



HABITAT MANAGEMENT PLAN CUMMINS WHITEWATER SITE DEVELOPMENT

Prepared for

Panattoni Development
900 SW 16th Street, Suite 300
Renton, Washington 98057

Prepared by

Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, Washington 98101

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LIST OF ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practices
City	City of Sumner
OHWM	ordinary high water mark
HMP	Habitat Management Plan
SMP	Shoreline Master Program
SPCC	Spill Prevention, Control, and Countermeasures
USFWS	U.S. Department of Fish and Wildlife
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

1 INTRODUCTION

This Habitat Management Plan (HMP) provides an evaluation of the proposed development for the Cummins Whitewater site located within the shoreline zone of the White River. The HMP has been prepared as required in Sumner Municipal Code 16.56.080 to provide for the implementation, monitoring, and maintenance of permanent mitigation and restoration measures for fish and wildlife habitat improvements along the shoreline. The report also describes the investigation of the ordinary high water mark (OHWM) along the White River and the investigation of the presence of potential wetlands on the property.

This HMP has also been prepared to demonstrate how the proposed project complies with NMFS' Biological Opinion for the National Flood Insurance Program (NFIP; NMFS 2008). This HMP determines that there would be "no effect" on NMFS or USWFS Endangered Species Act (ESA)-listed species or critical habitats or species of local importance in City of Sumner because there would be no construction within the 100-foot Riparian Management Zone, and because development activities within the 100-year floodplain of the White River associated with the proposed project would not result in adverse effects to fish as evaluated in relation to NMFS' Biological Opinion for the NFIP.

2 PROJECT DESCRIPTION

2.1 Project Location and Details

The Cummins Whitewater site is located in the City of Sumner (City) in Pierce County (Section 42, Township 20N, Range 4E) on a 7.03 acre parcel (#0420242030; Figures 1 and 2). The White River flows adjacent to the site, forming the northern and western boundaries of the project area. The development site lies between Fryar Avenue and the White River. Infinity Coach, a motorcoach service company, is located to the southeast of the project area. A railroad bridge crosses the White River along the southern extent of the project area, and a one-lane vehicle bridge crosses the river along the northern extent of the site. The Cummins Whitewater site contains an undeveloped upland field as well as the riparian buffer area adjacent to the White River. The site is zoned as Light Industrial with a Manufacturing/Industrial Center Core overlay and has a shoreline designation of Urban Conservancy, as described in the City's Shoreline Master Program (SMP; City of Sumner 2014).

The proposed project includes construction of two warehouse buildings with associated paved parking and truck maneuvering areas, landscaping, and utilities extension. It includes two road accesses to Fryar Avenue. The development is considered a non-water oriented commercial development and will include the development of a pedestrian trail because public access is required in the SMP and the City's regional trail plan. The pedestrian trail will be located outside of the Riparian Management Zone.

2.2 Shoreline Designation

The White River meets the criteria of a Type S stream, "shorelines of the state," under chapter 90.58 Revised Code of Washington. Its shoreline designation in the SMP is Urban Conservancy, with a 100-foot Riparian Management Zone standard. Shorelands designated in the project area extend to the floodway for the White River, which extends to the 49-foot contour line in this area. The floodway and the associated 200-foot shoreline zone are shown on Figure 2.

2.3 OHWM Delineation

During the site investigation on November 16, 2015, Anchor QEA biologists visited the site to perform an OHWM survey of the project area. However, the White River water elevation was elevated and had submerged much of the vegetation along the shoreline area (including many large trees), preventing delineation and survey of the OHWM. This vegetation remained submerged through December 2015. For the purposes of this HMP, an approximate OHWM boundary was used to establish shoreline buffer boundaries and develop conceptual development plans. The approximate OHWM was based on professionally surveyed water surface elevations collected on November 21 by Barghausen Consulting Engineers, and was then adjusted 10 feet towards the river to approximate the edge of visible but submerged vegetation. This approximate OHWM location is shown on Figure 2 and aligns with the trees observed to be submerged during the November survey, as shown overlaid on the aerial photo.

3 EXISTING CONDITIONS

The purpose of the Riparian Management Zone is to preserve the natural character of the City's riverine and lake systems and to protect the resources and ecology of the shoreline. Riparian Management Zones are designed to protect ecological functions and processes of the shorelines of the state, protect and enhance salmonid habitat, and provide a recreational open space system for the City. This section describes existing conditions of the Riparian Management Zone and anticipated impacts associated with the proposed project.

The Cummins Whitewater Site Development project consists of an upland area and the riparian buffer for the White River. Land surrounding the project area consists of heavy to moderate industrial properties. The upland is a relatively flat field dominated by reed canarygrass (*Phalaris arundinacea*) and other invasive species, including Canada thistle (*Cirsium arvense*), common nettle (*Urtica dioica*), and common vetch (*Vicia sativa*). The current Riparian Management Zone along the White River consists of a steep slope leading down from the upland field to the river. The area contains black cottonwood (*Populus balsamifera*) and Pacific willow (*Salix lasiandra*). The understory is dominated by invasive Himalayan blackberry (*Rubus armeniacus*), with smaller components of lady fern (*Athyrium filix-femina*), deer fern (*Blechnum spicant*), sword fern (*Polystichum munitum*), and field horsetail (*Equisetum arvense*). Although no wildlife was observed during the site visit, the riparian buffer contains tall mature trees and overhanging vegetation that could provide habitat for fish and birds, as well as terrestrial and aquatic invertebrates, which provide food for fish and birds. However, the presence of Himalayan blackberry significantly limits the functions provided in this riparian area.

During the site visit on November 16, 2015, Anchor QEA biologists assessed three data plots for wetland characteristics on site (Figure 2). No evidence of standing water or wetland soils were observed. Wetland data sheets are included as Appendix A of this report. National Wetlands Inventory maps do not show any wetlands in the vicinity of the project area (USFWS 2015). Along the western boundary of the site, a ditch separates the upland field area from the forested riparian area. During the site visit in November 2015, the ditch contained approximately 2 feet of standing water, but no wetland soils were present (Sample SP2 in Appendix A and Figure 2). This ditch is dominated by red alder

(*Alnus rubra*) and black cottonwood (*Populus balsamifera*) with snowberry (*Symphoricarpos albus*) and the invasive species English ivy (*Hedera helix*) and American holly (*Ilex opaca*) in the understory.

4 THREATENED, ENDANGERED, AND SENSITIVE SPECIES AND HABITATS ASSESSMENT AND EFFECTS ANALYSIS

Federal- and state-listed species and their associated habitats that could occur in the study area are identified in Table 1. Anchor QEA biologists determined if suitable habitat for any of these species was present within the study area. The site contains potential suitable habitat for steelhead trout, Chinook salmon, chum salmon, coho salmon, cutthroat trout, bull trout, bald eagle, pileated woodpecker, osprey, and waterfowl within the study area. Of these species, Chinook salmon, steelhead, and bull trout are federally listed as threatened, and the bald eagle is a sensitive species in the state of Washington. The U.S. Fish and Wildlife Service (USFWS) and Washington State Department of Fish and Wildlife (WDFW) Salmonscape identified breeding area for Chinook salmon and a migration corridor for steelhead in the White River adjacent to the study area (WDFW 2015a, 2015b). During the field investigation, none of the bird species were observed; additionally, there are no documented observations recorded on the WDFW or USFWS websites. WDFW Priority Habitat and Species on the web shows waterfowl and shorebird concentrations approximately 0.5 miles west of the project area (WDFW 2015a). The Washington Department of Natural Resources Heritage Program shows no sensitive plant species in the vicinity of the project (WDNR 2015).

Table 1
Pierce County Federal- and State-listed Species and Species of Local Importance with Potential Presence of Suitable Habitat within the Study Area

Group	Common Name (Species Name)	Suitable Habitat	State Status	Federal Status	Critical Habitat
Fish	Steelhead Trout (<i>Oncorhynchus mykiss</i>) ¹	Freshwater and marine	Candidate	Threatened (Puget Sound ESU)	Designated White River
	Chinook Salmon (<i>Oncorhynchus tshawytscha</i>) ¹	Freshwater and marine	Candidate	Threatened (Puget Sound ESU)	Designated White River
	Chum Salmon (<i>Oncorhynchus keta</i>) ¹	Freshwater and marine	Candidate	None	None in Puget Sound

Group	Common Name (Species Name)	Suitable Habitat	State Status	Federal Status	Critical Habitat
	Coho Salmon (<i>Oncorhynchus kisutch</i>) ¹	Freshwater and marine	None	Species of concern (Puget Sound)	None in Puget Sound
	Cutthroat trout (<i>Oncorhynchus clarki</i>) ¹	Freshwater and marine	None	None	None
	Bull trout (<i>Salvelinus confluentus</i>) ¹	Freshwater	Priority	Threatened (Puget Sound ESU)	Designated White River
Birds	Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Mature trees near water and prey sources	Sensitive	Species of concern	None
	Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Forest with snags and downed wood	Candidate	None	None
	Osprey (<i>Pandion haliaetus</i>) ¹	Mature trees near water and prey sources	None	None	None
	Waterfowl concentrations (<i>Anatidae</i>) ¹	Freshwater	None	None	None

Notes

¹ Species of Local Importance for Pierce County

The two NMFS ESA-listed species, Chinook salmon and steelhead trout, and one USFWS species, bull trout, would not be susceptible to impacts related to construction for the proposed project because the construction activities would all be outside of the 100-foot Riparian Management Zone. The site currently contains degraded habitat, predominantly reed canarygrass and invasive vegetation such as Himalayan blackberry in the riparian zone.

The 100-year floodplain is present on 91,700 sqft on the project site, most of which is located within the Riparian Management Zone. Outside of the Riparian Management Zone, the northwest corner of the proposed development area is located within the 100-year floodplain of the White River, which would consist of parking areas and associated fill. The area of the floodplain that would be filled as part of this development is 7,683 sqft, located outside of the Riparian Management Zone. A total of 990 cy of fill will be placed within the 100 year

floodplain, raising the area of the parking lot above the elevation of the existing floodplain. This reduced floodplain storage volume will be offset by excavating an equal amount within the 100 year floodplain, but outside of the Riparian Management Zone, resulting in no change to flood storage volume or flooding routine. In addition, habitat enhancements within the 100 year floodplain will result in improved habitat quality, both as a result of removal of invasive shrubs and installation of native vegetation within the shoreline buffer (Section 5) and installation of native plants in the landscaped area that falls within the floodplain. Flood storage capacity has been maintained per mitigation recommendations in the NMFS' Biological Opinion for the NFIP (NMFS 2008).

No potential aquatic habitat (below OHWM) for salmonid species would be disturbed under the proposed project. In the unlikely event that, during a flood event, Chinook salmon, steelhead trout, sockeye salmon, chum salmon, coho salmon, or cutthroat trout travelled into the 100-year floodplain area within the site, habitat conditions in the 100 year floodplain are expected to be improved from what is currently consists primarily of a reed canarygrass-dominated field with a mix of native vegetation and invasive vegetation. As discussed in Section 5, invasive shrubs will be removed from the Riparian Management Zone, and native plantings will be added, both to the Riparian Management Zone (to off-set removal of some trees) and to the landscape areas adjacent to the development, much of which is within the 100 year floodplain. These plantings will serve to increase the quality of floodplain, which includes the riparian habitat along this stretch of the White River. Any decrease in habitat quality or function within the 100 year floodplain from the conversion of reed canarygrass to a combination of landscape area with native plantings and a small portion of parking area will be offset by improvements in the riparian zone. For these reasons, protected species would not be susceptible to impacts from the proposed project.

Stormwater collected from the development will be treated and discharged through a dispersion trench. This system would result in similar infiltration and ultimate discharge of groundwater to the White River as what currently occurs on the site.

For the reasons stated above, the proposed project would have “no effect” on listed NMFS species, as evaluated per the NMFS' Biological Opinion for the NFIP (NMFS 2008), listed USFWS species, or City of Sumner species of local importance.

5 ANTICIPATED IMPACTS AND MITIGATION

5.1 Anticipated Impacts

The construction associated with the development project, including all excavation and grading activities, will occur outside of the 100-foot Riparian Management Zone (Figure 3). Some noise will result from traffic throughout the construction site; however, construction will only be conducted during the day and is not likely to increase the background noise levels associated with the adjacent industrial land use.

The northern and western parking areas, as well as a portion of the northern building is proposed to be within the 200-foot shoreline zone. Five cottonwood trees, between 14-inch diameter at breast height (DBH) and 28-inch DBH, will be removed from within the 200-foot shoreline zone as part of the proposed development (all outside the 100-foot Riparian Management Zone). One 14-inch DBH cherry tree has a drip line that extends into the grading area, and is therefore counted as a tree requiring mitigation in this HMP (however, the tree may not be impacted during construction). No other trees will be impacted or have drip lines that extend into the grading or construction areas as part of the project. The loss of five cottonwood trees and the potential impact from grading within the dripline of the one cherry tree will be mitigated with replacement of trees at a 3:1 ratio. Eighteen native trees will be planted within the Riparian Management Zone to fulfill this mitigation requirement (Figure 3). Additional activities to off-set construction activities in the shoreline zone will include removal of invasive shrubs and installation of live-stake willows in specific areas of the Riparian Management Zone.

5.2 Practicable Alternatives

The only practicable alternative was determined to be the currently proposed project. Other alternatives include reducing the size of the development area to avoid impacting trees within the 200-foot shoreline buffer. This would result in a constrained development plan with inadequate parking and building sizes that would make this proposed development not economically viable.

5.3 Avoidance and Minimization Measures

Construction impacts will be avoided and minimized through the use of Best Management Practices (BMPs) to minimize the potential for water quality impacts through spills and leaks from construction equipment and during the grading process. BMPs will also include confining all equipment to the work areas and stockpiling or staging only in approved locations within the work area. Construction will only occur during daylight hours and the area of disturbance will be limited during construction by avoiding in-water areas. Adequate materials and procedures will be maintained on the site to respond to unanticipated weather conditions or accidental leaks or spills.

A Temporary Erosion and Sedimentation Control Plan will be fully implemented as part of a Stormwater Pollution Prevention Plan. Construction techniques will use BMPs such as those described in the Washington State Department of Transportation (WSDOT) Standards and Specification for Road, Bridge, and Municipal Construction (WSDOT 2015) and the Washington State Department of Ecology Stormwater Management Manual for Western Washington (Ecology 2014). Appropriate erosion control measures will be erected at appropriate locations.

The contractor will prepare a construction Spill Prevention, Control, and Countermeasures (SPCC) plan for this project according to WSDOT guidance. Any potential spills will be handled and disposed of in a manner that does not contaminate the surrounding area. The SPCC will be consistent with 40 Code of Federal Regulations 112.3 as well as the State of Washington Oil Spill Contingency Plan (Washington Administrative Code 173-182).

5.4 Compensation

Mitigation is proposed to be conducted on site, adjacent to the impacts. The mitigation will involve planting of native vegetation and removal of invasive shrub species (i.e., Himalayan blackberry) within the existing Riparian Management Zone. The plantings are designed to enhance the currently degraded condition of the buffer.

This mitigation and enhancement of existing riparian areas will improve shoreline functions from existing conditions. The removal of invasive shrub species, including Himalayan

blackberry and English ivy, and establishment of a diverse, native plant community will generate a complex vegetation structure with herbaceous vegetation, shrubs, and trees. New trees will be installed adjacent to areas where existing trees will be removed and in areas where no trees are currently present. The plant community will provide improved functions to the riparian zone, including stabilization of the riparian area, filtering of surface runoff, shade, organic litter, and large woody debris (WDFW 2010). Existing native vegetation within the Riparian Management Zone will be preserved, which will continue to provide overhanging vegetation and habitat for insects and invertebrates that are important food sources for fish and other aquatic life. The Riparian Management Zone will specifically improve the habitat for juvenile salmon in the nearshore area, which provides food, refuge from predation, a shallow water migration corridor, and specific environmental conditions that support the physiological changes necessary to move from freshwater to saltwater as juveniles, and back to freshwater as mature adults (WDFW 2010).

The removal of invasive shrubs and enhanced plant communities in the Riparian Management Zone and adjacent landscape area will include deciduous and evergreen vegetation that will also serve to improve aesthetics and limit light (especially from trees) and noise impacts from the new development and access roads in an area that is currently dominated by Himalayan blackberry and reed canarygrass.

The plantings are proposed at a ratio of 3:1 (mitigation:impact). To meet this requirement, the project proposes to plant 18 native trees within the 100-foot Riparian Management Zone (Table 2). Additionally, an approximately 1,750 square foot area will be planted with livestake willows (Figure 3). This area is in a ditch along the shoreline with wetter conditions than the surrounding areas. This area contains existing native vegetation, including cottonwood, snowberry, and red alder, that will not be removed; the installed willows will be added to low lying areas without trees and shrubs after the removal of invasive species. Of this 1,750 square feet of space, an estimated 700 square feet will be available for livestake willow installation.

Following tree installation in the Riparian Management Zone, 3 inches of organic mulch will be applied to each plantings. Maintenance and monitoring will be conducted, as described in

Section 5.5. Watering of native vegetation will be conducted as needed during the first year of monitoring.

Table 2
Riparian Management Zone Plant List

Scientific Name	Common Name	Number	Size
Trees (See Figure 3)			
<i>Acer macrophyllum</i>	Big Leaf Maple	5	2-gal
<i>Alnus rubra</i>	Red Alder	8	2-gal
<i>Psuedotsuga menziesii</i>	Douglas Fir	5	2-gal
Willows (See Figure 3)			
<i>Salix hookeriana</i>	Hooker's willow	100 ¹	LS ²
<i>Salix lucida</i>	Pacific willow	100 ¹	LS ²

¹2-ft triangular spacing from center of stake, based on 699 square feet of planting area

²Livestake

5.5 Maintenance and Monitoring

Maintenance of the installed plant material will be the responsibility of the applicant. An as-built report (Year 0) shall be completed after the invasive shrub removal and tree installation and submitted to the City for use as a reference document during the subsequent 10 years of vegetation monitoring that will determine the success of the project.

Monitoring of the Riparian Management Zone will occur to verify the native plant community development and absence of invasive shrubs. Monitoring reports must be submitted to the City no later than October 1 of each monitoring year. Photo stations will be established at control points to provide photo-documentation of the existing conditions during each monitoring period.

Survival of planted trees is expected to be 100% throughout the 10-year monitoring program (Table 3). Success of the livestock willows will be evaluated during the monitoring periods based on standards in Table 3.

Table 3
Performance Standards for Installed Native Plants

Rated Item	Year 1	Year 2	Year 3	Year 5	Year 10
Installed Tree Survival (%)	100	100	100	100	100
Willow canopy (% areal) cover	20	30	40	60	75

Monitoring reports will be submitted to the City during Years 1, 2, 3, 5, and 10. Non-native weedy and invasive shrub species growing in the buffer will be mechanically removed (hand-pulling or cutting). Volunteer species of native woody plants – such as red alder and black cottonwood – are to be encouraged. If the percentage of non-native invasive shrub species exceeds 15% within the Riparian Management Zone in any monitoring period, appropriate control procedures will be implemented according to a custom designed maintenance plan for the project.

5.6 Contingency Plan

All contingencies cannot be anticipated. The contingency plan is flexible so that modifications can be made to subsequent years' construction if portions of the previous year's construction do not produce the desired results. Problems or potential problems will be evaluated by a qualified biologist and the City. Specific contingency actions will be developed, agreed to by consensus, and implemented based on all scientifically and economically feasible recommendations. Contingencies may include the following:

- Evaluation of invasive shrub species removal/maintenance techniques
- Consider species suitability for site conditions and provide replanting recommendations with same or alternate plants, and potentially adjusted planting locations
- Additional monitoring or unscheduled monitoring

If, during the monitoring program, other maintenance needs are identified as necessary to ensure the success of the mitigation project, they will be implemented, unless generated by third parties or acts of nature. Specific contingency actions relative to interim performance standards are identified in Table 4.

6 REFERENCES

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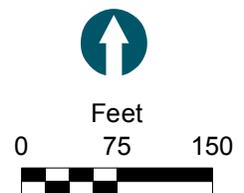
FIGURES



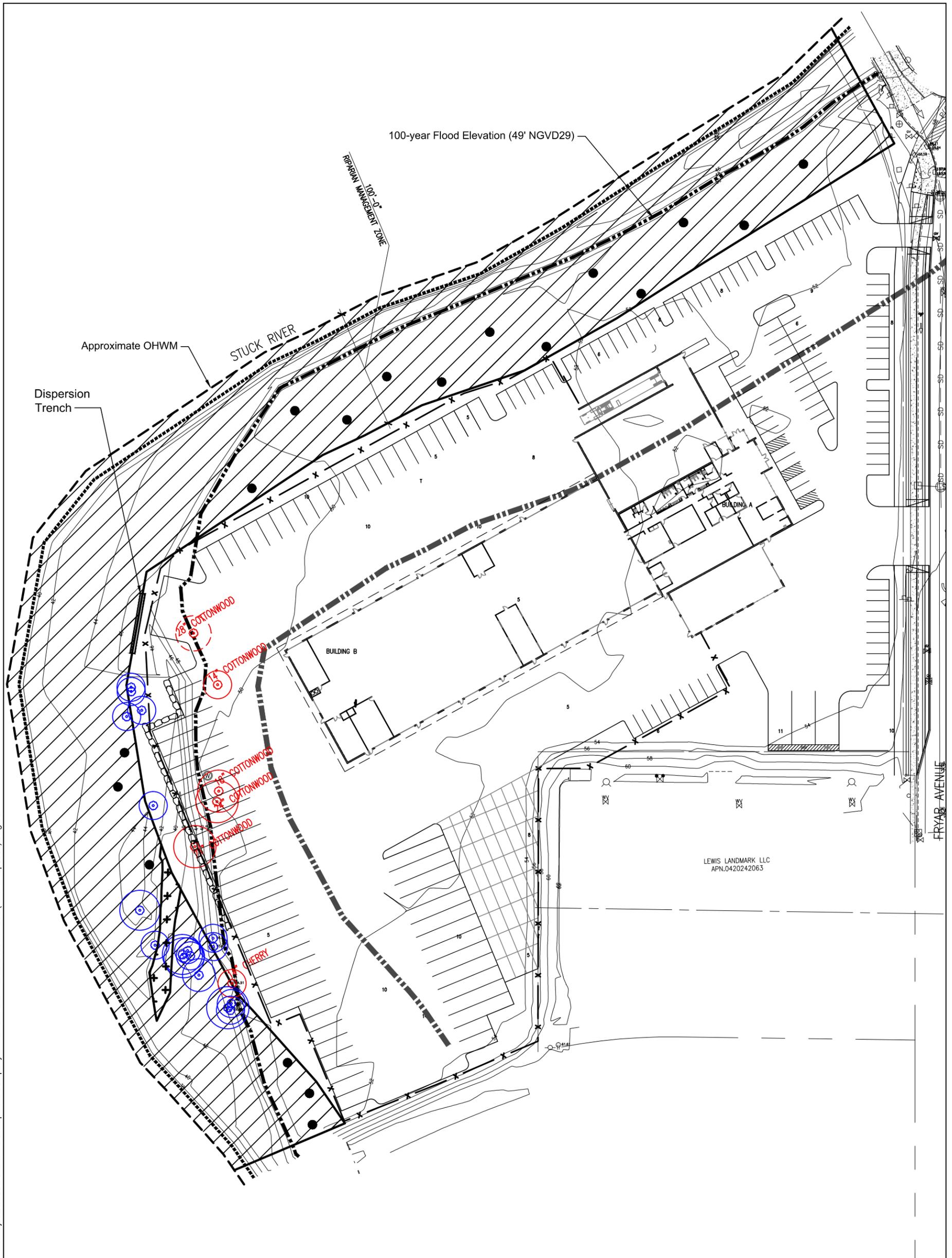
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- Project Area
- Approximate Ordinary High Water Mark
- - - 100-year Flood Elevation (49 ft NGVD29)
- Approx Floodway Boundary
- ▨ Riparian Management Zone
- Shoreline Zone
- Wetland Data Plot Location



K:\Projects\0456-Panattoni Development Company\Whitewater Site Habitat\0456-RP-006 (WWW - Proposed).dwg F3
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SOURCE: Drawing from Synthesis, PLLC.
 Image from Google Earth.
HORIZONTAL DATUM: Washington State Plane North, NAD83, U.S. Feet.
VERTICAL DATUM: National Geodetic Vertical Datum of 1929 (NGVD29).

- LEGEND:**
- Existing Contours
 - 100-year Flood Elevation (49 ft NGVD29)
 - Approximate Location of Floodway Boundary
 - 200' Shorelands Offset
 - OHWM

- Riparian Management Zone to be Enhanced
- Significant Trees to be Removed
- Significant Tree to be Retained
- Native Trees to be Installed
- Proposed Livestake Willows



Figure 3
 Proposed Development Plan
 Whitewater Habitat Management Plan
 Panattoni Development Company



APPENDIX A
WETLAND DATA FORMS

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

Project Site: Whitewater Development Site City/County: Sumner/Pierce Sampling Date: Nov. 16, 2015
 Applicant/Owner: Panattoni Development Company State: WA Sampling Point: SP1
 Investigator(s): E. Pizzichemi & S. Montgomery Section, Township, Range: S42, T20N, R4E
 Landform (hillslope, terrace, etc.): Depressional plateau Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 471239.53N Long: 1221435.72W Datum: WGS84
 Soil Map Unit Name: Sultan silt loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: The Whitewater Development Site is located on the bank of the White River. SP1 is located in the upland field dominated by reed canarygrass and Himalayan blackberry. No wetland soils or hydrology were observed.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
Sapling/Shrub Stratum (Plot size: 15-foot radius)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Herb Stratum (Plot size: 3-foot radius)																				
1. <u>Phalaris arundinacea</u>	100	yes	FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = 1, 20% = _____	100	= Total Cover																		
Woody Vine Stratum (Plot size: 3-foot radius)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum 0																				
Remarks: SP1 is located in an upland field dominated by reed canarygrass.																				

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

Project Site: Whitewater Development Site City/County: Sumner/Pierce Sampling Date: Nov. 16, 2015
 Applicant/Owner: Panattoni Development Company State: WA Sampling Point: SP2
 Investigator(s): E. Pizzichemi & S. Montgomery Section, Township, Range: S42, T20N, R4E
 Landform (hillslope, terrace, etc.): Depressional plateau Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 471239.53N Long: 1221435.72W Datum: WGS84
 Soil Map Unit Name: Sultan silt loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: The Whitewater Development Site is located on the bank of the White River. SP2 is located in a ditch along the stream bank in the southwest side of the site. The ditch contained 2 feet of standing water, but no wetland features were present.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Alnus rubra</i></u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)																
2. <u><i>Populus balsamifera</i></u>	<u>15</u>	<u>no</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>1</u> , 20% = <u>1</u>	<u>55</u>	= Total Cover																		
Sapling/Shrub Stratum (Plot size: 15-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:																
1. <u><i>Symphoricarpos albus</i></u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. <u><i>Rubus armeniacus</i></u>	<u>2</u>	<u>no</u>	<u>FACU</u>																	
3. <u><i>Rubus spectabilis</i></u>	<u>2</u>	<u>no</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>1</u> , 20% = <u>2</u>	<u>9</u>	= Total Cover																		
Herb Stratum (Plot size: 3-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:																
1. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Woody Vine Stratum (Plot size: 3-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?																
1. <u><i>Hedera helix</i></u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = <u>1</u> , 20% = _____	<u>5</u>	= Total Cover																		
% Bare Ground in Herb Stratum <u>100</u>																				

Remarks: SP2 is located in a ditch near the White River. The ditch is predominantly bare ground with native and some invasive shrubs and trees, and ivy along the ground.

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 18+	<u>10YR 4/2</u>	<u>100</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>None</u>	<u>Silty clay</u>	<u>No redox features</u>

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

Project Site: Whitewater Development Site City/County: Sumner/Pierce Sampling Date: Nov. 16, 2015
 Applicant/Owner: Panattoni Development Company State: WA Sampling Point: SP3
 Investigator(s): E. Pizzichemi & S. Montgomery Section, Township, Range: S42, T20N, R4E
 Landform (hillslope, terrace, etc.): Depression plateau Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 471239.53N Long: 1221435.72W Datum: WGS84
 Soil Map Unit Name: Sultan silt loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: The Whitewater Development Site is located on the bank of the White River. SP3 is located in the upland field dominated by reed canarygrass and Himalayan blackberry. No wetland soils or hydrology were observed.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30-foot radius)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Sapling/Shrub Stratum (Plot size: 15-foot radius)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Herb Stratum (Plot size: 3-foot radius)																				
1. <i>Phalaris arundinacea</i>	100	yes	FACW																	
2. <i>Equisetum arvense</i>	10	no	FAC																	
3. <i>Cirsium arvense</i>	2	no	FAC																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = 1, 20% = _____	100	= Total Cover																		
Woody Vine Stratum (Plot size: 3-foot radius)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum 0																				
Remarks: SP3 is in an upland field dominated by reed canarygrass.																				

Hydrophytic Vegetation Present? Yes No

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 2	_____	_____	_____	_____	_____	_____	Root matter	_____
2 to 18+	10YR 4/3	100	None	None	None	None	Silty clay	No redox features
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Type: _____								
Depth (inches): _____								
Remarks: Top 2 inches composed of root matter and dry plant material. Brown silty clay below 2 inches, no redox features, no saturation.								

HYDROLOGY

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