



**Washington State**  
**Department of Transportation**  
 Paula Hammond, PE  
 Secretary of Transportation

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March 25, 2011

Washington State Department of Fish and Wildlife  
 Habitat Program  
 600 N. Capitol Way  
 Olympia, WA 98501-1091

RE: SR 14 Woodard Creek Bank Protection  
 Original WDFW HPA Permit **107420-1**

Dear Interested Parties:

The Washington State Department of Transportation completed monitoring of the site on August 24, 2010 to determine survival of planted species for compliance with the above-listed HPA.

General Site Information	
<b>WDFW HPA Permit Number</b>	107420-1
<b>Restoration Location</b>	Next to SR 14 at Woodard Creek (milepost 34.25) in Skamania County
<b>Construction Date</b>	2007
<b>Monitoring Period</b>	2009-2011
<b>Year of Monitoring</b>	2 of 3
<b>Project Impact</b>	Flood caused bridge damage
<b>Type of Restoration</b>	Riparian re-vegetation
<b>Area of Restoration</b>	0.004 acres

**Site development:**

Permit Requirement	2009 Results	Management Activities
80% or greater survival	75% survival in upper riparian	Blackberry control in upper riparian area
80% or greater survival	86% survival in armored bank	

Planted woody species survival in the upper riparian area does not currently meet the permit requirement. Plantings in this area showed signs of stress and many drought intolerant species did not survive or showed signs of stress. Many willows (*Salix*) stakes installed in the armored

bank show vigorous growth with some mortalities, however, this area just met the permit requirement.

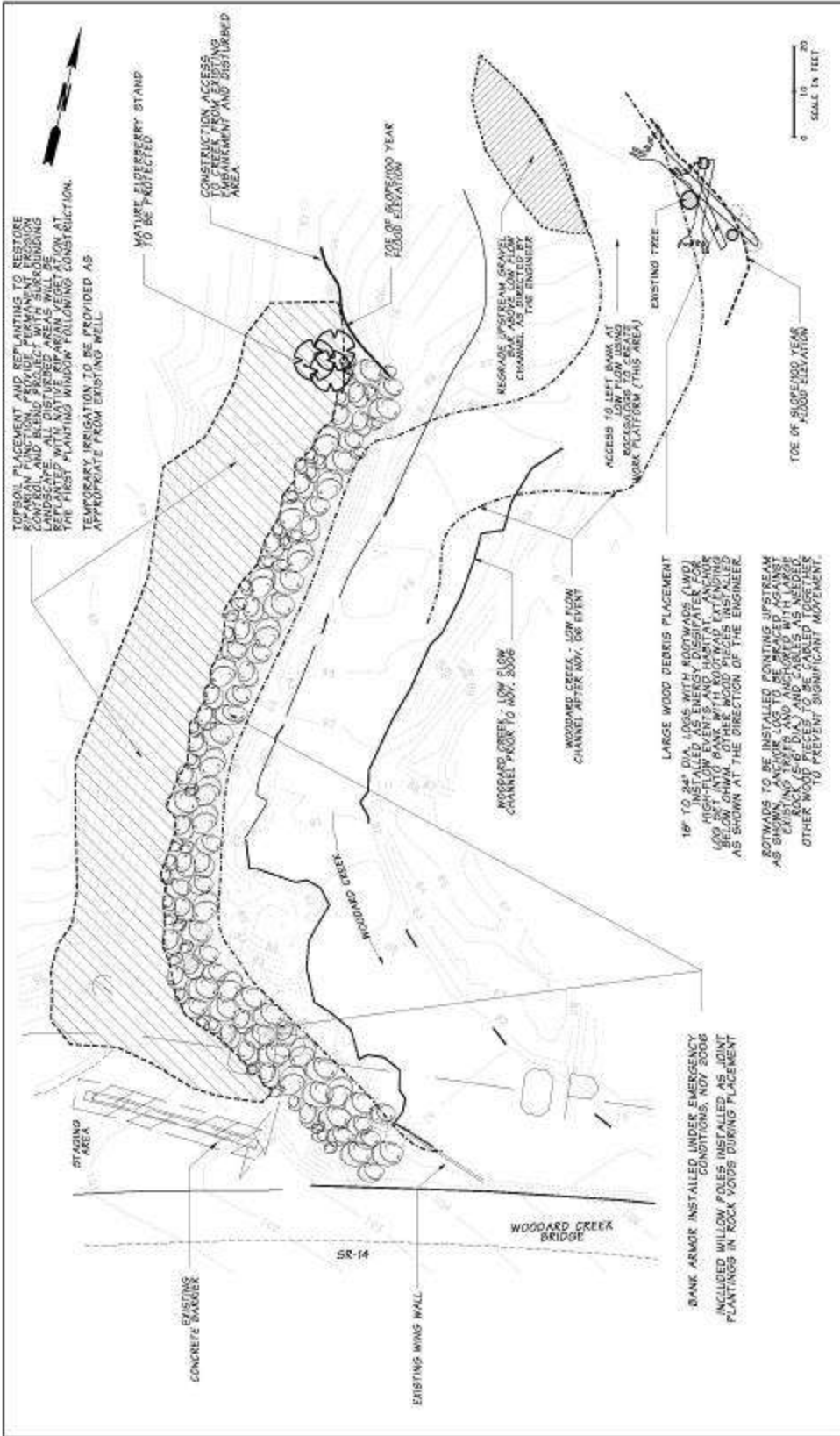
During monitoring, the armored bank appeared to be stable and no erosion along the creek was observed.

Continued weed and grass control in the riparian planting area will be conducted throughout the 2011 growing season. Replanting efforts utilizing native riparian woody vegetation will be targeted for the 2011/2012 dormant planting season.

We welcome your questions or comments. Please contact me at 360/570-6640 or by e-mail at [busht@wsdot.wa.gov](mailto:busht@wsdot.wa.gov) for questions about these mitigation sites.

Sincerely,

Tony Bush  
Wetland Assessment and Monitoring Program



TOPSOIL PLACEMENT AND REPLANTING TO RESTORE VEGETATION AND BIRD NESTS WITH SURROUNDING LANDSCAPE. ALL DISTURBED AREAS WILL BE REVEGETATED WITH NATIVE PLANTS AND TREES AT THE FIRST PLANTING WINDOW FOLLOWING CONSTRUCTION. TEMPORARY IRRIGATION TO BE PROVIDED AS APPROPRIATE FROM EXISTING WELL.

MATURE "ELDERBERRY" STAND TO BE PROTECTED

CONSTRUCTION ACCESS TO CREEK FROM EXISTING WINGWALL AND DISTURBED AREA

TOE OF FLOOD ELEVATION

WOODWARD CREEK - LOW FLOW CHANNEL PRIOR TO NOV. 2006

WOODWARD CREEK - LOW FLOW CHANNEL AFTER NOV. 06 EVENT

LARGE WOOD DEBRIS PLACEMENT 16" TO 24" DIA. LOGS WITH ROOTWADS (LWD) INSTALLED AS ENERGY DISSIPATER FOR LOW HIGH FLOW EVENTS AND HABITAT ENHANCEMENT FOR WOODRUFF AND OTHER WOOD PECKER BIRDS AS SHOWN AT THE DIRECTION OF THE ENGINEER.

ROOTWADS TO BE INSTALLED POINTING UPSTREAM AS SHOWN. ANCHOR LOG TO BE PLACED AGAINST EACH 6" DIA. AND CABLES TO BE NEEDED TO OTHER WOOD PIECES TO BE CABLED TOGETHER TO PREVENT SIGNIFICANT MOVEMENT.

BANK ARMOR INSTALLED UNDER EMERGENCY CONDITIONS, NOV 2006 INCLUDED WILLOW POLES INSTALLED AS JOINT PLANTINGS IN ROCK VOIDS DURING PLACEMENT

TOE OF FLOOD ELEVATION

SCALE IN FEET  
0 10 20

FILE NAME: S:\2006\SR14\2006\SR14\SR14_001.DWG		PROJECT NO. 06-001	
DATE: 06/15/06	PROJECT: SR-14 WOODWARD CREEK	SHEET: 10	
DESIGNED BY: B. COBBITT	ENGINEER: B. COBBITT	SCALE: AS SHOWN	
CHECKED BY: D. COBBITT	PROJECT: SR-14 WOODWARD CREEK	DATE: 06/15/06	
DESIGNED BY: C. YANS	PROJECT: SR-14 WOODWARD CREEK	DATE: 06/15/06	
DESIGNED BY: D. WARDNER	PROJECT: SR-14 WOODWARD CREEK	DATE: 06/15/06	
TITLE: SR-14 WOODWARD CREEK STREAMBANK EROSION MP 34.25 LT RESTORATION PLAN		WASHINGTON STATE DEPARTMENT OF TRANSPORTATION	