



TECHNICAL MEMORANDUM

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

September 3, 2020

Prepared by: Grette Associates^{LLC}
2102 North 30th Street, Ste A
Tacoma, WA 98403

File No.: 621.005

Re: Wesley Homes - Puyallup Senior Living: Year 1 Monitoring Report

1 INTRODUCTION

Grette Associates is under contract with Wesley Homes to complete the Year 1 monitoring at the buffer enhancement area 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 area against the performance standards defined in the approved Plan. Photographs were taken throughout the enhancement area to document the observed conditions, please see attached.

2 METHODS

Grette Associates traversed the enhancement area and collected quantitative and qualitative data on August 10, 2020 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.

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 site is currently meeting the established performance standards for Year 1. 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 2020 monitoring activities for Year 1 are presented in Table 1.

Table 1. Year 1 Performance Standards

Performance Standards for Year 1	Performance Standard met for Year 1 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.
4. Shrub density will be less than 80 percent aerial cover by the end of Year 1 in enhancement areas.	Wetland A: Yes – 19.5% Wetland C: Yes – 52.0%
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
9. A minimum of 5 native tree and shrub species will be present within the mitigation area in all monitoring years.	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 appears healthy. Grette Associates staff traversed the mitigation area and determined that the soils were adequately saturated over more than 70 percent of the wetland creation areas. Shrub aerial coverage was measured below 80 percent for Year 1 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 the buffer for Wetland A and was overgrown in areas of buffer for Wetland C, such that installed species were being engulfed. 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.

Species	Grass and Groundcover Species	Tree Species	Shrub Species
Sloughgrass	7.5		
Tall manna grass	12.5		
Carex stipata	32.5		
Fringed willow herb	2.5		
Meadow barley	12.5		
Small fruited bulrush	10		
Cottonwood		27.5	
Western crabapple		2.5	
Red Alder		30	

Species	Grass and Groundcover Species	Tree Species	Shrub Species
Red twigged dogwood			1
Spiraea			1
Pacific ninebark			5
Gooseberry			2.5
Salmonberry			10
Total Coverage	77.5%	63.0%	19.5%

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

Species	Grass and Groundcover Species	Tree Species	Shrub Species
American brooklime	5		
Tall manna grass	5		
Stinging nettle	15		
Fringed willow herb	5		
Meadow barley	15		
Creeping buttercup	30		
Sloughgrass	15		
Western crabapple		2	
Red Alder		25	
Red twigged dogwood			2
Pacific ninebark			5
Gooseberry			5
Salmonberry			40
Total Coverage	90%	27%	52%

4 DISCUSSION AND RECOMMENDATIONS

Based on the monitoring results, all of the performance standards specified in the Plan are being met for Year 1. There was no knotweed observed on site however, Grette Associates observed Himalayan blackberry throughout the buffer enhancement areas for both Wetlands A and C. If left unmaintained, blackberry can out-compete native shrub and herbaceous vegetation. The approved Plan requires long term maintenance of invasive species for the mitigation site. Grette Associates recommends that maintenance efforts occur this year and in subsequent years during mitigation activities to ensure survival of the planted species. Please note that any removal of blackberry should be done manually in the areas with installed plants and not with mechanized equipment to prevent unintentional trimming of native vegetation. Year 2 monitoring is scheduled to be performed in 2021. If you have any questions regarding this report, please contact me at (253) 573-9300, or by email at tomp@gretteassociates.com.

Regards,



Tom Peterman
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.

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)

