SR 4 MP 3.1 Vicinity Culvert Replacement and Emergency Detour (Naselle Culvert) Mitigation Site

USACE NWP (27) NWS-2015-127-DOT

Southwest Region

2018 MONITORING REPORT

Wetlands Program

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Washington State
Department of Transportation

Environmental Services Office
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SR 4 MP 3.1 Vicinity Culvert Replacement and Emergency Detour (Naselle Culvert) Mitigation Site

USACE NWP (27) NWS-2015-127-DOT

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

\(^1\) Impact and mitigation numbers sourced from WSDOT 2015.
Summary of Monitoring Results and Management Activities (2018)

<table>
<thead>
<tr>
<th>Performance Standards</th>
<th>2018 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,500 living native woody stems per acre where installed</td>
<td>10,620.7 stems/acre (total count)</td>
</tr>
<tr>
<td>Three species native trees and/or shrubs in the on-site wetland restoration or buffer enhancement areas</td>
<td>Achieved</td>
</tr>
<tr>
<td>Less than 15% cover reed canarygrass (<em>Phalaris arundinacea</em>), blackberry (<em>Rubus</em> species), Scotch broom (<em>Cytisus scoparius</em>), and Pacific County-listed Class A noxious weeds in the planted areas</td>
<td>&lt;5% cover (qualitative)</td>
</tr>
<tr>
<td>No Japanese knotweed (<em>Reynoutria japonica</em>) in any planting area</td>
<td>None observed</td>
</tr>
<tr>
<td>No State or Cowlitz County-listed Class A noxious weeds across the site</td>
<td>None observed</td>
</tr>
</tbody>
</table>

Report Introduction

This report summarizes third-year (Year 3) monitoring activities at the 004 Naselle Culvert 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 on October 9, 2018.
What is the 004 Naselle Culvert Mitigation Site?

This roadside mitigation site (Figure 1) is an onsite wetland restoration and buffer enhancement area at the crossing of SR 4 and Pete’s Creek. This site was created to compensate for the temporary impact to 3,800 square feet of wetland due to replacement of a failed culvert. The site restoration is designed to promote the development of native riparian plant communities and limit the growth of noxious and nuisance weeds.

Figure 1  Site Sketch

The 004 Naselle Culverts Mitigation Site contains roadside buffer enhancement and wetland restoration areas adjacent SR 4 and the culvert at the Pete’s Creek crossing, as well as a separate area adjacent to Youth Camp Drive. Appendix 1 includes site directions.
What are the performance standards for this site?

**Year 3**

**Performance Standard 1**
At monitoring Year 3, there will be a minimum density, amount, and/or cover of native vegetation (planted and volunteer native trees and shrubs) in on-site wetland restoration or buffer enhancement areas as follows: minimum density of 3,500 living native woody stems per acre where installed.

**Performance Standard 2**
At monitoring Year 3, there will be a minimum density, amount, and/or cover of native vegetation (planted and volunteer native trees and shrubs) in on-site wetland restoration or buffer enhancement areas as follows: at least three species of native trees and/or shrubs will be present in the on-site wetland restoration or buffer enhancement areas.

**Performance Standard 3**
The aerial extent of reed canarygrass, blackberry species, Scotch broom, and Class A (WA Dept. of Agriculture and Pacific County Weed Board) noxious weeds will not exceed 15 percent in the planted areas.

**Performance Standard 4**
Japanese knotweed shall not be allowed in any planting area and will be eradicated upon detection.

**Performance Standard 5**
If/when detected, Class A noxious weeds (WA Dept. of Agriculture and Cowlitz County), shall be treated so that the species do not exist on the site. These species shall not be included in the 15 percent cover allowed for invasive species.

Appendix 1 shows the as-built planting plan (WSDOT 2015).
How were the performance standards evaluated?

The table below documents the sample methods used for all of the performance standards (PS) as required by the mitigation plan. For additional details on the methods see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](WSDOT 2008).

<table>
<thead>
<tr>
<th>Attribute</th>
<th>PS 1</th>
<th>PS 2</th>
<th>PS 3</th>
<th>PS 4</th>
<th>PS 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target population</td>
<td>Density</td>
<td>Count</td>
<td>Cover</td>
<td>Presence/absence</td>
<td>Presence/absence</td>
</tr>
<tr>
<td>Living native</td>
<td>Count</td>
<td>Count</td>
<td>Noxious weeds</td>
<td>Japanese knotweed</td>
<td>Class A noxious weeds</td>
</tr>
<tr>
<td>woody stems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zone</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Planted areas</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Wetland restoration or buffer enhancement areas</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sample method</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total count/area of the site</td>
<td>Species list</td>
<td>Qualitative</td>
<td>Qualitative</td>
<td>Qualitative</td>
<td></td>
</tr>
</tbody>
</table>
How is the site developing?

This site has developed rapidly, and is meeting all final-year (Year 5) performance standards in Year 3. Cover and diversity of native woody species is high. Cover of invasive species is low.
Results for Performance Standard 1
(3,500 living native woody stems per acre where installed):

Density of living native woody plants is estimated at 10,620.7 stems/acre (Photo 1). This is based on a total count of 924 stems across the site/the area of the site (0.087 acre). This is above the performance standard target. Cover of native woody species across the site is qualitatively estimated at 90 percent. This exceeds the final year performance standard target of 35 percent cover.

Results for Performance Standard 2
(Three species native trees and/or shrubs in the on-site wetland restoration or buffer enhancement areas):

Fourteen native woody species were observed in the wetland restoration and buffer enhancement areas at the time of monitoring. This exceeds the performance standard target. Dominant species include willows (Salix species), Cascara buckthorn (Frangula purshiana), redosier dogwood (Cornus alba), and twinberry honeysuckle (Lonicera involucrata).

Results for Performance Standard 3
(Less than 15% cover reed canarygrass, blackberry, Scotch broom, and Pacific County-listed Class A noxious weeds in the planted areas):

Cover of reed canarygrass, and blackberries is qualitatively estimated at less than five percent. This is mostly Himalayan blackberry (Rubus armeniacus) observed on the east side of the culvert. No Scotch broom or Pacific County-listed Class A noxious weeds observed.

Results for Performance Standard 4
(No Japanese knotweed (Reynoutria japonica) in any planting area):

No Japanese knotweed observed at the time of monitoring.

Results for Performance Standard 5
(No State or Cowlitz County-listed Class A noxious weeds across the site):

No Class A noxious weeds observed at the time of monitoring.
What is planned for this site?
Weed control will continue in 2019; targeted replanting of geogrid areas as needed.
Appendix 1 – As-built
(from WSDOT 2015)
Driving Directions:
From I-5 take Exit 104 for US 101 North. Keep left to continue onto WA 8 West and follow signs to Montesano/Aberdeen. Continue onto US 12 West. Take the exit toward WA 107/Montesano/Raymond. Turn left onto WA 107 South/South Main Street. Turn left onto US 101 South. Follow WA 4 East to Youth Camp Lane.
Literature Cited


