



**Washington State
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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 522 Paradise Lake Road to Snohomish River Stage 2 and 4 - Northeast
Mitigation Site**
USACE 200201342
NMSF Tracking No. WHB-02-143

Dear Ms. Terzi:

The Washington State Department of Transportation completed qualitative monitoring of the SR 522 Paradise Lake Road mitigation site on August 10, 2010, to address Year-7 (2011) and Year-10 (2014) performance standards. Monitoring activities included an assessment of wetland hydrology, vegetation observations, and photo documentation. This Year-6 report is being issued for compliance with the terms and conditions of the Biological Assessment WHB-02-143, and to confirm the second year in a row of achieving final year performance standards.

General Site Information			
USACE IP Number	2002-01342		
Mitigation Location	North side of SR 522 east of Fales Road, Snohomish County		
LLID Number	1220746478150		
Construction Date	2004		
Monitoring Period	2005-2014		
Year of Monitoring	6 of 10		
Type of Project Impact	Wetland	Buffer	
Area of Project Impact¹	2.27 acres	9.52 acres	
Type of Mitigation	Wetland Establishment	Wetland Enhancement	Buffer Enhancement
Area of Mitigation	1.01	1.10	0.91

¹ Additional compensation for wetland and buffer impacts is provided by the SR 522 Paradise Lake Road to Snohomish River Stages 2 and 4 – Northwest Mitigation Site and the SR 522 Snohomish River Bridge 522/138 Scour Repair (East Bank) Restoration Site.

Summary of Monitoring Results and Management Activities

Performance Criteria (Year-7)	2010 Results	Management Activities
Performance Standards		
Wetland hydrology present.	Not present in all intended areas	
Native woody species will achieve 50% coverage in the forested and scrub-shrub wetland communities.	Qualitatively estimated 85% cover	
In the wetland, non-native invasive species will not exceed 15% cover.	Qualitatively estimated 5% cover	Manual weed control occurred in Feb., May, July, August, Sept. and Oct. in 2010. Herbicide application occurred in July.
Native upland tree and shrub in the buffer communities will achieve 35% coverage.	Qualitatively estimated 95% cover	Selective thinning of alders to maintain diversity of desirable woody species planted is planned for March 2011.
In the buffer, non-native invasive species will not exceed 10%.	Qualitatively estimated 5% cover	Manual weed control occurred in Feb., May, July, August, Sept. and Oct. in 2010.
Fencing and signage as shown on the plans are in place.	In place as planned	
Habitat structures as shown on the plans are in place.	In place as planned	
Permit Requirement		
Document maintenance activities.	7 separate maintenance visits	

Is the site a success?

This is the second year in a row that the mitigation site is meeting all of its Year-10 vegetative performance standards (see Table 1 at end of the letter for results) and is developing into a functioning wetland. This site has high cover of woody species and few invasive species in both the wetland and upland areas. Willows (*Salix* sp) and red alder (*Alnus rubra*) are dominant species in the wetland, providing cover and foraging opportunities for wildlife. Variations in topography result in small depressions. These areas create opportunity for the site to perform hydrologic and water quality functions (Photo 1). However, a wetland delineation conducted on April 21st, 2010 revealed a shortage of wetland acreage. The site was delineated at 1.72 acres a shortage of 0.39 acre from the intended 2.11 acres.

Results for Performance Standard 1 (Presence of wetland hydrology):

Monitoring records from March and April 2010 indicate wetland hydrology was not present in all of the intended areas. Observations of saturation to the soil surface and inundation were made

throughout most of the site, however on two out of three visits the sample point in the southwest corner of the site failed to meet the performance standard for wetland hydrology. Multiple site visits, indicate wetland hydrology is present in most intended areas.



Photo 1 – Inundated topographical depression (March 2010)

Results for Performance Standard 2

(Native woody species will achieve 50% coverage in the forested and scrub-shrub wetland communities):

The forested and scrub shrub wetland zones are qualitatively estimated to have 85 percent cover (Photo 2). This value exceeds the performance standard requirement. Over eight woody species were observed in the wetland creating potential for future varied canopy structure and diverse habitat for wildlife.

Results for Performance Standard 3

(In the wetland, non-native invasive species will not exceed 15% cover.):

The aerial cover of invasive species in the wetland is qualitatively estimated at five percent. This value is below the performance

Results for Performance Standard 7

(In the buffer, non-native invasive species will not exceed 10 %.):

The aerial cover of invasive species in the buffer is qualitatively estimated at five percent. This value is below the target threshold. The species observed in the buffer include Himalayan blackberry (*Rubus armeniacus*), cutleaf blackberry (*Rubus laciniatus*), reed canarygrass (*Phalaris arundinacea*), and Canada thistle (*Cirsium arvense*).

Results for Performance Standard 8

(Fence and signage are in place as planned.):

Fencing and signage were installed according to plan. No maintenance is required.

standard threshold. Invasive species observed in the wetland include reed canarygrass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus armeniacus*).

Results for Performance Standard 4

(Native upland tree and shrub in the buffer communities will achieve 35% coverage.):

The aerial cover of native woody species in the buffer is qualitatively estimated 95 percent. This greatly exceeds the performance standard requirement (Photo 2). Species observed in this zone include snowberry (*Symphoricarpos albus*), red elderberry (*Sambucus racemosa*), thimbleberry (*Rubus parviflorus*), Douglas-fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata*).



Photo 2 – Woody cover in the wetland (August 2010)

Results for Performance Standard 9

(Habitat structures as shown on plans have been installed.):

Habitat structures were installed according to plan. No maintenance is required.

Permit Requirement 1

(Maintenance activities conducted to date.):

The site was visited on seven separate occasions to conduct invasive control and to remove competitive herbaceous species around native woody plantings. A total of 125 man-hours were spent conducting maintenance activities on site.

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

Sincerely,

Tony Bush
Wetland Assessment and Monitoring Program

Table 1. Year-10 Vegetative Performance Standards

Performance Criteria (Year-10)	2010 Results	Management Activities
Performance Standards		
Native emergent facultative or wetter vegetation will achieve 75% cover.	Not applicable.	
Native woody species will achieve 75% coverage in the forested and scrub-shrub wetland communities.	Qualitatively estimated 85% cover	
In the wetland, non-native invasive species will not exceed 10% cover.	Qualitatively estimated 5% cover	
Native upland tree and shrub in the buffer communities will achieve 50% coverage.	Qualitatively estimated 95% cover	
In the buffer, non-native invasive species will not exceed 10%.	Qualitatively estimated 5% cover	

