Washington State Department of Transportation

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March 30, 2015

Ms. Caroline Cocoran
Department of Ecology
Wetland Mitigation and Permit Compliance
3190 160th Avenue SE
Bellevue, WA 98008-5452

RE: SR 520 Pontoon Construction Project SR 520 Bridge Replacement and HOV Program (Grass Creek) Mitigation Site
USACE NWS Permit 2008-151

Dear Ms. Corcoran:

The Washington State Department of Transportation completed qualitative monitoring of the SR 520 Grass Creek mitigation site on September 10, 2014, to address Year-3 (2015) performance standards. Monitoring activities included vegetation observations and photo documentation. This Year-2 report is being issued for compliance with the reporting requirements of the SR-520 Pontoon Construction Project – 401 Water Quality Certification; Order No. 8368.

General Site Information			
USACE NWP IP Number	2008-151		
WQC Order Number	8368		
Mitigation Location	At the mouth of Grass Creek in the North Bay of Grays Harbor		
LLID Number	Pending		
Construction Date	2011		
Monitoring Period	2013-2022		
Year of Monitoring	2 of 10		
Area of Project Impact	1.10 acres		
Type of Mitigation	Estuarine Rehabilitation	Tidal Flat Re-establishment	Tidal Channel and Edge Re-establishment
Area of Mitigation[1]	4.02 acres	0.62 acre	4.13 acres

[1] Mitigation acres from WSDOT 2010. An additional 46.01 acres of mitigation is available for use for other projects subject to future permits and approval by permitting agencies.

Performance Standards (Year-3)	2014 Results	Management Activities
Estuarine hydrology present	Present (See Photos 2-16)	
Palustrine hydrology present	Present	
Extent of salt tolerant species and existing fresh water vegetation, including reed canarygrass (*Phalaris arundinacea*), showing signs of salt induced stress documented.	Salt tolerant plants present throughout the site. Reed canarygrass showing signs of stress throughout estuary areas (Photo 1).	
At least 30% cover of native, wetland (facultative and wetter), woody species (both planted and volunteer) in the scrub-shrub and forested communities of the rehabilitated and enhanced wetland.	75% cover in palustrine forested areas; 30% cover in palustrine scrub-shrub areas.	100 Sitka spruce (*Picea sitchensis*) planted 11/20/2014
< 10% cover of non-native species in estuarine areas and < 20% cover of non-native species in palustrine areas. Washington State and Grays Harbor County-listed Class A noxious weeds, Japanese knotweed (*Reynoutria japonica*), and common reed (*Phragmites australis*) identified on the site will be eradicated.	20% cover in estuarine areas; 5% cover in palustrine areas.	Weed control performed on 2/20/14, 4/14/14, 5/15/14, 6/9/14, & 8/11/14
Native woody species (planted and volunteer) will achieve an average density of at least 5 plants per 100 sq. ft. in the buffer planting areas.	80% cover (cover estimate used as surrogate for density)	
< 20% cover non-native species in the buffer. State and County Class A noxious weeds eradicated.	5% cover; State and County Class A weeds not observed	
Habitat structures present according to plan	Many habitat structures observed	

Site development:

This site is doing well with estuarine areas establishing a salt tolerant vegetation community and reed canarygrass showing signs of stress. Woody plantings in the forested areas of the site are well established with an overstory of willows (*Salix* species), and Sitka spruce (*Picea sitchensis*) and western red cedar (*Thuja plicata*) in the understory. Palustrine scrub-shrub areas may receive more salt influence than originally anticipated. Pacific crabapple (*Malus fusca*) is surviving in the intended palustrine scrub-shrub area and on the remaining berm along Grass Creek. Some appeared to be planted and some are volunteering. If replanting of woody species is considered for the intended palustrine area, the Pacific crabapple may be a species that could survive current site conditions and add to additional cover in this area. Buffer areas around Channel F are establishing. Some Himalayan blackberry (*Rubus armeniacus*) was observed in this area. Weed control will continue as needed.

Results for Performance Standard 1
(Estuarine hydrology present):

Photos to document tidal inundation were taken on September 10, 2014 during a NOAA predicted 9.7 feet above sea level tide (Photo 2-16). High tides regularly inundate the tidal channels and mudflats with subsequent draining during a receding tide.

Results for Performance Standard 2
(Palustrine hydrology present):

Water was present within 12 inches of the soil surface in the single monitoring well on both March 13 and April 21, 2014 visits. On the first visit, about a third of the palustrine scrub-shrub area was saturated to the surface or inundated (up to five inches deep). On the second visit there were pockets of inundation in the low areas.

Results for Performance Standard 3
(Extent of salt tolerant species and existing fresh water vegetation, including reed canarygrass (*Phalaris arundinacea*), showing signs of salt induced stress documented):

Salt tolerant plants are present throughout the site with tolerant to very tolerant species (Western Washington Rating System Appendix B; Hruby 2004) adjacent to channels and other lower lying intended estuary areas. Reed canarygrass appears to be showing signs of stress throughout the majority of the estuary areas (Photo 1) with a trend of more stressed stands toward the east. Reed canarygrass appears in its typical thriving, full-sun, more fresh-water, form along the western edge of the site, nearest the road, and south of the intended palustrine area.

Results for Performance Standard 4
(At least 30% cover of native, wetland, woody species in the scrub-shrub and forested communities of the rehabilitated and enhanced wetland):

Native woody cover in palustrine forested areas is visually estimated at 75 percent, dominated by Hooker's willow (*Salix hookeriana*). Palustrine scrub-shrub areas have patchy cover, but overall cover is visually estimated at 30 percent; also dominated by willows.

Results for Performance Standard 5
(< 10% cover of non-native species in estuarine areas and < 20% cover of non-native species in palustrine areas. Washington State and Grays Harbor County-listed Class A noxious weeds, Japanese knotweed, and common reed identified eradicated):

The visual cover estimate of non-native species in the estuarine areas is near 20 percent, dominated by salt-stressed reed canarygrass.

Cover of non-native plants in the intended palustrine area is visually estimated at five percent, and includes: bird's-foot trefoil (*Lotus corniculatus*), reed canary-grass, and hairy cat's ear (*Hypochaeris radicata*) and other non-native *Asteraceae*. No Class A noxious weeds, Japanese knotweed, or common reed were observed during 2014 monitoring activities.

Photo 1 – Salt-stressed reed canarygrass in the estuary (August 2014)

Results for Performance Standard 6
(Native woody species will achieve an average density of at least 5 plants per 100 sq. ft. in the buffer planting areas):

An estimate of 80 percent cover is used as a surrogate for density in the buffer areas surrounding the intended palustrine areas in 2014. Hooker's willow is the dominate plant species. The buffer on the southeast corner of the site was inaccessible during the site visit and assessment of this area is not included in the cover estimate. In 2013, density in the buffer was estimated at 4.7 plants per 100 square feet ($CI_{80\%}$= 4-5.5).

Results for Performance Standard 7
(Less than 20% cover non-native species in the buffer. State and County Class A noxious weeds eradicated):

Cover of non-native species is visually estimated at five percent in buffer areas surrounding the intended palustrine areas, mostly provided by Himalayan blackberry and occasional reed canarygrass. This value is below the performance standard threshold. State and County Class A noxious weeds are not observed during monitoring activities. The buffer on the southeast corner of the site was inaccessible during the site visit.

Results for Performance Standard 8
(Habitat structures present according to plan):

Many habitat structures were observed, though a complete census was not performed.

High-tide Photos (September 10, 2014)

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

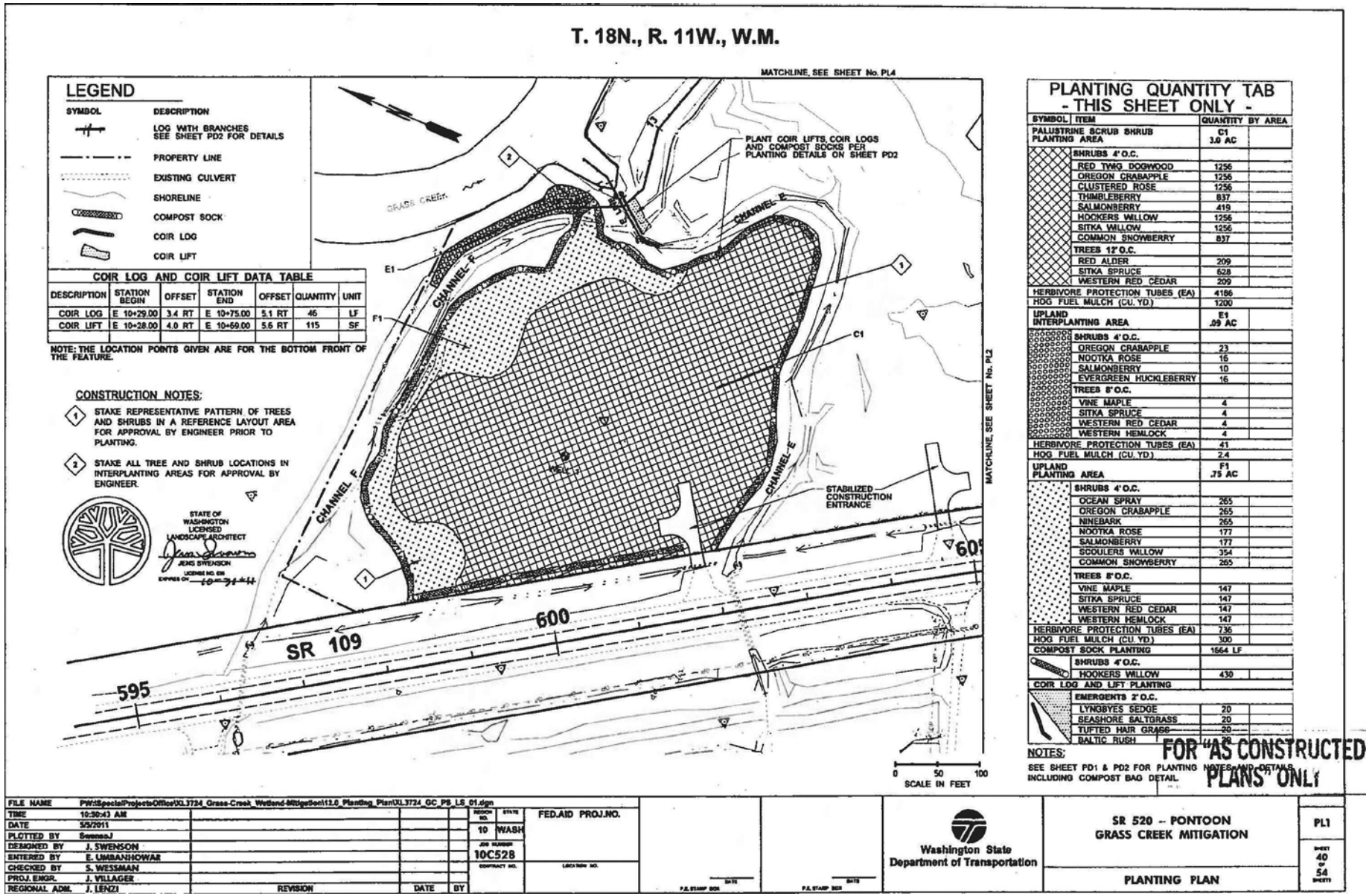
Photo 15

Photo 16

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

Sincerely,

Tony Bush
Wetlands Program


T. 18N., R. 11W., W.M.
MATCHLINE, SEE SHEET No. PL4
LEGEND
SYMBOL
DESCRIPTION
LOG WITH BRANCHES SEE SHEET PD2 FOR DETAILS
PROPERTY LINE
EXISTING CULVERT
SHORELINE
COMPOST SOCK
COIR LOG
COIR LIFT
COIR LOG AND COIR LIFT DATA TABLE
DESCRIPTION | STATION BEGIN | OFFSET | STATION END | OFFSET | QUANTITY | UNIT
COIR LOG | E 10+29.00 | 3.4 RT | E 10+75.00 | 5.1 RT | 46 | LF
COIR LIFT | E 10+28.00 | 4.0 RT | E 10+69.00 | 5.6 RT | 115 | SF
NOTE: THE LOCATION POINTS GIVEN ARE FOR THE BOTTOM FRONT OF THE FEATURE.
CONSTRUCTION NOTES:
1 STAKE REPRESENTATIVE PATTERN OF TREES AND SHRUBS IN A REFERENCE LAYOUT AREA FOR APPROVAL BY ENGINEER PRIOR TO PLANTING.
2 STAKE ALL TREE AND SHRUB LOCATIONS IN INTERPLANTING AREAS FOR APPROVAL BY ENGINEER.
STATE OF WASHINGTON LICENSED LANDSCAPE ARCHITECT
JENS SWENSON
GRASS CREEK
PLANT COIR LIFTS, COIR LOGS AND COMPOST SOCKS PER PLANTING DETAILS ON SHEET PD2
CHANNEL E
CHANNEL F
E1
F1
C1
STABILIZED CONSTRUCTION ENTRANCE
SR 109
600
595
605
MATCHLINE, SEE SHEET No. PL2
0 50 100
SCALE IN FEET
PLANTING QUANTITY TAB - THIS SHEET ONLY -
SYMBOL | ITEM | QUANTITY BY AREA
PALUSTRINE SCRUB SHRUB PLANTING AREA | C1 3.0 AC
SHRUBS 4' O.C.
RED TWIG DOGWOOD | 1256
OREGON CRABAPPLE | 1256
CLUSTERED ROSE | 1256
THIMBLEBERRY | 837
SALMONBERRY | 419
HOOKERS WILLOW | 1256
SITKA WILLOW | 1256
COMMON SNOWBERRY | 837
TREES 12' O.C.
RED ALDER | 209
SITKA SPRUCE | 628
WESTERN RED CEDAR | 209
HERBIVORE PROTECTION TUBES (EA) | 4186
HOG FUEL MULCH (CU. YD.) | 1200
UPLAND INTERPLANTING AREA | E1 .09 AC
SHRUBS 4' O.C.
OREGON CRABAPPLE | 23
NOOTKA ROSE | 16
SALMONBERRY | 10
EVERGREEN HUCKLEBERRY | 16
TREES 8' O.C.
VINE MAPLE | 4
SITKA SPRUCE | 4
WESTERN RED CEDAR | 4
WESTERN HEMLOCK | 4
HERBIVORE PROTECTION TUBES (EA) | 41
HOG FUEL MULCH (CU. YD.) | 2.4
UPLAND PLANTING AREA | F1 .75 AC
SHRUBS 4' O.C.
OCEAN SPRAY | 265
OREGON CRABAPPLE | 265
NINEBARK | 265
NOOTKA ROSE | 177
SALMONBERRY | 177
SCOULERS WILLOW | 354
COMMON SNOWBERRY | 265
TREES 8' O.C.
VINE MAPLE | 147
SITKA SPRUCE | 147
WESTERN RED CEDAR | 147
WESTERN HEMLOCK | 147
HERBIVORE PROTECTION TUBES (EA) | 736
HOG FUEL MULCH (CU. YD.) | 300
COMPOST SOCK PLANTING | 1664 LF
SHRUBS 4' O.C.
HOOKERS WILLOW | 430
COIR LOG AND LIFT PLANTING
EMERGENTS 2' O.C.
LYNGBYES SEDGE | 20
SEASHORE SALTGRASS | 20
TUFTED HAIR GRASS | 20
BALTIC RUSH | 20
NOTES:
SEE SHEET PD1 & PD2 FOR PLANTING NOTES AND DETAILS INCLUDING COMPOST BAG DETAIL.
FOR "AS CONSTRUCTED PLANS" ONLY
FILE NAME PW:\Special\Projects\Office\XL3724_Grass-Creek_Wetland-Mitigation\12.0_Planting_Plan\XL3724_GC_PB_LS_01.dgn
TIME 10:50:43 AM
DATE 5/5/2011
PLOTTED BY SwensoJ
DESIGNED BY J. SWENSON
ENTERED BY E. UMBANHOWAR
CHECKED BY S. WESSMAN
PROJ. ENGR. J. VILLAGER
REGIONAL ADM. J. LENZI
REVISION
DATE
BY
REGION NO. 10
STATE WASH
FED.AID PROJ.NO.
JOB NUMBER 10C528
CONTRACT NO.
LOCATION NO.
P.E. STAMP BOX
Washington State Department of Transportation
SR 520 -- PONTOON GRASS CREEK MITIGATION
PLANTING PLAN
PL1
SHEET 40 OF 54 SHEETS