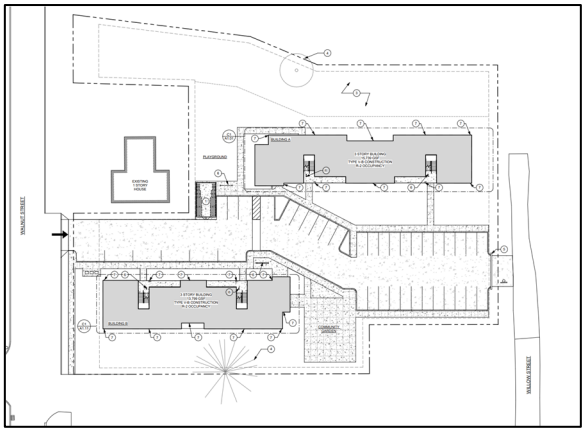
CRITICAL AREAS REPORT & BUFFER ENHANCEMENT PLAN

Willow Grove Apartments
Tax Parcel 23655
1106 Walnut Street
Kelso, WA 98626



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Revised Date: December 23, 2022

CASCADIA
ECOLOGICAL SERVICES, INC.

Executive Summary

Kelso Housing Authority (applicant) contracted with CES to complete a critical areas report and buffer enhancement plan for Tax Parcel 23655 which is located at 1106 Walnut Street in Kelso, Washington. The vacant property is located to the south of Walnut Street in a mixed residential and light industrial area of the City of Kelso. The property is dominated by upland pasture with the exception of the east boundary which is forested along the Old Coweeman Riverbed Slough.

The proposed development will consist of 32 affordable rental units, in a mix of 1, 2, and 3-bedroom apartments across two 3-story, wood framed buildings. The site will contain surface parking and landscape amenities.

CES completed a site visit to the property on July 15, 2021. Revisions to the report were made based on updated project information and the development of a site plan by Access Architecture in December 2022.

Based on the observations taken in the field during the site visit, no critical areas exist on the property. The Old Coweeman Riverbed Slough, a DNR Type F water, is located just off-site to the east. The proposed project is consistent with other adjacent land uses and will result in no net loss to habitat functions based on the mitigation measures detailed in this plan.

Table of Contents

Appendices

Acronyms and Abbreviations

Applicant	Kelso Housing Authority
CES	Cascadia Ecological Services, Inc.
DNR	Washington Department of Natural Resources
FPARS	Forest Practices Application Mapping System
NRCS	Natural Resources Conservation Service
USDA	US Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington State Department of Fish and Wildlife

Statement of Qualifications

Cascadia Ecological Services, Inc. (CES) is a multi-disciplined environmental consulting company based in Vancouver, Washington. CES was established in 2001 and specializes in wetland delineation, habitat assessment, permitting, and mitigation. This Critical Areas Report & Buffer Enhancement Plan was completed by James Barnes, president and owner of CES. The information contained herein documents the investigation, best professional judgment, and recommendation of CES. All assumptions made and relied upon are complete and accurate.

James S. Barnes
President
Cascadia Ecological Services, Inc.

Chapter 1. Introduction

Kelso Housing Authority (applicant) contracted with CES to complete a Critical Areas Report & Buffer Enhancement Plan for Tax Parcel 23655. The purpose of the report is to identify and describe regulated critical areas, and sensitive plant, fish, and wildlife species within the confines of the proposed project area.

This assessment facilitates the applicant's efforts to:

1. Avoid or minimize impacts to critical areas during the design process.
2. Document critical area determinations for review by the City of Kelso.
3. Provide early indications to project designers and/or engineers of critical areas and sensitive species within the project area.
4. Provide background information for critical areas mitigation proposals.

This project is anticipated to require a critical areas permit through the City of Kelso.

Chapter 2. Proposed Project Information

2.1 Location

Project Location: 1106 Walnut Street, Kelso, WA 98626
Project area (acreage): 1.63 acres
Tax Parcel: 23655
County: Cowlitz
Section, Township and Range: S35, T8N, R2W of the Willamette Meridian
Latitude/Longitude: 46.130/-122.906

2.2 Project Description

The proposed development will consist of 32 affordable rental units, in a mix of 1, 2, and 3-bedroom apartments across two 3-story, wood framed buildings. The site will contain surface parking and landscape amenities.

Chapter 3. Methods

This chapter summarizes the methods used to comply with local guidance. The presence of critical areas were assessed by traversing the property on foot. Observation of vegetation, hydrology, and soils in conjunction with data from the National Wetland Inventory maps of the U.S. Fish and Wildlife Service (USFWS, 2021), the USDA NRCS Web Soil Survey (USDA, 2021), and aerial photos were used to determine the presence of wetlands. The presence or non-presence of wetlands were determined by using the methodology of the Corps of Engineers

Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2010). Priority habitats and species data were obtained from the WDFW PHS on the Web website (WDFW, 2021).

Chapter 4. Existing Conditions and Background Information

4.1 Landscape Setting

The 1.63-acre project area (Figure 1 of 10) is located at 1106 Walnut Street in Kelso, Washington. Most of the surrounding area to the north and south of the site contains residential housing properties. East of the study area is the Old Coweeman Riverbed Slough which meanders through residential and industrial areas west of Interstate 5 which is 0.3 miles to the east. The property is located on a terrace west of the Coweeman River and topography is mostly flat.

4.2 Mapped GIS Soils and Wetlands Inventory Information

A review of the Cowlitz County GIS and USFWS National Wetland Inventory does not show the presence of wetlands or hydric soils on the project area. The property is mapped with the following non-hydric soil series (Figure 3 of 10):

- 32 - Clato silt loam, 0 to 3 percent slopes

According to the USDA NRCS Web Soil Survey, the mapped soils on-site are described as follows.

The Clato series consists of very deep, well drained soils formed in alluvium from sedimentary and basic volcanic rocks. Clato soils are on floodplains and low terraces.

4.3 Mapped PHS Areas

The WDFW PHS on the Web website does not identify the presence of any priority habitats or species (PHS) on the study area.

4.4 DNR Forest Practices Application Mapping (FPARS)

The WDNR Forest Practices Application Review System (FPARS) identifies the Old Coweeman Riverbed Slough as a Type F (fish bearing water). Type F waters are defined as streams and waterbodies that are known to be used by fish, or meet the physical criteria to be potentially used by fish. Fish streams may or may not have flowing water all year; they may be perennial or seasonal. The slough contains ponded or inundated conditions all year as observed during the site visit.

Chapter 5. Critical Areas

5.1 Wetlands

The National Wetland Inventory mapping (Figure 4 of 10) does not indicate the presence of any wetlands on the study area. The soils generally matched the description of the mapped Clato series (10YR 4/3 silt loam). No indicators of hydric soils were noted in any of the sampling locations taken throughout the site. The plant community in the grassland pasture is dominated by upland species as listed in Appendix C Table 1.

5.2 Uplands

Upland plant species dominate the mostly level terrace of the project area extending west from the Old Coweeman Riverbed Slough which is located just off-site to the east. Mature and seedling black cottonwood (*Populus balsamifera*) trees are within the riparian buffer zone along the west side of the slough. Large thickets of Armenian blackberries (*Rubus armeniacus*) are growing along the west edge of the cottonwoods.

5.3 Riparian Buffer

Although the Old Coweeman Riverbed Slough is located within a mostly urban area of Kelso, it contains important habitat for mammals and passerine/neotropical birds. Western painted turtles (*Chrysemys picta bellii*) likely use this habitat in addition amphibians and fish species.

The average established riparian buffer of developed properties along the west side of the slough is between 50 to 80 feet. A relatively new single-family residence is located along the north side of the study area which is 50 feet from the ordinary high-water mark of the slough. The same buffers exist along the east side of the slough, although the properties in that areas are light to heavy industrial in use.

The portion of the buffer which extends into the east part of the study area contains large areas of blackberries, a non-native species, which is one of the most widespread and disruptive of all the noxious weeds in Western Washington. It displaces native species and dominates riparian habitats. It reproduces by canes and seeds, the latter of which is carried by birds and animals.

It is recommended that the study area maintain a 50-to-80-foot buffer extending west from the slough as shown on Figure 7 of 10. This buffer is consistent with the existing developed properties along the majority of the slough west of Interstate 5. The wildlife functions and values will be increased by removing blackberries from the buffer and planting a variety of native shrubs and trees.

Chapter 6. Mitigation Strategy

6.1 Best Management Practices

The proposed project will implement design techniques that will reduce impacts to the riparian buffer area as follows:

(1) Buffer Enhancement. Improve the function of the buffer such that buffer areas with reduced function can function properly. This will include the removal and management of noxious weeds and/or invasive vegetation such as blackberries to improve habitat functions.

(2) Removal of Invasive Species. Because the riparian buffer includes extensive areas of non-native blackberries, a component of the proposed mitigation will include removal of those plants to reduce competition with native woody species.

(3) Shielding of High Intensity Uses.

(a) Lights. All lighting along the riparian side of the development will be directed to the west away from critical areas.

(b) Pets and Human Disturbance. A 6 foot tall solid wood privacy fence will be constructed along the east boundary of the development at the boundary of the riparian buffer enhancement area and dense woody vegetation will be planted in the riparian buffer to delineate the buffer edge and to discourage disturbance. Planted woody vegetation will be appropriate for the eco-region.

6.2 Management Strategy for Armenian Blackberry

Blackberries will be removed from the riparian buffer enhancement area in the two main areas (5,121 ft^2) as shown on Figure 7 of 10 but also wherever they are observed to be established. Removal of this invasive plant will allow for native plant species to re-establish providing structure, food, and nesting opportunities for a wide variety of bird species and mammals. Increased density and cover of woody vegetation over time will reduce the capacity of blackberries to dominate and outcompete the native plant species.

Manual removal of Armenian blackberry canes is the preferred method of control on this site rather than herbicide applications to limit damage to other existing native vegetation and proximity to aquatic areas. Removal methods can include the use of machetes and mechanical brush cutters. Upon completion of the cutting of the blackberry canes in the spring prior to berry seed production, they should be arranged in scattered piles and left for cover in the forest understory for wildlife species. Blackberry canes may also be mulched with mechanically and spread on the ground surface within the mitigation area.

In the fall it may be necessary to revisit the areas where the blackberry canes were removed as resprout is likely to occur. Individual spot application in upland areas away from water sources to the resprouted canes with Garlon 3a (triclopyramine formulation) and Roundup (glyphosate)

is an effective treatment. Removal of resprouted canes in the vicinity of aquatic areas shall be accomplished by hand by grubbing the root mass from the ground.

Upon completion of the removal activities, large areas of exposed soils are likely to exist especially where larger blackberry thickets occurred. Overseed these areas with sterile weed-free straw or "Re-Green" to help reduce erosion of disturbed soil.

6.3 Riparian Buffer Enhancement

After removal of blackberries in the riparian buffer, bare soils will be amended and planted with a native upland seed mixture and overlaid with 0.5 inches of weed free straw mulch. This work will result in an improvement to wildlife habitat utilizing the riparian corridor along the slough.

Seeding of the riparian buffer should not be completed until the fall when the rainy season begins to ensure germination of the seed mix. The following seed mix is to be applied to the areas cleared of blackberries.

Table 1. Native Riparian Seed Mix

Botanical Name	Common Name	% by weight	Seeds per lb. of Mix	Seeds per lb.	Actual % by Seed Size	PLS lbs. Needed	Requested %
Elymus glaucus	Blue Wildrye	60%	66000	110,000	65.15%	26.1	25%
Hordeum brachyantherum	Meadow Barley	30%	25500	85,000	25.17%	13.0	70%
Bromus carinatus	California Brome	10%	9800	98000	9.67%	4.3	5%
	TOTALS:	**100%**	**101300**		**100.00%**	**43.4**	**100%**

Source: Sunmark Seeds International
Seeding Rate: 1 PLS lbs. per 1,000 sf

A summary of the planting plan for the riparian buffer enhancement area is given in Table 2. Plantings will be installed in the appropriate areas within the buffer as directed by the project biologist.

Table 2. Plant list for Riparian Buffer Enhancement Area (14,028 ft^2)

Common Name	Scientific Name	Community Composition	Plant Size	Required Number to be Planted
Forested and Scrub-shrub Plant Community				
Oregon white oak	*Quercus garryana*	50%	1 gallon	**40**
Big-leaf maple	*Acer macrophyllum*	50%	1 gallon	**40**
Oregon grape	*Mahonia aquifolium*	20%	1 gallon	**65**
Cascara	*Rhamnus purshiana*	20%	1 gallon	**65**
Black hawthorn	*Crataegus douglasii*	20%	1 gallon	**65**
Red flowering currant	*Ribes sanguineum*	20%	1 gallon	**65**
Indian plum	*Oemlaria cerasiformis*	20%	1 gallon	**65**
Total				**405**

Planting density = Trees: 10’ O.C., Shrubs: 6’ O.C.

6.4 Implementation Schedule

Upon approval of this plan by the City, the riparian buffer enhancement area will be planted during the 2022 to 2023 dormant season per the numbers specified in Table 1. Planting is to occur during the period of November through March.

Project mitigation monitoring will be initiated during the growing season following the initial planting of the mitigation area.

Chapter 7. Mitigation Goals, Objectives, and Performance Criteria

The proposed riparian buffer enhancement area will be monitored for 3 years to demonstrate that the intended goals and objectives are established. Goals describe the overall intent of mitigation efforts, and objectives describe individual components of the mitigation site in detail. Performance measures and performance standards describe specific on-site characteristics that indicate a function is being provided. Performance measures are used to guide management of the mitigation site. Performance standards are used to evaluate compliance with the city critical areas permit in the preliminary year of monitoring. Contingency plans describe what actions can be taken to correct site deficiencies.

An adaptive management process will be used to improve mitigation success. Adaptive management involves learning from monitoring and implementing management activities, such as implementing parts of the site management or contingency plans. Information from monitoring is used to direct subsequent site management activities. As part of the adaptive management process, mid-course corrections may necessitate a change in vision for the site if nature takes its course and things turn out differently than planned. A change in vision may require renegotiation with regulators for a new set of performance standards.

7.1 Goals

The goal of the mitigation is to achieve a net gain in habitat functions through the planting of additional native woody plant species in the riparian buffer area on the project site and removal of invasive species as listed below:

- Improve habitat conditions
- Reduce cover of invasive blackberries

7.2 Objectives

Riparian Buffer Enhancement Area: Plant native shrubs and trees within the 14,028 ft^2 buffer area as shown on Figure 7 of 10.

7.3 Performance Criteria

The performance standards described below provide benchmarks for measuring achievement of the goals and objectives of the mitigation site. Mitigation activities are intended to meet these performance standards within a specified period. These performance standards measure structural attributes that provide a reasonable indication of habitat functions. Methods to monitor each performance standard are described in general terms.

Vegetation Performance Criteria
The vegetation performance criteria directly relate to objectives in Section 6.2.

Performance Measures

Years 1-2
Plant survival shall be 100 percent for planted native woody shrub and tree species.

Year 3
Overall plant survival shall be 80 percent or higher. Aerial cover of native, woody plant species (planted and volunteer) will be at least 30 percent in the mitigation area.

All years
County-listed Class-A noxious weeds will be eradicated within the mitigation area as they are discovered during monitoring.

Table 3. Upland woody vegetation performance standards by monitoring year.

Riparian Buffer Enhancement Area	Plant survival shall be 100 percent.	Comprehensive count of failed plantings.	Years 1 and 2	Replace failed plantings.
	Overall plant survival shall be at 80% or higher. Aerial cover of native woody species (planted and volunteer) will be at least 30 percent.	Visual Estimate & Aerial Photo Review	Year 3	Replace failed plantings.

7.4 Monitoring

Vegetation monitoring will occur and be reported annually so that progress toward meeting performance standards can be evaluated and adaptive management implemented, if necessary. Because this plan includes the implementation of slow developing habitats, a three-year monitoring period with monitoring completed and documented for all years will be required.

The site will be evaluated by the project biologist during the summer following plant installation to assess survival rates and document the presence of non-native invasive species. Monitoring

will be designed to determine if the performance measures or performance standards have been met. Monitoring reports will be submitted for review and comment to the City of Kelso by April following the formal monitoring activities conducted the previous year.

Monitoring will consist of the completion of a total plant count of surviving plants within the mitigation area each year. Sampling will be conducted the same season each year, during the growing season when leaf out of woody vegetation is more easily identifiable.

7.5 Contingency Plan

It is anticipated that the mitigation goals will be accomplished with the installation of the mitigation design as shown on the planting plan. Contingency actions, however, may be needed to correct unforeseen problems.

As necessary, contingency measures (site management or revisions to performance criteria) will be implemented to meet performance measures and performance standards. The following describes potential situations that may occur and the potential contingencies that might be implemented to correct the problem. Because not all site conditions can be anticipated, the contingencies discussed below do not represent an exhaustive list of potential problems or remedies.

Vegetation

Problems related to vegetation include plant mortality, and poor growth resulting in low plant cover. These problems could be the result of insufficient site management, particularly watering in the first few growing seasons, animal browse, competition from non-native or invasive species, incorrect plant selection, altered site conditions, and vandalism. Contingencies for plant mortality and poor plant cover may include the following:

- Plant replacement – Additional planting may be required to meet plant survival and plant cover requirements. Causes of plant mortality will be evaluated and replanting locations adjusted as necessary based on the local site conditions.
- Weed control – Control of non-native and invasive plant species will be required to meet survival and plant cover requirements. Weed control methods could include mechanical or hand control, mulching, or herbicide application.
- Herbivore control – If plant survival or vegetation cover standards are not met because of animal browse, the wildlife responsible will be identified and appropriate control measures will be attempted. This could include plant protection, fence installation, or the use of repellents. However, some pestilent and invasive wildlife species are difficult to avoid. Implementing precautionary measures with design and placement will minimize unwanted species but likely not eliminate them. Wildlife damage and manipulation to plantings and structures should be expected to occur and, with exceptions, it may be necessary to accept the situation and allow the vegetation to mature under these conditions. Occasionally it may be necessary to dissuade or exclude destructive wildlife species.

- Vandalism – To prevent vegetation disturbance from vandalism sensitive area signage will be installed along the west perimeter of the mitigation area as required by the city.

7.6 Site Management

The mitigation site will be managed for 3 years. Site management activities shall include non-native and invasive weed control and may include mulching, supplemental watering, maintaining access, repairing damage from vandals, correcting erosion or sedimentation problems, or litter pickup. Sensitive area signage will be installed as detailed in the next section.

7.7 Site Management

Wood or metal signs shall be posted at an interval of 50 feet or as otherwise determined by the community development department or designee and must be perpetually maintained by the property owner. The sign shall be worded as follows or with alternative language approved by the community development department or designee: "The area beyond this sign is a habitat buffer. Alteration or disturbance is prohibited by law. Please call the City of Kelso for more information.

Chapter 8. Conclusion

Based on observations taken during the field visit and review of the supporting documentation listed in this assessment, the study area contains a riparian buffer extending west from the Old Coweeman Riverbed Slough. Establishment of additional enhanced riparian buffer on the project area, removal of invasive blackberries, and planting of the buffer with native woody shrubs and trees will improve wildlife habitat conditions for the slough.

This report documents the investigation, best professional judgment, and conclusions of CES. It should be used at your own risk unless it has been reviewed and approved in writing by the City of Kelso under their jurisdictional standards.

Chapter 9. References

Cowlitz County. (2021, May 21). *NetMaps*. Retrieved from Cowlitz County NetMaps: https://cowlitz.maps.arcgis.com/apps/webappviewer/index.html?id=0b121e41d8914b78bda420f0bb0239c0

Hruby, T. (2014). *Washington State Wetland Rating System for Western Washington: 2014 Update.* Olympia, WA: Washington Department of Ecology.

USACE. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).* Vicksburg, MS: U.S. Army Corps of Engineers Engineer Research and Development Center.

USDA. (2021, July 15). *Web Site for Official Soil Series Descriptions and Series Classification*. Retrieved from https://soilseries.sc.egov.usda.gov/

USFWS. (2021, July 15). *National Wetlands Inventory*. Retrieved from U.S. Fish and Wildlife Service National Wetlands Inventory: https://www.fws.gov/wetlands/data/mapper.html

WDFW. (2021, July 15). *PHS on the Web*. Retrieved from PHS on the Web: http://apps.wdfw.wa.gov/phsontheweb/

Appendix A — Methods and Tools

Table A-1. Methods and tools used to prepare the report.

Parameter	Method or Tool	Website	Reference
Wetland Assessment	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)	http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finalsupp2.pdf	Website
	USFWS / Cowardin Classification System	https://www.fws.gov/wetlands/data/wetland-codes.html	Website
	National Wetlands Inventory – Wetlands Mapper V2	https://www.fws.gov/wetlands/data/mapper.HTML	Website
Wetland/Habitat Classification & Critical Areas	Washington State Wetland Rating System – 2014 Update	Western Washington: https://fortress.wa.gov/ecy/publications/documents/1406029.pdf	Hruby. 2014. Washington State wetland rating system for western Washington –Revised. Publication # 14-06-029.
	City of Kelso Unified Development Code	https://www.codepublishing.com/WA/Kelso/#!/Kelso17/Kelso1726.html#17.26.060 County/	17.26.060 – Fish and Wildlife Habitat Conservation Areas
Wetland Rating and Stream Classifications	Department of Natural Resources (DNR) Water Typing System	Forest Practices Water Typing: http://www.dnr.wa.gov/forest-practices-water-typing WAC 222-16-030: http://apps.leg.wa.gov/WAC/default.aspx?cite=222-16-030 Water Type Mapping: http://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-application-review-system-fpars	Washington Administrative Code (WAC) 222-16-030. DNR Water typing system.
Soils Data	USDA Web Soil Survey	https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm /	Website
Priority Habitats and Species	Washington Priority Habitats and Species	http://apps.wdfw.wa.gov/phsontheweb/	Website accessed on July 15, 2021. The study area does not contain any mapped areas of PHS per the Washington Department of Fish and Wildlife (WDFW).
Threatened and Endangered Species	USFWS species lists by County	Western Washington: https://ecos.fws.gov/ecp0/assessments/species-by-current-range-county?fips=53011	Website

Appendix B — Figures

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Figure 2 of 10 – Site Topographical Contours

Figure 3 of 10 – Mapped Soils

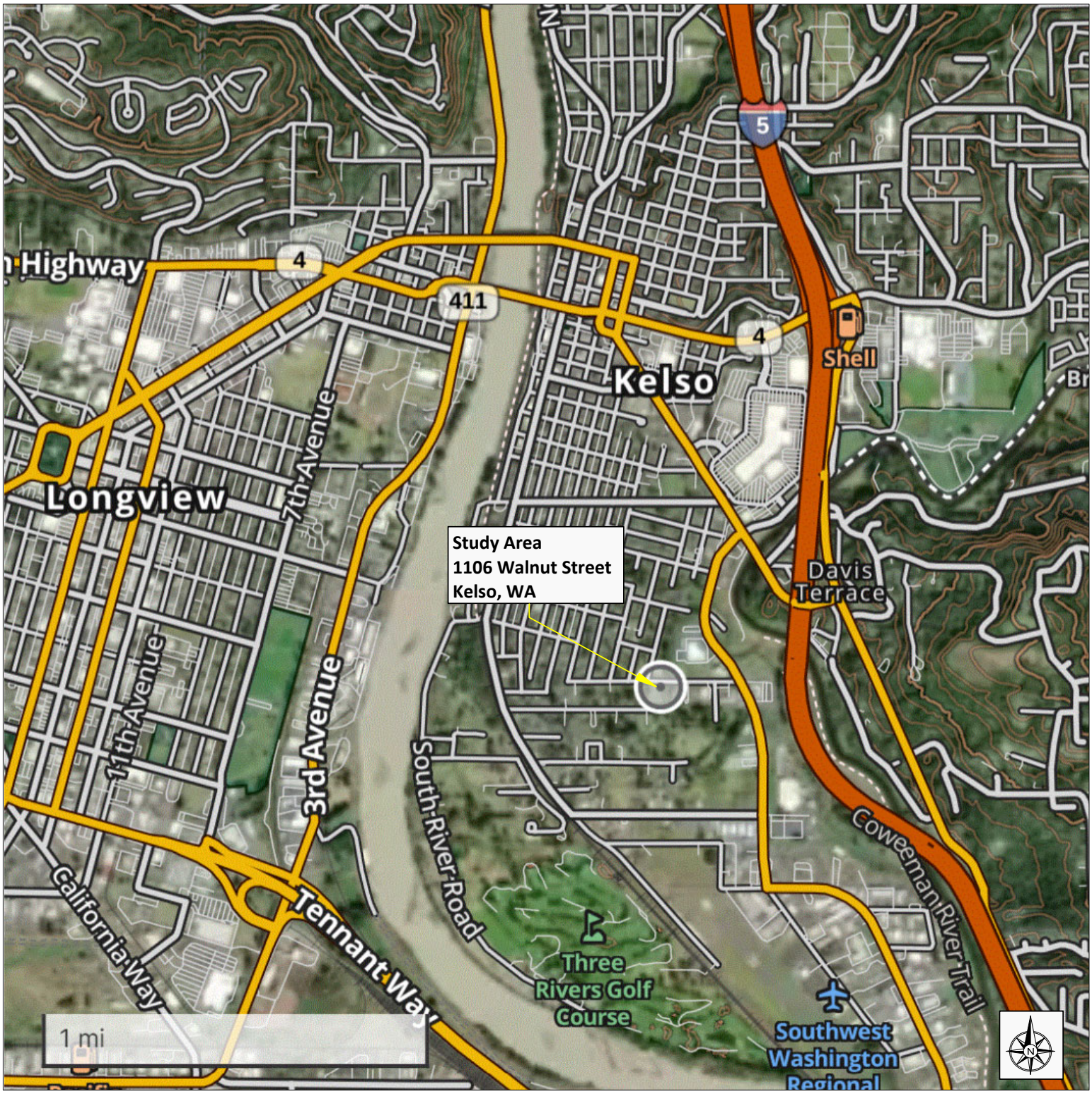
Figure 4 of 10 – National Wetland Inventory Mapping

Figure 5 of 10 – DNR FPARS Mapping

Figure 6 of 10 – Identified Critical Areas

Figure 7 of 10 – Recommended Riparian Zone and Enhancement Area

Figures 8 to 10 – Site Photos



Graphic Source: OpenStreetMap (2021)

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Figure 1 of 10 - Location Map
Critical Areas Report & Buffer Enhancement Plan

Project: Willow Grove Apartments
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Graphic Source: USGS, GAIA Maps (2021)

Figure 2 of 10 - Site Topographic Contours
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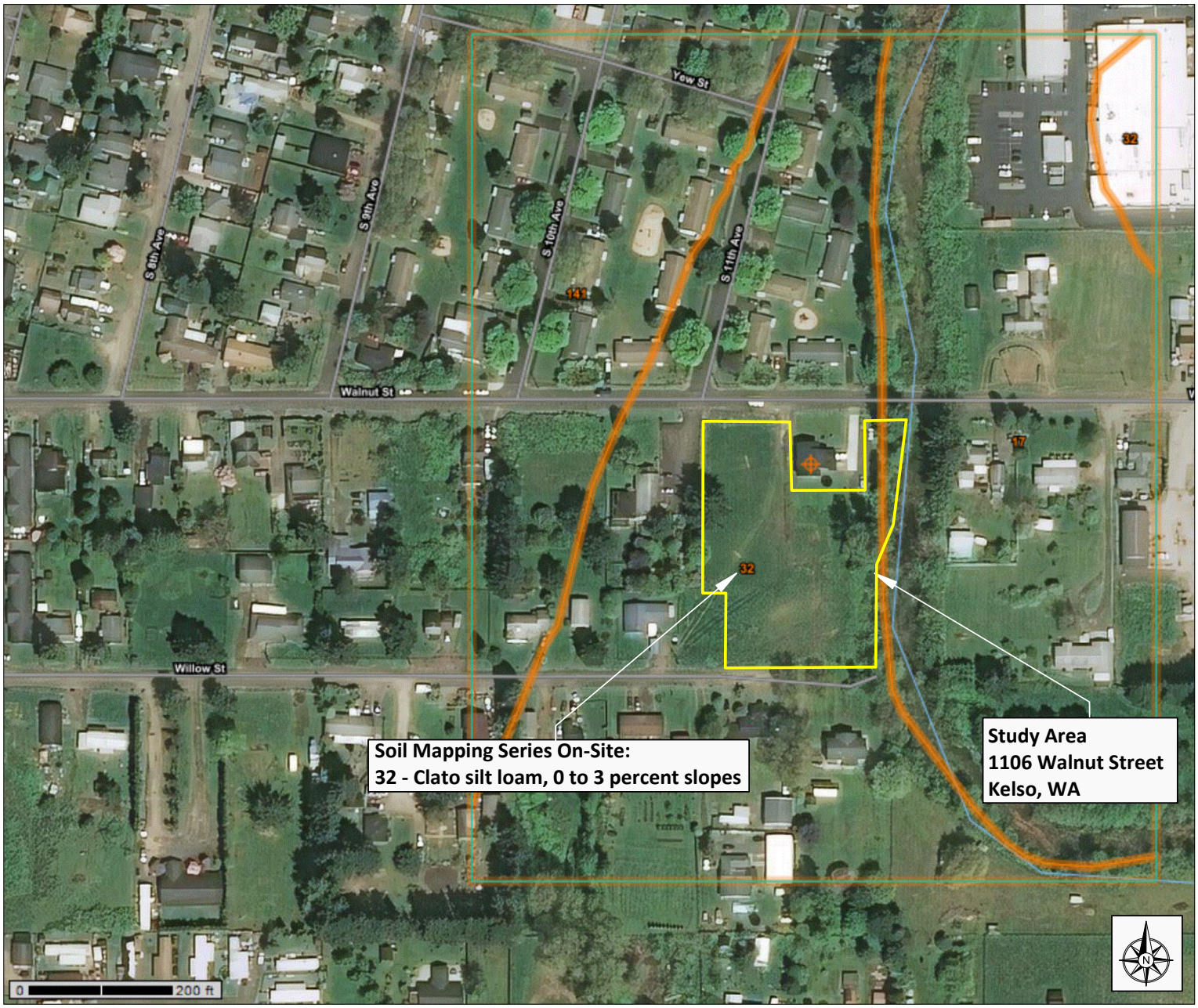

Graphic Source: USDA Web Soil Survey (2021)

Cowlitz County, Washington (WA015)

Cowlitz County, Washington (WA015)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Caples silty clay loam, 0 to 3 percent slopes	9.1	35.3%
32	Clato silt loam, 0 to 3 percent slopes	11.2	43.6%
141	Newberg fine sandy loam, 0 to 3 percent slopes	5.4	21.1%
Totals for Area of Interest		**25.6**	**100.0%**

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Figure 3 of 10 - Mapped Soils
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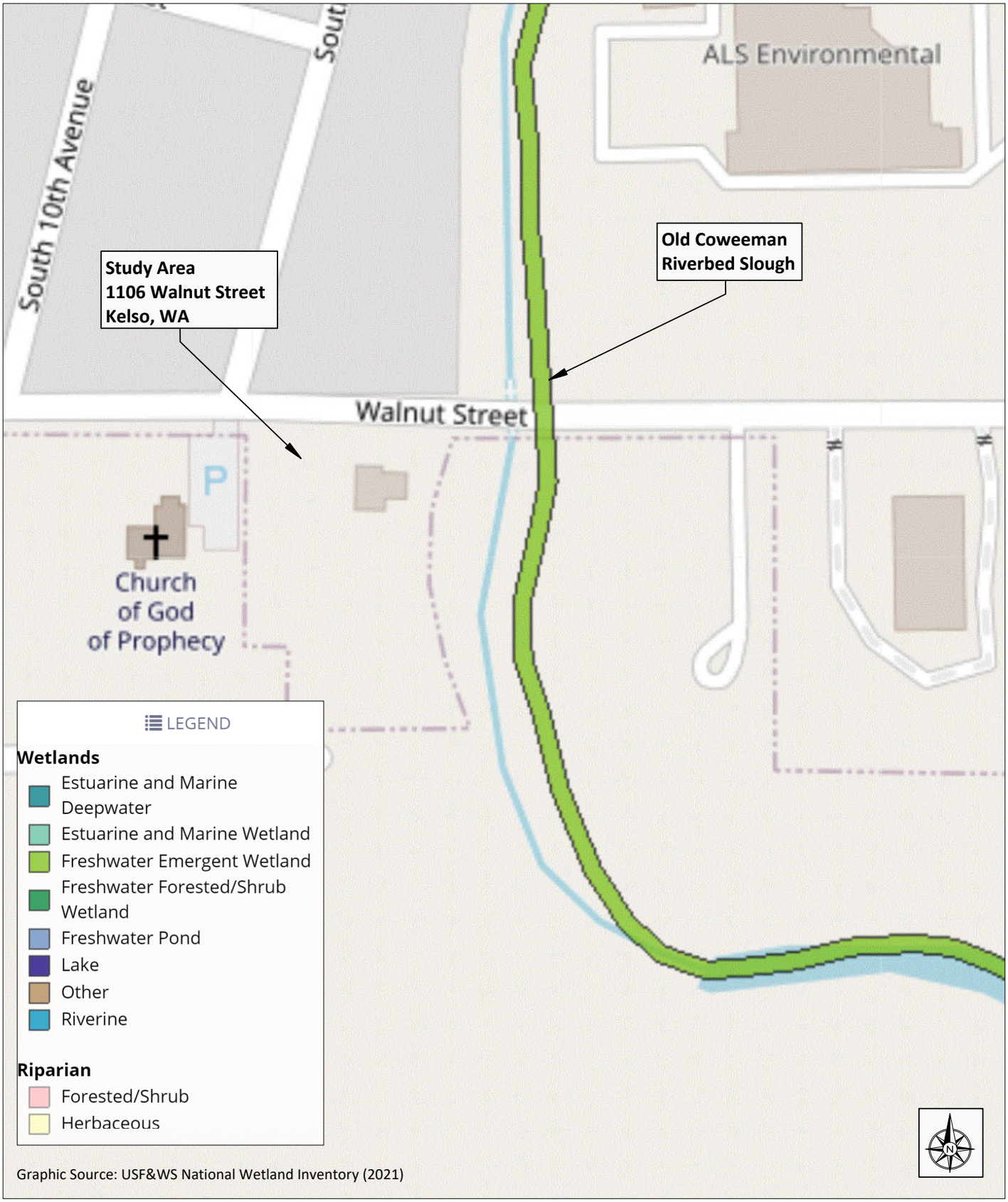

Graphic Source: USF&WS National Wetland Inventory (2021)

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Figure 4 of 10 - National Wetland Inventory Mapping
Critical Areas Report & Buffer Enhancement Plan

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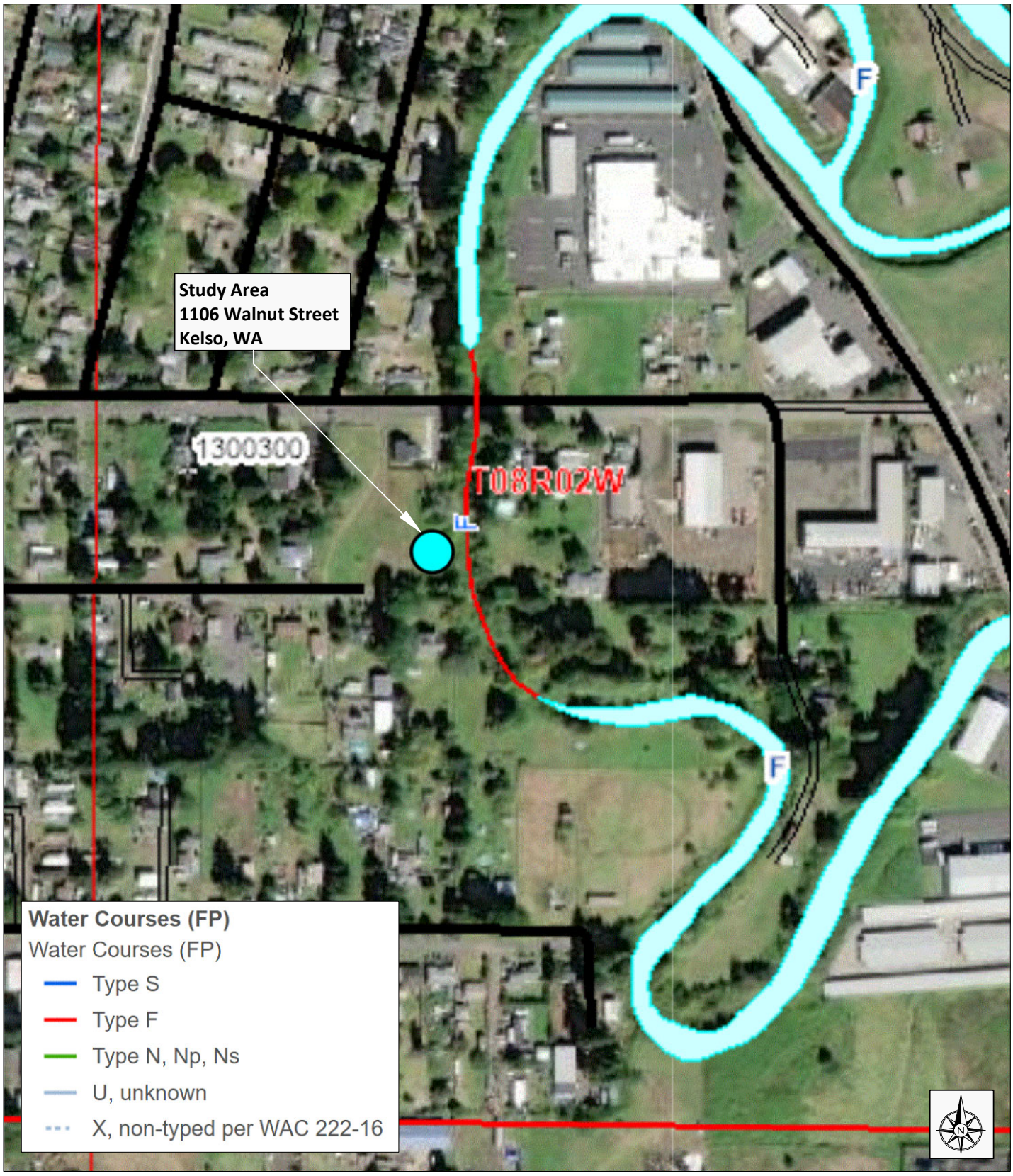

Graphic Source: Washington DNR Forest Practices Application Mapping Tool (2021)

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Figure 5 of 10 - DNR FPARS Mapping
Critical Areas Report & Buffer Enhancement Plan

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Kelso, WA 98626
(360) 423-3490

0 300 600
Feet

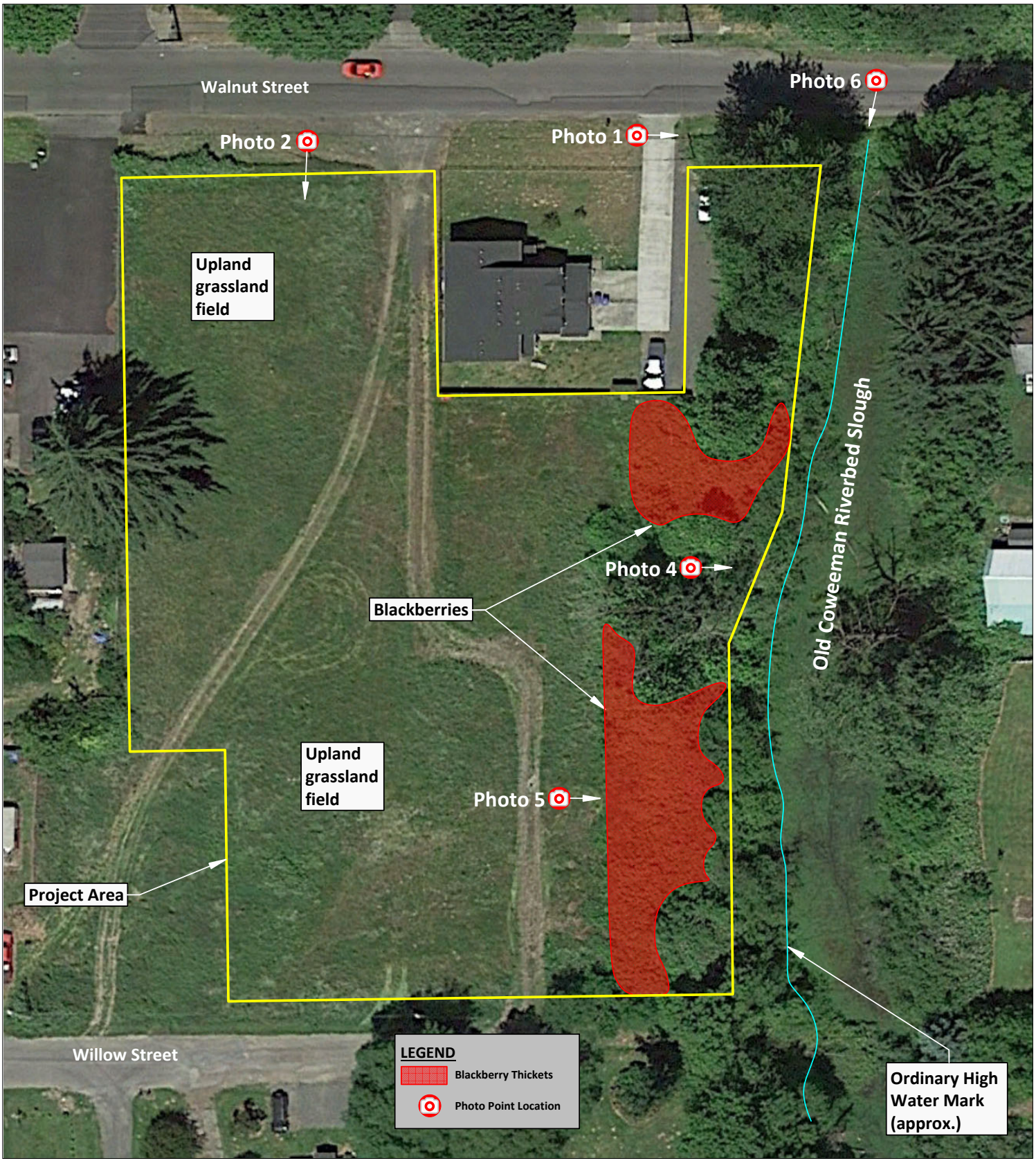

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Figure 6 of 10 - Identified Critical Areas
Critical Areas Report & Buffer Enhancement Plan

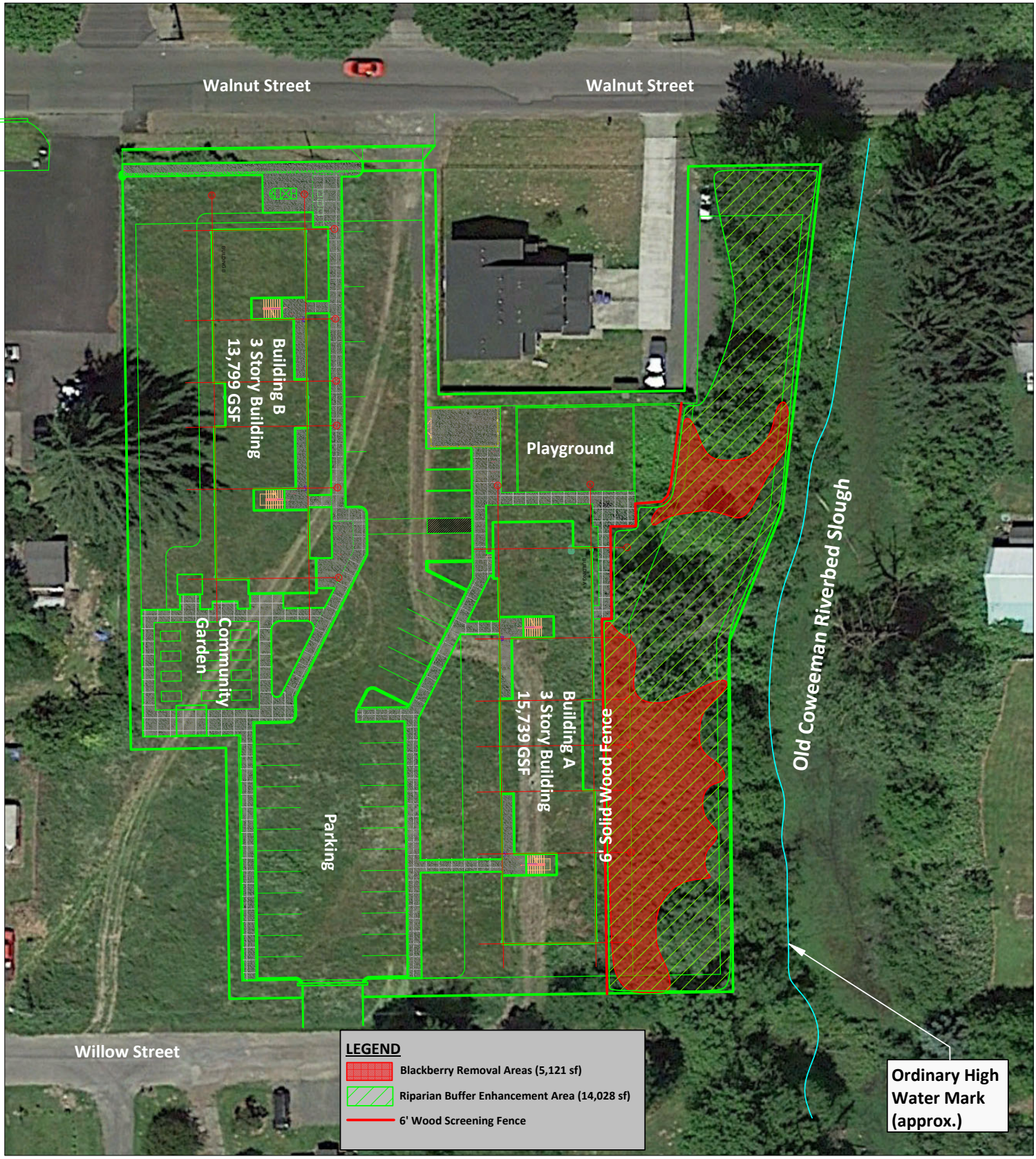
Project: Willow Grove Apartments
Location: 1106 Walnut Street, Kelso, WA 98626
Tax Parcel: 23655
Legal: S35, T8N, R2W of the Willamette Meridian
46.130 N. lat. /-122.906 W long.
County: Cowlitz

Cascadia Ecological Services, Inc.
14205 NW 56th Avenue, Vancouver, WA 98685
(360) 601-8631
www.cascadia-inc.com

Date: 12/23/22

Applicant:
Kelso Housing Authority
1450 S. 10th Avenue
Kelso, WA 98626
(360) 423-3490

0 25 50
Feet



CASCADIA
ECOLOGICAL SERVICES, INC.

Figure 7 of 10 - Recommended Riparian Zone and Enhancement Area
Critical Areas Report & Buffer Enhancement Plan

Project: Willow Grove Apartments
Location: 1106 Walnut Street, Kelso, WA 98626
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Date: 12/23/22

Applicant:
Kelso Housing Authority
1450 S. 10th Avenue
Kelso, WA 98626
(360) 423-3490

0 25 50
Feet

Photo 1. Taken at Walnut St. facing south across the study area.

Photo 2. Taken at Walnut St. facing east.

CASCADIA
ECOLOGICAL SERVICES, INC.

Figure 8 of 10 - Site Photos
Critical Areas Report & Buffer Enhancement Plan

Project: KWillow Grove Apartments
Location: 1106 Walnut Street, Kelso, WA 98626
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46.130 N. lat. /-122.906 W long.
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Date: 12/23/22

Applicant:
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1450 S. 10th Avenue
Kelso, WA 98626
(360) 423-3490

Photo 3. Northeast portion of study area in upland pasture facing east towards riparian buffer of slough.

Photo 4. East portion of study area in upland pasture facing east towards riparian buffer of slough.

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ECOLOGICAL SERVICES, INC.

Figure 9 of 10 - Site Photos
Critical Areas Report & Buffer Enhancement Plan
Project: Willow Grove Apartments
Location: 1106 Walnut Street, Kelso, WA 98626
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Kelso, WA 98626
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Photo 5. Typical blackberry dominated conditions along the east side of the existing riparian buffer.

Photo 6. Photo of slough taken at Walnut St. (off-site) facing south.

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ECOLOGICAL SERVICES, INC.

Figure 10 of 10 - Site Photos
Critical Areas Report & Buffer Enhancement Plan

Project: Willow Grove Apartments
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Date: 12/23/22

Applicant:
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Kelso, WA 98626
(360) 423-3490

Appendix C — Dominant Plant Species on Project area

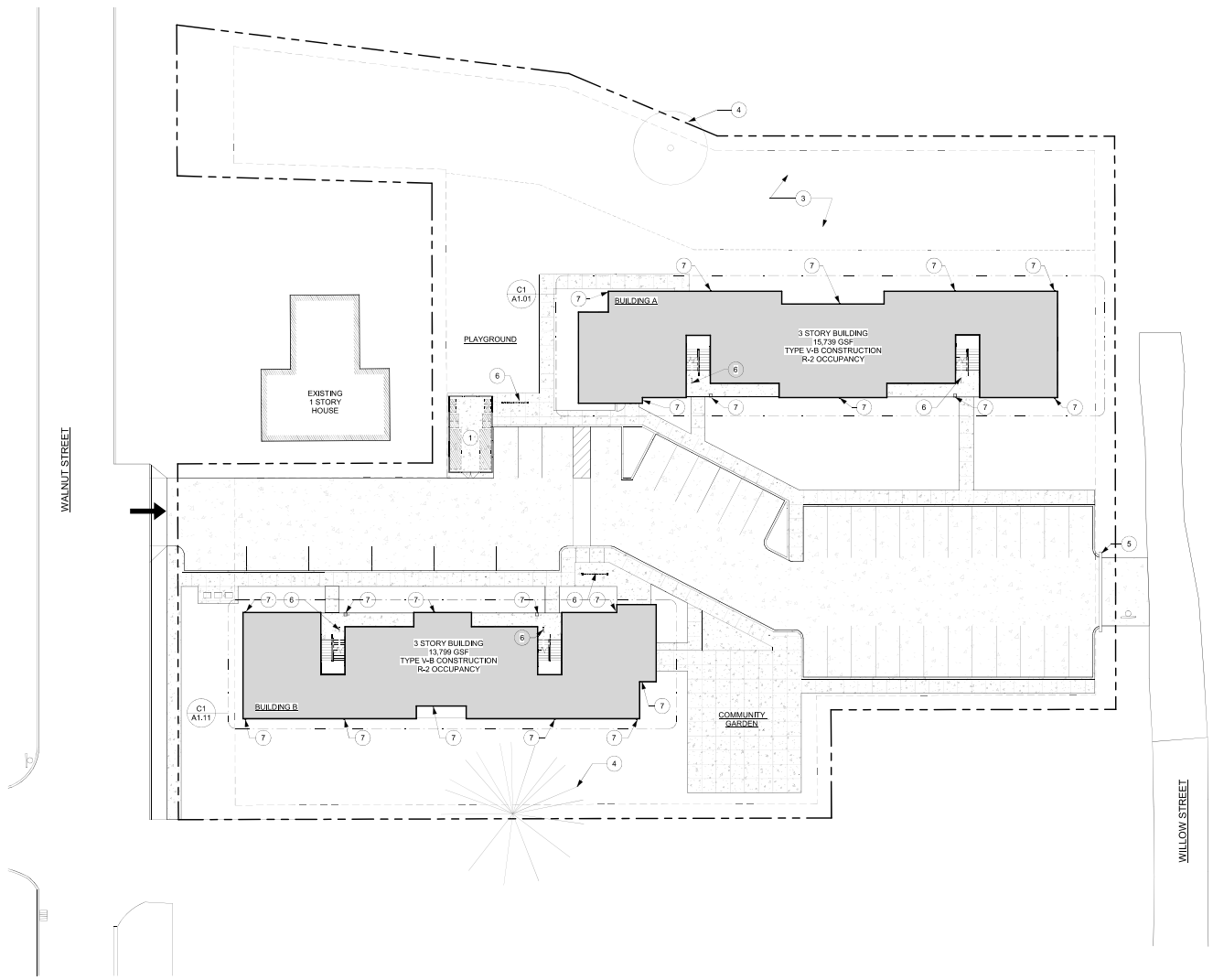
Appendix C Table 1. Dominant plant species occurring in uplands on the project area.

Herb Stratum		
Scientific Name	**Common Name**	**WIS***
Festuca arundinacea	Tall Fescue	FAC
Anthoxanthum odoratum	Sweet vernalgrass	FACU
Dactylis glomerata	Orchardgrass	FACU
Prunella vulgaris	Self heal	FACU
Leucanthemum vulgare	Oxeye daisy	FACU
Daucus carota	Queen Anne's lace	FACU
Phalaris arundinacea	Reed canarygrass	FACW
Sapling/Shrub Stratum		
Cytisus scoparius	Scotch broom	UPL
Tree Stratum		
Populus balsamifera	Black cottonwood	FAC
Woody Vine Stratum		
Rubus armeniacus	Armenian blackberry	FAC

* Wetland Indicator Status (WIS):

OBL	=	occurs in wetlands > 99% of time
FACW	=	occurs in wetlands 67-99% of time
FAC	=	occurs in wetlands 34-66% of time
FACU	=	occurs in wetlands 1-33% of time
UPL	=	occurs in uplands > 99% of time
NI	=	indicator status not known in this region
~	=	unsure as to FAC or FACU

Appendix D — Willow Grove Schematic Design (Access Architecture)



D1 A0.01 ARCHITECTURAL SITE PLAN

1" = 20'-0"

SITE PLAN GENERAL NOTES

A. ALL EXISTING CONDITIONS TO BE FIELD VERIFIED. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

B. ENSURE SITE GRADING MEETS ACCESSIBILITY STANDARDS.

C. ALL GRADE WITHIN 5 FEET OF BUILDING TO SLOPE AWAY FROM THE FOUNDATION.

D. PAVED AND HARDSCAPE AREAS TO BE SLOPED 1/4 INCH PER FOOT MINIMUM TO DRAIN WITH A MAXIMUM CROSS SLOPE OF 2%.

E. LANDSCAPED AREAS TO BE SLOPED 1/2 INCH PER FOOT MINIMUM TO DRAIN.

F. SEE C/ML AND LANDSCAPE FOR ADDITIONAL WORK NOT INDICATED ON THIS DRAWING.

SITE PLAN KEY NOTES

NOTE: NOT ALL NOTES MAY BE USED ON ALL SHEETS

1 TRASH ENCLOSURE
3 RIPARIAN BUFFER ZONE
4 EXISTING TREE TO REMAIN
5 LOCKED FIRE ACCESS GATE
6 BIKE RACKS DISPERSED AROUND SITE
7 DOWNSPOUT LOCATION

SITE PLAN LEGEND

NOTE: NOT ALL SYMBOLS MAY BE USED ON ALL SHEETS

PROPERTY LINE
SETBACK LINE
PARKING SPACES
PAVED AREA
BUILDING FOOTPRINT
SITE ENTRY

Access Architecture

PRELIMINARY NOT FOR CONSTRUCTION

WILLLOW GROVE

1106 WALNUT STREET
KELSO, WA 98626

SCHEMATIC DESIGN

REV	DATE	FILE

PM: Checker
JOB: 22012
DATE: 10.21.22

A0.01

ARCHITECTURAL SITE PLAN

11/28/2022 4:43:23 PM