

North Spokane Corridor – US 2 Lowering Deadman Creek Fish Passage Culvert

NWS-2008-336

Eastern Region

2014 MONITORING REPORT

Wetlands Program

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North Spokane Corridor – US 2 Lowering Deadman Creek Fish Passage Culvert Mitigation Site

USACE NWP (14 and 23) 2008-336



General Site Information			
USACE NWP 14 and 23 Number	NWS-2008-336		
Mitigation Location	At the intersection of Deadman Creek and US 2, approximately 3 miles northeast of Spokane		
LLID Number	1173647477790		
Construction Date	2011		
Monitoring Period	2012-2021		
Year of Monitoring	3 of 10		
Type of Project Impact	Permanent Wetland	Temporary Wetland	
Area of Project Impact¹	0.30 acre	0.24 acre	
Type of Mitigation	Wetland Establishment	Wetland Restoration	Stream Channel Creation
Area of Mitigation²	0.17 acre	0.24 acre	0.11 acre

¹Area of project impact numbers were taken from the March 18, 2010 Permit Modification Request from Tammie Williams to Rick Pratt. In addition to the mitigation provided on site, WSDOT purchased 0.56 acre of credit from the Meadowcroft Mitigation Bank to mitigate for permanent wetland impacts.

²The area of mitigation numbers were taken from WSDOT 2008 as modified by the document referenced above.

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Summary of Monitoring Results and Management Activities (2014)

Performance Standards	2014 Results	Management Activities
Native woody species (planted and volunteer) will achieve an average plant density of at least one plant per 20 square feet in the forested and scrub shrub wetland.	0.7 stems/20ft ²	Additional planting scheduled for Fall 2015
Native woody species will achieve an average plant density of at least three plants per 100 square feet in the upland buffer.	0.95 stems/100ft ² in the NW, SW, and SE quadrants. 3.5 stems/100ft ² in the NE quadrant.	Additional planting scheduled for Fall 2015
County-listed Class A, Class B Designates and Class B Noxious Weeds, and Canada thistle will not exceed 25 percent aerial cover across the restoration site.	7 percent	Weed control

Report Introduction

This report summarizes third-year (Year-3) monitoring activities at the United States (US) 2 Deadman Creek Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site development. Monitoring activities included vegetation surveys and photo-documentation.

What is the US 2 Deadman Creek Mitigation Site?

This 1.2 acre mitigation site (Figure 1) is a new and enhanced wetland and stream channel created at the intersection of Deadman Creek and US 2. This site was created to partially compensate for the loss of 0.40 acre of riverine wetlands due to construction of a fish-passable retrofit culvert where Deadman Creek crosses under US 2.

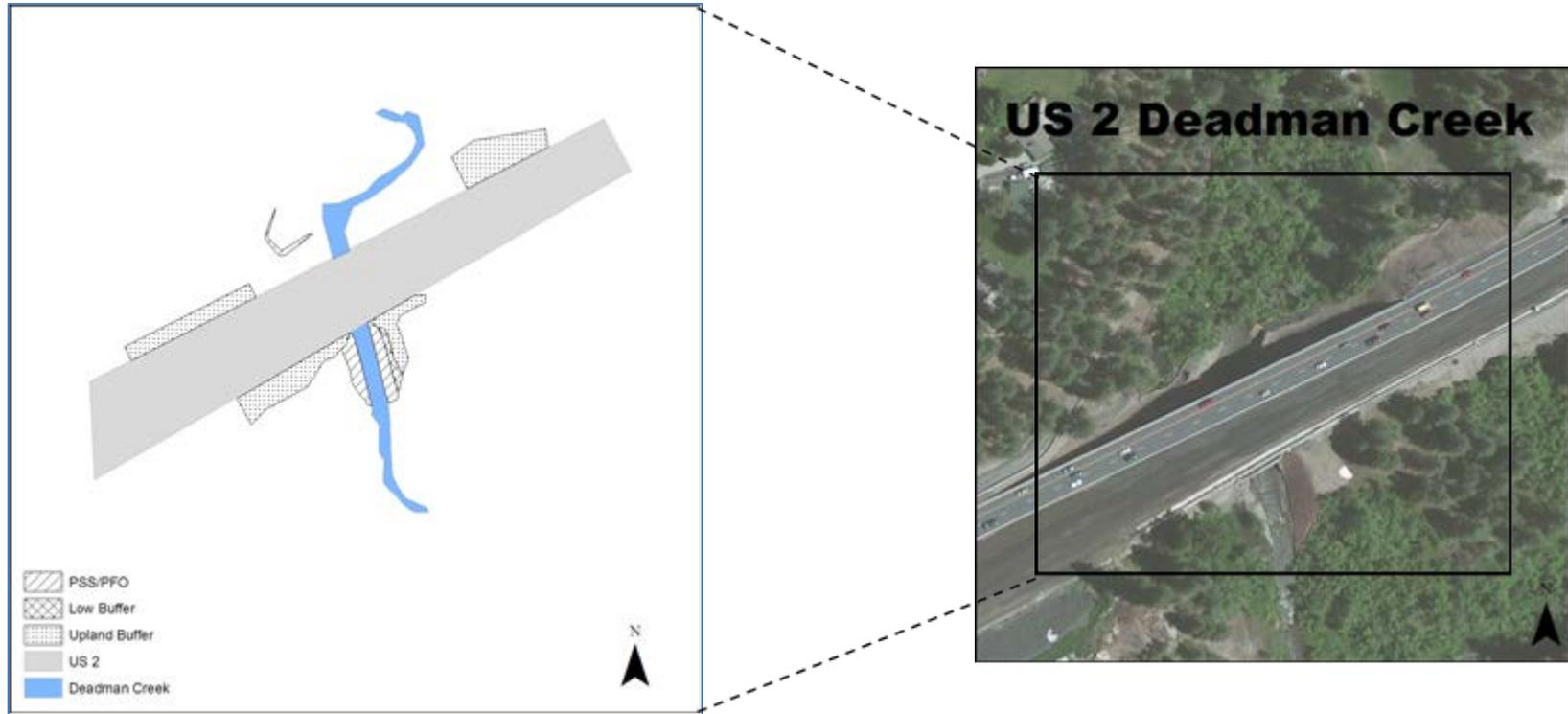


Figure 1 Site Sketch

The US 2 Deadman Creek Mitigation Site contains a realigned stream channel, floodplain wetlands, and upland buffer planting areas. Appendix 2 includes site directions.

What are the performance standards for this site?

Year-3

Performance Standard 1

Native woody species (planted and volunteer) will achieve an average plant density of at least 1 plant per 20 square feet in the forested and scrub shrub wetland.

Performance Standard 2

Native woody species will achieve an average plant density of at least 3 plants per 100 square feet in the upland buffer.

Performance Standard 3

County-listed Class A, Class B Designates and Class B Noxious Weeds, and Canada thistle will not exceed 25 percent aerial cover across the restoration site.

Appendix 1 shows the planting plan (WSDOT 2008).

How were the performance standards evaluated?

Plant counts were conducted to evaluate standards for the density of woody species (Performance Standards 1 and 2) in all zones except for the NE buffer area. The number of plants in each zone was divided by the area (taken from the as-built WSDOT 2008) of each zone in order to determine the number of plants per square foot. In the NE buffer area, three subjectively located ten by ten meter plots were arranged and the number of woody stems in the plots was averaged. This approach was utilized because of safety concerns associated with the steep slope of the planting area. The cover of Spokane County-listed Class A, Class B Designates and Class B Noxious Weeds, and Canada thistle was estimated qualitatively with visual assessments.

For additional details on the methods, see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](#) (WSDOT 2008).

How is the site developing?

The site continues to establish diverse communities of native wetland and upland vegetation along the banks of Deadman Creek and its associated buffers; however a significant amount of mortality has occurred. Planting could not be done in 2014 because of the lack of rainfall. There is a limited presence of invasive vegetation on this site. Weed control will also occur will occur in 2015 and planting is now planned for fall 2015.

Results for Performance Standard 1

(Native woody species will achieve an average plant density of at least one plant per 20 square feet in the forested and scrub shrub wetland):

The density of native woody vegetation in the wetland zones is 0.7 stems per 20 square feet (Photo 1). This density value is slightly below the performance standard target. Replanting will occur in 2014. Black cottonwood (*Populus balsamifera*), and willows (*Salix spp.*) are the dominant woody species in this zone.

Results for Performance Standard 2

(Native woody species will achieve an average plant density of at least three plants per 100 square feet in the upland buffer):

The density of native woody species in the NW, SW, and SE buffer areas is 0.95 stem per 100 square feet (Photo 2). The density of native woody species in the NE buffer area is 3.5 stems per 100 square feet. Across all buffer planting areas, the density is below the performance standard target. Replanting will occur in 2014. Dominant species in this zone include snowberry (*Symphoricarpos albus*), roses (*Rosa spp.*), and black hawthorn (*Crataegus douglasii*).

Results for Performance Standard 3

(County-listed Class A, Class B Designates and Class B Noxious Weeds, and Canada thistle will not exceed 25 percent aerial cover across the restoration site):

No County-listed Class A species were observed. Dalmatian toadflax (*Linaria dalmatica*), common bugloss (*Anchusa officinalis*) are both Class B weeds and were estimated to provide five percent cover across the site. Canada thistle (*Cirsium arvense*) is also present and provides an additional two percent cover. These problematic species were primarily located in the upland buffer areas.



Photo 1
Woody vegetation in the scrub-shrub wetland (June 2014)



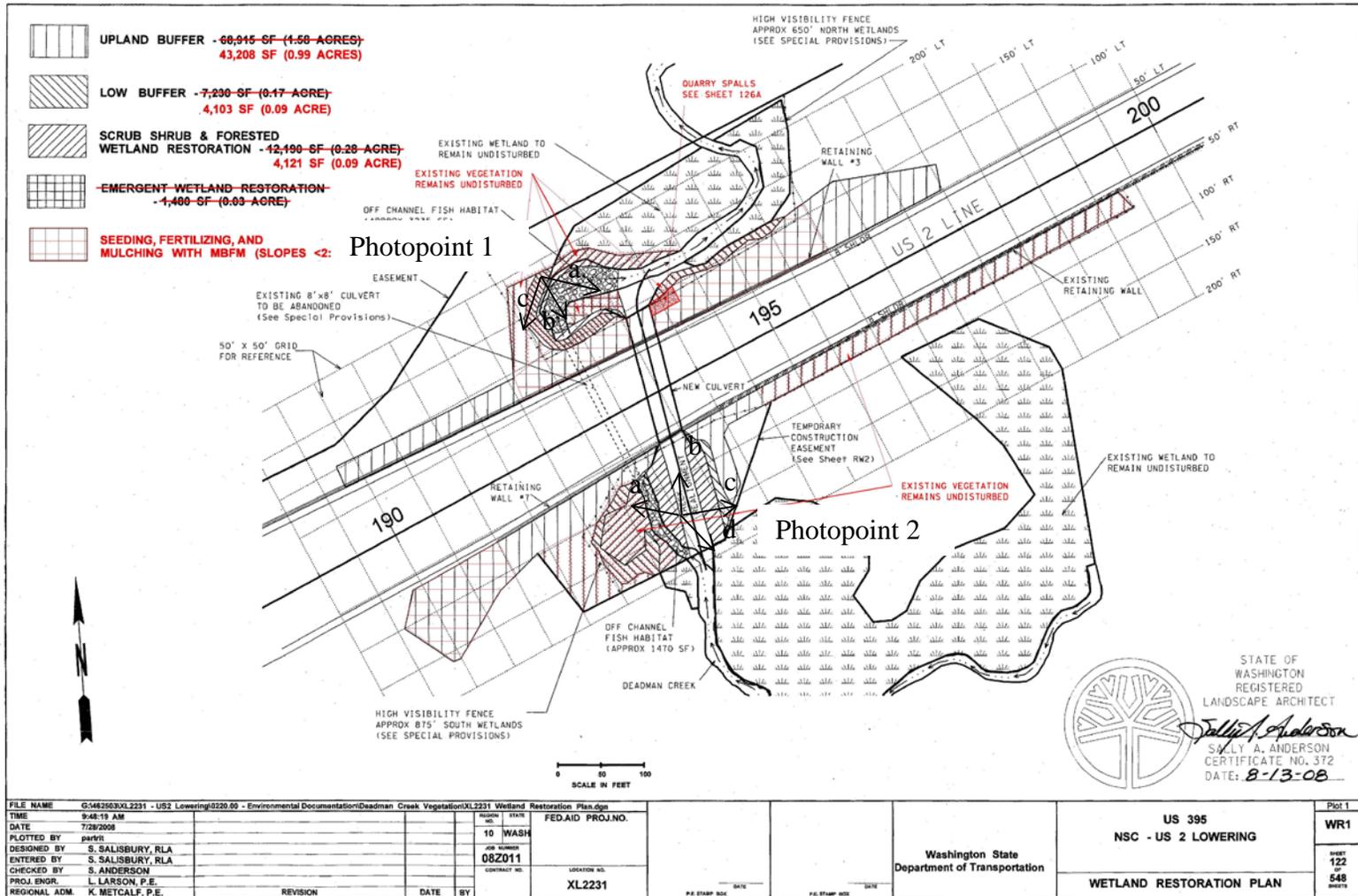
Photo 2
Sparse woody cover in upland buffer (June 2014)

What is planned for this site?

Planting and weed control will occur in 2015.

Appendix 1 – As built With Photopoint Locations

(WSDOT 2008)



Appendix 2 – Photo Points

The photographs below were taken from permanent photo-points on June 5, 2014 and document current site development.



Photo Point 1a



Photo Point 1b



Photo Point 1c



Photo Point 2a



Photo Point 2b



Photo Point 2c



Photo Point 2d

Driving Directions:

Take I-90 to exit 281 and turn left onto Division. In about 6 miles, merge onto US 2. In 2.8 miles turn right onto Farwell Rd. In 0.3 miles turn left onto Shady Slope Road. On 0.5 miles turn right onto Wilson Avenue. In 0.3 miles turn right onto Emilee Court. Continue down private driveway and park at a pullout on the left.

Literature Cited

1. [USACE] US Army Corps of Engineers. 2008. Department of the Army Nationwide 14 and 23 Permit Number NWS-2008-336.
2. [WSDOT] Washington State Department of Transportation. 2008. North Spokane Corridor – US 2 Lowering Deadman Creek Fish Passage Culvert Wetland Mitigation Report. Spokane (WA): Washington State Department of Transportation, Eastern Region.
3. [WSDOT] Washington State Department of Transportation. 2008. US 395 NSC – US 2 Lowering Wetland Restoration Plan Mitigation Site As-Built Planting Plan.
4. [WSDOT] Washington State Department of Transportation. 2008. WSDOT Wetland Mitigation Site Monitoring Methods. <http://www.wsdot.wa.gov/NR/rdonlyres/C211AB59-D5A2-4AA2-8A76-3D9A77E01203/0/MethodsWhitePaper052004.pdf>