its configuration and the wetland and riparian habitat that flanks it. The applicant proposes the construction of an apartment complex (Valentia's Villas) within the central upland and historically graded area of the site, while avoiding new impacts to the onsite critical areas (Figure 9). By utilizing the limits of the existing graded area, the proposed project will result in no net loss critical area habitat functions or values, as no new impact to onsite critical areas are proposed. The proposed project has been designed to concentrate high traffic areas, such as access and parking, within the central area of the apartment complex and all runoff off from paved areas will be treated onsite within engineered stormwater facilities.

Buffer Restoration

The existing critical area buffer habitat onsite is sparsely vegetated and/or dominated by invasive species that do not perform the adequate functions required to protect the onsite critical areas. The project proposes a buffer restoration plan to provide the appropriate native plant community that will perform the functions needed to protect the onsite critical areas. The buffer restoration area proposed will total 36,419 sq. ft. of area and consist of 31,409 sq.ft. of riparian/wetland buffer restoration as well as 5,010 sq.ft. of storm pond enhancement also located within the onsite buffer habitat. The proposed buffer restoration area has areas of overlapping wetland and riparian buffer habitat and will provide an average native vegetated buffer width of 121-feet, Figure 9. In addition to the native tree and shrub installation, the invasive species will be removed. The proposed stormwater pond buffer plantings will consist of native emergent species ideal for the depressional areas anticipated to be saturated during the wet season, with native trees and shrubs added to the outer perimeter areas where growth won't impede on the constructed ponds. The addition of native trees and shrubs to the perimeter of the stormwater ponds will provide for a contiguous vegetated habitat buffer and provide shielding, shade and shelter functions to the adjacent Type F water above that historically present.

Table 2. Buffer Restoration Summary.

Critical Area	Designation	Buffer Restoration and Enhancement
Wetland	Category III Slope (7 Habitat Score)	Total = 36,419 sq. ft (Average Width = 121-feet) Buffer Restoration Planting = 31,409 sq.ft. Storm Pond Buffer Enhancement = 5,010 sq.ft
Unnamed Stream	Type F Water	

PLANTING PLAN

Site Preparation

1. Stake or flag the on-site buffer restoration area and install tree protection fencing as needed.
2. Mow grasses and herbaceous vegetation present, paying special attention to invasive species within restoration areas prior to planting.

Plant Materials

The plants specified for the on-site mitigation are native species designed to diversify the existing plant community, provide an increase in woody structure and wildlife habitat on a short- and long-term basis, thereby increasing the habitat functions for the overlapping wetland and riparian habitat buffers. The specified shrubs will grow quickly forming an intertwining shrub layer forming a native understory along with the specified groundcover to complement the native tree canopy proposed within the restoration area.

Groundcover Seed

Seed will be purchased from a native-seed supplier and meet the specifications outlined by planting plan.

Container Stock

Plants will be purchased from a native-plant nursery and meet size outlined by planting plan.

Bareroot Species

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

Planting Methods

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

Seed stock

1. *Seed Application Rate:* 1 Lb. per 1000 sq. ft.

Container/bareroot stock

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

Planting Specifications

Planting will begin in Fall of 2024 or Winter/Spring of 2025 while onsite soils are moist (and stock is dormant). Table 3 on the following page summarizes the native plant selection, spacing, size, and quantity for the on-site mitigation area:

Table 3. Mitigation Planting Plan.

Common Name	*Scientific Name*	*Stock*	*Spacing*	*Quantity*
Buffer Restoration Planting Area (31,409 sf Total)				
Trees				
Big-leaf maple, FACU	*Acer macrophyllum*	1-gallon or 24-36" bare-root	14 ft.	50
Cascara, FAC	*Frangula purshiana*	1-gallon or 24-36" bare-root	14 ft.	60
Grand fir, FACU	*Abies grandis*	1-gallon or 24-36" bare-root	14 ft.	50
			Trees =	160
Shrubs				
Beaked hazelnut, FACU	*Corylus cornuta*	1-gallon or 24-36" bare-root	10 ft.	50
Common snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	115
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	100
Oceanspray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	50
			Shrubs =	315
			Total =	**475**
Storm Pond Buffer Enhancement (5,010 sf Total)				
Storm Pond Buffer Enhancement – Internal Pond Areas (3,000 sf total/1500 sf per pond) Sunmark Seeds - Native Water Quality (www.sunmarkseeds.com/native-seed/native-seed-mixes/native-water-quality/) *1lb per 1000 sq. ft. = 3 lbs*				
Storm Pond Buffer Enhancement - Perimeter (2,010 sf total/1,005 sf per pond)				
Sunmark Seeds - Native Riparian (www.sunmarkseeds.com/?s=native+riparian+) *1lb per 1000 sq. ft. = 2 lbs*				
Trees				
Big-leaf maple, FACU	*Acer macrophyllum*	1-gallon or 24-36" bare-root	14 ft.	4
Cascara, FAC	*Frangula purshiana*	1-gallon or 24-36" bare-root	14 ft.	4
Grand fir, FACU	*Abies grandis*	1-gallon or 24-36" bare-root	14 ft.	4
			Trees =	12 (6 trees per pond)
Shrubs				
Beaked hazelnut, FACU	*Corylus cornuta*	1-gallon or 24-36" bare-root	10 ft.	5
Common snowberry, FACU	*Symphoricarpos albus*	1-gallon or 24-36" bare-root	6 ft.	5
Nootka rose, FAC	*Rosa nutkana*	1-gallon or 24-36" bare-root	6 ft.	5
Oceanspray, FACU	*Holodiscus discolor*	1-gallon or 24-36" bare-root	6 ft.	5
			Shrubs =	20 (10 shrubs per pond)
			Total =	**32**
			Grand Total =	**507**

Maintenance Plan

Maintenance at the on-site restoration and enhancement areas is a five-year process and will involve removing persisting invasive plant species in addition to watering and re-installing failed native species as necessary. The maintenance will include the following activities when necessary:

1. Remove and control non-native/noxious vegetation around all newly installed plants. During years 1 through 3 invasive species will be removed and suppressed as often as necessary to meet a performance standard of no greater than 20 percent cover by invasive species, measured by monitoring plots.
2. Irrigate planted species as necessary during the dry season, approximately July 1 through October 15. Irrigation is recommended to occur on a two-week cycle (minimum) during the dry season for the first three years. Water will be provided by a temporary above-ground irrigation system or a water truck.
3. Replace dead or failed plants as described for the original installation to meet the minimum annual performance standard of 100% survival in the first year, 90% survival in the second year, and 80% survival in years 3-5.

Monitoring Plan

The 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 Kelso by the end of each monitored year. The goal of monitoring is to determine if the previously stated performance standards are being met. The mitigation area will be monitored once during the growing season, preferably during the same two-week period each year to better compare the data.

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

Vegetation

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

- Percent cover and frequency of herbaceous species
- Percent cover and frequency of sapling/shrub species
- Species composition of herbs, shrubs, and trees, including non-native/noxious, invasive species
- Photo documentation of vegetative changes over time

<u>Monitoring Report Contents</u>

The annual monitoring reports will contain at least the following:

- Location map and as-built drawing.
- Photographs from permanent photo points (x4 minimum).
- Historic description of project, including dates of plant installation, current year of monitoring, and restatement of mitigation goal.
- Documentation of plant survival, cover, and overall development of the plant community.
- Assessment of non-native, invasive plant species and recommendations for management.
- Summary of maintenance and contingency measures proposed for the next season and completed for the past season.

Contingency Plan

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

Site Protection

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

MITIGATION GOALS, OBJECTIVES AND PERFORMANCE STANDARDS

Objective 1: Buffer Restoration Planting Area of 31,409 square feet.

Performance Standard 1a. Document the installation of the native plant species specified by Table 3. Submit As-built documenting planting locations, plant species and quantities.

Performance Standard 1b. In Year 1, planted species are to achieve 100 percent (100%) survival one year after the site is planted. The survival rate is to be determined by comparison of baseline vegetation data collected during production of the As-built Map. (If dead plants are replaced in Year 1 to achieve the 100 percent survival rate, this performance standard will be met).

Performance Standard 1c. In Year 2, mitigation plant communities will achieve the densities listed in Table 4.

Performance Standard 1d. In Year 5, the mitigation plant community will achieve 30-percent (30%) aerial cover of woody species. (If plants are added, that achieve this cover requirement, this performance standard will be met).

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

Objective 2: Storm Pond Buffer Enhancement of 5,010 square feet.

Performance Standard 1a. Document the installation of the native plant species specified by Table 3. Submit As-built documenting planting locations, plant species and quantities.

Performance Standard 1b. In Year 1, planted species are to achieve 100 percent (100%) survival one year after the site is planted. The survival rate is to be determined by comparison of baseline vegetation data collected during production of the As-built Map. (If dead plants are replaced in Year 1 to achieve the 100 percent survival rate, this performance standard will be met).

Performance Standard 1c. In Year 2, mitigation plant communities will achieve the densities listed in Table 4.

Performance Standard 1d. In Year 5, the mitigation plant community will achieve 30-percent (30%) aerial cover of woody species. (If plants are added, that achieve this cover requirement, this performance standard will be met).

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

Objective 3: Provide long-term protection for the onsite buffer restoration/enhancement area.

Performance Standard 3a. Record a conservation covenant with the City of Kelso. This performance standard will be met when the covenant is approved and formally recorded with the City of Kelso and/or Cowlitz County.

Performance Standard 3b. Post permanent boundary signage every 100 feet along the outer edge of the onsite riparian buffer boundary (facing the development) *or as otherwise determined by the City of Kelso or Cowlitz County*. Signs are to read:

"Critical Areas and Buffer – Please Retain in a Natural State"

Signage will remain in legible condition; if signs are missing or illegible, they will be replaced. This performance standard will be met when signs are reported to be in place in the final monitoring report.

Table 4. Performance Standards by Monitoring Year.

Habitat Type	Performance Standards by Year			
	Year 1	Year 2	Year 3	Year 5
Riparian Enhancement Area				
Planted Vegetation Survival	100%	90%	80%	---
Woody Species Density	---	10-14' respectively (on center)	10-14' respectively (on center)	---
Woody Species Aerial Cover	---	---	---	30%
Invasive Plant Species				
Invasive/Non-native plant species	< 10%	< 20%	< 20%	< 20%

CONCLUSIONS

By utilizing the limits of the existing onsite impact area, the proposed project will result in no net loss of wetland or riparian habitat functions and values as new impacts to onsite critical areas will be. The implementation of the proposed buffer restoration plan will provide a native forested and scrub-shrub wetland and riparian habitat corridor that will provide the functions required to protect the onsite critical areas that have been historically lacking. With issuance of the approved permit, the proposed restoration activities will be implemented and a conservation covenant recorded to protect the onsite critical areas in perpetuity.

DISCLAIMER

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

REFERENCES

City of Kelso Municipal Code. Chapter 17.26.050 Wetlands.

City of Kelso Municipal Code. Chapter 17.26.060 Fish and Wildlife Habitat Conservation Areas.

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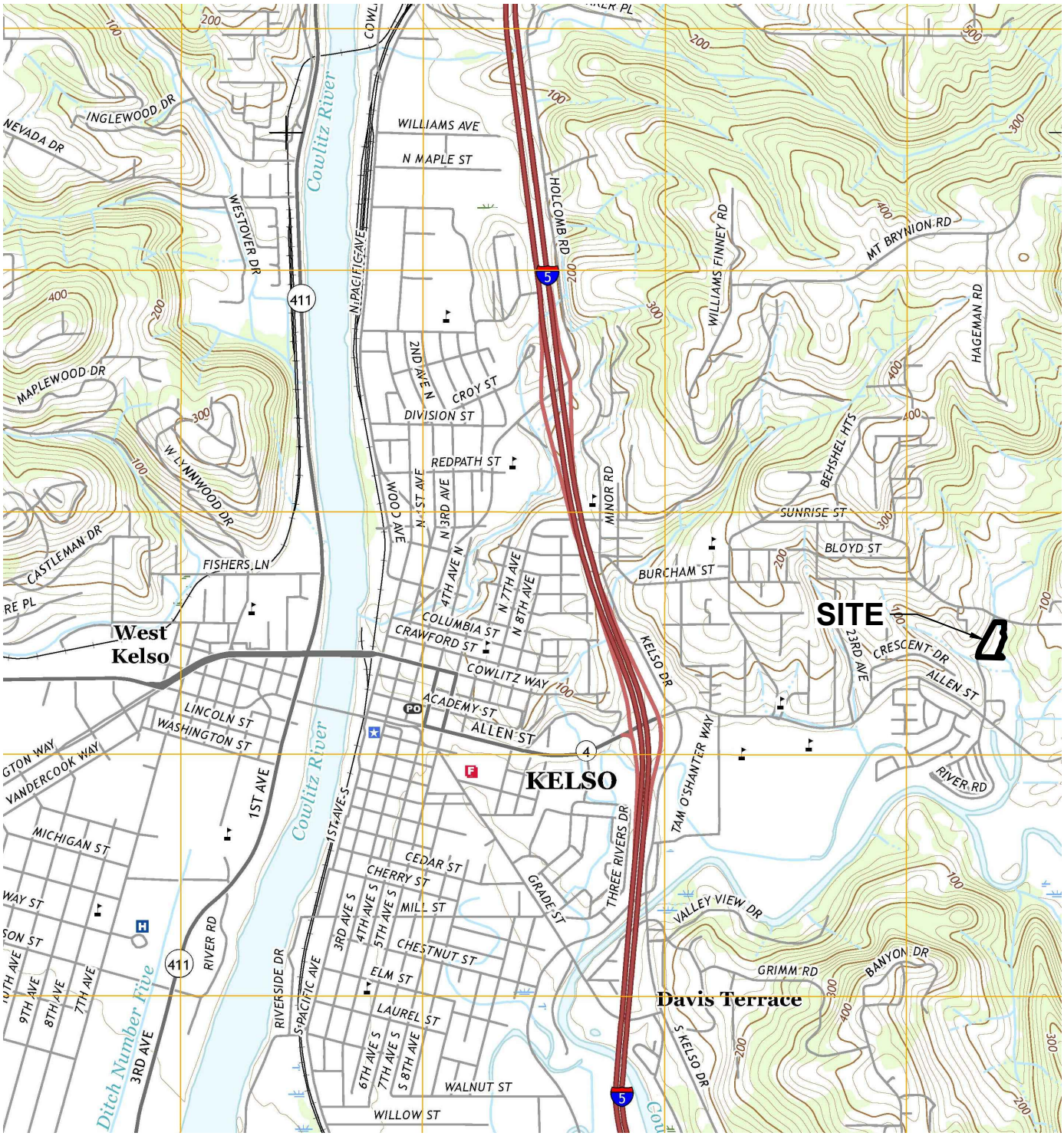

NOTE(S):
USGS, KELSO QUADRANGLE
WASHINGTON-OREGON
7.5 MINUTE SERIES (TOPOGRAPHIC)

Ash ECO SOLUTIONS, LLC

PURPOSE: XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	VICINITY MAP **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 1 **DATE:** 9-13-24

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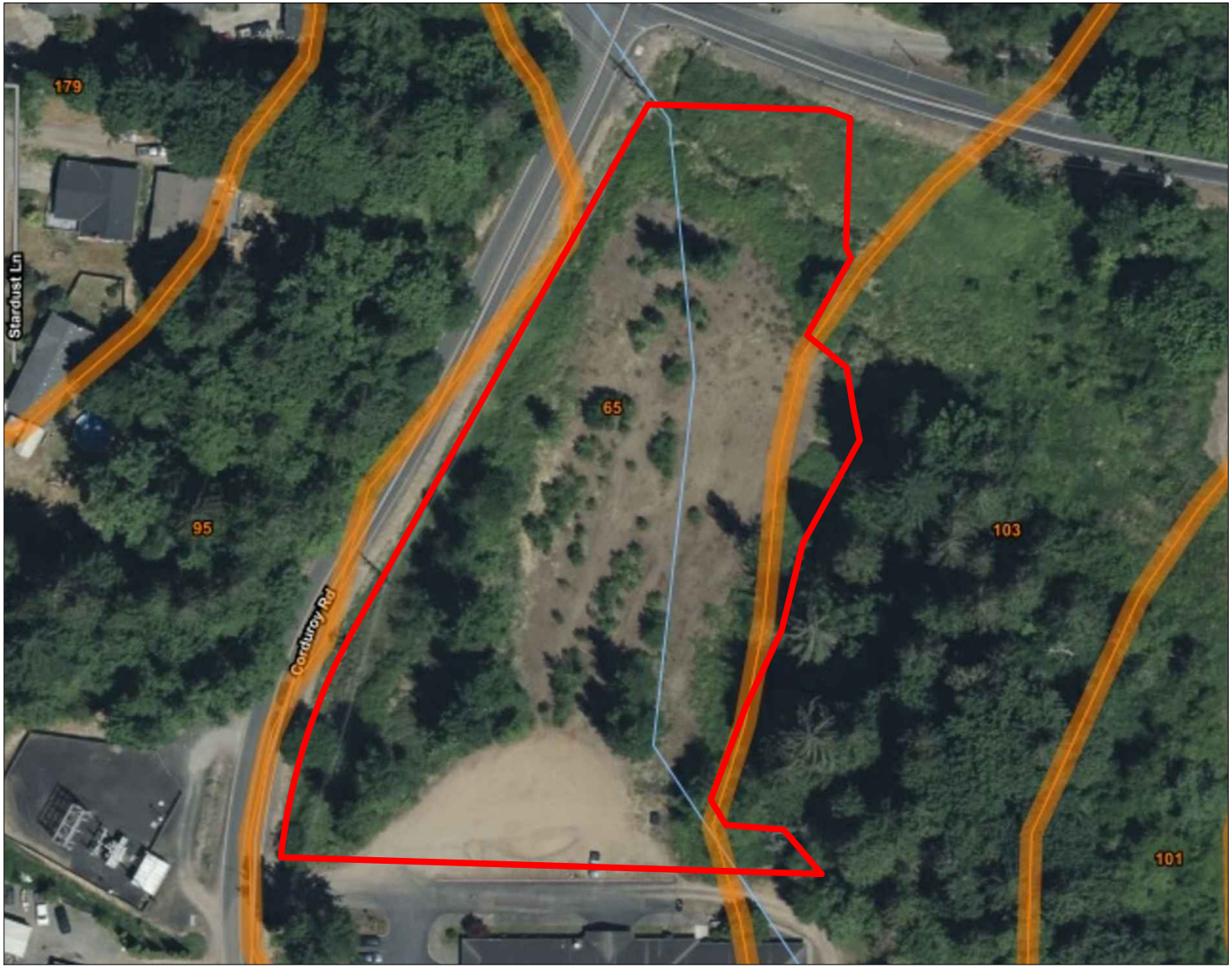

65 - Godfrey silt loam, 0-3% slopes

95 - Kalama gravelly loam, 15-30% slopes

103 - Kelso silt loam, 30-50% slopes

N

0 100 200

SCALE IN FEET
1" = 100'

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AshECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	SOIL SURVEY MAP **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 2 **DATE:** 9-13-24

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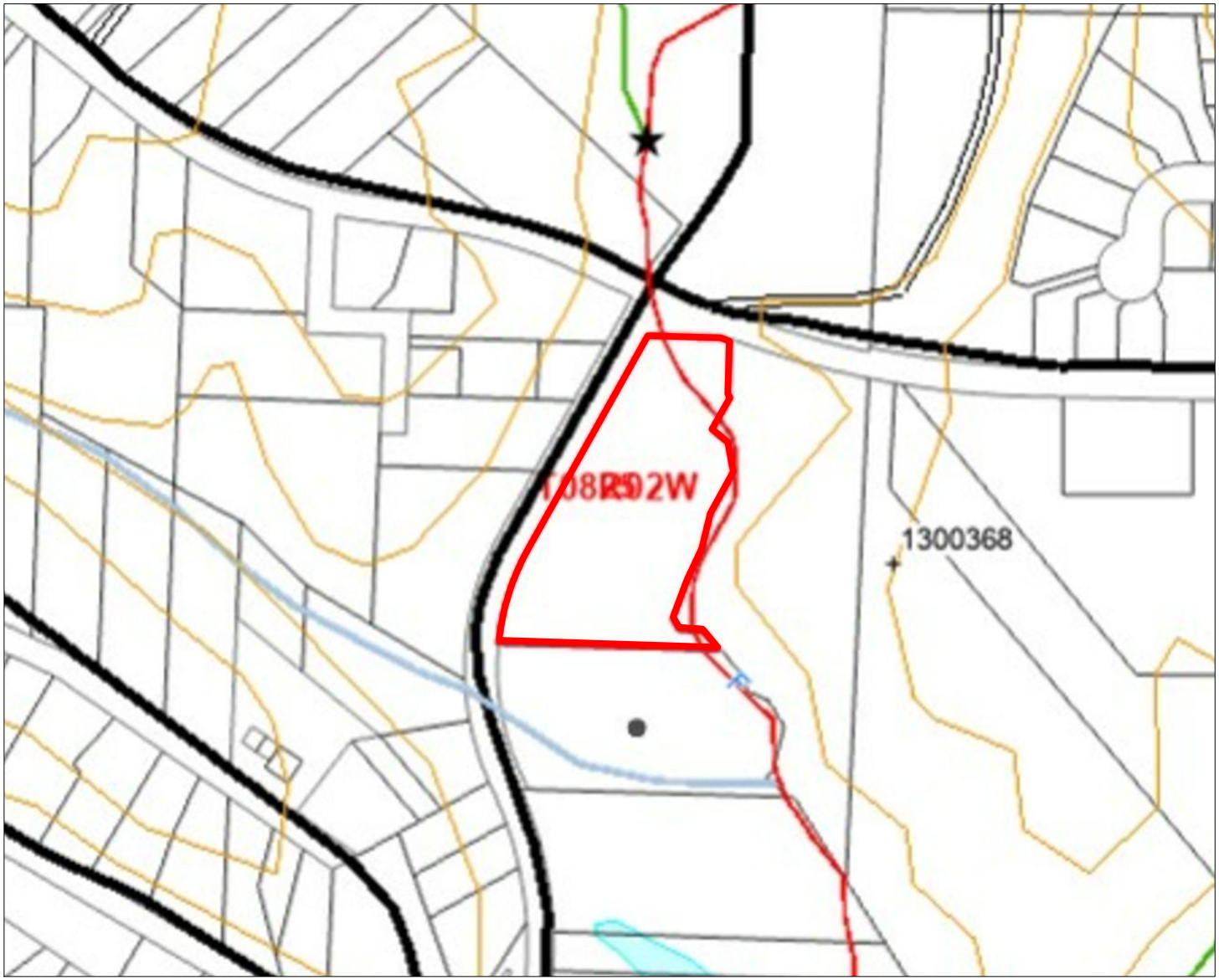
AshECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	NATIONAL WETLANDS INVENTORY MAP **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 3 **DATE:** 9-13-24



N

0 250 500

SCALE IN FEET
1" = 250'

Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	DNR FRAMT MAP **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 4 **DATE:** 9-13-24

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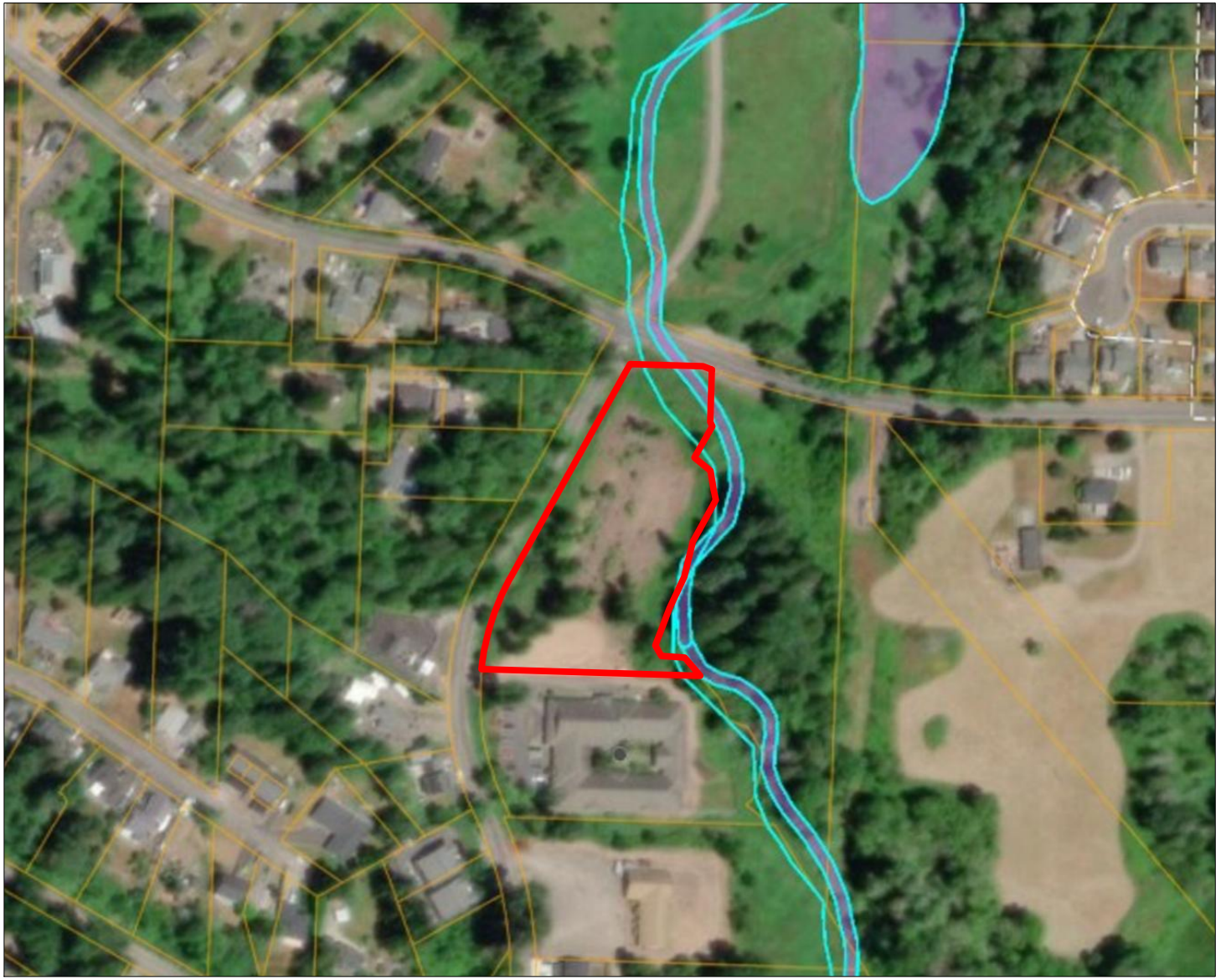

N

0 250 500

SCALE IN FEET
1" = 250'

Ash ECO SOLUTIONS, LLC

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

WDFW PHS MAP

APPLICANT: Jonathan Christopher
PROJECT NAME: Valentina's Villas
PARCEL #: 243570101
SITE LOCATION ADDRESS:
North of 114 Corduroy Rd.

PROPOSED: XX
Add 2
IN: Kelso
NEAR: XX
COUNTY: Cowlitz **STATE:** WA
FIGURE: 5
DATE: 9-13-24

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N

0 250 500

SCALE IN FEET
1" = 250'

Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	FEMA FLOODZONE MAP **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 6 **DATE:** 9-13-24

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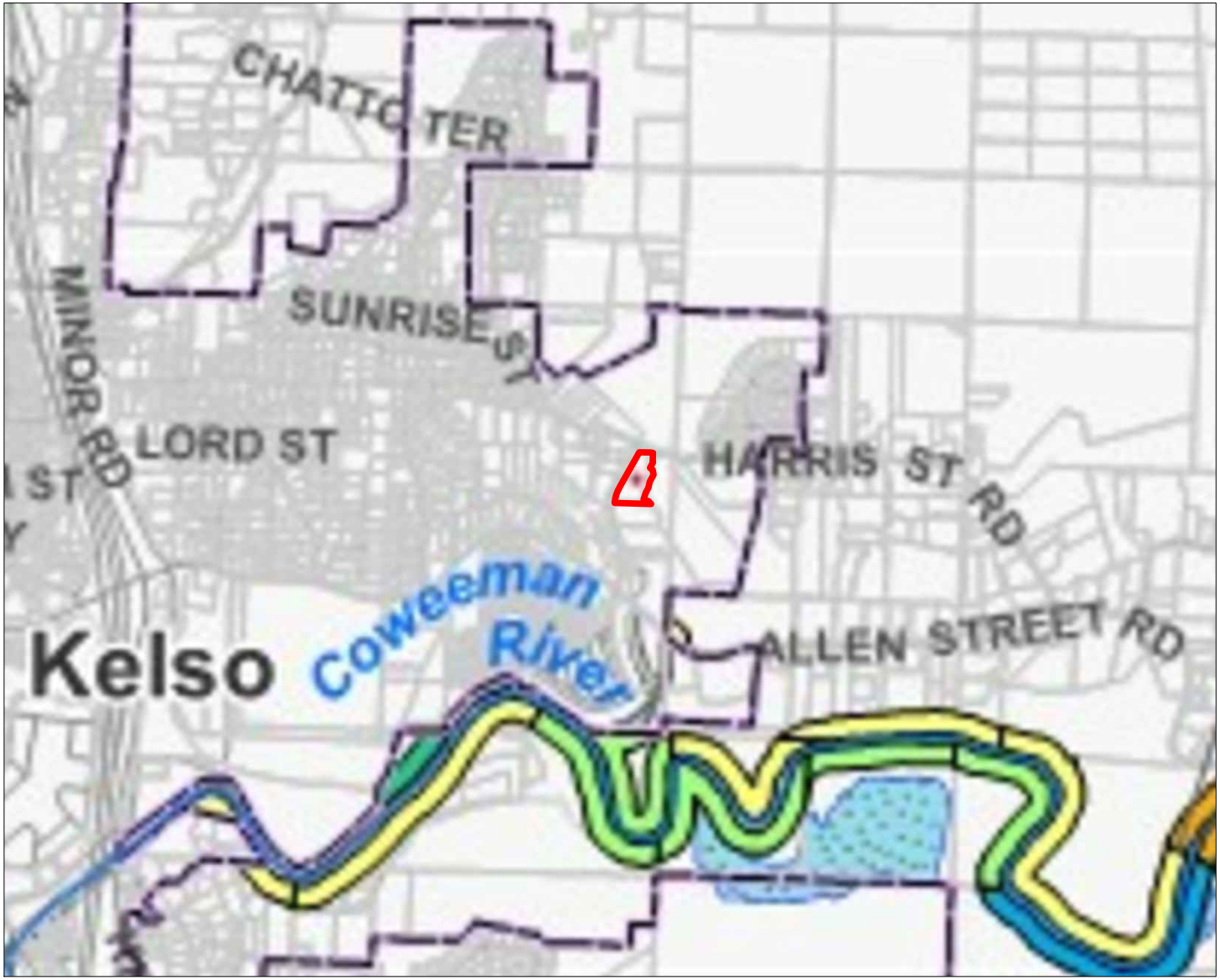

Cowlitz County Shoreline Environment Designations Map

- City Limits
- UGB
- County Boundary
- Parcel Boundary
- Potential Wetland

Shoreline SEDs

- High Intensity
- Rural Conservancy
- Urban Conservancy
- Residential
- Recreation
- Natural
- Aquatic

N

0 1500 3000

SCALE IN FEET
1" = 1500'

Ash ECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	SHORELINE ENVIRONMENT DESIGNATION MAP **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 7 **DATE:** 9-13-24

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LEGEND:

- Site Boundary
- Wetland Boundary
- Wetland Buffer
- Stream
- Stream Buffer

Notes: .
1. Following KMC Category III wetlands with a habitat score of 7 require 105-foot buffers. Type F waters (fish bearing streams) require a Habitat Management Plan from the City of Kelso for development proposed adjacent to the waterbody. The 100-Year Floodplain is mapped directly east of the historic fill on site.
2. Proposed development may utilize existing impacted footprints (historic fill) as they functionally isolate the wetland habitat areas and warrant buffer width reductions per KMC 17.26.050.D.7 when agreed upon by the City. Any new development must maintain the required critical area buffers and be located outside of the 100-Year Floodplain.

Harris Street Rd

Corduroy Rd

Category III Slope Wetland
Habitat Score = 7
Wetland Buffer = 105'
Note: The 105' buffer is considered functionally isolated by the historic fill and therefore not regulated by the City of Kelso

Limits of Historic Fill

Type F Water
(KMC Requires a Habitat Management Plan. No Standard Buffers are called out by code). Invasive species dominate from stream to edge of gravel. See Buffer Restoration Plan.

Ditch

N

0 60 120

SCALE IN FEET
1" = 60'

EXISTING CONDITIONS MAP

APPLICANT: Jonathan Christopher
PROJECT NAME: Valentina's Villas
PARCEL #: 243570101
SITE LOCATION ADDRESS: North of 114 Corduroy Rd.

PROPOSED: XX
Add 2
IN: Kelso
NEAR: XX
COUNTY: Cowlitz **STATE:** WA
FIGURE: 8
DATE: 9-13-24

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

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AshECO SOLUTIONS, LLC	**PURPOSE:** XX Line 1 Line 2 **DATUM:** NAVD 88 **ADJACENT PROPERTY OWNERS:** Adj 1 Adj 2	PROPOSED SITE PLAN **APPLICANT:** Jonathan Christopher **PROJECT NAME:** Valentina's Villas **PARCEL #:** 243570101 **SITE LOCATION ADDRESS:** North of 114 Corduroy Rd.	**PROPOSED:** XX Add 2 **IN:** Kelso **NEAR:** XX **COUNTY:** Cowlitz **STATE:** WA **FIGURE:** 9 **DATE:** 9-13-24

Appendix A

Site Photos

Valentina's Villas - Site Photos

Photo 1.
View of the site entrance near the southern property boundary.

Photo 2.
View west over the existing access present for the adjacent property to the south (Highlander Place, - assisted living facility). The existing improved driveway is located just north of the car in photo. The open dirt area is the southernmost portion of the subject site where parking and the southern site access is proposed by the site plan.

Photo 3.
View north down the roadside ditch present east of Corduroy Road.

Photo 4.
View west over the central portion of the subject parcel. The open area visible in the foreground represents the historic graded and graveled footprint onsite to be utilized by the proposed project. Scattered black cottonwood saplings have seeded in along the western side of the parcel.

Photos 5a, 5b.
5a) View south down the eastern limits of the subject parcel. The forested trees visible in photo are located directly off site and east of the stream channel present in this area. The dense H. blackberry visible at left of photo represents the degraded riparian buffer historically present onsite. 5b) View south down central portion of site.

Photo 6.
View east across the north/northeastern extent of the graded footprint onsite. The forested trees visible in photo are located directly off site and east of the stream channel present in this area. The dense H. blackberry visible in middle of photo represents the degraded riparian buffer historically present onsite. The buffer restoration plan proposes to upgrade the onsite buffer habitat by removing invasive species and installing native tree and shrub cover.

Photo 7.
View over the wetland present in the north/northeastern portion of the subject site and north of the stream channel. The wetland is dominated by reed canarygrass. The stream channel is not visible in photo, but the dense H. blackberry visible at bottom of photo represents the degraded southern riparian buffer historically present onsite.

Photo 8.
View north across the north/northwestern extent of the graded footprint onsite. Angular gravels are present within the historically graded area, hence the lack of vegetation. The vegetation present directly north (along the stream channel) is dominated by H. blackberry.

Photo 9.
View south down the Type F stream channel present onsite. The buffer is degraded and lacks native vegetation. The buffer restoration plan proposes to upgrade the onsite buffer habitat.

Appendix B

Wetland Rating Form & Figures

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 6/30/23

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

HGM Class used for rating Slope Wetland has multiple HGM classes? ___ Y ✓ N

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

Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

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

___✓___**Category III** – Total score = 16 - 19

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H (M) L	H M (L)	(H) M L	
Value	H (M) L	H (M) L	(H) M L	**TOTAL**
Score Based on Ratings	6	5	7	18

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	WRF Fig 1
Hydroperiods	H 1.2	WRF Fig 2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	WRF Fig 1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	WRF Fig 1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	WRF Fig 1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	WRF Fig 3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	WRF Fig 4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	WRF Fig 4

Figure 3

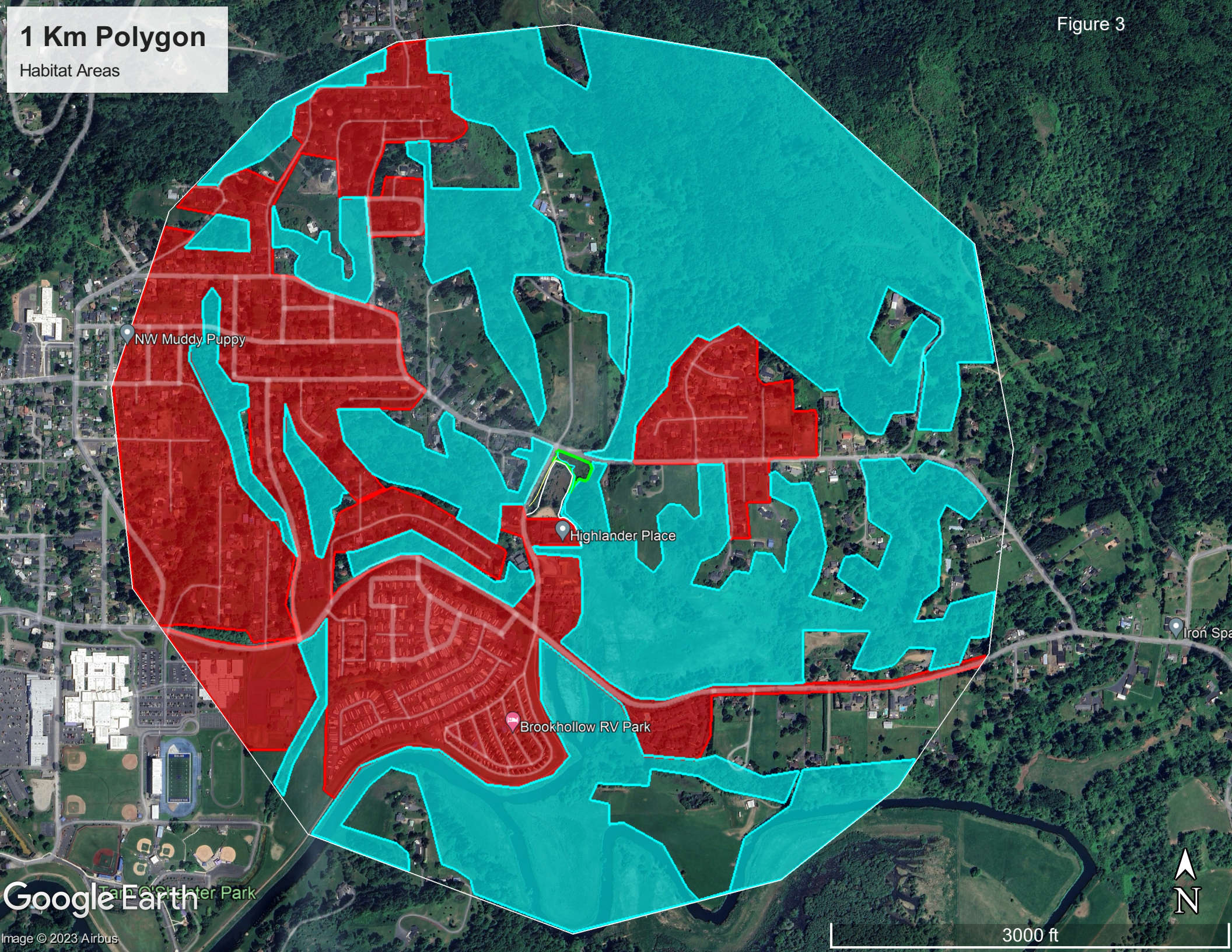
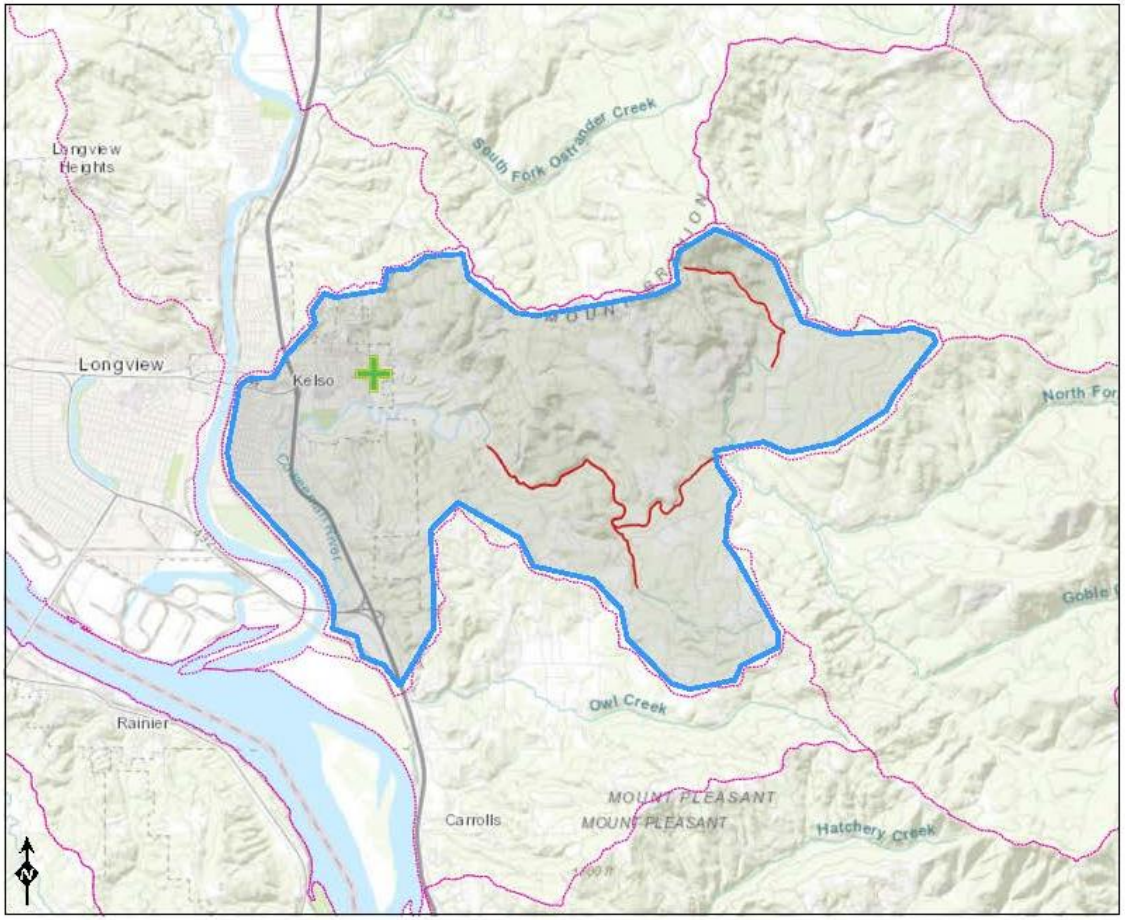

1 Km Polygon
Habitat Areas
NW Muddy Puppy
Highlander Place
Brookhollow RV Park
Iron Spa
Google Earth
Image © 2023 Airbus
N
3000 ft

Figure 4



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

WQ Improvement Projects
- Approved
- In Development

Subbasins (12 digit HUCs)
- HUC boundary

DEPARTMENT OF ECOLOGY
State of Washington

Assessed Water/Sediment ▼ Filter Applied Clear filters Zoom to selection

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter
	7795	17080005000021_001_001	5	Water	Temperature
	34973	17080005000020_001_001	5	Water	Temperature
	34974	17080005000022_001_001	5	Water	Temperature
	48690	17080005000816_001_001	5	Water	Temperature
	48697	17080005000854_001_001	5	Water	Temperature
	48705	17080005000033_001_001	5	Water	Temperature
	88447	17080005000020_001_001	5	Water	Bacteria - Fecal coliform

Wetland name or number A

HGM Classification of Wetlands in Western Washington

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Wetland name or number A

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

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

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

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

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

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

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

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

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

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

Wetland name or number A

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0	1
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = 0	
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	6
Total for S 1 Add the points in the boxes above	7

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

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

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

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

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

Wetland name or number A

SLOPE WETLANDS

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	1

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

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

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

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number A___

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

✓ Aquatic bed	4 structures or more: points = 4
✓ Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

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

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

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

2

H 1.3. Richness of plant species

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

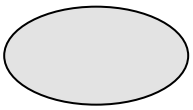
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

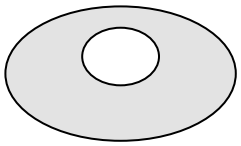
1

H 1.4. Interspersion of habitats

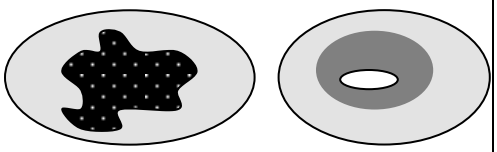
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

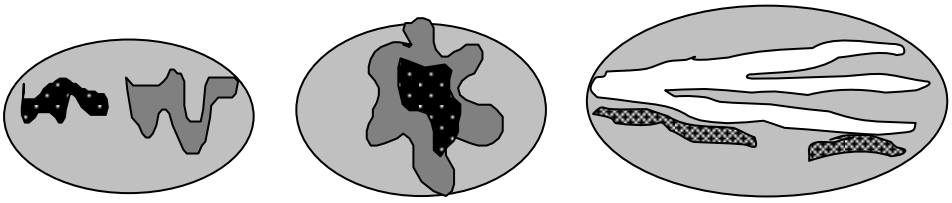


Low = 1 point



Moderate = 2 points

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



1

Wetland name or number A

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

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 9.3 **+** [(% moderate and low intensity land uses)/2] 2.57 **=** 11.87 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 45.3 **+** [(% moderate and low intensity land uses)/2] 12.35 **=** 57.65 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	3
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	4

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

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

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

Wetland name or number A

WDFW Priority Habitats

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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