

I-5 Blakeslee to Grand Mound Buffer Restoration Site

USACE NWS 2008-744-SOD

Southwest Region

2015 MONITORING REPORT

Wetlands Program

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USACE NWS 2008-744-DOT



| General Site Information | | |
|---|--|------------------|
| USACE IP Number | NWS 2008-744-DOT | |
| Mitigation Location | Along I-5 in Thurston and Lewis Counties from MP 83.6-87.5 | |
| LLID Number | 1230070467878 | |
| Construction Date | 2012 | |
| Monitoring Period | 2013-2017 | |
| Year of Monitoring | 3 of 5 | |
| Type of Project Impact | Temporary Wetland | Temporary Buffer |
| Area of Project Impact¹ | 4.99 acres | 2.94 acres |
| Type of Mitigation | Wetland and buffer Re-vegetation | |

¹In addition to the re-vegetation of temporarily impacted areas, a debt of 1.13 credits has been used from the North Fork Newaukum Mitigation Bank to compensate for long-term temporary impacts to 3.42 acres of forested and scrub-shrub wetlands (USACE 2008).

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Summary of Monitoring Results and Management Activities (2015)

| Performance Standards | 2015 Results ¹ | Management Activities |
|--|---|--|
| Wetland buffer and riparian areas will be qualitatively assessed at monitoring year 2.5 to assess the development of estimated conditions | 82% survival (CI _{80%} = 79-86%) | Infill planting (6,000 plants) occurred in January 2016. |
| The aerial extent of Blackberry Species and Class A noxious weeds will not exceed 15% in the combined scrub shrub and forest planting areas of the on-site mitigation areas. | 4% cover | Weed control last occurred on 8/18/2014. |

Report Introduction

This report summarizes third-year (Year-3) monitoring activities at the Interstate (I) 5 Blakeslee to Grand Mound Restoration 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 on September 16, 2015.

¹ Estimated values are presented with their corresponding statistical confidence interval. For example, 82% (CI_{80%} = 79-86% survival) means we are 80% confident that the true survival value is between 79% and 86%.

What is the I-5 Blakeslee to Grand Mound Roadside Restoration Site?

This site (Figure 1) restores the temporary wetland and buffer impacts areas associated with the widening of I-5 between Mile Post (MP) 83.66 and 87.50 on I-5 in Lewis and Thurston counties. In addition, credits at the NFN Bank were debited for long term temporary impacts to shrubs and trees. The enhancement/restoration of hydrologic and floodplain functions on approximately 12 acres of degraded wetlands was done at the TDA sites 11, 12, and 13 that are reported on separately. This project expands I-5 from four to six lanes and occurs within the Chehalis River watershed.

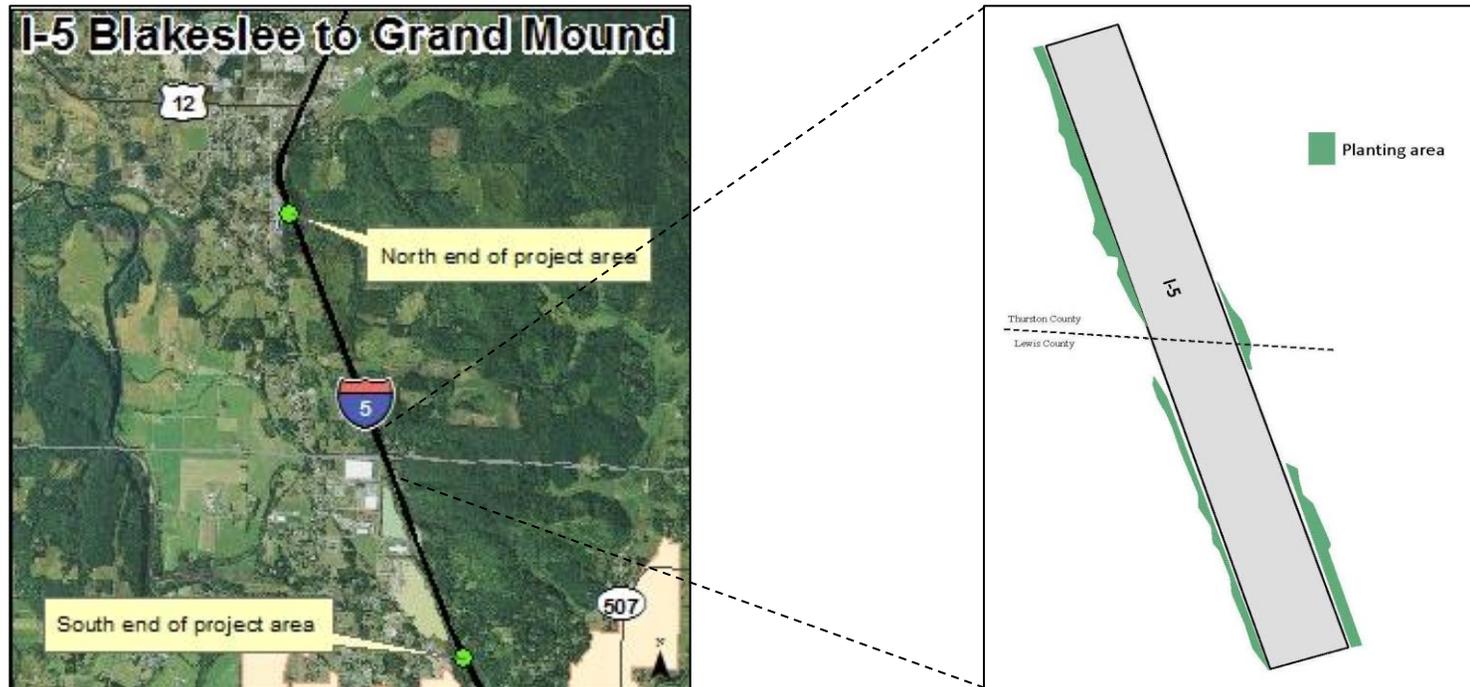


Figure 1 Site Sketch

The I-5 Blakeslee to Grand Mound Roadside Restoration Site contains restored herbaceous, scrub-shrub, and forested wetland communities and upland buffer areas on either side of I-5 within the project area. Appendix 1 includes site directions.

What are the performance standards for this site?

Year 5

Performance Standard 1

Wetland buffer and riparian areas will be qualitatively assessed at monitoring year 2.5 to assess the development of estimated conditions.

Performance Standard 2

The aerial extent of Blackberry Species and Class A noxious weeds will not exceed 15% in the combined scrub shrub and forest planting areas of the on-site mitigation areas.

Appendix 1 shows selected sheets from the as-built (WSDOT 2011).

How were the performance standards evaluated?

The table below documents the sampling methodology utilized for the Performance Standards (PS). For additional details on the methods see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](#) (WSDOT 2008).

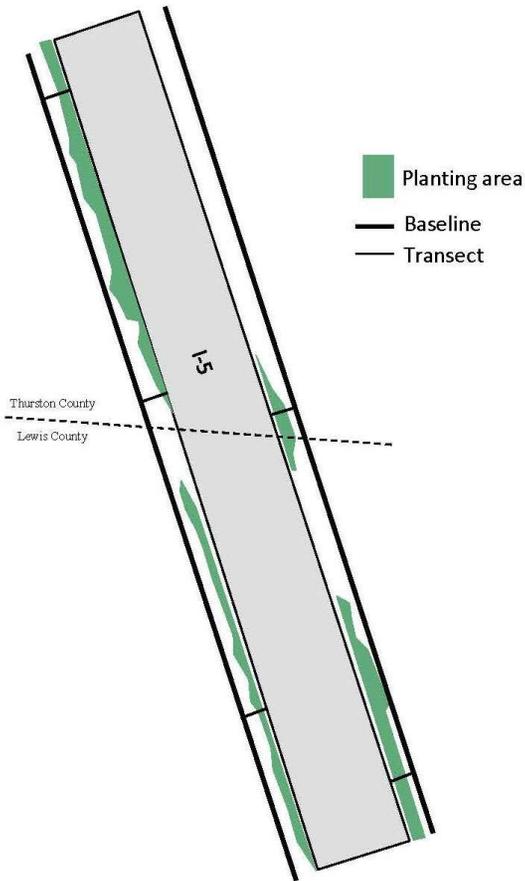


Figure 2 Site Sampling Design (2015)

Placement of Baseline: Baselines were established parallel northbound and southbound to I-5 (Figure 2). Total baseline length was 6,342 meters with 21 transects. (Transects 7-12 were not sampled as they fell within an active construction zone and were not accessible at the time of monitoring.)

| | PS 1 | PS 2 |
|----------------------|-----------------|------------------|
| Attribute | Survival | Cover |
| Target pop. | Woody Plantings | Invasive Species |
| Zone | Entire Site | Entire Site |
| Sample method | UBT | Qualitative |
| SU length | NA | NA |
| SU width | 4m | NA |
| Points per SU | NA | NA |
| Total # of SU | 15 | NA |

How is the site developing?

In general, these planting areas have begun to develop a diverse community of native woody vegetation throughout the length of the project area. Survival across all planting areas is adequate and invasive cover is limited and does not currently threaten the establishment of installed vegetation.

Results for Performance Standard 1

(Wetland buffer and riparian areas will be qualitatively assessed at monitoring year 2.5 to assess the development of estimated conditions):

Survival of woody plantings is estimated at 82% (CI_{80%}= 79-86%) across all planting areas sampled. A portion of the planted areas on the southwest side of I-5 were not sampled due to construction activity and accessibility issues at the time of monitoring, however, they were unaffected by the construction and appear to be doing as well as the sampled areas. (Photo 1)



Photo 1
Survival of woody plantings (September 2015)

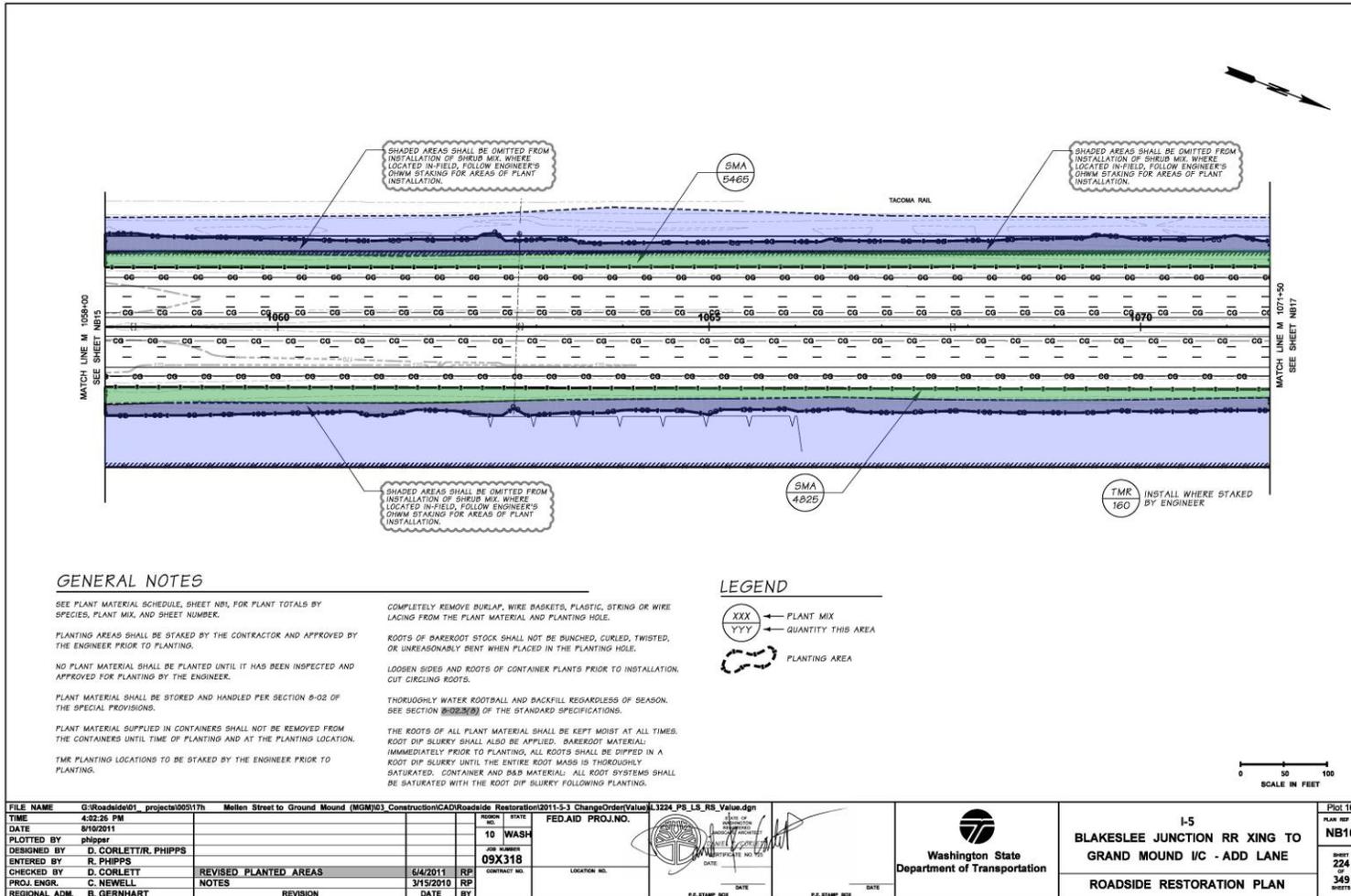
Results for Performance Standard 2

(The aerial extent of blackberry species and Class A noxious weeds will not exceed 15% in the combined scrub shrub and forest planting areas):

Invasive cover was qualitatively estimated at four percent across all planting areas, and included Himalayan blackberry (*Rubus armeniacus*), cutleaf blackberry (*Rubus laciniatus*), and reed canarygrass (*Phalaris arundinacea*).

What is planned for this site?

Routine weed control is planned for 2016.



Driving Directions:

All of these planting areas are accessible from the shoulder of I-5 between mileposts 83.6 to 87.5.

Literature Cited

1. [USACE] US Army Corps of Engineers. 2008. Department of the Army Individual Permit Number 2008-744-SOD.
2. [WSDOT] Washington State Department of Transportation. 2009. I-5 Mellen Street to Grand Mound Stage 1 Final Mitigation Plan. Vancouver (WA): Washington State Department of Transportation, Southwest Region.
3. [WSDOT] Washington State Department of Transportation. 2011. I-5 Blakeslee Junction RR Crossing to Grand Mound I/C Roadside Restoration 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>