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March 25, 2011

Ms. Gail Terzi
US Army Corps of Engineers Seattle District
Regulatory Branch CENWS OD RG
PO Box 3755
Seattle, WA 98124-3755

**RE: SR 16 Union Ave to Jackson Avenue HOV (SR 16 Snake Lake) Mitigation Site
USACE IP OYB-4-012713 (Modified), NWP (14) 200301129
WDFW HPA ST-G0109-02, ST-G0105-01**

Dear Ms. Terzi:

The Washington State Department of Transportation completed qualitative monitoring of the SR 16 Snake Lake mitigation site on August 23rd, 2010. Monitoring was completed to address the Permit Requirements. Monitoring activities include vegetation observations and photo documentation of current site conditions. This Year-2 report is being issued for compliance with the terms and conditions of the USACE IP OYB-4-012713 (Modified) and WDFW HPA ST-G0109-02, ST-G0105-01.

General Site Information	
USACE Number	OYB-4-012713 NWP (14) 200301129
Hydraulic Approval Permit Log Number	ST-G0109-02, ST-G0105-01
Mitigation Location	City of Tacoma, west of Tyler street, under SR 16, on either side of Snake Lake, Pierce County
LLID Number	1224923472352
Construction Date	2008
Monitoring Period	2009-2013
Year of Monitoring	2 of 5
Area of Project Impact	5.66 acres ¹
Type of Mitigation	Re-vegetation
Area of Mitigation	0.9 acre

¹ Additional wetland acreage provided by two other mitigation sites, including SR 16 Leach Creek and the Tacoma Nature Center Wetland Mitigation Site. See Appendix 1.

Summary of Monitoring Results and Management Activities

Permit Requirement	2010 Results ²	Management Activities
80% survival of vegetative cuttings	72% survival (CI _{80%} = 67–77%)	

How is this site developing?

The tree and shrub planting areas situated on the north and south sides of SR 16 are becoming well established and show a higher rate of survival than the rest of the site (Photo 2). Plants in this zone range in height from 1 to 4 meters tall and the dominant species include roses (*Rosa* spp.) and red alder (*Alnus rubra*), tall oregonrape (*Mahonia aquifolium*), and twinberry honeysuckle (*Lonicera involucrata*).

The plantings located under the bridge (dry shrub mix) have a very low survival rate (Photo 1). The lack of water and sunlight has inhibited the ability of the plants in this zone to become established.

Invasive non-native species observed on site include bull thistle (*Cirsium vulgare*), common St. Johnswort, cutleaf blackberry (*Rubus laciniatus*), and Scotch broom (*Cytisus scoparius*). The cover of these species is estimated at four percent. Management activities include ongoing weed control efforts.

² Estimated values are presented with their corresponding statistical confidence interval. For example, 72% survival (CI_{80%} = 67-77%) means we are 80% confident that the true survival value is between 67% and 77%.

Results for Permit Requirement
(80% survival of vegetative cuttings):

Survival across the site is 72% ($CI_{80\%} = 67-77\%$). This value does not satisfy the Permit requirement target. As we have seen in previous years, virtually all dead plants were located under the bridge (Photo 1); however some of the recently planted California huckleberries (*Vaccinium ovatum*) seem to be surviving.

Plants outside of the bridge's drip-line are generally doing well (Photo 2). If the transects that fell underneath the bridge are removed from the sample, the result is 88 percent survival ($CI_{80\%} = 81-96\%$). This does meet the HPA permit requirement.



Photo 1 – Mortality under the bridge (August 2010)



Photo 2 – Plantings outside of drip line (August 2010)

For questions about this report or the mitigation site please contact me at 360-570-6640 or by email at bush@wsdot.wa.gov.

Sincerely,

Tony Bush
Wetland Assessment and Monitoring Program

Appendix 1

Mitigation sites that compensate for impacts incurred during construction of the SR 16 Union Avenue to Jackson Avenue HOV project.

Mitigation Site	Year of Monitoring 2010	Wetland Impact (acre)	Type of Impact	Mitigation (acre)	Type of Mitigation
Leach Creek	4 of 10 (15)	4.34	Permanent, Stormwater designation	26.80	Preservation and Enhancement
Snake Lake	2 of 5	0.82	Temporary	0.9	Re-vegetation
		0.49	Shading	None	N/A
Tacoma Nature Center	0 of 10 (Year-1 in 2011)	0.01	Permanent	0.42	Re-establishment
Total Impacts		5.66			

