

CRITICAL AREAS REPORT

Project:

Juniper Ridge Subdivision

Applicant:

TD West, LLC
5900 NE 152nd Avenue
Vancouver, WA 98682
360-921-7991

Prepared By:



Date:

July 19, 2024

The information in this report was compiled to meet the requirements of the La Center Municipal Code (LCMC) Section 18.300.090.2 Fish and Wildlife Habitat Conservation Areas and Section 18.300.090.5 Wetlands. This report has been prepared under the supervision and direction of the undersigned, a qualified professional following LCMC 18.300.090.



Andrea W. Aberle
Sr. Biologist
AshEco Solutions, LLC

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Biologist
AshEco Solutions, LLC

SITE INFORMATION:

| | |
|-------------------------|--|
| Parcel No(s): | 258945000 & 258944000 |
| Acreage: | 24.94 acres total |
| Local Jurisdiction: | City of La Center, Washington |
| Section/Township/Range: | SW ¼ S34, T5N, R1E |
| Site Address: | 34011 & 34017 NW 9 th Avenue La Center, WA 98629 |
| Legal Landowner: | Mary Ritola (34011 NW 9 th Ave.) |

Juniper Ridge Subdivision
CAR

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INTRODUCTION

Project Description

AshEco Solutions, LLC (AES) was contracted by TD West, LLC to assess the critical areas located within the subject site located in La Center, Washington, Figure 1. Riparian buffer impacts associated with the proposed project were also assessed and appropriate mitigation determined. This Critical Areas Report and Riparian Buffer Mitigation Plan follows the La Center Municipal Code (LCMC) Chapter 18.300 Critical Areas. The applicant (Juniper Ridge, LLC) proposes development of a 28-lot residential subdivision within the southeast portion of the subject site and stormwater detention facility within the southwest portion.

Project Location and Background Information

The subject site is just under 25-acres in total size, under the jurisdiction of the City of La Center and consists of two parcels (assigned parcel numbers 258944000 and 258945000). Parcel 258944000 is addressed as 34011 NW 9th Avenue and parcel 258945000 is addressed as 34017 NW 9th Avenue, La Center, Washington. NW 9th Avenue (directly north of NW Pacific Highway) provides existing site access to the northwest corner of the site. The site is bordered to the east and north by multi-family residential development and large lot residential development to the west.

EXISTING CONDITIONS

The site is highly constrained by critical areas due to steep slopes and the presence of a riparian habitat corridor within the central portion of the site. An unnamed stream, and riverine wetlands associated with the stream, bisect the site from northeast to southwest, with only the far south-southeastern limits of the site located outside of critical area constraints. The northern limits of the site sits at approximately 250 feet in elevation, with the lowest point near the southwest corner site at approximately 150 feet in elevation, Figure 2.

One single-family residence is present within each of the two subject parcels that make up the subject site. The existing residences are located south of the riparian corridor onsite as is the shared gravel site access (NW 9th Avenue). The area south of the residences consists of an open grass hay pasture. The area north of the two existing residences consists of a forested riparian habitat corridor. A historic logging road provides access to this northern forested area from the northern terminus of NW 9th Avenue. The road heads north, crossing the unnamed stream three times and loops back to the start in the northwest corner of the site, Figure 6.

The proposed project has been designed to utilize the minimal area available outside of critical area constraints and the historically impacted areas of the site. These design measures allow for avoidance and minimization of critical area impacts to the greatest extent possible and preserve the most significant and highest functioning habitat onsite.

CRITICAL AREAS MAP RESEARCH

Soil Survey

Soils within the subject site, as mapped by the NRCS USDA Soil Conservation Service, Soil Survey of Clark County (1974), Washington, are Hillsboro silt loam, 3-8 percent slopes (HoB), Hillsboro silt loam, 8-15

percent slopes (HoC), Hillsboro silt loam, 15-20 percent slopes (HoD), Hillsboro silt loam, 30-65 percent slopes (HoG), and Hesson gravelly clay loam, 0-8 percent slopes (HgB), Figure 3.

The Hillsboro series consists of deep, well-drained soils on terraces. These are medium-textured soils that developed in deposits of old Columbia River alluvium. Most areas are nearly level to gently sloping, but strongly sloping to very steep areas are along drainageways and streams. The native vegetation is dominantly Douglas-fir and a scattering of grand fir, bigleaf maple, and western dogwood. The understory consists principally of salal, ferns, Oregon grape, and vine maple. The annual precipitation is 40 to 50 inches.

Hillsboro silt loam, 3 to 8 percent slopes (HoB) is gently undulating and in most places the slopes are short. In a typical profile the surface layer is dark-brown silt loam about 7 inches thick. The next layer is about 48 inches thick. In sequence from the top, the upper 17 inches is friable, dark-brown silt loam; the next 16 inches is friable, dark grayish-brown heavy silt loam; and the lower 15 inches is friable, dark grayish-brown silt loam. The next layer, to a depth of 86 inches, is dark grayish brown silt loam. This soil is well drained, moderately permeable, and easily tilled. The available water capacity is very high. Fertility is moderately high. Surface runoff is slow, and the erosion hazard is slight. The HoB soil type is not listed on the Washington State Hydric Soils List for Clark County (NRCS 2024).

Hillsboro silt loam, 8 to 15 percent slopes (HoC) is similar to Hillsboro silt loam, 3 to 8 percent slopes, (HIB) except that the surface layer is 1 to 3 inches thinner. Surface runoff is medium, and the erosion hazard is moderate. Most of the slopes are short. The HoC soil type is not listed on the Washington State Hydric Soils List for Clark County (NRCS 2024).

Hillsboro silt loam, 15 to 20 percent slopes (HoD) soil occurs along streams and major drainageways. HoD is similar to Hillsboro silt loam, 3 to 8 percent slopes, (HoB) except that the surface layer is 2 to 3 inches thinner. Surface runoff is medium, and the erosion hazard is moderate. The HoD soil type is not listed on the Washington State Hydric Soils List for Clark County (NRCS 2024).

Hillsboro silt loam, 30 to 65 percent slopes (HoG) is similar to Hillsboro silt loam, 3 to 8 percent slopes, (HoB) except that the surface layer is 7 to 10 inches thick. Surface runoff is rapid to very rapid, and the erosion hazard is severe to very severe if the surface is left bare. The HoG soil type is not listed on the Washington State Hydric Soils List for Clark County (NRCS 2024).

The Hesson series consists of deep, well-drained soils that are mostly level to gently rolling. Some areas are hilly and very steep. These are moderately fine textured soils that have a fine textured subsoil. The parent material is deeply weathered, mixed old alluvium that contains varying amounts of gravel. The original vegetation is a heavy growth of Douglas-fir and a scattering of western redcedar and grand fir. The understory consists principally of vine maple, salal, Oregon grape, ferns, and red huckleberry. Annual precipitation ranges from 50 inches to more than 60 inches.

Hesson gravelly clay loam, 0-8 percent slopes (HgB) is similar to Hesson clay loam, 0 to 8 percent slopes (HcB), except that tillage is more difficult. Permeability is moderately slow, and the available water capacity is high. Tall fescue, ryegrass, and orchardgrass are the common grasses. The HgB soil type is not listed on the Washington State Hydric Soils List for Clark 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 be found in areas without mapped hydric soils.

Wetlands

“Potential wetland presence” associated with the onsite unnamed stream in the central portion of the subject site is mapped by the Clark County Geographic Information Systems (GIS) website, Figure 3.

Riparian Habitat

The Washington State Department of Natural Resources (DNR) mapping identifies the onsite unnamed stream in the central portion of the subject site as a Type F (fish-bearing) water, Figure 4. Clark County GIS also maps the approximate 200-foot “Riparian Habitat Buffer” offset from the approximate stream location, Figure 4.

WDFW Priority Oak Habitat

The Washington Department of Fish and Wildlife (WDFW) maps the presence of an Oregon white oak directly offsite from the far northwest corner of the subject site, Figure 5. The project is not located within the vicinity of the mapped oak and no other Oregon white oaks were identified onsite within the limits of the project by AES.

METHODOLOGY

Wetlands

The study area was evaluated for the presence of wetlands using the Routine Determination Method per the U.S. Army Corps of Engineers’ (USACE’s) *Wetland Delineation Manual* (1987), the *Washington State Wetlands Identification and Delineation Manual* (1997), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (USACE 2010). The Routine Determination Method examines three parameters to determine if wetlands exist in a given area: vegetation, hydrology, and soils. The presence of hydrology is critical in identifying wetlands; however, since hydrologic conditions can change periodically (hourly, daily, or seasonally), it is necessary to determine if hydrophytic vegetation and hydric soils are also present. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as “Waters of the United States” by the USACE, “Waters of the State” by Washington State Department of Ecology (ECY), and locally by CCC Section 40.450 Wetland Protection.

Wetlands were identified within the central portion of the site generally flanking the onsite stream habitat, Figure 6. The boundaries of the onsite wetlands, associated with the unnamed stream in the central portion of the subject site, are located within a well-defined ravine flanked by steep slopes to the north and south. The wetland boundaries generally follow along the toe of the surrounding steep slopes and the unnamed stream is confined to a defined channel. See Appendix A for the formal Wetland Determination Data Sheets.

Riparian Habitat

The unnamed Type F stream is confined to a defined channel contained within a ravine surrounded by steep slopes, Figure 6. The top-of-bank of the stream’s defined channel generally corresponds with the location of the onsite ordinary high-water mark (OHWM) of the stream. The methodology used for determining the location of the ordinary high water mark (OHWM) of the Type F waters followed the Washington State Department of Ecology’s (ECY) *Determining the OHWM on Streams in Washington State* (2010). Figure 6 depicts the OHWM for the onsite waters.

WDFW Priority Oak Habitat

WDFW defines priority oak habitat as follows; (Oregon White Oak Woodlands) are “stands of oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%; or where total canopy coverage of the stand is <25%, but oak accounts for at least 50% of the canopy coverage. The latter is often referred to as oak savanna. In non-urbanized areas west of the Cascades, priority oak habitat consists of stands > 0.4 ha (1.0 ac) in size. East of the Cascades, priority oak habitat consists of stands > 2 ha (5 ac) in size. In urban or urbanizing areas, single oaks or stands < 0.4 ha (1 ac) may also be considered a priority when found to be particularly valuable to fish and wildlife (i.e., they contain many cavities, have a large diameter at breast height [dbh] (generally 20-inches dbh and greater), are used by priority species, or have a large canopy). Oak woodlands in western Washington may contain understory plants indicative of *Prairie*.” Oak habitat meeting the above definitions was not identified within the limits of the proposed project onsite.

DOCUMENTED VEGETATION

Forested habitat dominates most of the subject site. The vegetation within the forested areas associated with the riparian corridor of the onsite unnamed stream are comprised of bigleaf maple (*Acer macrophyllum*, FACU), red alder (*Alnus rubra*, FAC), Douglas fir (*Pseudotsuga menziesii*, FACU) and Western red cedar (*Thuja plicata*, FAC) in the overstory. The understory was comprised of beaked hazelnut (*Corylus cornuta*, FACU), vine maple (*Acer circinatum*, FAC), Indian plum (*Oemleria cerasiformis*, FACU), Oregon grape (*Berberis aquifolium*, FACU), trailing blackberry (*Rubus ursinus*, FACU), false Solomon’s-seal (*Smilacina racemosa*, NI), bracken fern (*Pteridium aquilinum*, FACU), and western swordfern (*Polystichum munitum*, FACU). Invasive reed canarygrass (*Phalaris arundinacea*, FACW), English holly (*Ilex aquifolium*, FACU), English ivy (*Hedera helix*, FACU) and travelers joy (*Clematis vitalba*, FAC) was also observed onsite. The open grass field in the southeast was dominated by upland pasture grasses including Orchard grass (*Dactylis glomerata*, FACU).

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

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

CRITICAL AREA CONCLUSIONS

Wetlands

The onsite wetland unit is associated with the onsite unnamed stream (Type F Water) and its floodplain. Overbank flooding during the wet season provides hydrology for this wetland, and subsequently the onsite wetland was rated under the Riverine Hydrogeomorphic (HGM) classification under the Washington State Department of Ecology Wetland Rating Form (2014). Upon AES completion of the formal wetland rating form, the wetland rating was determined to be a Category II Riverine with a habitat score of 7, Appendix B. The wetland unit continues offsite to the north and northeast, and south.

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Wetland Buffers

Under the LCMC Chapter 18.300 Critical Areas, wetland buffer widths are established by comparing the wetland rating category and the intensity of the proposed land uses per LCMC Tables 18.300.090(5)(i)(i)-1 - 3. For Category I and II wetlands, the habitat score from the wetland rating form is also used to determine the appropriate buffer to protect habitat functions. The proposal includes constructing a 28-lot residential subdivision within the subject site which meets the High Land Use Intensity definition under LCMC 18.300.030(47) of a “residential (more than one unit per gross acre) land use.”

Following LCMC 18.300.090.5.j(i), functionally isolated buffer areas, such as roads, structures, and other vertical separations, shall be excluded from wetland buffers. Due to existing vertical separations in slope and the presence of the old logging road, portions of the onsite wetland buffer will stop at the inner (waterward) edge of road, Figures 6 and 7.

Riparian Habitat

An unnamed stream identified as a Type F (fish-bearing) water runs through the central portion of the subject site. Type F streams are afforded a 200-foot Riparian Buffer following LCMC 18.300.090(2)(f). The standard regulated riparian habitat buffer for the stream includes the area measured 200 feet in each direction, respectively, landward from the ordinary high-water mark.

Following 18.300.090.2.h(iv) the buffer of a stream shall not extend landward beyond an existing substantial improvement such as an improved road, dike, levee, or a permanent structure which reduces the impact proposed activities would have on the river or stream. Due to the presence of the old logging road, portions of the onsite riparian buffer will stop at the inner (waterward) edge of road, Figures 6 and 7.

Table 1. Critical Areas Summary.

| Critical Area | Buffer Width |
|---|--|
| Type F Water (Fish-bearing stream) | 200-foot Riparian Buffer <i>(or extending to the waterward edge of existing road)</i> |
| Wetland A Category II Riverine Wetland (Habitat Score: 7) | 130 ft = Moderate Land LUI Buffer 180 ft = High Land LUI Buffer <i>(or extending to the waterward edge of existing road)</i> |

Avoidance and Minimization

The subject site is highly constrained due to critical areas and steep slopes that surround the riparian corridor where the unnamed stream and associated wetlands are located, Figure 6. The proposed project avoids direct impacts to the highest functioning wetland and riparian habitat located within the central portion of the site, and preservation of this habitat corridor. The project has also been designed to avoid new impacts to the onsite wetland and riparian buffer habitat. The project footprint has been located outside of the onsite critical areas and utilizes the historically impacted areas within the far southeast portion of the site. The historically impacted areas include existing building footprints, gravel parking and driveway areas, maintained lawn areas, a small Douglas-fir tree plantation and the open agriculture field that has been highly managed over the history of the site.

CONCLUSIONS

The proposed project will avoid impacts to the onsite critical areas and will not impose a loss of critical area functions or values. With issuance of project approvals, a conservation covenant will be recorded to protect the onsite jurisdictional 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

La Center Municipal Code. 2024. Section 18.300.090.2 Fish and Wildlife Habitat Conservation Areas.

La Center Municipal Code. 2024. Section 18.300.090.5 Wetlands.

Clark County Geographic Information Systems. Available at: <http://gis.clark.wa.gov/mapsonline/> [Accessed July 2024].

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

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

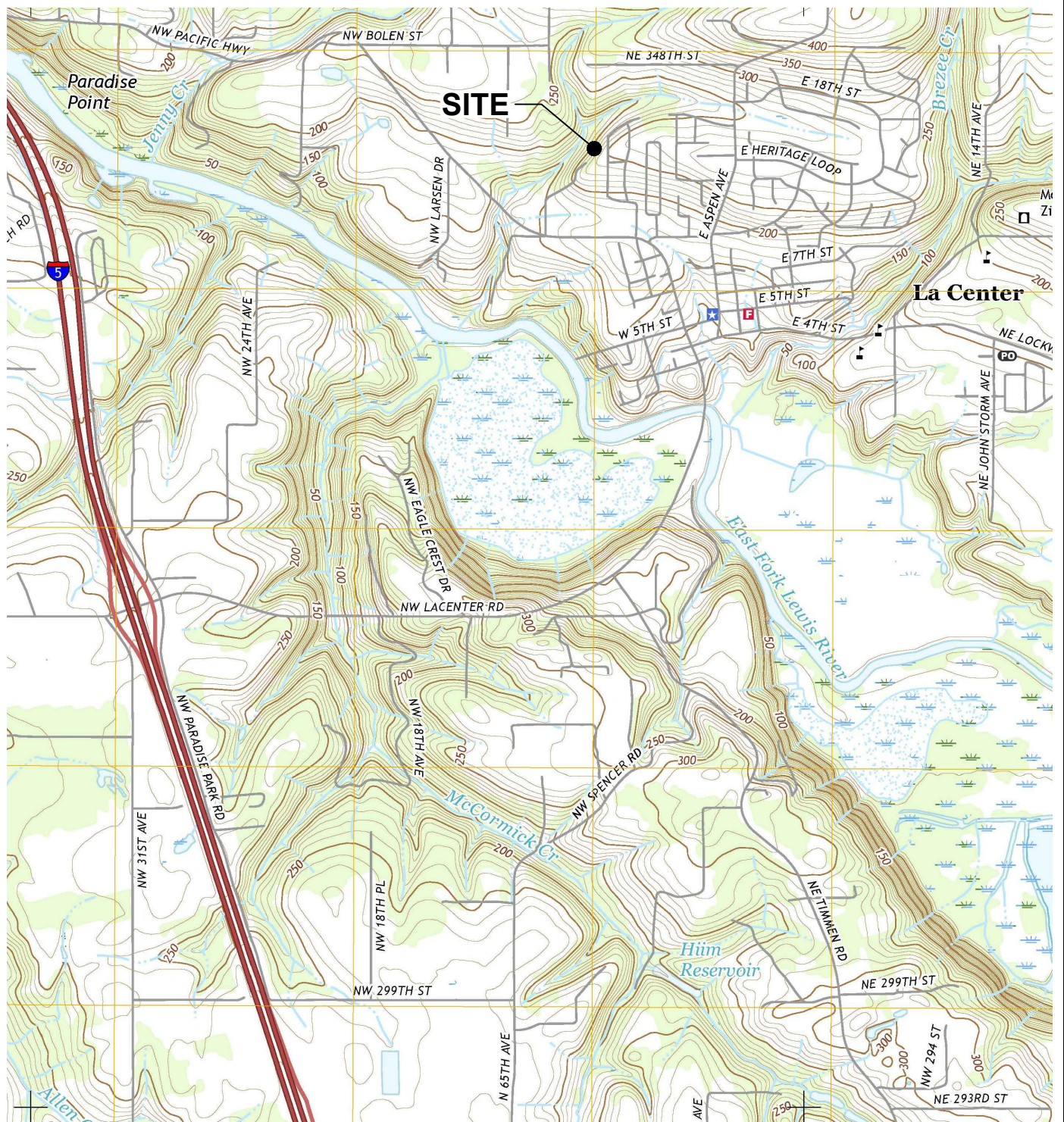
U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 1972. Soil Survey of Clark County Area. Online document. Available at: <http://websoilsurvey.nrcs.usda.gov/app/>. [Accessed July 2024]

U. S. Fish & Wildlife Service. 2012. National Wetlands Inventory. Online document. Available at: <http://www.wetlandsfws.er.usgs.gov/NWI/index.html>. [Accessed July 2024].

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

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



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



PURPOSE: XX

Line 1
Line 2

DATUM: NAVD 88

ADJACENT PROPERTY OWNERS:

Adj 1
Adj 2

VICINITY MAP

APPLICANT: TD West LLC
PROJECT NAME: Juniper Ridge Subdivision
PARCEL #: 258944000
SITE LOCATION ADDRESS:
34017 NW 9th Ave.

PROPOSED: XX

Add 2

IN: La Center

NEAR: XX

COUNTY: Clark

FIGURE: 1

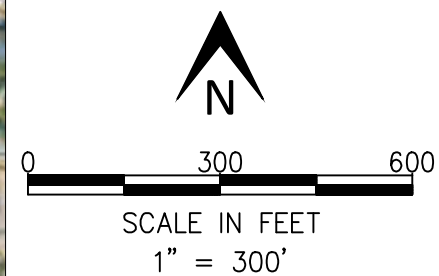
DATE: 7-10-24

STATE: WA



Legend

- Taxlots
- Contour Lines - 10 ft
- Contour Lines - 100 ft



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

AERIAL PHOTO & TOPO MAP

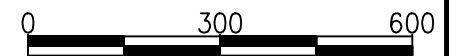
APPLICANT: TD West LLC
PROJECT NAME: Juniper Ridge Subdivision
PARCEL #: 258944000, 258945000
SITE LOCATION ADDRESS:
34017 NW 9th Ave.

PROPOSED: XX
Add 2
IN: La Center
NEAR: XX
COUNTY: Clark **STATE:** WA
FIGURE: 2
DATE: 7-10-24



Legend

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



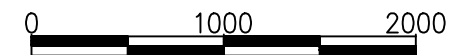
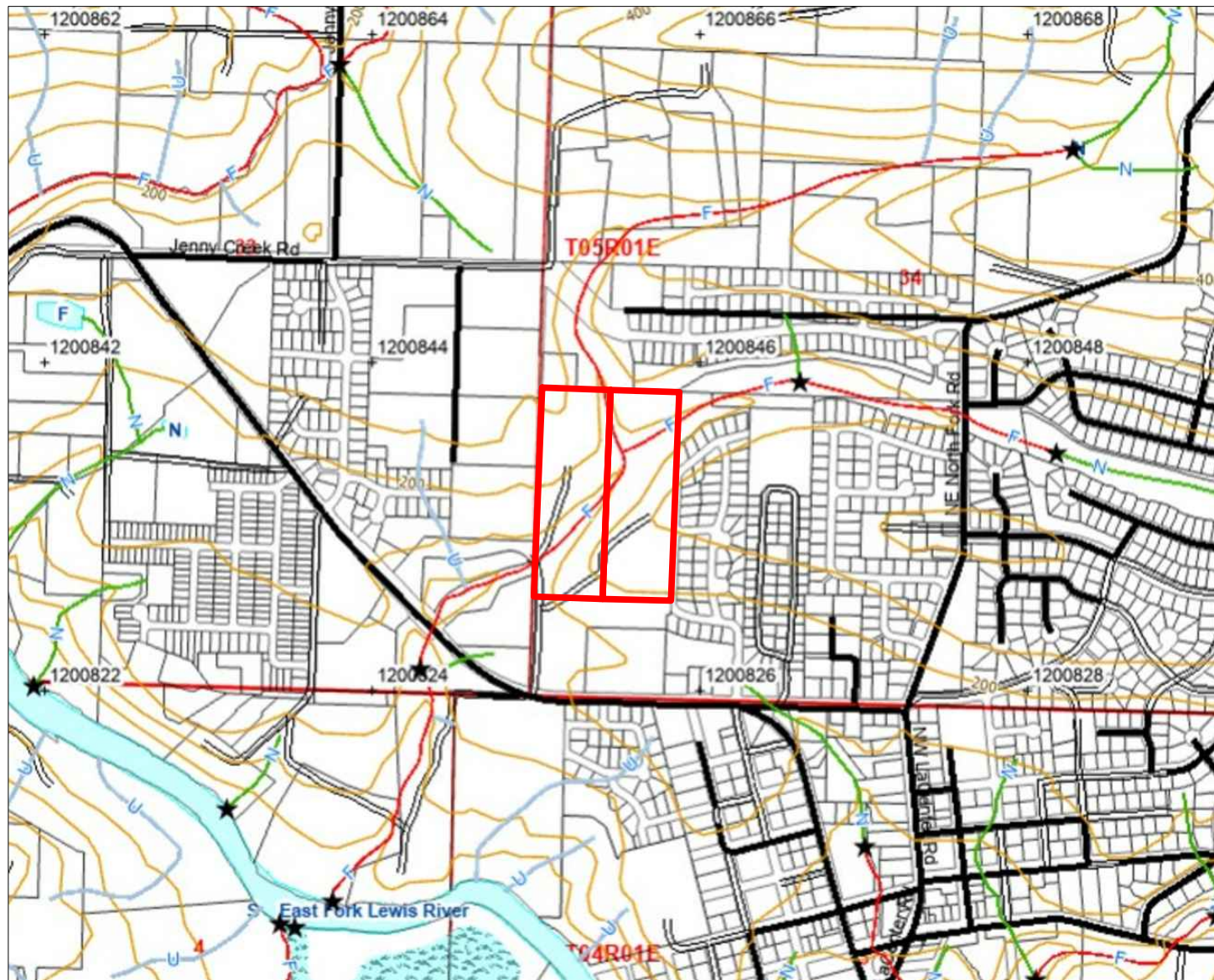
SCALE IN FEET
1" = 300'



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

**SOIL SURVEY &
NATIONAL WETLANDS INVENTORY MAP**
APPLICANT: TD West LLC
PROJECT NAME: Juniper Ridge Subdivision
PARCEL #: 258944000, 258945000
SITE LOCATION ADDRESS:
34017 NW 9th Ave.

PROPOSED: XX
Add 2
IN: La Center
NEAR: XX
COUNTY: Clark **STATE:** WA
FIGURE: 3
DATE: 7-10-24



SCALE IN FEET
1" = 1000'



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

DNR FPARS MAP

APPLICANT: TD West LLC
PROJECT NAME: Juniper Ridge Subdivision
PARCEL #: 258944000, 258945000
SITE LOCATION ADDRESS:
34017 NW 9th Ave.

PROPOSED: XX
Add 2
IN: La Center
NEAR: XX
COUNTY: Clark **STATE:** WA
FIGURE: 4
DATE: 7-10-24



Legend

- Taxlots
- Species**
 - Species Area
 - Adjacent to Species Area
- Habitat**
 - Habitat Area
 - Adjacent to Habitat Area
- Riparian Habitat



SCALE IN FEET

1" = 300'



PURPOSE: XX

Line 1

Line 2

DATUM: NAVD 88

ADJACENT PROPERTY OWNERS:

Adj 1

Adj 2

PRIORITY HABITAT MAP

APPLICANT: TD West LLC

PROJECT NAME: Juniper Ridge Subdivision

PARCEL #: 258944000, 258945000

SITE LOCATION ADDRESS:

34017 NW 9th Ave.

PROPOSED: XX

Add 2

IN: La Center

NEAR: XX

COUNTY: Clark

STATE: WA

FIGURE: 5

DATE: 7-10-24



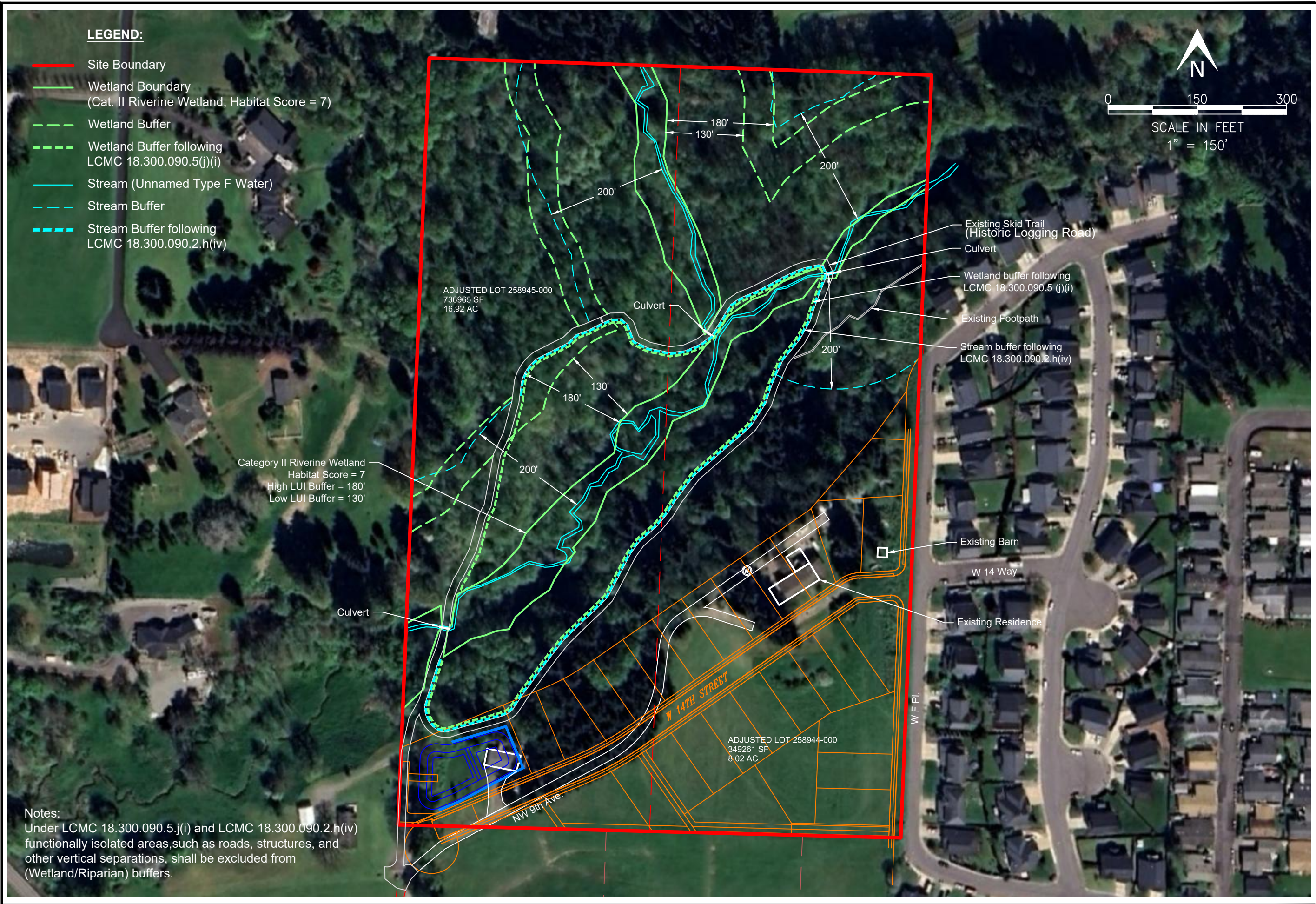
Ash Eco Solutions, LLC

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

PROPOSED: XX
Add 2
IN: La Center
NEAR: XX
COUNTY: Clark
FIGURE: 6
DATE: 7-10-24

STATE: WA

I:\Autocad Files\AshECO Autocad\Juniper Ridge\Juniper_BM-071724.dwg



| | | |
|--|--|------------------------------|
| PURPOSE: XX Line 1 Line 2 | PROPOSED SITE PLAN | PROPOSED: XX Add 2 |
| DATUM: NAVD 88 | APPLICANT: TD West LLC | IN: La Center |
| ADJACENT PROPERTY OWNERS: Adj 1 Adj 2 | PROJECT NAME: Juniper Ridge Subdivision | NEAR: XX |
| | PARCEL #: 258944000, 258945000 | COUNTY: Clark |
| | SITE LOCATION ADDRESS: 34017 NW 9th Ave. | FIGURE: 7 |
| | | STATE: WA |
| | | DATE: 7-10-24 |



Appendix A

Test Plot Data Sheets

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

Project/Site: Juniper Ridge City/County: La Center/Clark Co. Sampling Date: 6/4/2024
Applicant/Owner: TD West LLC State: WA Sampling Point: TP-1
Investigator(s): Andrea Aberle Section, Township, Range: S34, T5N, R1E
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 2-3
Subregion (LRR): LRR-A Lat: 45.868789° Long: -122.680378° Datum: _____
Soil Map Unit Name: Hillsboro silt loam, 30-65 percent slopes (HoG) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|--|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No _____ | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No _____ | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|--|---------------------|----------------------|---------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. _____ | _____ | _____ | _____ | |
| Herb Stratum (Plot size: 3' radius) | | | | |
| 1. reed canarygrass (Phalaris arundinacea) | 100% | Y | FACW | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| _____ | 100% | | = Total Cover | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ | _____ | _____ | = Total Cover | |
| % Bare Ground in Herb Stratum _____ | | | | |
| Remarks: | | | | |

SOIL

Sampling Point: TP-1

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

| Depth (inches) | Matrix | | Redox Features | | Type ¹ | Loc ² | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | | | | |
| 0-12 | 10YR 4/4 | 95% | 2.5YR 3/6 | 5% | C | M | sandy loam | |
| 12-16 | 7.5YR 4/2 | 95% | 2.5YR 3/6 | 5% | C | M | sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input checked="" type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

| | | |
|------------------------|--|-----------------------|
| Surface Water Present? | Yes _____ No <input checked="" type="checkbox"/> | Depth (inches): _____ |
| Water Table Present? | Yes _____ No <input checked="" type="checkbox"/> | Depth (inches): _____ |
| Saturation Present? | Yes _____ No <input checked="" type="checkbox"/> | Depth (inches): _____ |

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

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

Remarks:

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

Project/Site: Juniper Ridge City/County: La Center/Clark Co. Sampling Date: 6/4/2024
Applicant/Owner: TD West LLC State: WA Sampling Point: TP-2
Investigator(s): Andrea Aberle Section, Township, Range: S34, T5N, R1E
Landform (hillslope, terrace, etc.): slope toe Local relief (concave, convex, none): none Slope (%): 3-5
Subregion (LRR): LRR-A Lat: 45.868789° Long: -122.680378° Datum: _____
Soil Map Unit Name: Hillsboro silt loam, 30-65 percent slopes (HoG) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|--|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ | Hydic Soil Present? Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B) |
|---|--------------------------|-------------------|------------------|--|
| 1. <u>big leaf maple (Acer macrophyllum)</u> | <u>80%</u> | <u>Y</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| Sapling/Shrub Stratum (Plot size: _____) | <u>80%</u> = Total Cover | _____ | _____ | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ 5 - Wetland Non-Vascular Plants ¹ ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| Herb Stratum (Plot size: <u>3'</u> radius) | <u>60%</u> = Total Cover | <u>Y</u> | <u>FACW</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |
| 1. <u>reed canarygrass (Phalaris arundinacea)</u> | <u>60%</u> | <u>Y</u> | <u>FACW</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | <u>20%</u> = Total Cover | <u>Y</u> | <u>FAC</u> | |
| 1. <u>Himalayan blackberry (Rubus armeniacus)</u> | <u>20%</u> | <u>Y</u> | <u>FAC</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | <u>20%</u> = Total Cover | _____ | _____ | |
| % Bare Ground in Herb Stratum _____ | _____ | _____ | _____ | |
| Remarks: | | | | |

SOIL

Sampling Point: TP-2

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | |
|---|---|--|
| Primary Indicators (minimum of one required; check all that apply) | | Secondary Indicators (2 or more required) |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | |
| Remarks: | | |

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

Project/Site: Juniper Ridge City/County: La Center/Clark Co. Sampling Date: 6/4/2024
Applicant/Owner: TD West LLC State: WA Sampling Point: TP-3
Investigator(s): Andrea Aberle Section, Township, Range: S34, T5N, R1E
Landform (hillslope, terrace, etc.): slope toe Local relief (concave, convex, none): none Slope (%): 3-5
Subregion (LRR): LRR-A Lat: 45.868789° Long: -122.680378° Datum: _____
Soil Map Unit Name: Hillsboro silt loam, 30-65 percent slopes (HoG) NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|--|---|
| Hydrophytic Vegetation Present? | Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes _____ No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes _____ No <input checked="" type="checkbox"/> | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B) |
|---|---------------------|----------------------|---------------------|---|
| 1. <u>red alder (Alnus rubra)</u> | <u>90%</u> | <u>Y</u> | <u>FAC</u> | |
| 2. _____ | _____ | _____ | _____ | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| Sapling/Shrub Stratum (Plot size: _____) | | | | Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ 5 - Wetland Non-Vascular Plants ¹ ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| Herb Stratum (Plot size: <u>3'</u> radius) | | | | Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> |
| 1. <u>sword fern (Polystichum munitum)</u> | <u>50%</u> | <u>Y</u> | <u>FACU</u> | |
| 2. <u>trailing blackberry (Rubus ursinus)</u> | <u>25%</u> | <u>Y</u> | <u>FACU</u> | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| % Bare Ground in Herb Stratum _____ | | | | |
| Remarks: | | | | |

SOIL

Sampling Point: TP-3

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | Secondary Indicators (2 or more required) | |
|--|--|--|--|--|
| Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7) | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | |
| Remarks: | | | | |

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

Project/Site: Juniper Ridge City/County: La Center/Clark Co. Sampling Date: 6/4/2024
Applicant/Owner: TD West LLC State: WA Sampling Point: TP-4
Investigator(s): Andrea Aberle Section, Township, Range: S34, T5N, R1E
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 2-3
Subregion (LRR): LRR-A Lat: 45.868789° Long: -122.680378° Datum: _____
Soil Map Unit Name: Hillsboro silt loam, 30-65 percent slopes (HoG) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---------------------------------|--|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No _____ | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No _____ | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B) |
|--|---------------------|----------------------|---------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| Herb Stratum (Plot size: <u>3' radius</u>) | | | | |
| 1. <u>reed canarygrass (Phalaris arundinacea)</u> | <u>35%</u> | <u>Y</u> | <u>FACW</u> | |
| 2. <u>creeping buttercup (Ranunculus repens)</u> | <u>25%</u> | <u>Y</u> | <u>FAC</u> | |
| 3. <u>slough sedge (Carex obnupta)</u> | <u>25%</u> | <u>Y</u> | <u>OBL</u> | |
| 4. <u>trailing blackberry (Rubus ursinus)</u> | <u>15%</u> | <u>N</u> | <u>FACU</u> | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |
| 11. _____ | _____ | _____ | _____ | |
| 100% = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| _____ = Total Cover | | | | |
| % Bare Ground in Herb Stratum _____ | | | | |
| Remarks: | | | | |

SOIL

Sampling Point: TP-4

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | |
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Assumed that soils meet hydric indicators due to presence of test plot inundation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, |
| <input type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A, and 4B) | 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 2"-4"

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ✓ No

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

Remarks:

Appendix B

Wetland Rating Form & Figures

Wetland name or number Wetland A - Juniper Ridge

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A - Juniper Ridge Parcel Date of site visit: 6/4/2024

Rated by Andrea Aberle Trained by Ecology? ☒ Yes ___ No Date of training 10/2006

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___ Y ☒ N

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

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

1. Category of wetland based on FUNCTIONS

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

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

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

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

| FUNCTION | Improving Water Quality | Hydrologic | Habitat | |
|--------------------------------|---|---|---|--------------|
| Circle the appropriate ratings | | | | |
| Site Potential | H <input checked="" type="checkbox"/> M L | H <input checked="" type="checkbox"/> M L | H <input checked="" type="checkbox"/> M L | |
| Landscape Potential | <input checked="" type="checkbox"/> H M L | H <input checked="" type="checkbox"/> M L | H <input checked="" type="checkbox"/> M L | |
| Value | <input checked="" type="checkbox"/> H M L | H <input checked="" type="checkbox"/> M L | <input checked="" type="checkbox"/> H M L | TOTAL |
| Score Based on Ratings | 7 | 6 | 7 | 20 |

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

9 = H, H, H

8 = H, H, M

7 = H, H, L

7 = H, M, M

6 = H, M, L

6 = M, M, M

5 = H, L, L

5 = M, M, L

4 = M, L, L

3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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 (<i>can be added to map of hydroperiods</i>) | D 1.1, D 4.1 | |
| Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>) | D 2.2, D 5.2 | |
| Map of the contributing basin | D 4.3, D 5.3 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | D 3.1, D 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | D 3.3 | |

Riverine Wetlands

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

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 (<i>can be added to another figure</i>) | L 2.2 | |
| 1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat | H 2.1, H 2.2, H 2.3 | |
| Screen capture of map of 303(d) listed waters in basin (from Ecology website) | L 3.1, L 3.2 | |
| Screen capture of list of TMDLs for WRIA in which unit is found (from web) | L 3.3 | |

Slope Wetlands

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

HGM Classification of Wetlands in Western Washington

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

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

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

☐ **NO** – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

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

NO – Saltwater Tidal Fringe (Estuarine)

YES – Freshwater Tidal Fringe

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

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

☐ **NO** – go to 3

YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☐ **NO** – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

___ The wetland is on a slope (slope can be very gradual),

___ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps.

It may flow subsurface, as sheet flow, or in a swale without distinct banks,

___ The water leaves the wetland **without being impounded**.

☐ **NO** – go to 5

YES – The wetland class is **Slope**

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

Wetland name or number Wetland A - Juniper Ridge

5. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☒ The overbank flooding occurs at least once every 2 years.

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Water Quality Functions** - Indicators that the site functions to improve water quality**R 1.0. Does the site have the potential to improve water quality?**

| | | |
|--|-----------------------------------|----|
| R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: | | |
| Depressions cover $>3/4$ area of wetland | points = 8 | 2 |
| Depressions cover $> 1/2$ area of wetland | points = 4 | |
| Depressions present but cover $\leq 1/2$ area of wetland | points = 2 | |
| No depressions present | points = 0 | |
| R 1.2. Structure of plants in the wetland (areas with $>90\%$ cover at person height, not Cowardin classes) | | 8 |
| Trees or shrubs $> 2/3$ area of the wetland | points = 8 | |
| Trees or shrubs $> 1/3$ area of the wetland | points = 6 | |
| Herbaceous plants (> 6 in. high) $> 2/3$ area of the wetland | points = 6 | |
| Herbaceous plants (> 6 in. high) $> 1/3$ area of the wetland | points = 3 | |
| Trees, shrubs, and ungrazed herbaceous $< 1/3$ area of the wetland | points = 0 | |
| Total for R 1 | Add the points in the boxes above | 10 |

Rating of Site Potential If score is: 12-16 = H ✓ 6-11 = M 0-5 = L

Record the rating on the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?

| | | |
|---|-----------------------------------|---|
| R 2.1. Is the wetland within an incorporated city or within its UGA? | Yes = 2 No = 0 | 2 |
| R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? | Yes = 1 No = 0 | 1 |
| R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? | Yes = 1 No = 0 | 1 |
| R 2.4. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants? | Yes = 1 No = 0 | 0 |
| R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? | Yes = 1 No = 0 | 0 |
| Other sources _____ | | |
| Total for R 2 | Add the points in the boxes above | 4 |

Rating of Landscape Potential If score is: ✓ 3-6 = H 1 or 2 = M 0 = L

Record the rating on the first page

R 3.0. Is the water quality improvement provided by the site valuable to society?

| | | |
|---|-----------------------------------|---|
| R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? | Yes = 1 No = 0 | 1 |
| R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? | Yes = 1 No = 0 | 0 |
| R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the drainage in which the unit is found.) | Yes = 2 No = 0 | 2 |
| Total for R 3 | Add the points in the boxes above | 3 |

Rating of Value If score is: ✓ 2-4 = H 1 = M 0 = L

Record the rating on the first page

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS**Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion**R 4.0. Does the site have the potential to reduce flooding and erosion?**

| | |
|--|----|
| <p>R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks). If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1</p> | 4 |
| <p>R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are <u>NOT</u> Cowardin classes). Forest or shrub for $>1/3$ area OR emergent plants $>2/3$ area points = 7 Forest or shrub for $>1/10$ area OR emergent plants $>1/3$ area points = 4 Plants do not meet above criteria points = 0</p> | 7 |
| <p>Total for R 4 Add the points in the boxes above</p> | 11 |

Rating of Site Potential If score is: 12-16 = H ✓6-11 = M 0-5 = L

Record the rating on the first page

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

| | |
|---|---|
| R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 No = 1 | 0 |
| R 5.2. Does the upgradient watershed include a UGA or incorporated area? Yes = 1 No = 0 | 1 |
| R 5.3. Is the upgradient stream or river controlled by dams? Yes = 0 No = 1 | 1 |
| <p>Total for R 5 Add the points in the boxes above</p> | 2 |

Rating of Landscape Potential If score is: 3 = H ✓1 or 2 = M 0 = L

Record the rating on the first page

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

| | |
|--|---|
| <p>R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site. The sub-basin immediately downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0</p> | 1 |
| <p>R 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</p> | 0 |
| <p>Total for R 6 Add the points in the boxes above</p> | 1 |

Rating of Value If score is: 2-4 = H ✓1 = M 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

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

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

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

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input type="checkbox"/> Saturated only | 1 type present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input checked="" type="checkbox"/> Intermittently or seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

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

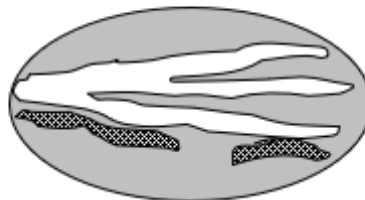
- | | | |
|------------------------------|------------|---|
| If you counted: > 19 species | points = 2 | 2 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

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

**None = 0 points****Low = 1 point****Moderate = 2 points**

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



2

Wetland name or number Wetland A - Juniper Ridge

| | | |
|--|-----------------------------------|---|
| <p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. The number of checks is the number of points.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh > 4 in.) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> 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)</p> <p><input checked="" type="checkbox"/> 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)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)</p> | | 2 |
| Total for H 1 | Add the points in the boxes above | 8 |

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? | | |
| <p>H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland.</p> <p>Calculate: % relatively undisturbed habitat <u>4%</u> + [(32% moderate and low intensity land uses)/2] = <u>18%</u></p> <p>Total accessible habitat is:</p> <p>> 1/3 (33.3%) of 1 km Polygon points = 3</p> <p>20-33% of 1 km Polygon points = 2</p> <p>10-19% of 1 km Polygon points = 1</p> <p>< 10% of 1 km Polygon points = 0</p> | | 1 |
| <p>H 2.2. Total habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % relatively undisturbed habitat <u>31%</u> + [(32% moderate and low intensity land uses)/2] = <u>31.5%</u></p> <p>Total habitat > 50% of Polygon points = 3</p> <p>Total habitat 10-50% and in 1-3 patches points = 2</p> <p>Total habitat 10-50% and > 3 patches points = 1</p> <p>Total habitat < 10% of 1 km Polygon points = 0</p> | | 1 |
| <p>H 2.3. Land use intensity in 1 km Polygon:</p> <p>> 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p>≤ 50% of 1 km Polygon is high intensity points = 0</p> | | 0 |
| Total for H 2 | Add the points in the boxes above | 2 |

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? | | |
| <p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p><input checked="" type="checkbox"/> It has 3 or more Priority Habitats within 100 m (see next page)</p> <p><input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW Priority Species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data</p> <p><input type="checkbox"/> 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</p> <p>Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p> | | 2 |

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

WDFW Priority Habitats

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

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ✓ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

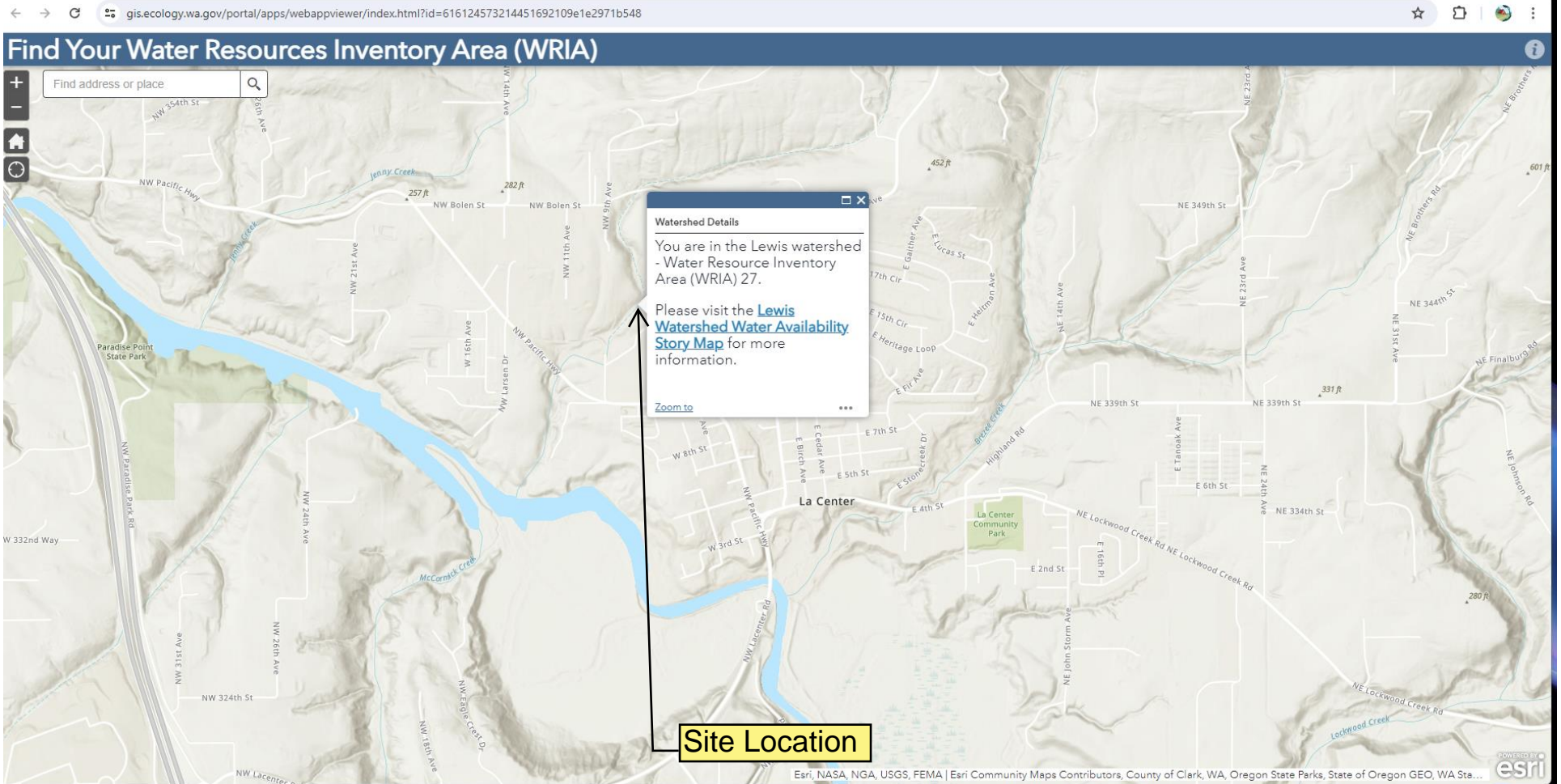
¹³³ <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

Wetland name or number Wetland A - Juniper Ridge

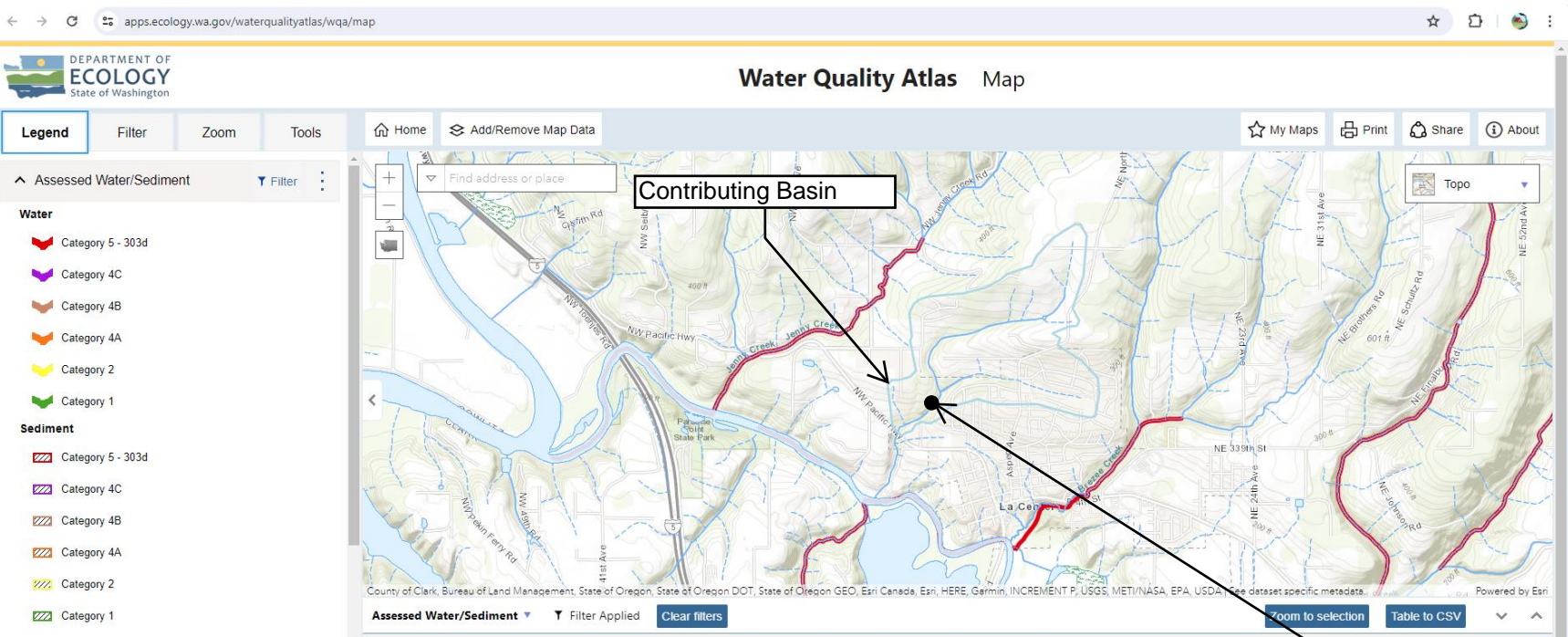
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, [WDFW's Management Recommendations for Oregon White Oak](#)¹³⁴ provides more detail for determining if they are Priority Habitats
- ✓ — **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✓ — **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

¹³⁴ <https://wdfw.wa.gov/publications/00030/wdfw00030.pdf>
Wetland Rating System for Western WA: 2014 Update
Rating Form – Version 2, July 2023

WRIA, Contributing Basin & TMDL Map



WRIA, Contributing Basin & TMDL Map



Site Location

fortress.wa.gov/ecy/ezshare/wq/WaterQualityImprovement/TMDL/projectdirectory.htm



Directory of Projects

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of Projects

Select by County

Choose the first letter the county below to find more information about the water quality improvement projects happening in that county.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Get more information and data

Links provide more information by taking you to the water quality improvement project page by county where you can find quick information such as what pollutants are being dealt with, the status of the project, and contact information. Once on the county pages you will be able to click links to view publications related to a project, go to the Water Quality Atlas, or the specific project website.

Summary of water quality improvement projects listed by county

For more specifics on any of these projects click on the county name. Water Resource Inventory Areas (WRIA) [link] is the unit of area that relates to how we typically study and regulate water resources.

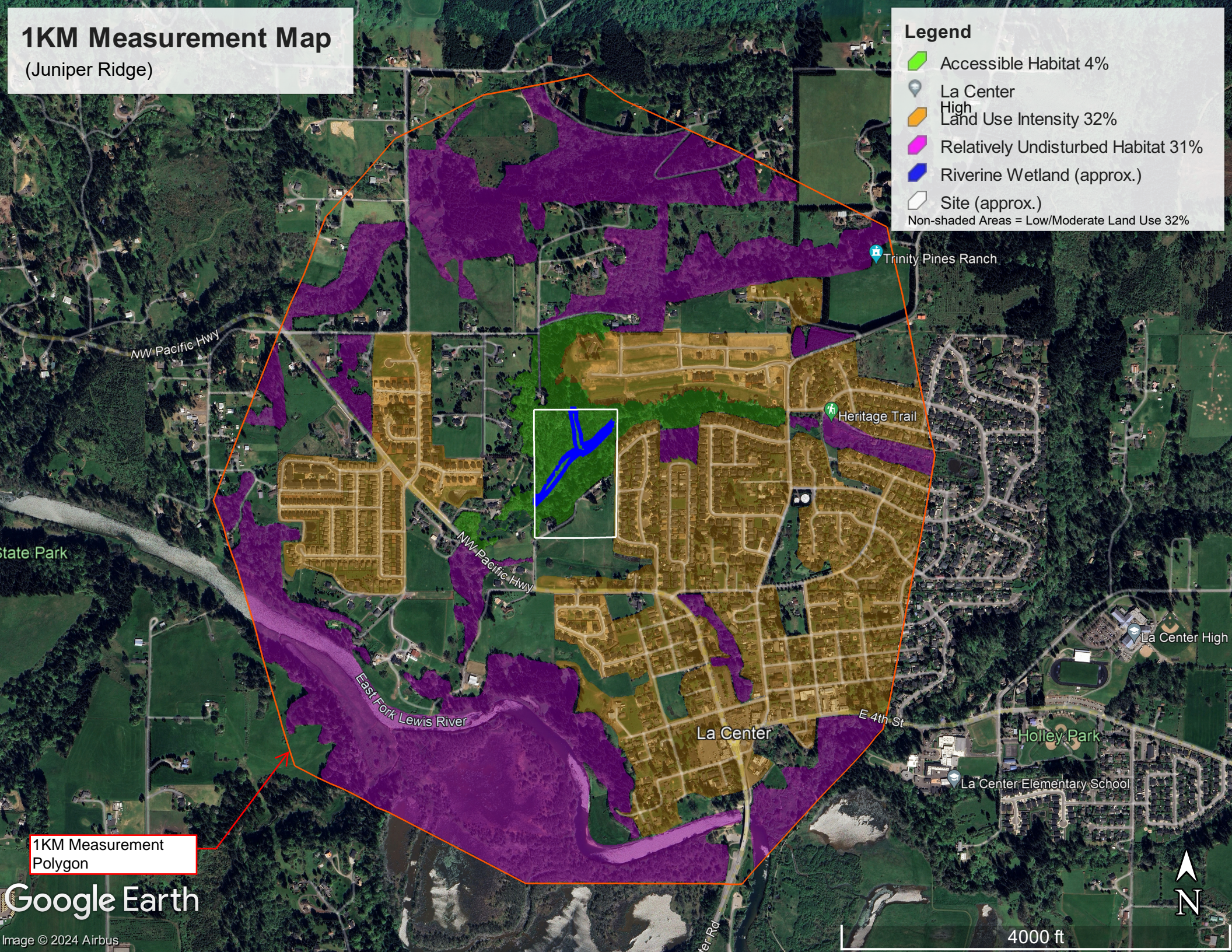
| County | TMDL (s) | WRIA (s) |
|-------------------------|---|----------------|
| Adams | Palouse River | 34, 36, 41, 43 |
| Asotin | No TMDL projects | 35 |
| Benton | Yakima River | 31, 37, 40 |
| Chelan | Lake Chelan, Mission Creek, Wenatchee River Watershed, | 40, 45, 46, 47 |
| Clallam | Strait of Juan de Fuca, Dungeness Bay, Matriotti Creek | 17, 18, 19, 20 |
| Clark | Burnt Bridge Creek, Gibbons Creek, Gifford Pinchot USFS, Lacamas Creek, Lewis River, Salmon Creek, Weaver Creek | 27, 28 |

1KM Measurement Map

(Juniper Ridge)

Legend

- Accessible Habitat 4%
- La Center High
- Land Use Intensity High 32%
- Relatively Undisturbed Habitat 31%
- Riverine Wetland (approx.)
- Site (approx.)
- Non-shaded Areas = Low/Moderate Land Use 32%



1KM Measurement
Polygon

Google Earth

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