SR 4 Elochoman Vic. Culvert Replacements MP 33.84 to 34.19 (Elochoman Culverts) Mitigation Site

USACE NWP (27) NWS-2014-082

Southwest Region
2018 MONITORING REPORT

Wetlands Program

Issued March 2019

Washington State Department of Transportation
Environmental Services Office
SR 4 Elochoman Vic. Culvert Replacements MP 33.84 to 34.19 (Elochoman Culverts) Mitigation Site

USACE NWP (27) NWS-2014-082

<table>
<thead>
<tr>
<th>General Site Information</th>
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<tbody>
<tr>
<td>USACE NWP 27</td>
</tr>
<tr>
<td>Mitigation Location</td>
</tr>
<tr>
<td>LLID Number</td>
</tr>
<tr>
<td>Construction Date</td>
</tr>
<tr>
<td>Monitoring Period</td>
</tr>
<tr>
<td>Year of Monitoring</td>
</tr>
<tr>
<td>Type of Impact</td>
</tr>
<tr>
<td>Area of Project Impact$^1$</td>
</tr>
<tr>
<td>Type of Mitigation</td>
</tr>
<tr>
<td>Planned Area of Mitigation$^2$</td>
</tr>
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</table>

$^1$ Impact numbers sourced from WSDOT 2014.
$^2$ Mitigation numbers sourced from WSDOT 2014.
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Summary of Monitoring Results and Management Activities (2018)

<table>
<thead>
<tr>
<th>Performance Standards</th>
<th>2018 Results</th>
<th>Management Activities</th>
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</thead>
<tbody>
<tr>
<td>At least 175 native woody shrubs in the wetland restoration areas</td>
<td>519 native woody shrubs in buffer and wetland combined</td>
<td></td>
</tr>
<tr>
<td>At least 175 native woody shrubs in the buffer enhancement areas</td>
<td>519 native woody shrubs in buffer and wetland combined</td>
<td></td>
</tr>
<tr>
<td>At least 175 native emergent plants in the wetland restoration areas</td>
<td>35% cover (qualitative)</td>
<td></td>
</tr>
<tr>
<td>No Class A noxious weeds, purple loosestrife (<em>Lythrum salicaria</em>), or paleyellow iris (<em>Iris pseudacorus</em>) across the site</td>
<td>Paleyellow iris observed</td>
<td>Weed control activity occurred on 4/26 and 8/15 in 2018. 2,000 woody plants installed Feb 2019</td>
</tr>
<tr>
<td>Reed canarygrass (<em>Phalaris arundinacea</em>) not outcompeting planted woody species throughout the site</td>
<td>Reed canarygrass outcompeting some emergent plantings</td>
<td></td>
</tr>
</tbody>
</table>

Report Introduction

This report summarizes final-year (Year 3) monitoring activities at the 004 Elochoman Culverts Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site success. Monitoring activities included vegetation surveys and photo-documentation on October 9, 2018.
What is the 004 Elochoman Culverts Mitigation Site?

Washington State Department of Transportation (WSDOT) created this 7,000 square foot on-site wetland restoration and buffer enhancement mitigation site (Figure 1) adjacent to SR 4 at two culverts (North Culvert and Tidegate Culvert) just south of the Elochoman River. This site compensates for temporary impacts to two wetlands due to culvert replacements for fish passage. The site restores wetland and buffer function by providing bank stabilization, vegetation structure, wildlife habitat, cover, and shading.

The 004 Elochoman Culverts mitigation site contains approximately 2,000 square feet of restored wetland and 5,000 square feet of upland buffer. Appendix 2 includes site directions.
What are the performance standards for this site?

Year 3

Performance Standard 1
There will be a minimum of 175 native woody shrubs (planted and volunteer species) in wetland restoration areas.

Performance Standard 2
There will be a minimum of 175 native woody shrubs (planted and volunteer species) in buffer enhancement areas.

Performance Standard 3
There will be a minimum of 175 native emergent plants (planted and volunteer species) in wetland restoration areas.

Performance Standard 4
In all monitoring years, all Class A noxious weeds, purple loosestrife, and paleyellow iris will be documented and completely removed from the site.

Performance Standard 5
Reed canarygrass will be managed so as to not outcompete planted woody species throughout the monitoring period.

Appendix 1 shows the planting plan (WSDOT 2014).
How were the performance standards evaluated?

A total count of live plants compared to planting numbers was used to assess survival of the plantings. Invasive performance standards were assessed with qualitative visual estimates. For additional details on the methods see the WSDOT Wetland Mitigation Site Monitoring Methods Paper (WSDOT 2008)

Is this site a success?

This site is successfully meeting all performance standards and is ready to be considered for closeout. Planted native woody and herbaceous vegetation provides bank stability, structure, habitat, cover, and shading in the restored wetland areas. Low-growing native shrubs provide glare screening and shading in the buffer areas. WSDOT restoration crews treated the paleyellow iris observed during monitoring.
Results for Performance Standard 1
(At least 175 native woody shrubs in the wetland restoration areas):

At least 175 native woody shrubs were present in the wetland restoration areas (Photo 1). In the wetland and buffer areas combined, 519 native woody shrubs were counted. This exceeds the performance standard target.

Results for Performance Standard 2
(At least 175 native woody shrubs in the buffer enhancement areas):

At least 175 native woody shrubs were present in the buffer enhancement areas (Photo 2). In the wetland and buffer areas combined, 519 native woody shrubs were counted. This exceeds the performance standard target.
Results for Performance Standard 3
(At least 175 native emergent plants in the wetland restoration areas):

Cover of native emergent plants in the wetland is qualitatively estimated at 35 percent (Photo 3). Percent cover was used as a surrogate criterion because it’s not feasible to count individual emergent plants in Year 3.

Results for Performance Standard 4
(No Class A noxious weeds, purple loosestrife, or paleyellow iris across the site):

Paleyellow iris was observed on both sides of the southern (tidegate) culvert, and reported to the region. Purple loosestrife was observed on the west side of the north culvert, but it was already treated with herbicide and appeared to be dead. No Class A noxious weeds observed.

Results for Performance Standard 5
(Reed canarygrass not outcompeting planted woody species throughout the site):

Reed canarygrass was present, but not outcompeting the planted woody species.

What is planned for this site?
Weed control will continue in 2019. Areas of sparse cover received targeted replanting of 4,250 shrubs in February, 2019.
Appendix 1 – Planting Plan with Photo Point Locations
(from WSDOT 2014)

See actual planting quantities below.
<table>
<thead>
<tr>
<th>Customer</th>
<th>Customer ID</th>
<th>Qty on Order</th>
<th>Line Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Rose, Nootka (Rosa nutkana) WW, 1-0, 12&quot;+ (30)</td>
</tr>
<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Dogwood, Red Osier (Cornus serilis, C. stolonifera) WW, 1-0, 12&quot;+ (50)</td>
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<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Spirea, Douglas (Spirea douglasii) WW, 2-0, 18&quot;+ (10)</td>
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<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Ninebark, Pacific (Physocarpus opulifolius) WW, 1-0, 12&quot;+ (50)</td>
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<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Twimberry (Lonicer a involucrata) WW, 1-0, 12&quot;+ (10)</td>
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<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Snowberry (Symphoricarpos albus) WW, 12-18 BROKERED</td>
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<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Salmonberry (Rubus spectabilis) WW, 1-0, 12&quot;+ (50)</td>
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<tr>
<td>WSDOT - Beall, Jodie</td>
<td>W1800.6</td>
<td>500</td>
<td>Elochoman Culverts</td>
</tr>
</tbody>
</table>

**WACD Plant Materials Center**

**Picklist Report**

**As of Jan 4, 2016**

Filter Criteria includes: 1) SO/Proposal Numbers from 16-243 to 16-245; 2) Excludes Drop Ships; 3) Not Quantity; 4) Accepted Proposals only. Report order is by SO/Proposal Number. Report is printed in Detail Format.
Appendix 2 – Photo Points

The photographs below were taken from permanent photo-points on October 9, 2018 and document current site success.

Photo Point 1

Photo Point 2

Photo Point 3

Photo Point 4
Photo Point 5

Photo Point 6

Photo Point 7

Photo Point 8
Driving Directions:
From I-5, take Exit 40 toward WA-4 South/Kelso/Long Beach/Long View. Turn right onto North Kelso Avenue. Continue onto North Pacific Avenue. Turn right onto Cowlitz Way. Turn right onto WA-4 West.
Literature Cited


