



TECHNICAL MEMORANDUM

Prepared for: Kevin Anderson
Chief Executive Officer
Wesley Homes
815 South 216th Street
Des Moines, WA 98198-6332

December 13, 2021

Prepared by: Grette Associates^{LLC}
2102 North 30th Street, Ste A
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File No.: 621.005

Re: Wesley Homes - Puyallup Senior Living: Year 2 Monitoring Report

1 INTRODUCTION

Grette Associates is under contract with Wesley Homes to complete the Year 2 monitoring at the wetland and wetland buffer enhancement areas associated with the approved *Wetland Delineation, Habitat Assessment, and Final Mitigation Plan: Wesley Homes-Puyallup Senior Living* (the "Plan", Soundview Consultants 2017).

The purpose of this monitoring is to document the condition of the enhancement areas against the performance standards defined in the approved Plan. Photographs were taken throughout the enhancement areas to document the observed conditions, please see attached.

2 METHODS

Grette Associates traversed the enhancement areas and collected quantitative and qualitative data on July, 2 2021 to determine species health and species quantities. Monitoring includes percent cover measurements at permanent sampling points, walk-through surveys to identify invasive species presence, analysis of the mortality rate of the planted species, photographs taken at fixed photo points, wildlife observations, and verification of dispersion trench function and general qualitative buffer function observations as approved in the Mitigation Plan (Soundview 2017).

To determine percent cover, observed vegetation was identified and recorded by species with an estimate of areal cover of species within each sampling plots. Circular sample plots, approximately 30 feet in diameter are centered at each monitoring station. Trees and shrubs within each 30-foot diameter monitoring plot are recorded with their total areal cover. Ground vegetation is sampled from a 10-foot diameter within each monitoring plot. Herbaceous species within each monitoring plot are then recorded with their estimate cover. Survival rate was determined by documenting all observed mortality within the enhancement area and comparing to quantities defined in the as-built inspection (Grette Associates 2019).

3 RESULTS

Based on the monitoring results, the enhancement areas are currently meeting the established performance standards for Year 2. The full list of objectives and performance standards required by the mitigation actions are presented in the approved Mitigation Plan (Soundview 2017). The performance standards to be evaluated during the 2021 monitoring activities for Year 2 are presented in Table 1.

Table 1. Year 2 Performance Standards

Performance Standards	Performance Standard met for monitoring?
1. The new wetland area will have saturated soils within 12 inches of the surface over 70 percent of the wetland creation area for a minimum of continuous weeks each growing season in years with normal precipitation levels.	Yes. Saturated soils over more than 70 percent of wetland.
5. Introduce small areas of surface inundation within the slope wetland using careful placement of LWD.	Yes
6. A minimum of 6 LWD containment structures will be situated in the slope wetland and function in a manner that holds back minor surface waters creating small areas of surface inundation.	Yes
8. A minimum of 6 small woody debris (SWD) brush piles will be situated in Wetlands A and C creating additional wildlife habitat features.	Yes
9. A minimum of 5 native tree and shrub species will be present within the mitigation area in all monitoring years.	Yes
10. The enhanced buffer area on-site will contain a minimum of 20 percent areal coverage by Year 2, 30 percent areal coverage by Year 3 and 40 areal coverage percent by Year 5 in all strata.	Yes
11. Non-native invasive plants will not make up more than 15 percent total cover in any growing season following Year 1.	Yes
12. All knotweeds found within the mitigation site, including buffers, shall be eliminated.	Yes. Knotweed was not observed onsite.

Overall, the installed wetland and buffer vegetation appear healthy. Grette Associates staff traversed the enhancement areas shrub aerial coverage was measured for Year 2 for both Wetland A and C (Tables 2 and 3). While Knotweed was not observed onsite, Grette Associates observed that Himalayan blackberry (*Rubus armeniacus*) was present in some of Wetland A and C’s buffer, Although, Himalayan blackberry (*Rubus armeniacus*) was observed in both areas, its percent total cover is approximately 10%. Additionally, at least five native tree and shrub species and at least 6 large woody debris containment structures were observed.

Table 2. Wetland A observed species with percentage of aerial coverage.

Grass and Groundcover Species (10ft)	Percentage	Species Status
Sloughgrass (<i>Beckmannia syzigachne</i>)	27	OBL
Common Rush (<i>Juncus pylaei</i>)	59	OBL
Awl Fruited Sedge (<i>Carex stipata</i>)	15	OBL
Velvet Grass (<i>Holcus lanatus</i>)	17	FAC
Creeping Buttercup (<i>Ranunculus repens</i>)	4	FAC
Tufted Hairgrass (<i>Deschampsia caespitosa</i>)	4	FACW
Colonial Bentgrass (<i>Agrostis capillaris</i>)	6	FAC
Meadow Barley (<i>Hordeum brachyantherum</i>)	20	FACW
Willow Herb (<i>Epilobium brachycarpum</i>)	7	FAC
Bitter Nightshade (<i>Solanum dulcamara</i>)	1	FAC
Common Birds Foot Trefoil (<i>Lotus corniculatus</i>)	6	FAC
Common Horse Tail (<i>Equisetum arvense</i>)	2	FAC
Total Coverage	84%	
Tree and Shrub Species (30ft)	Percentage	Species Status
Sitka Spruce (<i>Picea sitchensis</i>)	6	FAC
Mature Cottonwood (<i>Populus deltoides</i>)	20	FAC
Mature Red Alder (<i>Alnus rubra</i>)	12	FAC
Red Alder (<i>Alnus rubra</i>)	11	FAC
Mature Black Hawthorne (<i>Crataegus douglasii</i>)	1	FAC
Western Red Cedar (<i>Thuja plicata</i>)	4	FAC
Red Osier Dogwood (<i>Cornus alba</i>)	1	FACW
Sitka Willow (<i>Salix sitchensis</i>)	3	FACW
Himalayan Blackberry (<i>Rubus armeniacus</i>)	8	FAC
Gooseberry (<i>Ribes divaricatum</i>)	1	FAC
Salmonberry (<i>Rubus spectabilis</i>)	15	FAC
Indian Plum (<i>Oemleria cerasiformis</i>)	4	FACU
Nootka Rose (<i>Rosa nutkana</i>)	3	FAC
Total Coverage	44%	

Table 3. Wetland C observed species with percentage of aerial coverage.

Grass and Groundcover Species (10ft)	Percentage	Species Status
Sloughgrass (<i>Beckmannia syzigachne</i>)	18	OBL
Tall manna grass (<i>Glyceria elata</i>)	17	FACW
Stinging nettle (<i>Urtica dioica</i>)	10	FAC
Willow herb (<i>Epilobium brachycarpum</i>)	6	FAC

Meadow barley (<i>Hordeum brachyantherum</i>)	15	FACW
Creeping buttercup (<i>Ranunculus repens</i>)	27	FAC
Common Birds Foot Trefoil (<i>Lotus corniculatus</i>)	3	FAC
Tufted Hairgrass (<i>Deschampsia caespitosa</i>)	4	FACW
Total Coverage	100%	
Tree and Shrub Species (30ft)		
Western crabapple (<i>Malus fusca</i>)	3	FACW
Red Alder (<i>Alnus rubra</i>)	20	FAC
Red dogwood (<i>Cornus alba</i>)	5	FACW
Pacific ninebark (<i>Physocarpus capitatus</i>)	10	FACW
Gooseberry (<i>Ribes divaricatum</i>)	5	FAC
Salmonberry (<i>Rubus spectabilis</i>)	30	FAC
Himalayan Blackberry (<i>Rubus armeniacus</i>)	7	FAC
Total Coverage	80%	

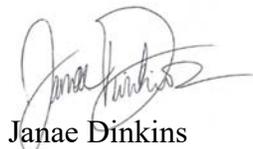
4 DISCUSSION AND RECOMMENDATIONS

Based on the monitoring results, all of the performance standards specified in the Plan are being met for Year 2. There was no Knotweed observed on site; however, Grette Associates observed Himalayan blackberry throughout the buffer enhancement areas for both Wetlands A and C. While the non-native invasive species total cover does not exceed 15%, If left unmaintained, blackberry can out-compete native shrub and herbaceous vegetation in subsequent years. The approved Plan requires long term maintenance of invasive species for the enhancement areas.

Please note that for any removal of blackberry, Grette Associates recommends, that maintenance efforts be followed according to Section 7.12 of the approved plan (Soundview 2017). Year 3 monitoring is scheduled to be performed in 2022.

If you have any questions regarding this report, please contact me at (253) 573-9300, or by email at janaed@gretteassociates.com.

Regards,



Janae Dinkins
Biologist

References:

Soundview Consultants, LLC. 2017. Wesley Homes – Puyallup Senior Living: Wetland delineation, Habitat Assessment, and Mitigation Plan. August 2017.

Grette Associates, LLC. 2018. Wetland Delineation, Habitat Assessment, and Final Mitigation Plan – Puyallup Senior Living: Enhancement Cell Exclusion Proposal. Prepared for Wesley Homes. August 16, 2018.

Grette Associates, LLC. 2019. Wesley Homes - Puyallup Senior Living: As-Built Memorandum. Prepared for Wesley Homes. April 22, 2019.

Grette Associates, LLC. 2020. Wesley Homes - Puyallup Senior Living: Year 1 Memorandum. Prepared for Wesley Homes. April 22, 2019.

ATTACHMENT:

Figure 1. Photo point 1 looking south (Wetland A)



Figure 2. Photo point 1 looking north (Wetland A)



Figure 3. Photo point 2 looking south (Wetland A)



Figure 4. Photo point 3 looking north (Wetland A)



Figure 5. Photo point 3 looking south (Wetland A)



Figure 6. Photo point 4 looking south (Wetland C)



Figure 7. Photo point 4 looking north (Wetland C)



