



## TECHNICAL MEMORANDUM

Prepared by: Grette Associates<sup>LLC</sup>  
2102 North 30<sup>th</sup> Street, Ste A  
Tacoma, WA 98403

August 24, 2020

Prepared for: ATTN: Jing Liu  
Toxics Cleanup Program  
Washington State Department of Ecology  
PO Box 47600  
Olympia, WA 98504-7600

File No.: 306.039

Re: Cornet Bay Marina Model Toxic Control Act (MTCA) Cleanup Mitigation Plan: 2020  
Vegetation Assessment Results

### 1 INTRODUCTION

Grette Associates is under contract with Washington State Department of Ecology (Ecology) to assist in the long-term monitoring outlined in the approved *Cornet Bay MTCA Cleanup Mitigation Plan* (Plan; Grette Associates 2013). Cornet Bay Marina is located at 200 Cornet Bay Drive (Island County tax parcels R13436-488-2260, R13436-506-2420, and R13436-517-2500) and in Section 36, Township 34 North, Range 1 East, W.M. in Oak Harbor, Washington. The purpose of this memorandum is to summarize the voluntary monitoring that occurred in 2020 to evaluate the mitigation site against the upcoming Year 7 (2021) performance standards defined in the approved Plan and to determine if the site will achieve those standards in 2021. Photographs taken at the designated photo point locations are presented at the end of this memorandum.

### 2 METHODS

During the site assessment, quantitative data was collected to determine species health, density, and canopy coverage. Data and photographs were collected along the three (3) monitoring transects that were established during the as-built inspection (Grette Associates 2014). Any additional observations, including wildlife presence, were noted and are summarized below.

Canopy coverage was determined using the Line-Intercept method along each transect (WSDOT 2008). To calculate percent cover using this method, the distance along the transect intercepted by the canopy of each species is recorded. Percent cover for each species was calculated by dividing the sum of the intercept lengths of each species by the total length of all transects. Survival rate was determined by documenting all observed mortality within the mitigation area

and comparing it against the quantities summarized in the contingency actions plan (Grette Associates 2015a<sup>1</sup>).

### **3 RESULTS**

Grette Associates completed the site assessment on July 23, 2020 to evaluate the wetland and wetland buffer enhancement areas. Staff collected vegetation data along each monitoring transect and captured photographs at each of the photo-point locations (see attached photos).

#### **3.1 Wetland Enhancement Area**

While the emergent species within the wetland area appears to be thriving, the wetland enhancement area is largely devoid of shrubs (Table 1). Grette Associates observed one Nootka rose (*Rosa nutkana*) along the upper extent of the wetland enhancement area. All of the remaining shrubs that were observed in the Year 1 monitoring effort (Grette Associates 2015b) did not survive (Table 2). Grette Associates did not observe any remnant shrub debris within the wetland enhancement area which suggests that the dead plants were removed over time.

There is no performance standard for emergent vegetation within the wetland enhancement area; however, a general assessment of the emergent vegetation was completed to determine the overall health and success of the plantings. Similar to Year 1 observations, the emergent area predominantly consists of seashore saltgrass (*Distichlis spicata*), Lyngby's sedge (*Carex lyngbyei*), saltmarsh bulrush (*Schoenoplectus maritimus*), and pickleweed (*Salicornia virginica*). Based on visual observations, the planted emergent area has approximately 80 percent aerial coverage.

#### **3.2 Wetland Buffer Enhancement Area**

Shrub coverage within the wetland buffer enhancement area was 25 percent (Transects 2 and 3; see attached map). Grette Associates observed very little mortality of the planted vegetation and observed volunteer Nootka rose and salmonberry (*Rubus spectabilis*) mixed throughout the area (Table 2).

In addition to the shrub coverage, herbaceous vegetation is well established within the wetland buffer enhancement area (see attached photos). Based on visual observations, the herbaceous vegetation is providing over 80 percent ground cover.

Wildlife observations were also recorded during the site assessment. Grette Associates observed recent sign that deer regularly use the enhancement areas for foraging and Canada goose were observed in the vicinity of the wetland area foraging along the shoreline.

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<sup>1</sup> As noted in the Contingency Action Compliance Report (Grette Associates 2015a), the revised standard for assessing survival within the wetland enhancement area was reduced to 50 shrubs. Originally, the area was planted with a total of 65 assorted shrubs; however, 15 were replaced with an assortment of emergent species (Grette Associates 2015a).

**Table 1. Preliminary Year 7 performance standard summary**

<b>Performance Standards</b>	<b>Performance Standard met?</b>
1a. A minimum of 1,300 square feet of aquatic area will be created by the end of the Cornet Bay cleanup.	<b>Yes</b> <sup>1</sup>
2a. A minimum of two (2) species of native shrubs will be present by the end of the monitoring period within the wetland enhancement area.	<b>No</b> – 1 species present
2b. A minimum of 80% survival of planted shrub species in Year 7 within the wetland enhancement area.	<b>No</b> – 2%
2c. A minimum of 30% aerial coverage of native shrubs after Year 7 within the wetland enhancement area.	<b>No</b> – 6%
3a. A minimum of two (2) species of native shrubs will be present by the end of the monitoring period within the buffer enhancement area.	<b>Yes</b> – 2 species present
3b. A minimum of 80% survival of planted shrub species in Year 7 within the buffer enhancement area.	<b>Yes</b> – 99%
3c. A minimum of 30% aerial coverage of native shrubs after Year 7 within the wetland buffer enhancement area.	<b>No</b> – 25%

<sup>1</sup> Area verified during the as-built survey completed after completion of the cleanup.

**Table 2. 2020 Shrub Mortality Survey Results**

<b>Enhancement Area</b>	<b>2020 Survey Results</b>		<b>Assorted Plant Totals</b>	<b>Assessment Standard</b>	<b>Survival Percentage</b>
	<b>Alive</b>	<b>Dead</b>			
Wetland	1	- <sup>1</sup>	1	50 <sup>2</sup>	2%
Wetland Buffer	78 <sup>3</sup>	1	79	79	99%

<sup>1</sup> One Nootka rose was observed within wetland enhancement area. Therefore, with the exception of one shrub, it is assumed that the shrubs planted within the wetland enhancement area did not survive.

<sup>2</sup> Per the approved contingency actions (Grette Associates 2015), the assessment standard was reduced to 50 species.

<sup>3</sup> Given the volunteer rose species observed and only one dead plant observed, Grette Associates assumes that the buffer enhancement area meets the minimum 80 percent survival.

#### **4 DISCUSSION**

Based on the observations and data collected, the wetland enhancement area is not projected to meet Year 7 performance standards. With the exception of the 30 percent shrub coverage requirement, the wetland buffer enhancement area is projected to meet Year 7 performance (Table 1). In Grette Associates’ professional opinion, the wetland enhancement area does not appear to provide suitable growing conditions for a shrub community. The soils in the upper wetland enhancement area are very sandy, and likely do not retain much moisture during the dry months to support shrub species. Furthermore, the majority of the shoreline is relatively steep and transitions to upland in a moderately short distance (Grette Associates 2014). As a result, the wetland enhancement area appears to provide better growing conditions to support a salt tolerant emergent vegetation community that is regularly inundated by marine waters rather than a vegetation community that includes native shrubs that are conducive to growing in brackish environments.

In Grette Associates professional opinion, the wetland buffer enhancement area is targeted to achieve the 30 percent shrub coverage requirement in Year 7. Year 1 shrub coverage was 15 percent which was five percent higher than the required Year 1 performance standard. Based on

the shrub coverage from Year 1 and 2020, the shrub species will likely continue to increase canopy coverage as the planted species reach maturity.

## 5 RECOMMENDATIONS

Per the approved Plan, contingency actions may be implemented if the mitigation site continues to fail performance standards (Grette Associates 2013). Contingency actions implemented in 2015 reduced shrubs within the wetland enhancement area by 25 percent in response to unforeseen site conditions (Grette Associates 2015a). Grette Associates recommends that performance standards 2a, 2b, and 2c be updated to reflect emergent species and that a shrub community no longer be required. While removal of a shrub layer will potentially reduce habitat value, the wetland enhancement area will still meet wetland criteria (USACE 2010) to ensure no net loss of wetland area will occur. It is Grette Associates' professional opinion that the existing site conditions will not support a shrub community given the brackish conditions and that it would be more invasive to recommend any substantial modification (e.g. grading) to allow for more suitable growing conditions for shrubs. The emergent community exhibits approximately 80 percent groundcover and re-grading the site would potentially reduce emergent coverage which provides quality aquatic habitat compared to the shrub element that largely provides habitat only for terrestrial wildlife species (i.e. foraging). Given its location, the mitigation likely does not provide suitable refuge opportunities for most wildlife species that would be expected to forage in the area. In addition, Grette Associates recommends that the goose exclusion barrier be removed to prevent rack debris from covering the emergent species within the wetland enhancement area.

Grette Associates does not recommend any contingency measure within the wetland buffer areas. This area is within five percent of the 30 percent coverage requirement for Year 7 and it is Grette Associates' professional opinion that this area will continue to mature and provide great coverage over time.

If you have any questions on the site assessment observations or stewardship recommendations, please contact me at (253) 573-9300, or by email at [chadw@gretteassociates.com](mailto:chadw@gretteassociates.com).

Regards,



Chad Wallin  
Biologist

### References:

Grette Associates, LLC. 2013. Cornet Bay Marina – Cornet Bay Marina Mitigation Plan: Model Toxic Control Act (MTCA) Cleanup. Prepared for Kennedy/Jenks Consultants, Inc. July 2013.

Grette Associates, LLC. 2014. Cornet Bay Marina – Cornet Bay Marina Model Toxic Control Act (MTCA) Cleanup Mitigation Plan As-Built. Prepared for Kennedy/Jenks Consultants, Inc. August 28, 2014.

Grette Associates, LLC. 2015a. Cornet Bay Marina Model Toxic Control Act Cleanup Mitigation Plan: Contingency Action Compliance Report. Prepared for Kennedy/Jenks Consultants, Inc. March 17, 2015.

Grette Associates, LLC. 2015b. Cornet Bay Marina Model Toxic Control Act Cleanup Mitigation Plan: Year 1 Monitoring Report. Prepared for Kennedy/Jenks Consultants, Inc. October 19, 2020.

Washington State Department of Transportation (WSDOT). 2008. WSDOT Wetland Mitigation Site Monitoring Methods. Guidance Memorandum. Updated June 12, 2008.

**Attachment A.**

**Figure 1. Transect 1 facing northwest.**



**Figure 2. Transect 1 facing southeast.**



Figure 3. Transect 2 facing southwest.



Figure 4. Transect 2 facing northeast.



**Figure 5. Transect 3 facing southwest.**



**Figure 6. Transect 3 facing northeast.**





**Figure 7. Planted emergent area.**





AQUATIC HABITAT CREATION AREA (APPROX.)

LEGEND

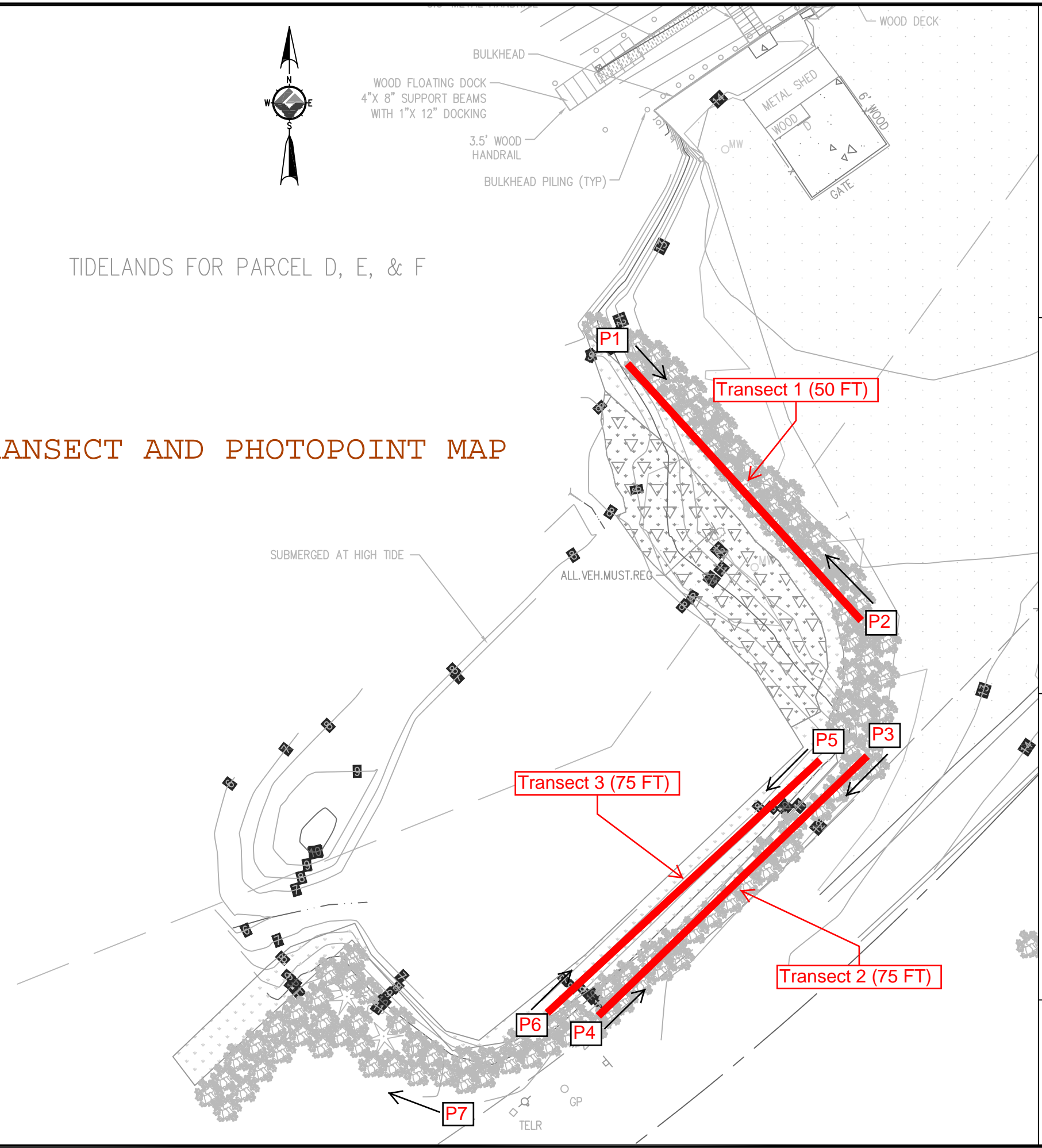
-  AQUATIC HABITAT CREATION  
1300 SF (APPROX.)
-  WETLAND ENHANCEMENT  
1720 SF (APPROX.)
-  WETLAND BUFFER ENHANCEMENT  
1750 SF (APPROX.)
-  MHHW  
MEAN HIGHER HIGH WATER  
11.02 (APPROX.)



PHOTO FROM 5.08.2013 5:00PM -- PREDICTED TIDE AT 5:00PM = 10.0 FT MLLW

TIDELANDS FOR PARCEL D, E, & F

TRANSECT AND PHOTOPOINT MAP



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PROJECT #: 304.003  
DESIGNED BY: CW  
CHECKED BY: MB  
DATE: 05.14.13  
DATE: 05.14.13

CLIENT: Cornet Bay Marina

**CORNET BAY  
REMEDIATION PROJECT  
PROPOSED ONSITE MITIGATION**

SITE ADDRESS: Island County, WA

DRAWING SCALE: 1/2" = 1'0"

THE PROPOSED ENHANCEMENT AREAS WILL BE PLANTED WITH NATIVE SHRUB SPECIES