EXHIBIT 21
CUP17-03

UNION SELF STORAGE
CRITICAL AREAS REPORT AND MITIGATION PLAN (REVISION)

Tax Parcel 176190000
6250 NW Friberg-Strunk Street
Camas, Washington

USACE No. NWS-2017-845

Prepared by:

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Revised Date: November 6, 2017

CASCADIA
ECOLOGICAL SERVICES, INC.

Executive Summary

The applicant, Union Storage, LLC, is proposing a mini-storage building totaling 60,100 gross square feet (SF) including storage space and an office/caretaker's residence on approximately 3.62 acres in the Community Commercial (CC) zone.

This critical areas report and mitigation plan addresses proposed impacts to Category 3 slope wetlands on the project site which are listed under Section 16.51.070 of the City of Camas Municipal Code (CMC) as critical areas subject to regulation.

Mitigation for wetland impacts will occur through the enhancement of wetlands on the project site and purchase of wetland bank credits in the Terrace Wetland Mitigation Bank.

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Acronyms and Abbreviations

Applicant	Union Storage, LLC
CES	Cascadia Ecological Services, Inc.
CMC	Camas Municipal Code
DNR	Washington Department of Natural Resources
Ecology	Washington Department of Ecology
NRCS	Natural Resources Conservation Service
PEM	Palustrine emergent
PSS	Palustrine scrub shrub
PFO	Palustrine forested
TWMB	Terrace Wetland Mitigation Bank
USACE	U.S. Army Corps of Engineers
USDA	US Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington State Department of Fish and Wildlife

The information and data in this critical area report and mitigation plan was compiled and prepared by the undersigned:

Jim Barnes
President,
Cascadia Ecological Services, Inc.

Chapter 1. Introduction

Union Storage, LLC (applicant) contracted with CES to complete a critical areas report for Tax Parcel 176190000 where a proposed mini storage facility is proposed to be constructed.

This revised report addresses unavoidable Category 3 slope permanent wetland impacts of 0.49 acres, permanent wetland buffer impacts of 0.90 acres, and indirect wetland impacts of 0.11 acres located on the property (Appendix B-4).

The purpose of this report is to identify City of Camas regulated critical areas on the project site. The report identifies critical areas impacts resulting from the proposed project that will require a critical areas permit and mitigation. The report was performed in accordance with the City of Camas Municipal Code (CMC) Section 16.51 and documents the investigation, best professional judgment, and conclusions of CES. Mitigation for critical area impacts were determined through consultations with City of Camas, Ecology, and Corps of Engineers staff.

Chapter 2. Project Information

2.1 Location

Project Location: 6250 NW Friberg-Strunk Street, Camas, Washington
Tax Parcel: 176190000
County: Clark
Section, Township, and Range: SE 1/4, S29, T2N, R3E of the Willamette Meridian
Latitude/Longitude: 45.62427606544913 N, -122.464881239858 W

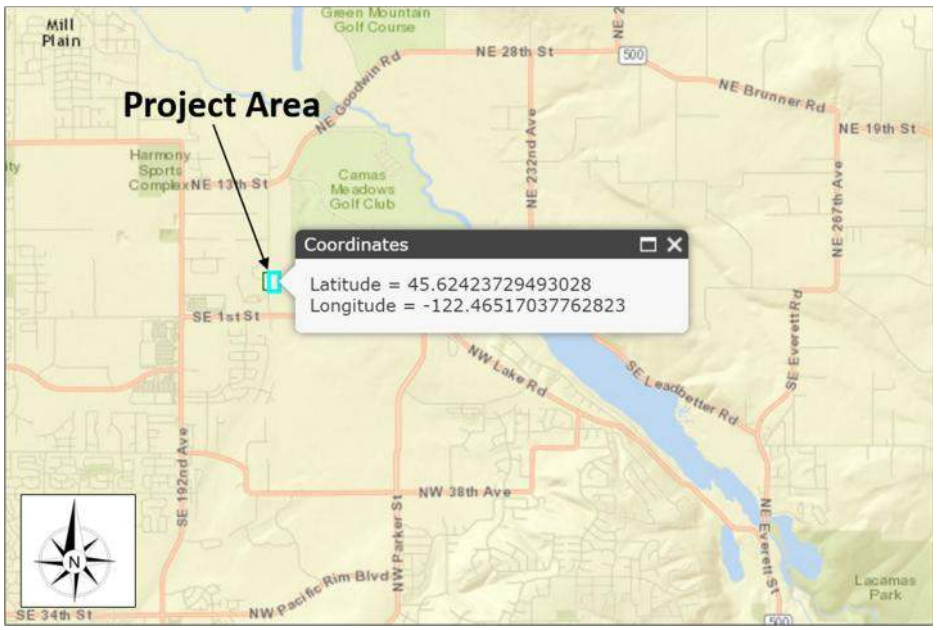


Figure 1. Project Vicinity Map.

2.2 Project Purpose and Description

The applicant, Union Storage, LLC, is proposing a mini-storage building totaling 60,100 gross square feet (SF) including storage space and an office/caretaker's residence on approximately 3.62 acres in the Community Commercial (CC) zone. The project is being undertaken to fill a need for mini storage in the Camas area due to a growing population base.

Chapter 3. Methods

This chapter summarizes the methods used to comply with local guidance. CES completed a wetland delineation and assessment report for the project area on June 14, 2016 (Appendix D). 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), the Soil Survey for Clark County (McGee, 1972), and aerial photos were used to determine the presence of wetlands on the project area. See Appendix B for maps showing soils, topography, the wetland inventory, and priority habitat and species areas. The presence of wetlands was determined by using the methodology of the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2010). The wetlands identified within the confines of the project area were assessed using the Washington State Wetland Rating System for Western Washington (Hruby, 2014). The Corps of Engineers completed a site visit on May 17, 2017 and determined the wetlands as flagged in the field by CES are jurisdictional. As of the date of this report, the Corps has not yet issued a formal jurisdictional wetland determination for the project.

Chapter 4. Existing Conditions

4.1 Landscape Setting

The project area is accessed by parking at a gravel pull out area directly to the east of NW Friburg -Strunk Street across from the Union High School parking lot.

The undeveloped site consists mostly of grassland with some scattered areas of shrub and blackberry thickets. The west portion of the study area consists of an area of fill adjacent to the east side of NW Friberg-Strunk Street. This area is several feet higher than the remainder of the project area and is dominated mostly by weedy plants and grasses. The east portion of the project area contains slope wetlands. In general, the wetlands drain in an easterly direction towards an unnamed stream off-site.

A Clark Public Utilities Substation is located to the south of the site. The other surrounding parcels are undeveloped. Union High School is located across NW Friberg-Strunk Street to the west. Camas Meadows Golf Course is approximately 430 feet to the northeast.

4.1.1 Soils and Hydrology Conditions

A detailed analysis of the wetlands on the project area including a description of soils and site hydrology conditions is included in the Wetland Delineation and Assessment Report (Barnes, 2016). The following is a summary of those conditions.

A review of the Clark County GIS show the presence of mapped wetlands in the area to the east of the project area. The property is mapped with the following soil series:

- Dollar loam, 0 to 5 percent slopes (DoB)
- Cove silty clay loam, thin solum, 0 to 3 percent slopes (CwA)

According to the USDA NRCS Web Soil Survey (USDA, 2016), The Dollar series consists of moderately deep to a fragipan, moderately well drained soils formed in old alluvium on terraces. Slopes are 0 to 5 percent.

The Cove series consists of very deep, poorly and very poorly drained soils that formed in mixed alluvium from sedimentary and basic igneous rocks. Cove soils are on flood plains and have slopes of 0 to 3 percent.

Soils within the wetland areas generally match the description of the hydric Cove soil series with a low soil chroma and redox features.

Areas along the west and northwest portions of the project area contain imported fill which is several feet higher than the native ground level in the remainder of the site.

Wetland hydrology was visually present in the form of saturated soils within twelve inches of the surface, oxidized rhizospheres on living plant roots, and the presence of reduced iron in the soil. No free water was observed in any of the soil data plots taken in the wetlands at the time of the site visit.

4.2 Critical Areas

4.2.1 Wetlands

The east portion of the study area contains PEM slope wetlands. In general, the wetlands drain in an easterly direction towards Dwyer Creek, a DNR Type F (fish bearing) stream located off-site. The wetlands on the project area are part of an overall wetland unit that extends off-site to include a section of Dwyer Creek. Because the project area wetlands extend off-site into a larger wetland unit including Dwyer Creek, the HGM class that was used to determine the wetland rating was slope. The overall wetland category is Category 3 (Appendix D).

Slope wetlands occur in flood plains and riparian corridors in association with stream channels. Dominant water sources are often overbank flow from the channel or subsurface hydraulic connections between the stream channel and wetlands. However, sources may be interflow and return flow from adjacent uplands, occasional overland flow from adjacent uplands, tributary inflow, and precipitation. At their headwater, slope wetlands often are

replaced by slope or depressional wetlands where the channel morphology may disappear. They may intergrade with poorly drained flats or uplands. Perennial flow in the channel is not a requirement (Hruby, 2014).

The dominant plant species noted within the wetlands includes meadow foxtail (*Alopecurus pratensis* – FAC), redtop grass (*Agrostis gigantea* – FAC), reed canarygrass (*Phalaris arundinacea* – FACW), common velvetgrass (*Holcus lanatus* – FAC), and quackgrass (*Elymus repens* – FAC). Scattered areas of Douglas spirea (*Spiraea douglasii* - FAC) and Oregon ash (*Fraxinus latifolia* – FACW) seedlings were also observed in the east portion of the wetlands.

Figure 2. Photo of emergent slope wetlands taken from the south side of the project area facing northeast. (Photo 1; February 10, 2017).

4.2.2 Wetland Buffer (Uplands)

The west portion of the study area consists of an area of fill adjacent to the east side of NW Friberg-Strunk Street. This area is several feet higher than the remainder of the study area and is dominated mostly by weedy plants and grasses.

The dominant upland plant community on the site is dominated by tall fescue (*Festuca arundinacea* – FAC), sweet vernalgrass (*Anthoxanthum odoratum* – FACU), red clover (*Trifolium pratense* – FACU), white clover (*Trifolium repens* – FAC), Canada thistle (*Cirsium arvense* – FAC), prickly lettuce (*Lactuca serriola* – FACU), meadow foxtail, cat's ear (*Hypochaeris radicata* – FACU), California brome (*Bromus carinatus* – UPL), sheep sorrel, and lanceleaf plantain (*Plantago lanceolata* – FACU).

Soils within the non-wetland areas generally match the description of the non-hydric Dollar soil series. No primary or secondary wetland indicators were observed in the non-wetland portions of the site.

Figure 3. Photo of imported fill slope and uplands within the west portion of the project area. Photo is taken facing north along the east side of NW Friberg-Strunk Street. (Photo 2; February 10, 2017).

4.2.3 Priority Habitats and Species Areas

The Washington Department of Fish and Wildlife PHS on the Web website and Clark County GIS does not show any areas of Priority Habitats and Species on the project site or in the immediate vicinity off-site. The nearest mapped PHS area is associated with Dwyer Creek, a DNR Type F tributary stream to Lacamas Creek. The stream is located approximately 450 feet to the east of the southeast property corner of the project site according to the GIS. No other regulated PHS was observed during the field visit.

Figure 4. Project area vicinity DNR FPARS mapping from the Clark County GIS.

4.2.4 Buffer Functions

The on-site wetland buffers consist mostly of grassland and provide water quality functions including filtration of sediment and other pollutants. Habitat functions are limited due to the lack of cover from woody shrubs and trees.

Chapter 5. Wetland and Buffer Impact Assessment

5.1 Permanent Direct and Indirect Wetland Impacts

Corps and Ecology Wetland Impact Discussion

The construction of the proposed mini storage facility will result in unavoidable permanent direct wetland impacts of 0.49 acres in the west half of the property. Indirect wetland impacts of 0.11 acres will result from the required extension of Street B along the north side of the project site. The Corps and Ecology require indirect wetland impacts to be treated as direct wetland impacts in regard to mitigation requirements. Because Street B is to be constructed along the north side of the wetlands within the 120-foot wetland buffer, the buffer would be required to extend south into the wetlands resulting in an indirect wetland impact of 0.11 acres. The area shown on Appendix Sheet B-4 as "Indirect Wetland Impact Crossover Area" is not required to be mitigated as indirect wetland impacts by the Corps and Ecology because it is a duplication of mitigation that is required by the City of Camas for permanent wetland buffer impact which are discussed in the following chapter.

Table 1. Wetland size, classification, and area impacted by the proposed project.

Wetland [A]	Wetland Classification				Wetland Size On-Site (acre)	Wetland Impact Area (acre)			
	Cowardin [B]	HGM	ECY [C]	Local Jurisdiction [D]		Permanent	Percent Impacted	Temp.	Indirect
A	PEM	Slope	3	3	2.59 ac.	0.49	100	0	0.11

A. Wetland name
B. Cowardin, et al. (1979) or National Wetland Inventory (NWI) Class based on vegetation: PEM = Palustrine Emergent
C. Ecology rating according to Hruby (2004).
D. List local jurisdiction ordinance.

Stormwater Discussion

Stormwater runoff from NW Friburg-Strunk Street, Street B, the parking areas, and sidewalks will be routed to six (6) bioretention cells for treatment prior to being conveyed to a 36" underground detention system. A flow control manhole will regulate the release rate from the stormwater facility as required by the City of Camas Stormwater Ordinance. The stormwater runoff will be released to the existing wetlands east of the development. Stormwater runoff from the roof will bypass treatment and be conveyed directly to the detention facility.

The stormwater treatment and detention system will be designed per the requirements of the City of Camas Stormwater Ordinance and the 2014 Stormwater Manual for Western Washington. In summary, the discharge rates from the developed site must be equal to or less than the pre-developed discharge rates from the site. Due to the proposed stormwater design, wetland hydrology is expected to remain the same as before the development.

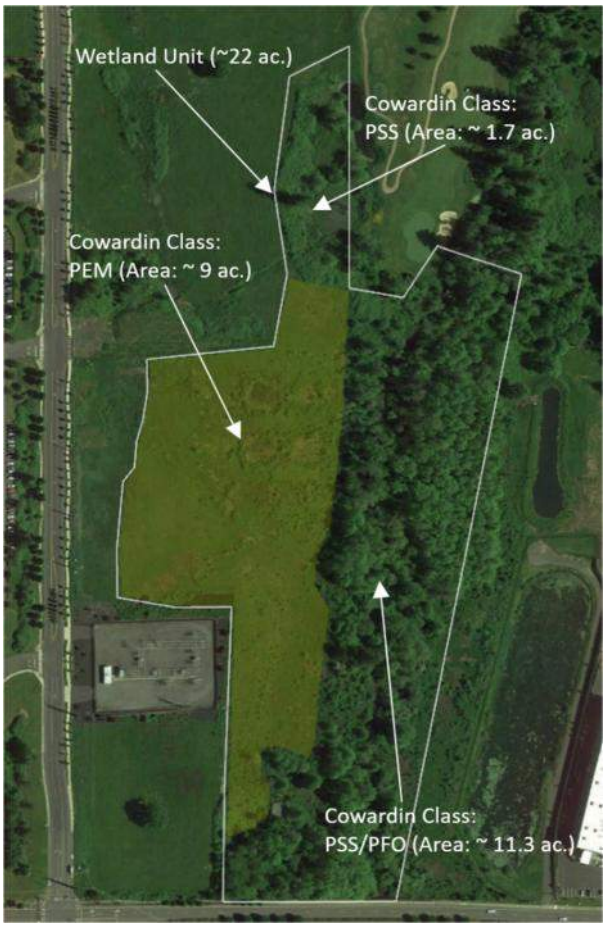
Table 2. Impacted wetland functions.

Function/Value[a]	Wetland
	A
Flood Flow Alteration	-
Sediment Removal	+
Nutrient and Toxicant Removal	+
Erosion Control & Shoreline Stabilization	-
Production & Export of Organic Matter	X
General Habitat Suitability	X
Habitat for Aquatic Invertebrates	-
Habitat for Amphibians	X
Habitat for Wetland-Associated Mammals	X
Habitat for Wetland-Associated Birds	X
General Fish Habitat	-
Native Plant Richness	X
Educational or Scientific Value	X
Uniqueness and Heritage	X

a "-" means that the function is not present; "X" means that the function is present and is of low quality; and "+" means the function is present and is of high quality.

5.2 Wetland A Summary Sheet

Table 3. Wetland A summary.

Wetland Impacts Summary Sheet		
	**Local Jurisdiction**	City of Camas
	WRIA	Salmon-Washougal 28
	Ecology Rating (Hruby 2004)	Category 3
	Local Jurisdiction Rating	Category 3
	Local Jurisdiction Buffer Width	120 feet*
	Proposed Land Use Intensity	High
	Wetland Unit Size	22 acres
	Cowardin Classification	PEM/PSS/PFO
	HGM Classification	Slope
	Wetland Rating System Pts.	
	Water Quality Score	6
	Hydrologic Score	5
	Habitat Score	7
	Total Score	**18**

* Per CMC Table 16.53.040-3.

Chapter 6. Mitigation Strategy

6.1 Avoidance and Minimization of Wetland Impacts

The project site is zoned for commercial uses and is almost completely encumbered with wetlands and buffers leaving little to no developable area or reasonable economic use of the property.

Reasonable efforts have been made during the design phase to both avoid, reduce, and mitigate impacts to the critical areas. In order to avoid or reduce wetland impacts on this site, alternate site plan designs were implemented for this property. A typical site plan for a mini-storage building on a similar unencumbered site would be a series of one-story buildings connected by internal drive aisles. In order to reduce wetland impacts on this site, the applicant is proposing a multi-story storage building. By increasing the height of the building vertically, the footprint was reduced horizontally to reduce wetland impacts.

The site plan was also configured to concentrate development on the western portion of the site with the majority of the eastern portion of the site to remain as open space/wetland area. This limits the proposed direct impacts to onsite wetland areas to less than half an acre as shown on the project plans. The project engineer designed the stormwater facilities for the project with the intent to maintain the current levels of wetland hydrology after the project is constructed.

In addition to the steps that were taken to avoid and minimize impacts, mitigation in the form of onsite wetland enhancement and the purchase of mitigation bank credits as described in this report is proposed for the unavoidable wetland impacts associated with this project.

6.2 Proposed Compensatory Mitigation

Compensatory wetland mitigation requirements for the Union Self Storage Project are intended to replace the permanent loss of aquatic resource functions caused by the project's construction activities.

City of Camas Mitigation Requirements

Per CMC Section 16.51.160, mitigation should be in-kind and on-site, when possible, and sufficient to maintain the functions and values of the critical area, and to prevent risk from a hazard posed by a critical area. The direct wetland impacts and permanent wetland buffer impacts will be mitigated on-site through enhancement of the existing Category 3 wetlands with native shrubs and trees. Because the area available on-site for wetland enhancement is not large enough to fully compensate for the wetland and buffer impacts, the remaining mitigation will be compensated for through the purchase of wetland bank credits.

In order to meet the requirements of CMC Section 16.51.160, wetland mitigation ratios will be as follows:

Table 3. Proposed mitigation ratios for the City of Camas using permittee responsible mitigation.

Wetland	Category	Impact Area (acre)		Mitigation Proposed	Required Ratio		Mitigation		Area over/under (+/-) (acre)	Bank Credits Required (under/ratio)
		Direct	Indirect		Direct	Indirect	Required Onsite (acre)	Provided Onsite (acre)		
A	III	0.49 [a]		Enhancement	8:1		3.92	1.07 [b]	-2.85	0.36
A	III		0.90 [c]	Enhancement		1:1	0.90	0.90 [c]	0.0	NA

a. Direct wetland impacts on project area (Impact areas #2 & 3; Appendix Sheet B-4)
b. On-Site mitigation for direct wetland impacts (Mitigation Area #3; Appendix Sheet B-4)
c. On-Site mitigation for permanent wetland buffer impacts of 0.90 acres (Mitigation areas #1 & #2; Appendix Sheet B-4)

Corps of Engineers/Ecology Mitigation Requirements

In addition to the direct wetland impacts of 0.49 acres addressed in the previous section, the extension of Street B will result in indirect wetland impacts. Street B is to be sited within the 120-ft. wetland buffer near the north boundary of the wetlands to the east of the project area. The road will effectively eliminate the wetland buffer in this area. Therefore, the wetland buffer will extend 120-ft. south of the proposed Street B into the wetland area. This is classified as an indirect wetland impact by Corps and Ecology. The City of Camas does not require mitigation for indirect wetland impacts in its code. Indirect wetland impacts are treated the same as direct wetland impacts by Corps and Ecology and require mitigation based on Ecology's *Mitigation Ratios for Western Washington* ((Ecology, 2006).

Wetland mitigation is calculated as follows for this project for the purposes of Corps and Ecology:

Table 4. Proposed mitigation ratios for Corps and Ecology using permittee responsible mitigation.

Wetland	Category	Impact Area (acre)		Mitigation Proposed	Required Ratio		Mitigation		Area over/under (+/-) (acre)	Bank Credits Required (under/ratio)
		Direct	Indirect		Direct	Indirect	Required Onsite (acre)	Provided Onsite (acre)		
A	III	0.49 [a]		Enhancement	8:1		3.92	1.07 [b]	-2.85	0.36
A	III		0.90	Enhancement		1:1	0.90	0.90 [c]	0.0	NA

a. Direct wetland impacts on project area (Impact areas #2 & 3; Appendix Sheet B-4)
b. On-Site mitigation for direct wetland impacts (Mitigation Area #3; Appendix Sheet B-4)
c. On-Site mitigation for indirect wetland buffer impacts of 0.90 acres (Mitigation areas #1 & #2; Appendix Sheet B-4)

A total of 0.36 wetland bank credits will be purchased from the Terrace Wetland Mitigation Bank (TWMB). These credits will offset the remaining direct Category 3 wetland impact of 0.36 acres Table 5. The wetland bank use plan included with this plan as Appendix C will facilitate the wetland bank credit transaction as part of the permitting process with the City of Camas, Corps and Ecology of Engineers.

Wetland Enhancement

On-site wetland enhancement will result in increased wildlife functions to the east of the project site. This area is adjacent to a City of Camas owned property (Tax Parcel 176188000) which contains a mosaic of mature forest, slope and PSS wetlands, some of which are part of an existing wetland mitigation area. Dwyer Creek crosses through the center of the city owned parcel.

Enhancement of these wetlands will increase the overall size of the protected wetlands to the west of the stream. Once established, this area will support a healthy cover of woody vegetation providing cover, food, and nesting areas for birds, mammals, amphibians, and reptiles.

A summary of the planting plan for the wetland enhancement area is given in Table . Upon completion of planting, the wetland enhancement area will mature into a matrix of slope, PSS, and PFO wetlands. Plantings will be installed in the appropriate hydrological regimes which will support optimal growth and survival as determined by the wetland biologist. The proposed plant communities are consistent with those found in adjacent and nearby wetlands. It is expected that natural revegetation from an existing seed bank in the wetlands and natural recruitment from nearby sites will occur.

Table 5. Plant list proposed for Mitigation Areas 1-3 (Wetland Enhancement - 1.96 acres; refer to Appendix Sheet B-5 for mitigation area locations).

Common Name	Scientific Name	Indicator Status	Community Composition	Plant Size	Required Number to be Planted
	Scrub-shrub Wetland Community (PSS)				
Sitka willow	*Salix sitchensis*	FACW	40%	2-3' Cutting	1793
Scouler's willow	*Salix scouleriana*	FAC	40%	2-3' Cutting	1793
Red-osier dogwood	*Cornus sericea*	FACW	8%	18" + Bare Root	358
Twinberry	*Lonicera involucrata*	FAC	5%	18" + Bare Root	224
Nootka rose	*Rosa nutkana*	FAC	7%	18" + Bare Root	314
	Total				**4482**
	Forested Wetland Community (PFO)				
Oregon ash	*Fraxinus latifolia*	FACW	60%	18" + Bare Root	512
Black cottonwood	*Populus balsamifera*	FAC	18%	18" + Bare Root	153
Pacific willow	*Salix lasiandra*	FACW	22%	2-3' Cutting	187
	Total				**852**

Note: Plant density: Trees at 10' on center; shrubs at 4' on center.

Wetland Mitigation Bank

The project is located within the service area (Water Resource Inventory Area 28) for the Terrace Wetland Mitigation Bank. The TWMB is located in located within the northwest quarter of Section 13 and the northeast quarter of Section 14, in Township 2 North, Range 2 East of the Willamette Meridian. (see Appendix C – Union Self Storage Wetland Bank Use Plan).

The service area of the TWMB includes all plains and terraces, nearly level to gently sloping, within the Terrace Hydrogeologic Unit as described in the Washington Department of Ecology's 2009 Watershed Characterization of Clark County and that also encompasses the somewhat excessively drained to very poorly drained soils of bottom lands and terraces within Water Resource Inventory Area (WRIA) 28. The service area includes the Lacamas, Salmon Creek, Lakeshore, and Burnt Bridge Creek Watersheds, and their associated subwatersheds, with the exception of the Mill Creek Subwatershed within the Salmon Creek Watershed, which is excluded from the boundaries of the service area (Terrace Mitigation Bank, 2017).

Implementation Schedule

The wetland enhancement area will be planted in late 2017 according to the planting table and specifications given in Table 7 and Figure 5. Planting is to occur during the dormant season, which generally extends from November through March.

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

Trees shall be planted so that the root ball is equal to or slightly higher than the surrounding soil surface. Excavate a planting hole two times the diameter of the width of the root ball. The depth of the hole should be less than the height of the root ball, especially in compacted or natural wet soils. Backfill the hole with soil ensuring that the top of the root ball is at least 10% above the surrounding landscape soil elevation.

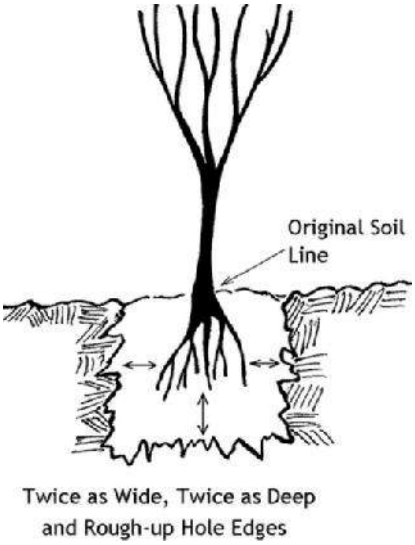


Figure 5. Plant Installation Detail

Chapter 7. Mitigation Goals, Objectives, and Performance Criteria

7.1 Goals

The goal of the mitigation is to replace habitat functions and values lost through the filling of 0.49 acres of slope wetlands and permanent loss of buffers on the project site.

1. Plant native woody vegetation within the wetland enhancement area to increase the wildlife habitat suitability of the property and increase the overall area of the off-site City of Camas wetland mitigation area to the east of the project site.
2. Compensate for direct and indirect wetland impacts resulting from wetland fills on the project area by purchasing wetland mitigation banking credits from the TWMB.

7.2 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 time frame. The proposed plant communities are consistent with those found in adjacent and nearby wetlands. It is expected that natural revegetation from an existing seed bank in the wetlands and natural recruitment of native plants from nearby sites will occur. The presence of volunteer native plant species will be noted in annual monitoring reports.

Years 1-2
Native, wetland (facultative and wetter) woody species will achieve a 100 percent survival rate in the scrub-shrub and forested communities of the enhanced wetland area.

Year 3
Aerial cover of native woody species (planted and volunteer) in the scrub-shrub and forested communities of the enhanced wetland area will be at least 20 percent.

Year-5

Aerial cover of native, wetland (facultative and wetter) woody species will be at least 35 percent in the scrub-shrub and forested communities of the enhanced wetland area.

Year-7
Aerial cover of native, wetland (facultative and wetter) woody species will be at least 50 percent in the scrub-shrub and forested communities of the enhanced wetland area.

Year 10
Aerial cover of native woody species will be at least 70 percent in the scrub-shrub and forested communities in the enhanced wetland area.

All years
County-listed Class-A noxious weeds will be eradicated within the enhanced wetland area as

they are discovered during monitoring. Non-native blackberries (*Rubus* spp.), Scot's broom (*Cytisus scoparius*), and thistles (*Cirsium* spp.) will not exceed 10 percent aerial cover in the enhanced wetland area.

Table 6. Wetland vegetation performance standards by area and monitoring year.

Mitigation Area	Required Plant Densities	Monitoring Method	Monitoring Year	Contingency Requirement
Wetland Enhancement Area FO (Forested) and SS (Scrub-shrub) wetlands)	Achieve an average density of at least 1 tree at 10' on center and 1 shrub at 4' on center.	Quadrant Method	Years 1 and 2	Replace failed plantings.
	Aerial cover of native woody species (planted and volunteer) will be at least 20 percent.	Quadrant Method	Year 3	Replace failed plantings.
	Aerial cover of native woody species (planted and volunteer) will be at least 35 percent.	Quadrant Method	Year 5	Replace failed plantings.
	Aerial cover of native woody species (planted and volunteer) will be at least 50 percent.	Quadrant Method	Year 7	Replace failed plantings.
	Aerial cover of native woody species (planted and volunteer) will be at least 70 percent.	Quadrant Method	Year 10	Replace failed plantings.
Non-native Invasive Plant Species	Cover will be <10% for all non-native invasive species.	Quadrant Method	All years monitored	Hand or machine removal, herbicides only as recommended and supervised by a licensed aquatic applicator.

7.3 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 (i.e. forested wetlands), a ten-year monitoring period with monitoring completed and documented in years 1, 2, 3, 4, 5, 7, and 10 will be required.

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

The Quadrat Method of vegetation monitoring will be utilized to determine whether the mitigation sites are meeting the required performance standards.

Quadrat Method

To measure survival or density of planted trees and shrubs in an area, quadrat sample units will

be randomly located along sampling transects (Bonham 1989; Coulloudon et al. 1999).

Quadrat width and length are based on characteristics of the vegetative community and patterns of plant distribution. Quadrats will be located lengthwise along sampling transects. Plants within a quadrat will be recorded as alive, stressed or dead. The success standard or contingency threshold can be addressed with a percent survival estimate of plantings, or a density per unit area of living plantings as appropriate. For example, if eight planted woody species were recorded as alive and two were recorded as dead in a sample unit measuring 1 x 20 meters, the survival of planted woody species for that sample unit would be 80%, and the density would be 0.4 live plants per square meter.

Sampling will be conducted the same season each year, during the growing season when vegetation is more easily identifiable. Portions of the mitigation areas which are seasonally under water may need to be sampled at a separate time than the rest of the site.

Photo point locations will be identified and marked via GPS coordinates by the wetland biologist for future monitoring visits during the first year of monitoring. Panoramic photos at each of these locations will be taken during each monitoring visit and provided in the required monitoring reports.

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 recipient listed in Table 9 by April following the formal monitoring activities conducted the previous year. Monitoring will consist of a complete plant count to determine the percentage of yearly plant survival. Photo stations will be established within the mitigation area during the first monitoring season to evaluate future response of the vegetation community.

Table 7. Wetland mitigation monitoring report recipients.

Permitting Agency or Organization	Contact Name and Address
City of Camas	City of Camas 616 NE 4th Avenue Camas, WA 98607 (360) 817-1568
U.S. Army Corps of Engineers	James Carsner U.S. Army Corps of Engineers 2108 Grand Blvd. Vancouver, WA 98661 (206) 316-3047

7.4 Contingency Plan

It is anticipated that the mitigation goals will be accomplished with the installation of the mitigation design as shown on the planting plans. Contingency actions, however, may be needed to correct unforeseen problems. Contingency revisions typically require coordination with the permitting agencies.

As necessary, contingency measures (site management or revisions to performance criteria with permitting agency agreement) 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 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.
- Irrigation – Supplemental irrigation to mitigation planting will be required during the dry season to ensure plant survival.
- Weed control – Control of non-native invasive species may 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 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, fencing and sensitive area signage may need to be installed.

Invasive Species Control Strategy

The wetland enhancement area will be closely evaluated for the presence of weeds. If invasive non-native species, other than reed canarygrass (RCG), are found to be greater than the 10% cover performance standard, they will be eradicated through a combination of hand pulling, mowing, and treating with herbicides, depending on the species and the best control method for that species.

Because of environmental risks from improper application, aquatic herbicide application in Washington state waters is regulated and has the following restrictions:

- Applicators must be licensed by the Washington State Department of Agriculture.

- Applicants must obtain coverage under a discharge permit called a National Pollutant Elimination System Discharge (NPDES) permit before they can legally apply aquatic herbicides to the waters of the state.
- Ecology requires notification and posting before treatment and there are additional mitigations to protect rare plants or threatened and endangered species.

Complete eradication of RCG is not feasible for this project due to the adjacent populations in fields surrounding the wetland enhancement area.

Mowing of RCG will occur 3-4 times during the growing season depending upon site conditions. Areas that are dry enough to warrant mowing will be mowed beginning in May. The last mowing will occur during the fall as needed. Herbicide treatments will be made in late summer for maximum translocation to the roots.

Irrigation

A temporary irrigation system will be installed and maintained throughout the ten-year maintenance period so that supplemental water is available to the wetland enhancement area if needed. The addition of supplemental water to the mitigation area would be initially discontinued after the second year to determine if "natural" hydrologic conditions are sufficient to support plant growth and survival. The water would be applied at the discretion of the project wetland biologist. The irrigation schedule will vary depending on weather patterns, but in general, would be used during the late spring and summer months.

7.5 Site Management

The mitigation site will be managed annually for 10 years. Site management activities shall include noxious weed control and may include mulching, supplemental watering, maintaining access, repairing damage from vandals, correcting erosion or sedimentation problems, or litter pickup. Signs will be placed at 50-foot intervals along the outer perimeter of the mitigation sites that state the following: "Wetland Mitigation Area – Please Leave in a Natural State". Future management of the overall project site will be conducted by the applicant.

Reed canarygrass dominates the watershed and suppression/control of this invasive plant will require careful site preparation and active site management to include mowing and application of approved herbicides. While complete elimination of reed canarygrass from the mitigation site may not be possible, it should be managed sufficiently to ensure survival of the native planted species until they can effectively compete.

7.6 Financial Assurances and Site Protection

The Applicant will provide the City of Camas evidence of a deposit account with a financial institution showing funding sufficient to successfully implement the planting of the wetland enhancement area and complete the required 10-year monitoring period prior to the issuance of an occupancy permit by the city. The remaining mitigation requirement will be accomplished by contracting with the Terrace Wetland Mitigation Bank to purchase a total of 0.36 mitigation

credits. The Applicant shall provide documentation of the wetland bank transaction to the City of Camas.

A recorded copy of the conservation covenant for the mitigation area identified in this plan shall be recorded with the Clark County Auditor and provided to the City of Camas. The purpose of the conservation covenant is to ensure the mitigation site remains in a natural state in perpetuity.

Chapter 8. References

Barnes, J. (2016). *Wetland Delineation and Assessment Report - Union Self Storage Project.* Vancouver: Cascadia Ecological Services, Inc.

Coulloudon, B., K. Eshelman, J. Gianola, N. Habich, L. Hughes, C. Johnson, M. Pellant, P. Podborny. A. Rasmussen, B. Robles, P. Shaver, J. Spehar, J. Willoughby. 1999. Sampling Vegetation Attributes. BLM Technical Reference 1734-4, Denver, CO.

Ecology. (2006). *Wetland Mitigation in Washington State Part 1, Version 1.* Olympia: Washington Department of Ecology.

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

McGee, D. (1972). *Soil Survey of Clark County, Washington.* Washington, DC: Soil Conservation Service.

NRCS. (2008). *Hydrogeomorphic Wetland Classification System: An Overview and Modification to Better Meet the Needs of the Natural Resources Conservation Service.* Washington, DC: United States Department of Agriculture Natural Resources Conservation Service.

Terrace Mitigation Bank, L. (2017). *Terrace Mitigation Bank Mitigation Banking Instrument.* Vancouver: Terrace Mitigation Bank, LLC.

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.

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 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 Camas Critical Areas Ordinance	https://www.municode.com/library/wa/camas/codes/code_of_ordinances?nodeId=TIT16EN_CRAR_CH16.53WE	Chapter 16.53 – Wetlands
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.
	City of Camas Critical Areas Ordinance	https://www.municode.com/library/wa/camas/codes/code_of_ordinances?nodeId=TIT16EN_CRAR_CH16.61FIWIHACOAR	Chapter 16.61 – Fish and Wildlife Habitat Conservation Areas
Soils Data	Clark County GIS	http://gis.clark.wa.gov/mapsonline/	Website
Priority Habitats and Species	Washington Priority Habitats and Species	http://apps.wdfw.wa.gov/phsontheweb/	Website accessed on 2/15/17. The project area does not contain any mapped PHS areas per Washington Department of Fish and Wildlife (WDFW).
Threatened and Endangered Species	USFWS species lists by County	Western Washington: https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=53011	Website

Appendix B — Background Information and Maps

Appendix Sheet B-1 Wetland Inventory and Soil Mapping

Appendix Sheet B-2 Site Topographic Contours

Appendix Sheet B-3 Clark County GIS Mapped Priority Habitat and Species Areas

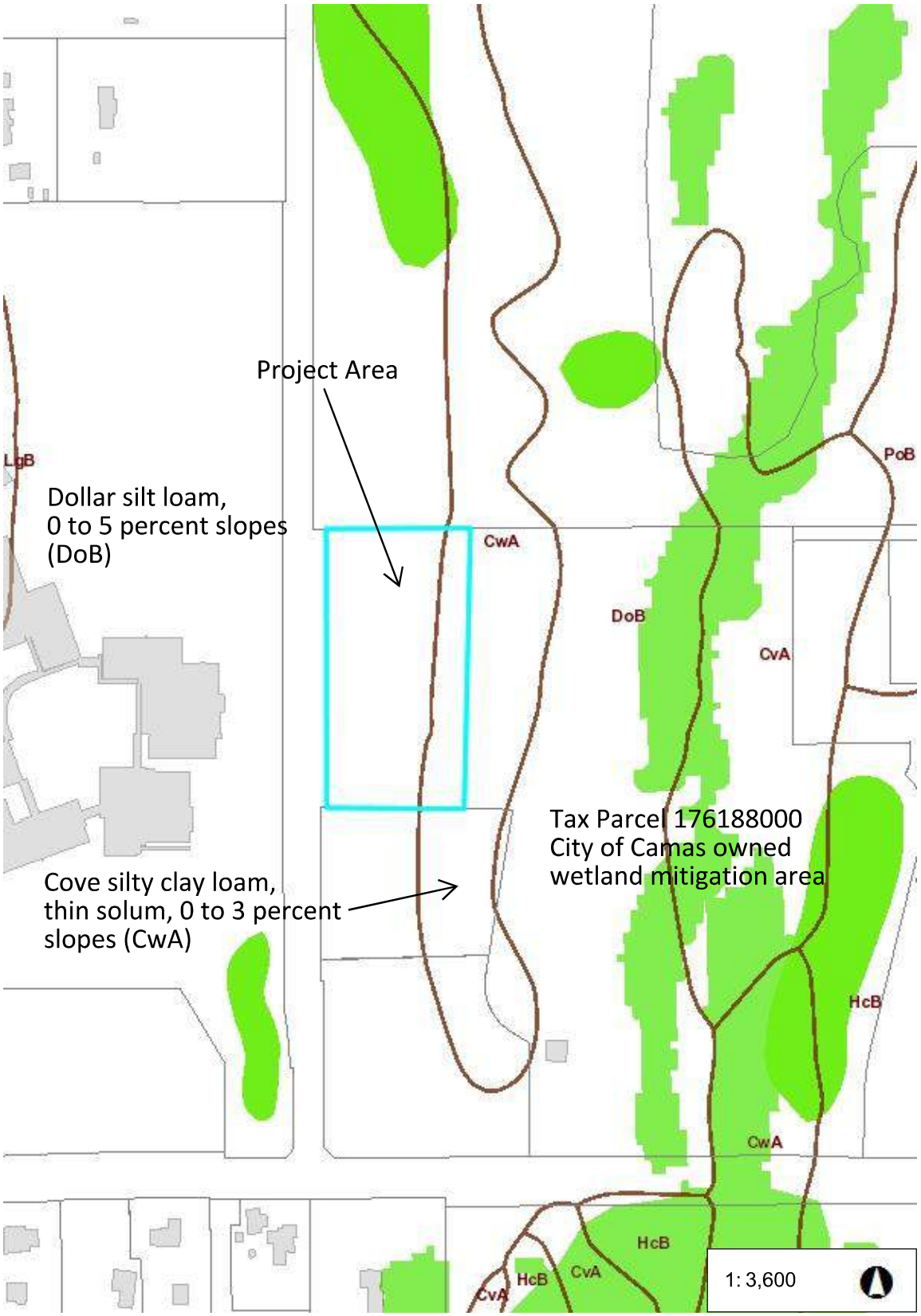
Appendix Sheet B-4 Critical Area Impacts and Mitigation Areas

Appendix Sheet B-5 On-Site Wetland Enhancement Area

Appendix Sheet B-6 Project Area Cross-Section

Appendix Sheet B-7 Delineation of Project Area from City of Camas Property

Appendix Sheet B-1. Wetland Inventory and Soil Mapping
Critical Areas Report and Mitigation Plan
Union Self Storage



Legend

- Building Footprints
- Taxlots
- Soil Type
- Wetlands Presence
- NWI Wetland

Tax Parcel: 176190000
6250 NW Friberg-Strunk Street, Camas, WA 98607

SE 1/4, S29, T2N, R3E of the Willamette Meridian

Lat: 45.62427606 N.
Long: -122.4648812 W

Applicant:

Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

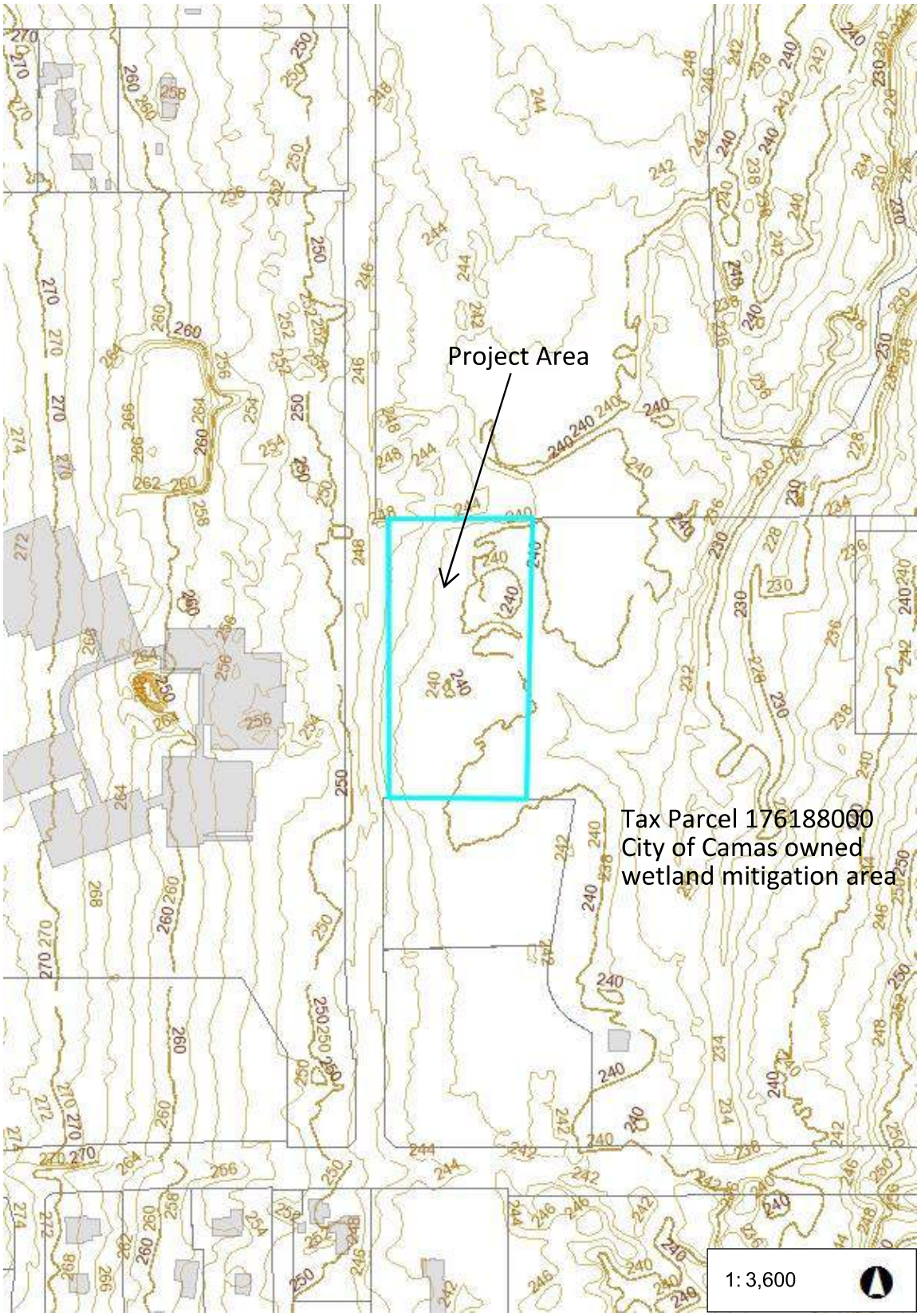
Revised Date: 11/6/17

CASCADIA
ECOLOGICAL SERVICES, INC.

600.0 0 300.00 600.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - http://gis.clark.wa.gov

Appendix Sheet B-2. Site Topographic Contours
Critical Areas Report and Mitigation Plan
Union Self Storage



Legend

- Building Footprints
- Taxlots
- Contour Lines - 2 ft
- Contour Lines - 10 ft
- Contour Lines - 200 ft

Tax Parcel: 176190000
6250 NW Friberg-Strunk Street, Camas, WA 98607

SE 1/4, S29, T2N, R3E of the Willamette Meridian

Lat: 45.62427606 N.
Long: -122.4648812 W

Applicant:

Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Revised Date: 11/6/17

CASCADIA ECOLOGICAL SERVICES, INC.

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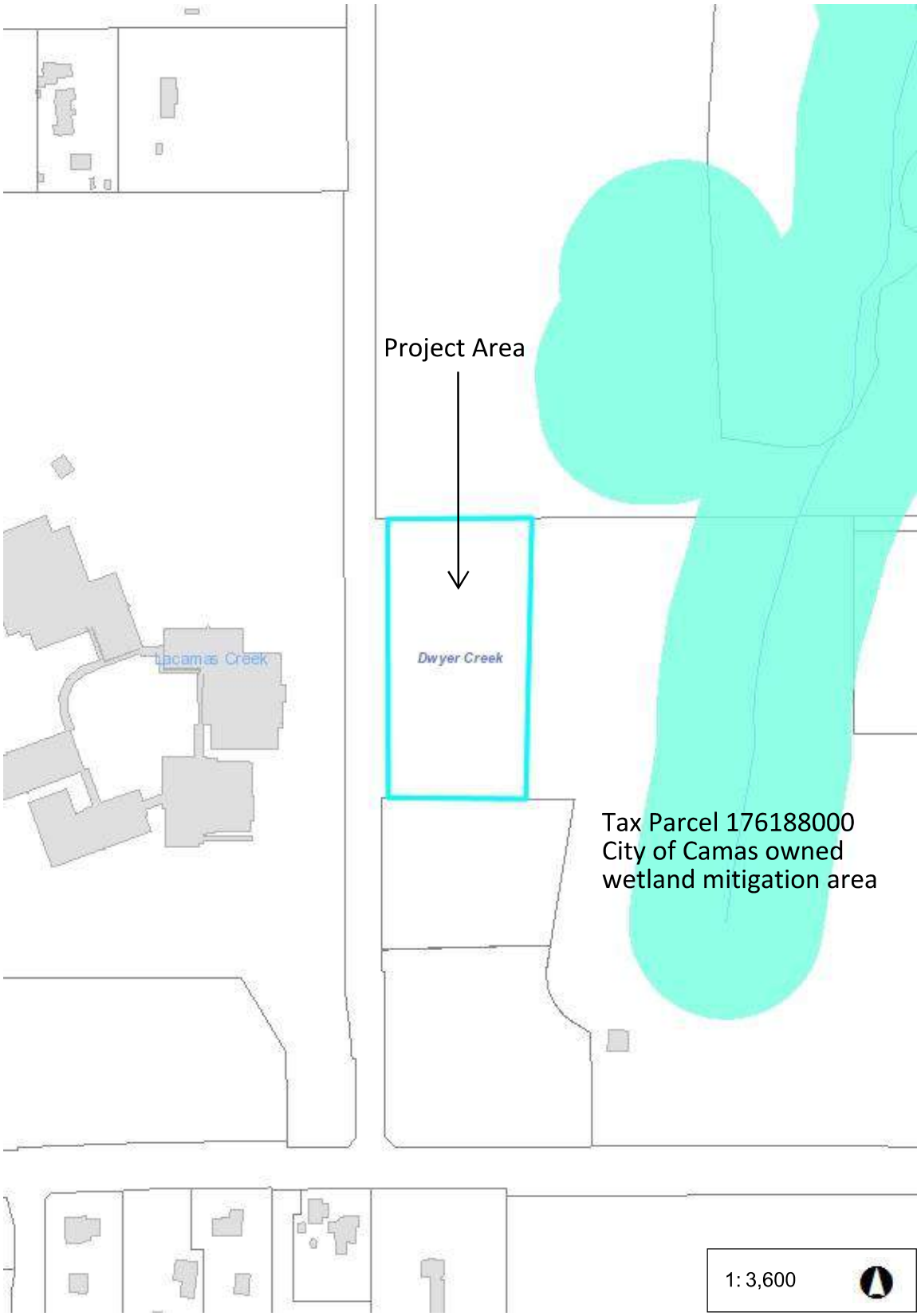
Clark County, WA. GIS - http://gis.clark.wa.gov

Appendix Sheet B-3. Clark County GIS Mapped PHS Areas
Critical Areas Report and Mitigation Plan
Union Self Storage



Legend

- Priority Habitat Buffer
- Priority Species Buffer
- Priority Habitat and Species Ar
  - Non-riparian Habitat Conservation A
  - Species Areas
  - Riparian Habitat Conservation Area
- Stream - DNR
- Lake - DNR
- Watershed
- Sub-Watershed
- Catchment
- Building Footprints
- Taxlots

Tax Parcel: 176190000
6250 NW Friberg-Strunk Street, Camas, WA 98607

SE 1/4, S29, T2N, R3E of the Willamette Meridian

Lat: 45.62427606 N.
Long: -122.4648812 W

Applicant:

Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Revised Date: 11/6/17

1: 3,600

CASCADIA ECOLOGICAL SERVICES, INC.

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Clark County, WA. GIS - http://gis.clark.wa.gov

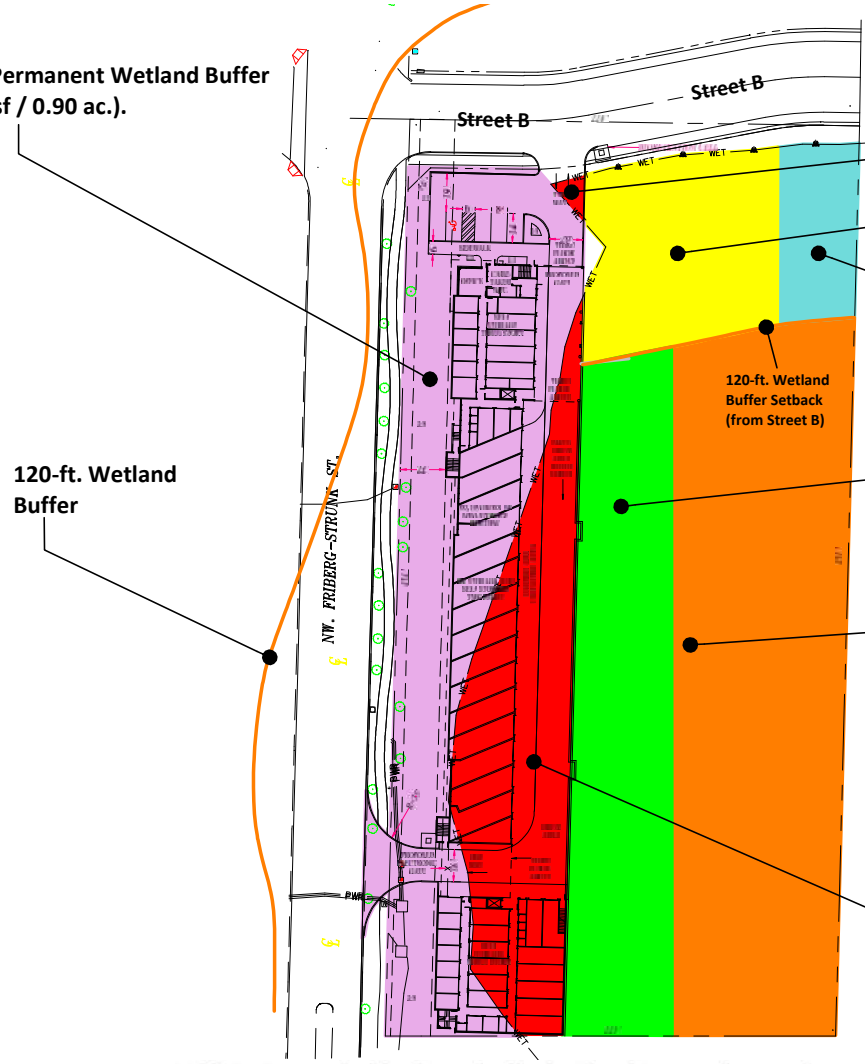

Table 3. Proposed mitigation ratios for the City of Camas using permittee responsible mitigation.

Wetland	Category	Impact Area (acre)		Mitigation Proposed	Required Ratio		Mitigation		Area over/under (+/-) (acre)	Bank Credits Required (under/ratio)
		Direct	Indirect		Direct	Indirect	Required Onsite (acre)	Provided Onsite (acre)		
A	III	0.49 [a]		Enhancement	8:1		3.92	1.07 [b]	-2.85	0.36
A	III		0.90 [c]	Enhancement		1:1	0.90	0.90 [c]	0.0	NA

a. Direct wetland impacts on project area (Impact areas #2 & 3; Appendix Sheet B-4)
b. On-Site mitigation for direct wetland impacts (Mitigation Area #3; Appendix Sheet B-4)
c. On-Site mitigation for permanent wetland buffer impacts of 0.90 acres (Mitigation areas #1 & #2; Appendix Sheet B-4)

Table 4. Proposed mitigation ratios for Corps and Ecology using permittee responsible mitigation.

Wetland	Category	Impact Area (acre)		Mitigation Proposed	Required Ratio		Mitigation		Area over/under (+/-) (acre)	Bank Credits Required (under/ratio)
		Direct	Indirect		Direct	Indirect	Required Onsite (acre)	Provided Onsite (acre)		
A	III	0.49 [a]		Enhancement	8:1		3.92	1.07 [b]	-2.85	0.36
A	III		0.90	Enhancement		1:1	0.90	0.90 [c]	0.0	NA

a. Direct wetland impacts on project area (Impact areas #2 & 3; Appendix Sheet B-4)
b. On-Site mitigation for direct wetland impacts (Mitigation Area #3; Appendix Sheet B-4)
c. On-Site mitigation for indirect wetland buffer impacts of 0.90 acres (Mitigation areas #1 & #2; Appendix Sheet B-4)

Drawn by: J. Barnes

CASCADIA ECOLOGICAL SERVICES, INC

Appendix Sheet B-4
Critical Area Impacts and Mitigation Areas

Location: 6250 NW Friberg-Strunk Street, Camas, Washington
Tax Parcel: 176190000
Legal: SE 1/4, S29, T2N, R3E of the Willamette Meridian
45.62427606544913 N. lat. / -122.464881239858 W long.
County: Clark

Cascadia Ecological Services, Inc.
3015 NW 95th Place, Vancouver, WA 98665
(360) 601-8631
www.cascadia-inc.com

Date: 11/6/17

CLIENT:
Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Graphic Scale
0 60 120
Feet

Mitigation Area 1. Wetland Enhancement Area (City of Camas)
Mitigation Area for Permanent Wetland Buffer Impacts
13,474 sf / 0.30 ac.

Mitigation Area 2. Wetland Enhancement Area
Mitigation Area for Permanent Wetland Buffer Impacts
25,820 sf / 0.59 ac.
(See Note 1)

Table 10. Plant list proposed for Mitigation Areas 1-3 (Wetland Enhancement - 1.96 acres).

Common Name		Scientific Name	Indicator Status	Community Composition	Required Number to be Planted
	Scrub-shrub Wetland Community (PSS)				
Sitka willow		*Salix sitchensis*	FACW	40%	1793
Scouler's willow		*Salix scouleriana*	FAC	40%	1793
Red-osier dogwood		*Cornus sericea*	FACW	8%	358
Twinberry		*Lonicera involucrata*	FAC	5%	224
Nootka rose		*Rosa nutkana*	FAC	7%	314
	Total				**4482**
	Forested Wetland Community (PFO)				
Oregon ash		*Fraxinus latifolia*	FACW	60%	512
Black cottonwood		*Populus balsamifera*	FAC	18%	153
Pacific willow		*Salix lasiandra*	FACW	22%	187
	Total				**852**

Note: Plant density: Trees at 10' on center; shrubs at 4' on center.

Mitigation Area 3. Wetland Enhancement Area (46,839 sf / 1.07 ac.)
Equivalent to 0.13 acres of credit for proposed 0.49 acre direct wetland fill (Cat. 3 mitigation ratio of 8:1)

Drawn by: J. Barnes

CASCADIA ECOLOGICAL SERVICES, INC.

Appendix Sheet B-5
On-Site Wetland Enhancement Area
Critical Areas Report and Mitigation Plan

Location: 6250 NW Friberg-Strunk Street, Camas, Washington
Tax Parcel: 176190000
Legal: SE 1/4, S29, T2N, R3E of the Willamette Meridian
45.62427606544913 N. lat. / -122.464881239858 W long.
County: Clark

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

Date: 11/6/17

CLIENT:
Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Graphic Scale
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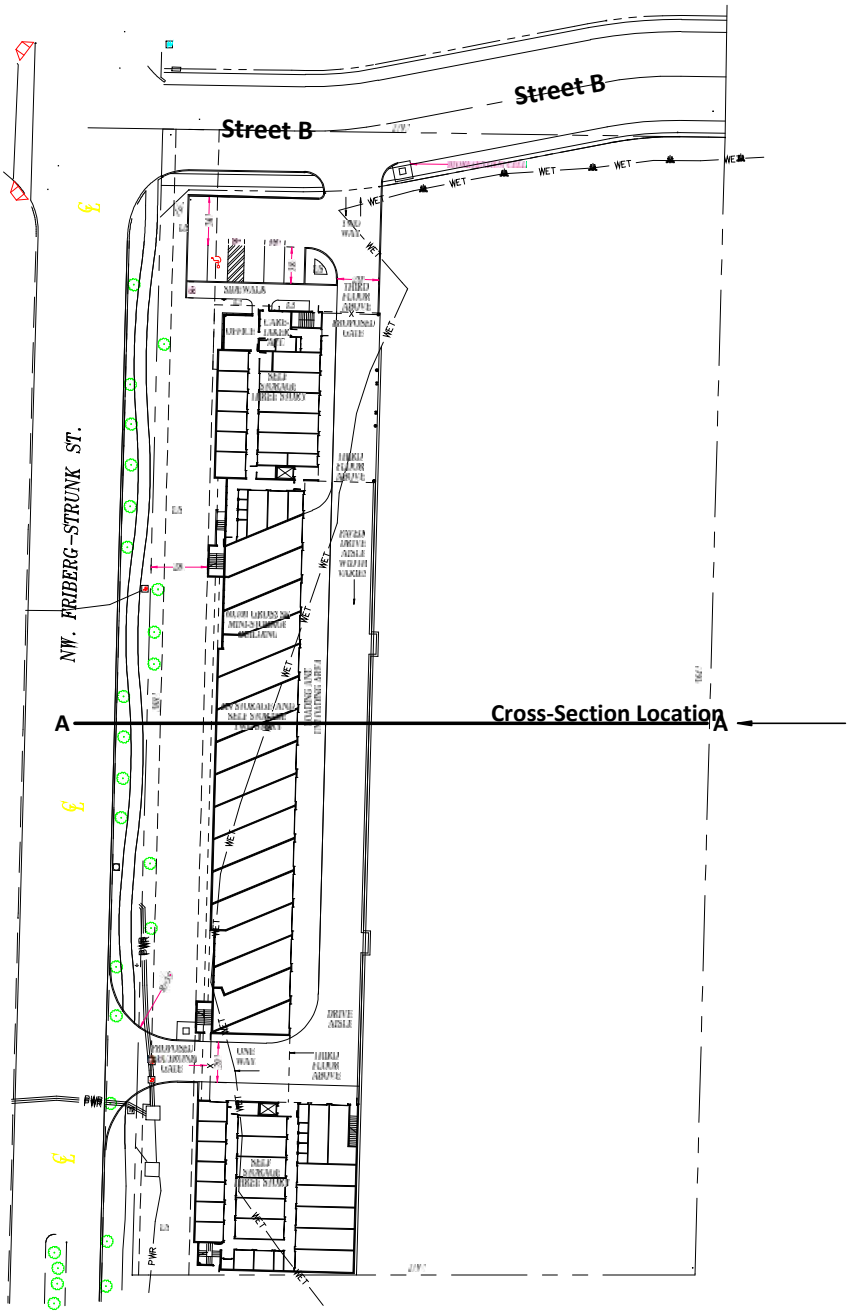
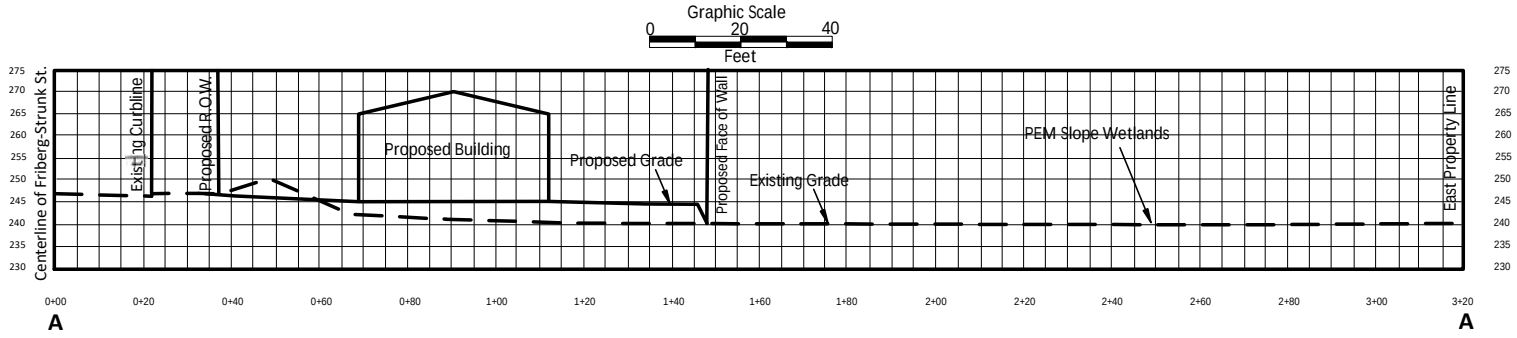
Feet



Cross-Sectional View from Friberg-Strunk Rd. to East Property Line
(Provided by Olson Engineering)



Drawn by: J. Barnes

CASCADIA ECOLOGICAL SERVICES, INC

Appendix Sheet B-6
Project Area Cross-Section
Critical Areas Report and Mitigation Plan

Location: 6250 NW Friberg-Strunk Street, Camas, Washington
Tax Parcel: 176190000
Legal: SE 1/4, S29, T2N, R3E of the Willamette Meridian
45.62427606544913 N. lat. / -122.464881239858 W long.
County: Clark

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

Date: 11/6/17

CLIENT:
Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Graphic Scale
0 60 120
Feet

Drawn by: J. Barnes

CASCADIA ECOLOGICAL SERVICES, INC.

Appendix Sheet B-7
Delineation of Project Area from City of Camas Property
Critical Areas Report and Mitigation Plan

Location: 6250 NW Friberg-Strunk Street, Camas, Washington
Tax Parcel: 176190000
Legal: SE 1/4, S29, T2N, R3E of the Willamette Meridian
45.62427606544913 N. lat. / -122.464881239858 W long.
County: Clark

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

Date: 11/6/17

CLIENT:
Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Graphic Scale
0 150 300
Feet

Appendix C — Wetland Bank Use Plan

WETLAND BANK USE PLAN

Union Self Storage

6250 NW Friberg-Strunk Street
Camas, Washington

Prepared by:

Cascadia Ecological Services, Inc.
3015 NW 95th Place
Vancouver, WA 98665
(360) 601-8631

Applicant:

Union Storage, LLC
23801 NE 43rd Court
Ridgefield, WA 98642
(360) 787-3465

Project Engineer:

Olson Engineering
222 E Evergreen Blvd.
Vancouver, WA 98660
(360) 695-1385

Revised Date: November 6, 2017

CASCADIA
ECOLOGICAL SERVICES, INC.

Table 1. Summary of project information, wetland impacts and compensatory mitigation.

Project	Union Self Storage
Township/Range/Section (impact)	SE 1/4, S29, T2N, R3E of the Willamette Meridian
Permanent Wetland Impact	0.49 acres (Category 3)
Indirect Wetland Impact	0.90 acres (Category 3)
Mitigation Location	SE 1/4, S29, T2N, R3E of the Willamette Meridian (On-Site); Section 17, and a portion of Section 20, Township 2N, Range 1E, Willamette Meridian (Wetland Bank)
Area & Type of Mitigation	**On-Site** - Wetland Enhancement (1.97 acres); compensates for all permanent wetland buffer impacts, indirect wetland impacts, and 0.13 acres of direct wetland impacts on-site **Off-Site** - Wetland Mitigation Bank Credits for 0.36 acres of direct wetland impacts
Total Area of Mitigation	1.97 acres (on-site) - Wetland Enhancement
Years of Monitoring	10 Years (On-Site wetland enhancement only)

Table of Contents

Tables

Appendices

1. *Project Location and Description*

The project is located at 6250 NW Friberg-Strunk Street in Camas, Washington (Figure 1). Specific project location characteristics area as follows:

- Tax Parcel 176190000
- SE 1/4, S29, T2N, R3E of the Willamette Meridian
- Latitude/Longitude: 45.6242372 N, -122.46170377 W
- Water Resource Inventory Area (WRIA) 28
- Salmon/Washougal Watershed

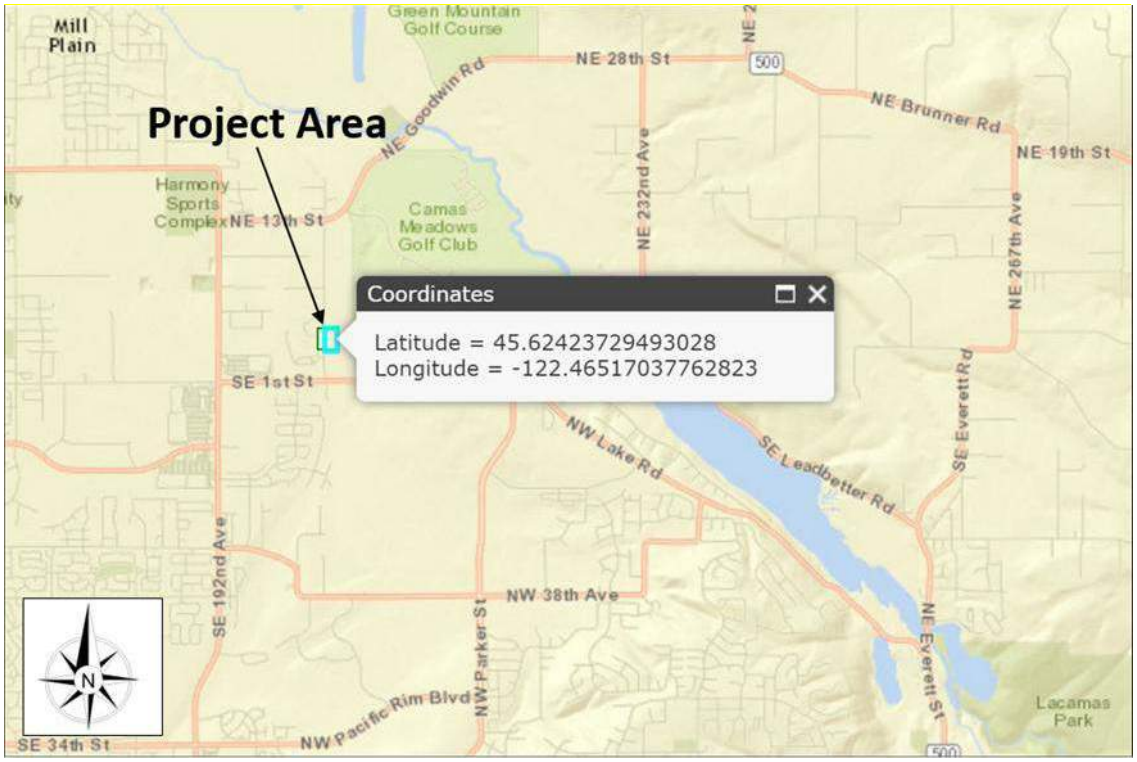


Figure 1. Project Vicinity Map.

Wetland impacts are associated with the construction of mini storage facility, associated infrastructure, and roads.

2. *Existing Conditions of Wetlands and Buffers*

Details regarding the Category 3 slope wetlands can be found in the project Critical Areas Report Revision dated November 6, 2017 (Barnes, 2017).

The project area contains one wetland area which is labelled as Wetland A in the wetland delineation and assessment report. The wetlands are classified as slope according to the

Washington Department of Ecology Western Washington Wetland Rating System (Hruby, 2004).

The wetlands are providing mainly water quality and hydrologic functions as the habitat value is limited. This is due mainly to the lack of woody vegetation in the wetlands. The areas surrounding the on-site wetlands consist mainly of grassland.

Wetlands were classified using:

- USFWS system (Cowardin et al. 1979)
- Hydrogeomorphic Classification system (Brinson 1993)
- *Washington State Wetlands Rating System for Western Washington* (Hruby 2004)

3. Avoidance and Minimization of Wetland Impacts

The project site is zoned for commercial uses and is almost completely covered with wetlands and buffers leaving little to no developable area or reasonable economic use of the property. Reasonable efforts have been made during the design phase to both avoid, reduce, and mitigate impacts to the critical areas. In order to avoid or reduce wetland impacts on this site, alternate site plan designs were implemented for this property. A typical site plan for a mini-storage building on a similar unencumbered site would be a series of one-story buildings connected by internal drive aisles. In order to reduce wetland impacts on this site, the applicant is proposing a multi-story storage building. By increasing the height of the building vertically, the footprint was reduced horizontally to reduce wetland impacts.

The site plan was also configured to concentrate development on the western portion of the site with the majority of the eastern portion of the site to remain as open space/wetland area. This limits the proposed direct impacts to onsite wetland areas to less than half an acre as shown on the project plans.

In addition to the steps that were taken to avoid and minimize impacts, mitigation in the form of onsite wetland enhancement and the purchase of mitigation bank credits as described in this report is proposed for the unavoidable wetland impacts associated with this project.

4. Unavoidable Wetland Impact Acreage and Mitigation Calculations

The construction of the proposed mini storage facility will result in unavoidable permanent direct Category 3 slope wetland impacts of 0.49 acres in the west half of the property. Indirect Category 3 slope wetland impacts of 0.11 acres will result from the required extension of Street B along the north side of the project site. The wetlands are regulated by the USACE, Ecology, and the City of Camas.

City of Camas Mitigation Requirements

Per CMC Section 16.51.160, mitigation should be in-kind and on-site, when possible, and sufficient to maintain the functions and values of the critical area, and to prevent risk from a

hazard posed by a critical area. The direct wetland impacts and permanent wetland buffer impacts will be mitigated on-site through enhancement of the existing Category 3 wetlands with native shrubs and trees. Because the area available on-site for wetland enhancement is not large enough to fully compensate for the wetland and buffer impacts, the remaining mitigation will be compensated for through the purchase of wetland bank credits.

Ecology/Corps of Engineers Mitigation Requirements

In addition to the direct wetland impacts of 0.49 acres, the extension of Street B will result in indirect wetland impacts. Street B is to be sited within the 120-ft. wetland buffer near the north boundary of the wetlands to the east of the project area. The road will effectively eliminate the wetland buffer in this area. Therefore, the wetland buffer will extend 120-ft. south of the proposed Street B into the wetland area. This is classified as an indirect wetland impact by Ecology and the Corps. The City of Camas does not require mitigation for indirect wetland impacts in its code.

Wetland mitigation is calculated as follows for this project for the purposes of Ecology and the Corps (see Appendix Sheet B-1):

Table 3. Proposed on-site wetland enhancement for indirect wetland buffer impacts (acres).

Permanent Wetland Buffer Impacts		Mitigation Type	
Ecology/Corps Wetland Category	**Area (acres)**	**Ratio**	Total Wetland Enhancement Area (Acres)
Category 3 Direct	0.90	1:1	0.90 (Mitigation Areas 1 & 2)
Total	**0.90**		**0.90**

Table 4. Proposed on-site wetland enhancement for direct wetland impacts (acres).

Permanent Wetland Impacts		Mitigation Type	
Ecology/Corps Wetland Category	**Area (acres)**	**Ratio**	Total Wetland Enhancement Area (Acres)
Category 3 Direct	0.49	8:1	1.07 (Mitigation Area 3)
Total	**0.49**		**1.07**

Table 5. Proposed wetland bank credit purchase for on-site mitigation deficit.

Permanent Wetland Impacts		Mitigation Type	
Ecology/Corps Wetland Category	**Area (acres)**	**Ratio**	Terrace Wetland Mitigation Bank
Category 3 Direct	0.36	1:1	0.36 Wetland Credits
Total	**0.36**		**0.36**

A total of 0.36 wetland bank credits will be purchased from the Terrace Wetland Mitigation Bank (TWMB). These credits will offset the remaining direct Category 3 wetland impact of 0.36 acres Table 5.

5. Impacted Wetland Functions

Functions that were considered the most relevant to this project are grouped into three categories: habitat, water quality, and hydrologic support. Habitat functions include providing avian species, amphibians, and other wildlife species access to food, cover, and breeding and rearing opportunities. Hydrologic functions assessed include groundwater recharge/discharge, base flow support, and flood flow alteration. Water quality functions include protection and enhancement through sedimentation, erosion protection, and nutrient retention/nutrient transformation. Table 6 lists the appropriate functions/values of the wetlands which will be impacted by this project.

Table 6. Wetland Functions/Values Impacted by Project.

Function/Value[a]	Wetland
	A
Flood Flow Alteration	+
Sediment Removal	+
Nutrient and Toxicant Removal	+
Erosion Control & Shoreline Stabilization	+
Production & Export of Organic Matter	+
General Habitat Suitability	+
Habitat for Aquatic Invertebrates	+
Habitat for Amphibians	+
Habitat for Wetland-Associated Mammals	+
Habitat for Wetland-Associated Birds	+
General Fish Habitat	+
Native Plant Richness	+
Educational or Scientific Value	X
Uniqueness and Heritage	X

a "-" means that the function is not present; "X" means that the function is present and is of low quality; and "+" means the function is present and is of high quality.

6. Wetland Mitigation Site Selection Rationale

Compensatory mitigation requirements for the Union Self Storage are intended to replace the permanent loss of aquatic resource functions caused by the project's construction activities. Part of the wetland mitigation strategy is to enhance the remaining on-site wetlands as per the City of Camas Municipal Code Section 16.51.160. Wetland impacts that cannot be mitigated on-site will be mitigated through the purchase of wetland bank credits in the TWMB.

The service area of the bank includes all plains and terraces, nearly level to gently sloping, within the Terrace hydrogeologic Unit as described in the Washington Department of Ecology's 2009 Watershed Characterization of Clark County and that also encompasses the somewhat excessively drained to very poorly drained soils of bottom lands and terraces within Water Resource Inventory Area (WRIA) 28. The service area includes the Lacamas, Salmon Creek, Lakeshore, and Burnt Bridge Creek Watersheds, and their associated subwatersheds, with the exception of the Mill Creek Subwatershed within the Salmon Creek Watershed, which is excluded from the boundaries of the service area (Terrace Mitigation Bank, 2017).

The TWMB is located within the northwest quarter of Section 13 and the northeast quarter of Section 14, in Township 2 North, Range 2 East of the Willamette Meridian. The situs address of the Bank is 5721 NE 152nd Avenue, Vancouver, Washington which is the management representative of the TWMB. The project is located within the service area (Water Resource Inventory Area 28) for the TWMB.

The principle ecological objectives of this mitigation bank are as follows:

- Re-establishing hydrology through the disabling of the drain tiles throughout the site;
- Establishing a native historic forested, scrub-shrub, and emergent wetland plant community in re-established and rehabilitated wetland areas;
- Enhancing a native upland scrub-shrub plant community in the upland buffer area within the BPA easement;
- Reshaping of incised stream banks to reconnect the stream to its floodplain and existing wetlands;
- Enhancing the riparian area along Burnt Bridge Creek by removing invasive species and planting native trees and shrubs to increase shading and lower water temperatures, and provide improved habitat structure and diversity;
- Removing an existing culvert crossing at the west property boundary to improve stream flow, and;
- Removing existing invasive species and preventing the establishment of invasive species throughout the Bank site.

The wetland bank was created to support the restore and rehabilitate approximately 89.15 acres of selfsustaining, diverse forest, scrub-shrub, and emergent wetland habitat, encompassing as many pre-agricultural features as possible. The approximate 89.15-acre wetland area will be planted to provide 43.24 acres of forested/scrub-shrub, 0.10 acres of

scrub-shrub, and 45.81 acres of emergent wetland classes, with an additional 2.53 acres of open channel enhancement.

As of April 2017, the TWMB is approved and certified and is able to transfer wetland credit to permit applicants within the service area (C. Rotschy, pers. comm. April 10, 2017).
The TWMB has met all required performance standards applicable to the project under the terms of the MBI relating to credits released and offered for use to potential permit applicants. Given the size and scope of wetland and critical habitat restoration at the bank, legal and financial protections, guarantees for successful restoration and sustainability, and progress in achieving performance standards to limit temporal loss of wetland function, the TWMB is the most suitable location for the project's compensatory mitigation requirements.

For more information about the bank contact:
Terrace Mitigation Bank, LLC
Cornell Rotschy
Project Manager
9210 NE 62nd Avenue
Vancouver, WA 98665
Phone: (360) 330-3100
Email: cornellr@rotschyinc.com

Confirmation of Mitigation Credit Availability

As of April 10, 2017, the TWMB has approval from the Corps and Ecology to start taking reservations for projects that will require wetland mitigation banking credits during the summer of 2017. Mitigation credits are provided from the bank to an applicant's project using the suggested ratios in the table below, as approved by the USACE and Washington State Department of Ecology:

Table 7. Typical Credit-Debit Ratios.

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2:1
Wetland, Category III	1:1
Wetland, Category IV	.85:1
Critical Area Buffer	Case by case

Proof of the current number of available mitigation credits at the TWMB site can be confirmed by the approving agency(s) through the Interagency Review Team (IRT).

Contact:
Kate Thompson
Shorelands and Environmental Assistance Program
P.O. Box 47600
Olympia, WA 98504
(360) 407-6749
kate.thompson@ecy.wa.gov

Gail Terzi
Regulatory Branch, Seattle District
4735 E Marginal Way S
PO Box C-3755
Seattle, WA 98124
(206) 764-6903
Gail.M.Terzi@usace.army.mil

The TWMB has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the US Army Corps of Engineers and the Washington State Department of Ecology. The site development plan for the TWMB is detailed in the bank's Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies participated in the development of the banking instrument:

- US Army Corps of Engineers, Seattle District
- US Environmental Protection Agency
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Clark County

7. Wetland Functions Provided at Wetland Mitigation Bank

Summary of Wetland functions provided at the TWMB:

Water Quality

The depressional wetlands within the bank site have a medium level of site potential for water quality improvement. The wetland unit consists of depressions with a highly constricted permanently flowing outlet (drain tiles and stream), allowing some pollutants to be retained within the wetland unit, and persistent, ungrazed plant species cover over less than 1/10 of the wetland unit that can function to filter out pollutants. The wetland area that is seasonally ponded is greater than ¼ of the total area of the wetland. The wetland's landscape potential is also medium due to more than 10 percent of the surrounding area consisting of residential,

commercial, and urban land use. The wetland unit has a medium level of water quality improvement that is valuable to society as it is in a subbasin where water quality is an issue in some types of aquatic resource (wetland unit is in the same sub-basin as Burnt Bridge Creek, which is on the 303d list). The resulting overall score for the wetland unit improving water quality functions is medium (6 points).

Hydrologic

The depressional wetlands within the bank site have a medium level of potential to reduce flooding and erosion, as the wetland unit consists of depressions with a highly constricted permanently flowing outlet (drain tiles and stream), provide less than 0.5 feet of flood storage during wet periods, and the area of the contributing basin is 100 times the area of the wetland unit. These characteristics reduce flooding (depressions, flood storage) and peak flows (area of contributing basin). The wetlands have a medium level of landscape potential to support hydrologic functions at the site, due to more than 10 percent of the surrounding area consisting of residential, commercial, and urban land use, and more than 25 percent of the contributing basin of the wetland unit being covered with intensive human land uses. The wetlands have a medium level of hydrologic function that is valuable to society, as the wetlands capture surface water that would otherwise flow down gradient of the unit. The resulting overall score for the wetland improving hydrologic function is lower medium (5 points).

Habitat

The analysis of habitat functions provided within the depressional wetlands yielded a low score for the site's potential for habitat, reflecting the low level of habitat interspersion, and a lack of special habitat features (large, downed woody debris, standing snags, and less than 25 percent cover of invasive plants). The potential for the landscape to support habitat is rated as medium, as within 1 kilometer (km) of the wetland unit there is 20 to 33 percent of accessible habitat that abuts the unit, there is 10 to 50 percent of undisturbed habitat within 1 kilometer (km) of the wetland unit. For the Category IV wetlands, over 50 percent of the area within 1 km of the unit is in high intensity land use, with the Category III wetlands having less than 50 percent of the area within 1 km of the unit in high intensity land use. For all wetlands, the wetland unit provides a low amount of habitat that is valuable to society, as the site does not provide habitat for species that is valued in laws, regulations, or policies within 330 feet of the wetlands. The resulting overall score for habitat functions is lower medium for Category III wetlands (5 points) and moderately low for Category IV wetlands (4 points).

Anticipated Functional Lift

The bank site will re-establish high quality wetlands and associated wildlife habitat where there is currently a mostly barren, drained agricultural field, providing for significant overall functional lift. Wetlands onsite are expected to be rated as Category I wetlands postconstruction (20 years following final mitigation site work and plantings, in contrast to the

majority of onsite wetlands which are currently considered Category IV wetlands. The overall functional lift (an increase of 7 to 8 wetland rating points) provided by the post-construction wetlands is reflected in the change (lift) in wetland rating score from the baseline conditions of the four existing Category III, and fourteen Category IV wetlands with the post-construction wetlands scoring 23 points (Category I wetland), and the existing wetlands scoring 15 or 16 total points (Category IV or Category III wetland). The bank site location within the landscape and overall design will provide a significant ecological benefit not only to the immediate, surrounding area, but throughout many portions of the watershed. The post-construction Bank site will consist of a forested, scrub-shrub, and emergent depressional flow-through wetland system that contain the headwaters of a perennial stream. As a whole, the Bank site will provide a variety of water regimes, vegetation interspersion, and habitat features which will provide diverse habitat opportunity for wildlife. The re-established wetlands will also increase flood storage, improve water quality, help prevent downstream erosion, recharge groundwater to supplement low summer flows, and keep summer water temperatures cooler, similar to pre-agricultural conditions.

Monitoring and Reporting

During the establishment period, the Bank Sponsor shall monitor and report on the progress of the Bank toward achieving the goals, objectives, and performance standards established by Appendix F of the MBI and take all actions directed by the Corps and/or Ecology, following consultation with the IRT, to remediate any consideration that prevents a component of the Bank from achieving the goals, objectives and performance standards of the Bank. Procedures for as-built reports, monitoring reports and remedial actions are described in Appendix F of the MBI.

8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

The TWMB provides all the anticipated wetland functions that will be lost due to permanent impacts from the Union Self Storage Project.

9. Proposed Mitigation Credits

The TWMB will provide 0.36 credits under this Bank Use Plan. Mitigation is provided at the ratios shown in Table 8 below for the projects mitigation requirements.

Table 8. Mitigation Bank Credits Proposed for Use by Impact Project**.**

Wetland Impacts		**Wetland Mitigation Bank**	
Corps/Ecology Wetland Category	**Area (acres)**	**Ratio**	Total Mitigation Bank Credits
Category 3 Direct	0.36	1:1	0.36
Total	**0.36**		**0.36**

10. Credit Purchase or Transfer Timing

The applicant will enter into a Purchase Agreement with the representative of the TWMB, for 0.36 mitigation credits that would appropriately mitigate for the project wetland impacts. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

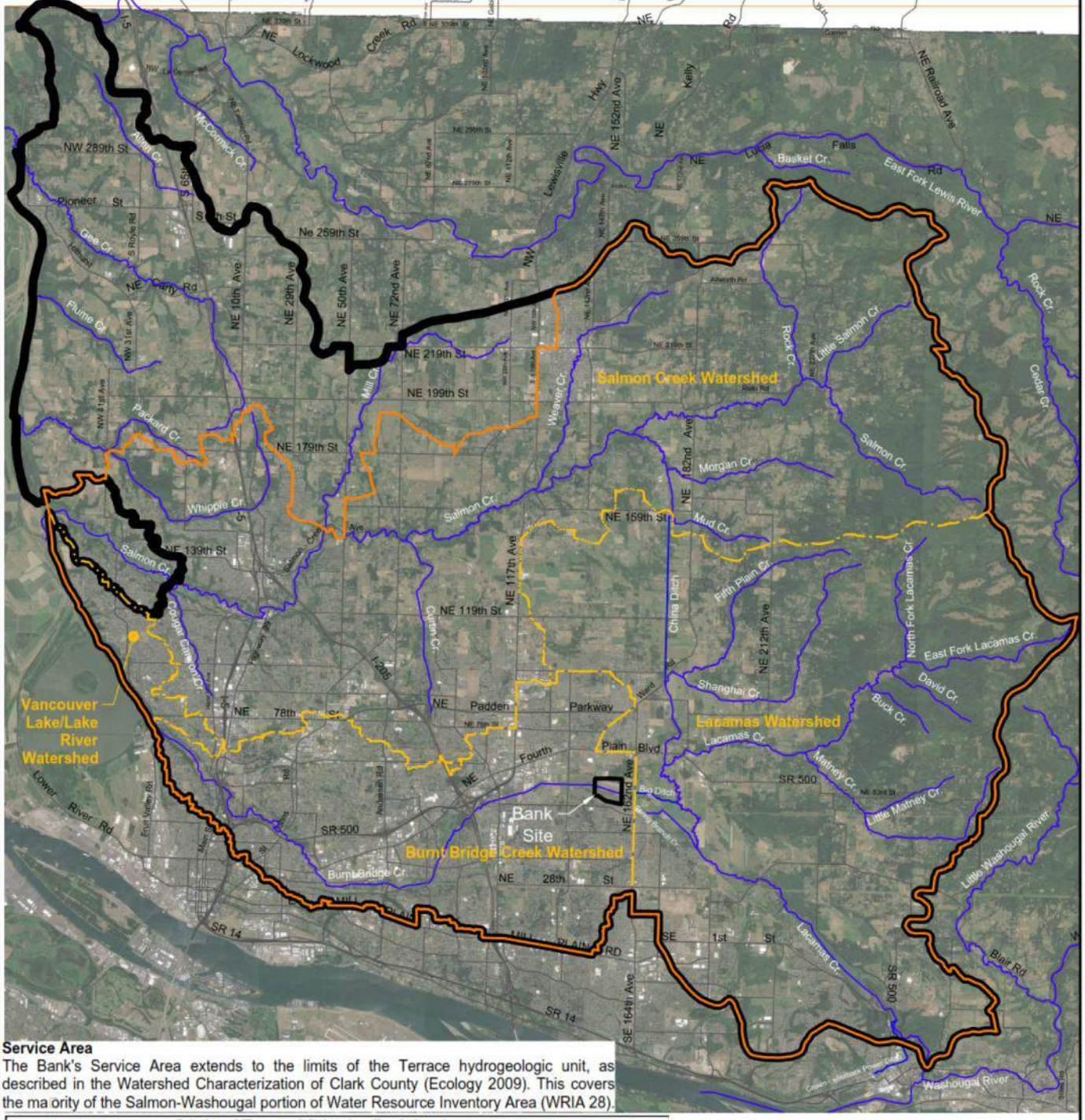
Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.

11. References

Barnes, J. (2017). *Union Self Storage Critical Areas Report (November 6, 2017 Revision).* Vancouver: Cascadia Ecological Services, Inc.

Terrace Mitigation Bank, L. (2017). *Terrace Mitigation Bank Mitigation Banking Instrument.* Vancouver: Terrace Mitigation Bank, LLC.

Appendix A (Wetland Bank Use Plan) — Terrace Mitigation Bank Service Area



Service Area

The Bank's Service Area extends to the limits of the Terrace hydrogeologic unit, as described in the Watershed Characterization of Clark County (Ecology 2009). This covers the ma ority of the Salmon-Washougal portion of Water Resource Inventory Area (WRIA 28).

Limits of Terrace Mitigation Bank Service Area	
Northern Limits	Salmon Creek RM 0.60 and 8.96; Upper Whipple Creek, Woodin Creek, and Rock Creek Subwatersheds
Western Limits	Lakeshore and Lower Burnt Bridge Creek Subwatersheds
Southern Limits	Middle Burnt Bridge Creek, Burton Sink, Dwyer Creek, and Lacamas Lake Subwatersheds
Eastern Limits	Matney Creek, Upper Lacamas, and Salmon Creek RM 22.20
Watersheds that are wholly (Lacamas/Burnt Bridge Creek) or partially (Salmon Creek/Vancouver Lake/Lake River) encompassed within the Service Area	**Sub-watersheds in Service Area**
Lacamas	China Ditch, Lower Fifth Plain, Upper Fifth Plain Creek, Shanghai Creek, Upper Lacamas Creek, Lower Lacamas Creek, Matney Creek, Dwyer Creek, and Lacamas Lake
Burnt Bridge Creek	Lower Burnt Bridge Creek, Middle Burnt Bridge Creek, Upper Burnt Bridge Creek, and Burton Sink
Salmon Creek	Salmon Creek RM 0.60, 3.83, 8.96, 14.66, and 22.20; Cougar Creek, Curtin Creek, Woodin Creek, Morgan Creek, Rock Creek, and Upper Whipple Creek
Vancouver Lake/Lake River	Lakeshore

LEGEND:

- Service Area
- Watershed Boundary
- Terrace Hydrogeologic Unit
- Roads
- Streams

NOTES: Aerial photo from Google Earth™. Subwatershed boundaries from Clark County GIS Department.

N W E S

0 2 4

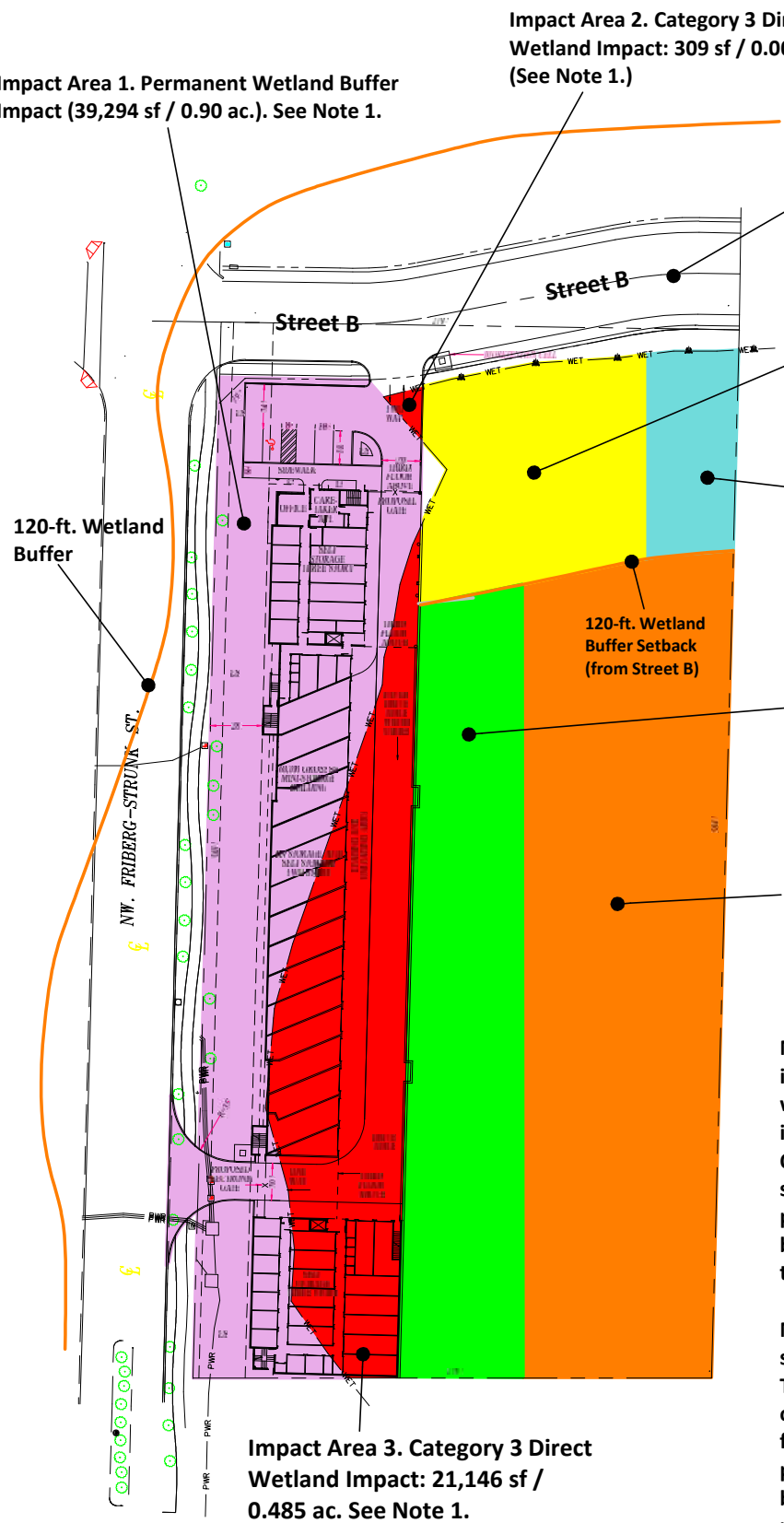
SCALE IN MILES
1 INCH = 2 MILES

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305
www.eco-land.com

DATE: 2/17/17
DWN: JKJ
REQ. BY: KB
PRJ. MGR: KB
CHK:
PROJECT NO: 1382.02

Figure E-1
TERRACE MITIGATION BANK SERVICE AREA
Terrace Mitigation Bank
Rotschy, Inc.
City of Vancouver, Clark County, Washington
Section 11, 12, 13, & 14, Township 2N, Range 2E, W.M.

Appendix B (Wetland Bank Use Plan) — Critical Area Impacts and On-Site Mitigation Areas



Note 1. Mitigation for permanent wetland buffer and wetland impacts to consist of on-site wetland enhancement within mitigation areas 1 and 2 to meet the requirements for in-kind and on-site mitigation per CMC Section 16.51.160. On-site areas proposed for wetland enhancement do not fully satisfy the overall required mitigation needed for both the permanent wetland buffer impacts and direct wetland impacts by 0.36 acres. Therefore, the remaining deficit will be satisfied through the purchase of wetland mitigation bank credits.

Note 2. Ecology and Corps require a 120-ft buffer extending south from the wetland boundary south adjacent to Street B. This area is considered an indirect wetland impact. The City of Camas does not have this requirement or require mitigation for indirect wetland impacts. Because this area will be enhanced per CMC Section 16.51.160 to mitigate for permanent wetland buffer impacts, Ecology and the Corps are not requiring additional mitigation for this area.

Drawn by: J. Barnes

CASCADIA ECOLOGICAL SERVICES, INC.

Appendix Sheet B-1
Wetland Bank Use Plan
Critical Area Impacts and On-Site Mitigation Areas

Location: 6250 NW Friberg-Strunk Street, Camas, Washington
Tax Parcel: 176190000
Legal: SE 1/4, S29, T2N, R3E of the Willamette Meridian
45.62427606544913 N. lat. / -122.464881239858 W long.
County: Clark

Cascadia Ecological Services, Inc.
3015 NW 95th Place, Vancouver, WA 98665
(360) 601-8631
www.cascadia-inc.com

Date: 11/6/17

CLIENT:
Union Storage, LLC
200 SE 197th Place
Camas, WA 98607
(360) 600-5532

Graphic Scale
0 60 120
Feet

Appendix D — Ecology Wetland Rating Form

Wetland name or number A (Union Self Storage)

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 6/14/17

Rated by Jim Barnes Trained by Ecology? x Yes ___No Date of training 11/12/13

HGM Class used for rating Slope Wetland has multiple HGM classes? ___Y x N

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

Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY III (based on functions x 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

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

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

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number A

HGM Classification of Wetlands in Western Washington

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Wetland name or number A

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

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

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

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

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

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

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

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

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

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

Wetland name or number A

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less points = 3 Slope is > 1%-2% points = (2) Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0	2
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = (0)	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = (2) Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	2
Total for S 1 Add the points in the boxes above	4

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

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

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

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Salmon Creek Yes = (1) No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list*. Rockwell Creek: Bacteria Yes = (1) No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which unit is found.* Salmon Creek: Bacteria/Turbidity Yes = (2) No = 0	2
Total for S 3 Add the points in the boxes above	4

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

Wetland name or number A

SLOPE WETLANDS

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

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

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

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

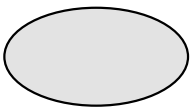
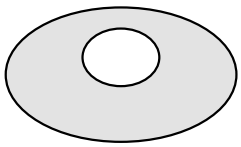
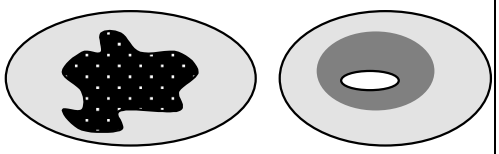
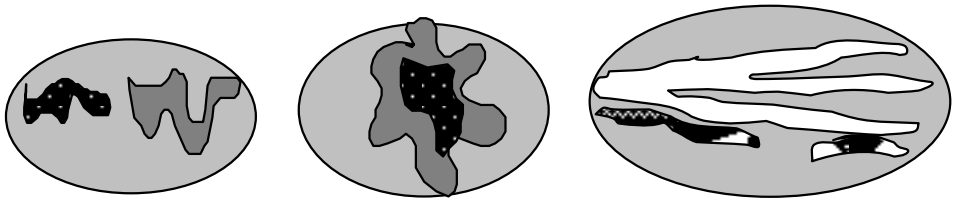
Rating of Landscape Potential If score is: ___ **1 = M** X **0 = L** *Record the rating on the first page*

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

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = (4) ____Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* __X__The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	4
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = (2) ____Occasionally flooded or inundated — 2 types present: points = 1 __X__Saturated only — 1 type present: points = 0 __X__Permanently flowing stream or river in, or adjacent to, the wetland __X__Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	2
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = (1) < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are (**HIGH** = 3points) 	3

Wetland name or number A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). X Standing snags (dbh > 4 in) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) X Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 Add the points in the boxes above	13

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 2 + [(% moderate and low intensity land uses)/2] 6 = 8 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = (0)	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 22 + [(% moderate and low intensity land uses)/2] 19 = 41 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = (1) Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = (0)	0
Total for H 2 Add the points in the boxes above	1

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

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

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

Wetland name or number A

WDFW Priority Habitats

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

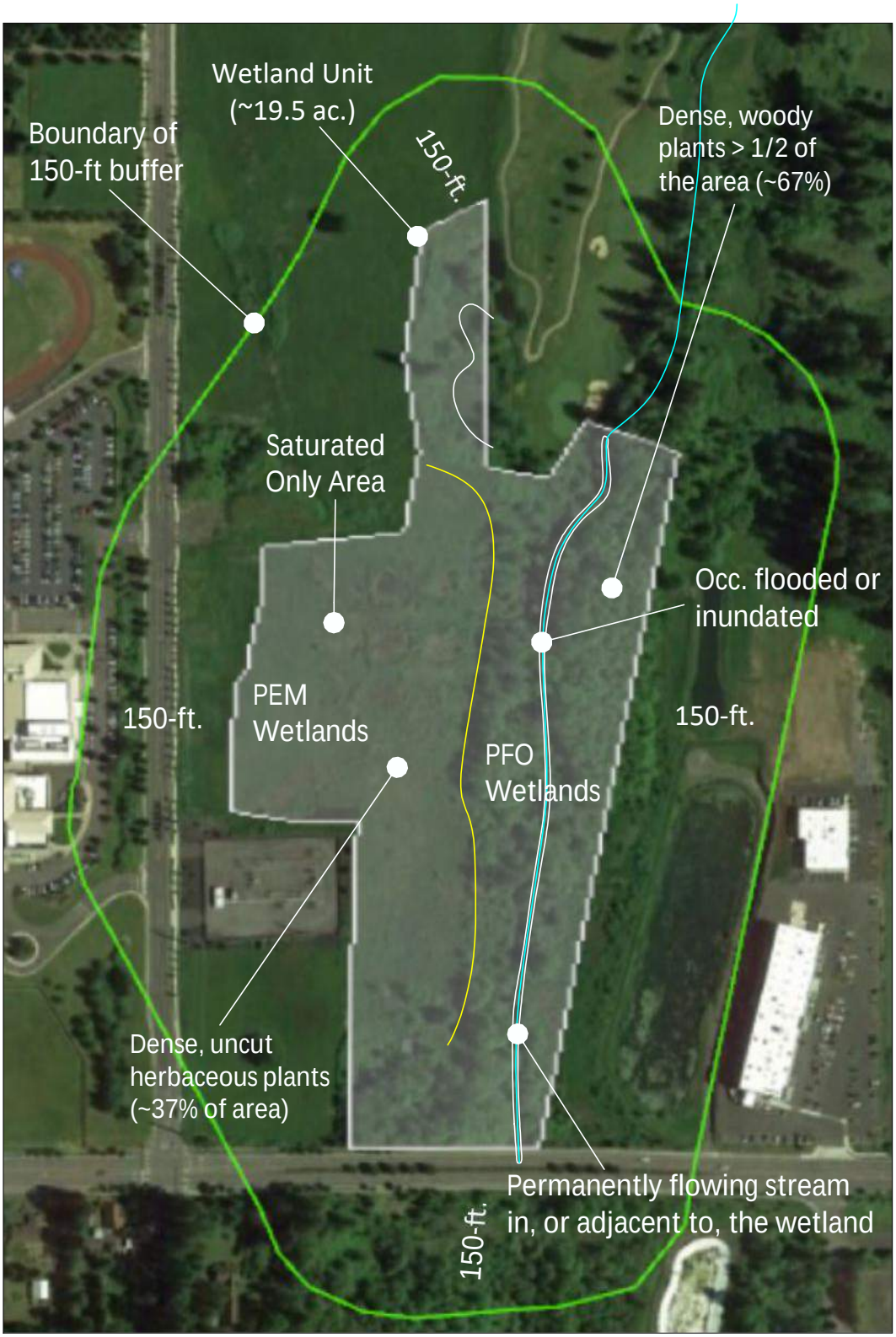
Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** (No=) **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** (No) Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes **= Category I** No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 2.4** No **= Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** (No) Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No) **= Is not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No **= Is not a bog**	**Cat. I**

Wetland name or number A

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** (No) = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** (No) = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** (No) = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	n/a



Graphic Source: Google Earth

CASCADIA ECOLOGICAL SERVICES, INC.

Figure WR-1 - Wetland Rating Form
Project: Union Self Storage

Location: 6250 NW Friberg-Strunk Street, Camas, WA 98607
Tax Parcel: 176190000
Legal: SE 1/4,S29,T2N,R3E of the Willamette Meridian
45.62430386021988 N. lat. / -122.46499837245655 W long.
County: Clark

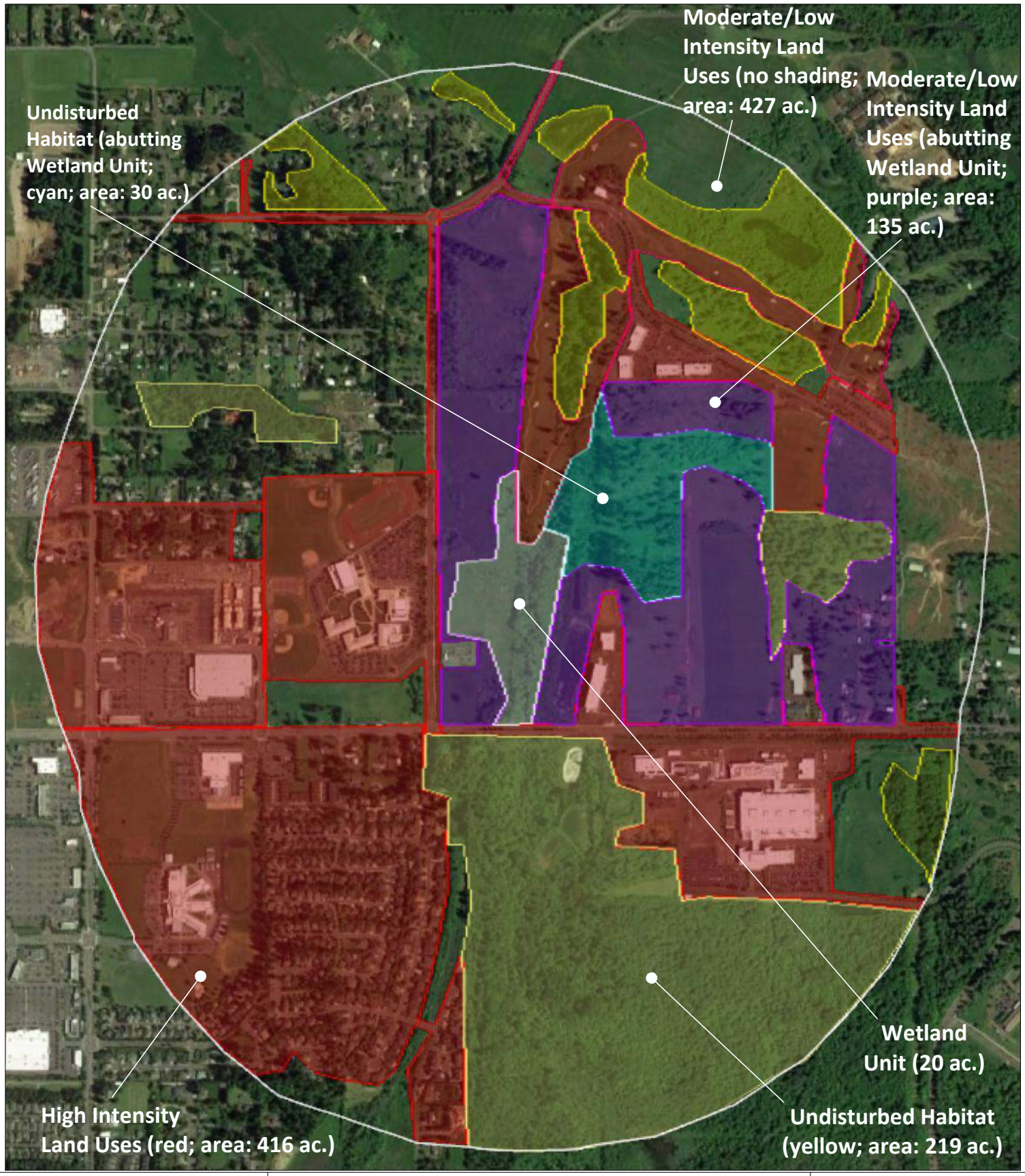
Cascadia Ecological Services, Inc.
3015 NW 95th Place, Vancouver, WA 98665
(360) 601-8631
www.cascadia-inc.com

Date: 10/18/17

CLIENT:
Tom Strassenberg
200 SE 197th Place
Camas, WA 98607

N

0 200 400
Feet



CASCADIA ECOLOGICAL SERVICES, INC.

Figure WR-2 - Wetland Rating Form
Project: Union Self Storage

Location: 6250 NW Friberg-Strunk Street, Camas, WA 98607
Tax Parcel: 176190000
Legal: SE 1/4,S29,T2N,R3E of the Willamette Meridian
45.62430386021988 N. lat. / -122.46499837245655 W long.
County: Clark

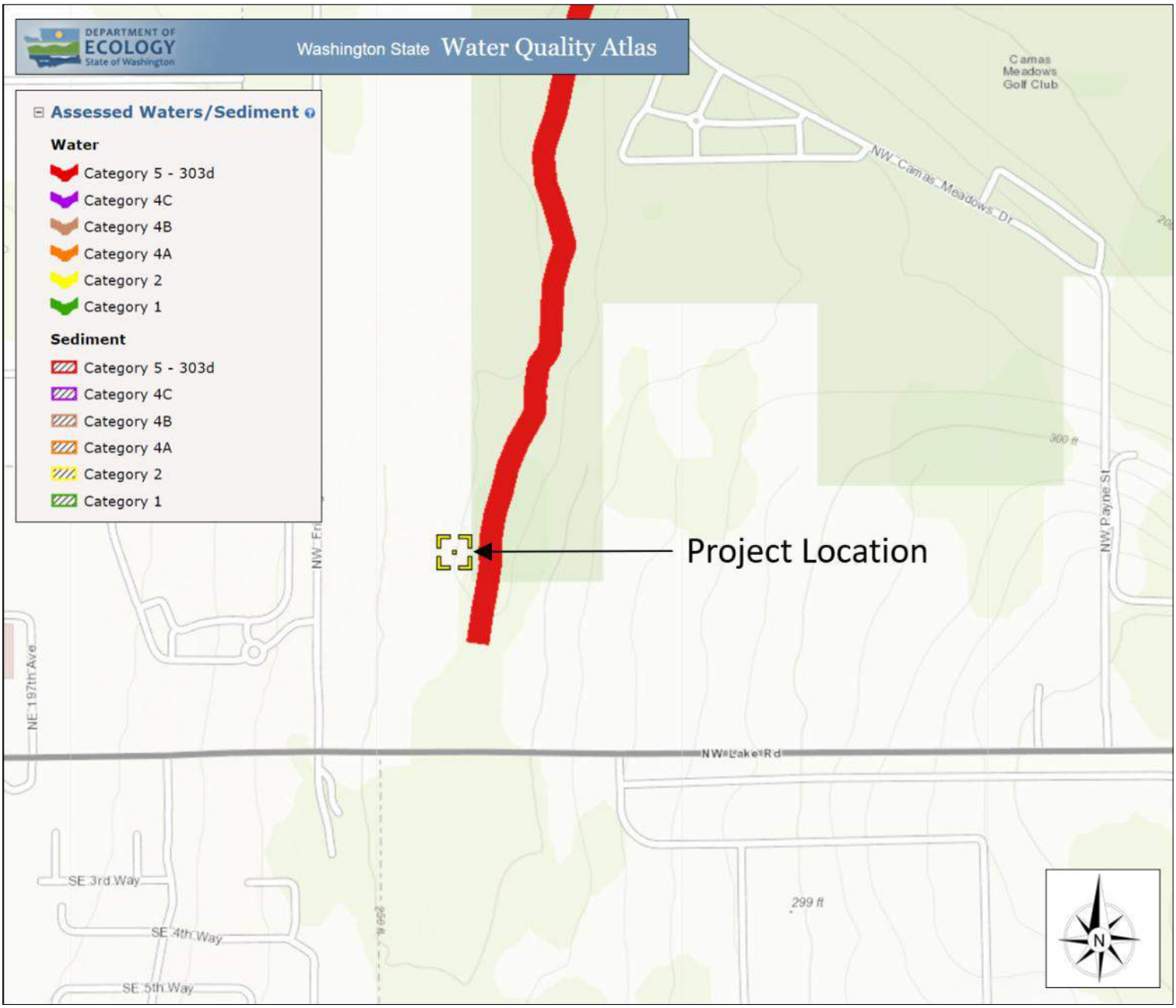
Cascadia Ecological Services, Inc.
3015 NW 95th Place, Vancouver, WA 98665
(360) 601-8631
www.cascadia-inc.com

Date: 10/20/17

CLIENT:
Tom Strassenberg
200 SE 197th Place
Camas, WA 98607

N

0 700 1400
Feet



Screen capture of map of 303(d) listed waters in basin (from Ecology website)

CASCADIA ECOLOGICAL SERVICES, INC.

Figure WR-3 - Wetland Rating Form
Project: Union Self Storage

Location: 6250 NW Friberg-Strunk Street, Camas, WA 98607
Tax Parcel: 176190000
Legal: SE 1/4,S29,T2N,R3E of the Willamette Meridian
45.62430386021988 N. lat. / -122.46499837245655 W long.
County: Clark

Cascadia Ecological Services, Inc.
3015 NW 95th Place, Vancouver, WA 98665
(360) 601-8631
www.cascadia-inc.com

Date: 10/20/17

CLIENT:
Tom Strassenberg
200 SE 197th Place
Camas, WA 98607

Water Quality Improvement Projects (TMDLs)

Water Quality Improvement > Water Quality Improvement Projects by County > Clark County

Clark County projects

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this county. Please use links (where available) for more information on a project.

To get additional information about the water bodies in Clark County please use the Water Quality Assessment Query Tool.

WRIAs in Clark County

- WRIA 27 - Lewis
- WRIA28 - Salmon-Washougal

DEPARTMENT OF ECOLOGY
State of Washington

Waterbody Name	Pollutants	Status	TMDL Lead
Burnt Bridge Creek	Multi-parameter	Under development	Brett Raunig 360-690-4660
Gibbons Creek	Fecal Coliform	EPA approved Has an implementation plan	Brett Raunig 360-690-4660
Gifford Pinchot USFS	Temperature	On hold	Tony Whiley 360-407-7241
Lacamas Creek	Dissolved Oxygen Fecal Coliform pH Temperature	Under development	Brett Raunig 360-690-4660
Lewis River, E. Fork	Fecal Coliform Temperature	Under Development	Brett Raunig 360-690-4660
Salmon Creek	Fecal Coliform Turbidity	EPA approved Has an implementation plan	Brett Raunig 360-690-4660
	Temperature	EPA approved Has an implementation plan	
Weaver Creek	Ammonia-N BOD (5-day)	EPA approved	Brett Raunig 360-690-4660

Screen capture of map of TMDLs for WRIA in which unit is found (from web)