SR 500 St. Johns Blvd. Interchange (Arnold Park) Mitigation Site

USACE NWP (23) NWS-2009-1104

Southwest Region

2014 MONITORING REPORT

Wetlands Program

Issued March 2015

Washington State Department of Transportation

Environmental Services Office

Author:
Sean Patrick

Editor:
Tony Bush

For additional information about this report or the WSDOT Wetlands Program, please contact:

Tony Bush, Wetlands Program
WSDOT, Environmental Services Office
P. O. Box 47332, Olympia, WA 98504
Phone: 360-570-6640 E-mail: busht@wsdot.wa.gov

Monitoring reports are published on the web at: http://www.wsdot.wa.gov/Environment/Wetlands/Monitoring/reports.htm

SR 500 St. Johns Blvd. Interchange (Arnold Park) Mitigation Site

USACE NWP (23) NWS-2009-1104

General Site Information			
USACE NWP 23 Number	NWS-2009-1104		
Mitigation Location	Along Burnt Bridge Creek within Arnold Park, Vancouver, WA		
LLID Number	1226487456514		
Construction Date	2012-2013		
Monitoring Period	2014–2023		
Year of Monitoring	1 of 10		
Type of Project Impact	Wetland	Wetland Buffer	Riparian Buffer
Area of Project Impact[1]	0.24 acre	1.56 acres	4.30 acres
Type of Mitigation	Riparian Buffer		
Planned Area of Mitigation[2]	4.42 acres		

[1] (WSDOT 2011, p. 9–22)
[2] Additional mitigation provided at the SR 500 Lower Burnt Bridge Creek mitigation site.

This Page Intentionally Left Blank

Summary of Monitoring Results and Management Activities (2014)

Performance Standards	2014 Results[3]	Management Activities
Minimum 90% survival in the riparian enhancement areas	90% survival ($CI_{80\%}$ = 88-93%)	
Blackberry (*Rubus* species) and class B noxious weeds will not exceed 15% cover	Less than 5%	Weed control was conducted on six dates in 2014 from May through September
Class A Noxious Weeds Japanese knotweed (*Reynoutria japonica*) and purple loosestrife (*Lythrum salicaria*) shall be treated so that the species do not exist on the site	Purple loosestrife present along the creek banks	Purple loosestrife plants found during monitoring were pulled

Report Introduction

This report summarizes first-year (Year-1) monitoring activities at the State Route (SR) 500 Arnold Park Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site development. Monitoring occurred on August 11 and 12, 2014 and included vegetation surveys and photo-documentation.

[3] Estimated values are presented with their corresponding statistical confidence interval. For example, 90% survival ($CI_{80\%}$ = 88-93%) means we are 80% confident that the true survival value is between 88% and 93%.

What is the SR 500 Arnold Park Mitigation Site?

This 4.42-acre mitigation site (Figure 1) is located along Burnt Bridge Creek west of St. John's Blvd., north of SR 500, and entirely within Arnold Park. This site was created as partial compensation for impacts to 4.30 acres of disturbed riparian buffer due to mobility and safety improvements within the vicinity of the SR 500 and St. John's Blvd. interchange. The riparian enhancement area is located adjacent to and within the overall project boundaries, and shares the same watershed characteristics as the impacted areas. The site is designed to provide mitigation for lost wetland functions and is anticipated to provide stream shading, flood flow attenuation, water quality, and general habitat functions.

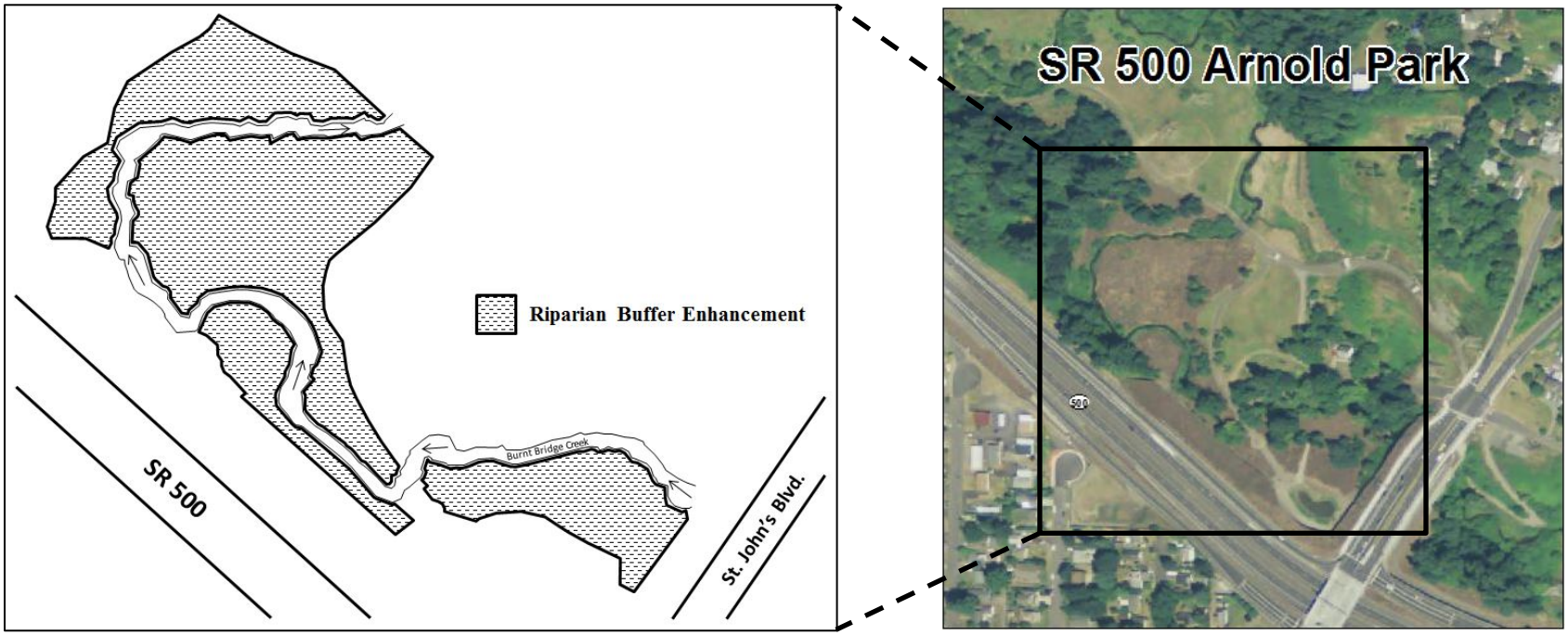


Figure 1 Site Sketch

The SR 500 Arnold Park riparian mitigation site consists of four planting areas adjacent to Burnt Bridge Creek within the City of Vancouver's Arnold Park. Appendix 2 includes site directions.

What are the performance standards for this site?

Performance Standard 1
At monitoring year 1, there will be a minimum survival rate of 90 percent in area identified on the Revegetation Concept as Scrub Shrub, Wetland Buffer, and Riparian Enhancement areas.

Performance Standard 2
The aerial extent of Blackberry Species and Class B (WA Dept of Agriculture and Clark County Weed Board) noxious weeds will not exceed 15 percent in the combined scrub shrub, buffer, and riparian planting areas, exclusive to each mitigation site.

Performance Standard 3
If/when detected, Class A Noxious Weeds (WA Dept. of Agriculture and Clark County), Japanese Knotweed, and Purple Loosetrife 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 planting plan (WSDOT 2010).

How were the performance standards evaluated?

To evaluate the survival of planted woody species, a 450-meter baseline was established in four segments (Figure 2). Twenty-two transects were placed perpendicular to the baselines using a systematic random sampling method. The unequal-area belt transect method was used to estimate the survival rate of planted woody species (Performance Standard 1). One-meter-wide belt transect sample units were positioned along the entire length of each sampling transect.

The cover of invasive species across the site (Performance Standards 2 and 3) was estimated visually.

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

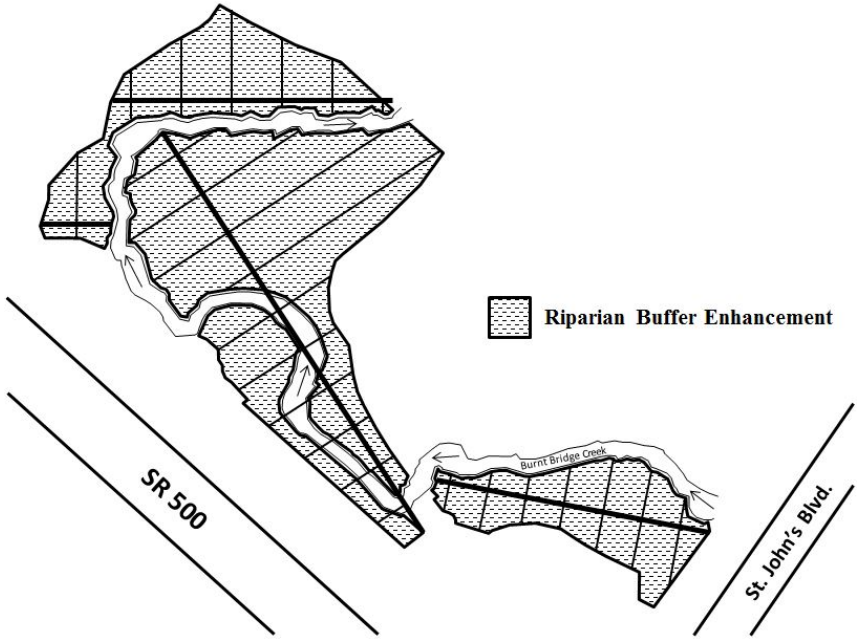


Figure 2 Site Sampling Design (2014)

How is the site developing?

This site has gotten off to a good start, with the woody plantings establishing well in all areas. The site appears to have had substantial noxious weed issues in the past (particularly with Canada thistle), which have been kept in check so far through intensive weed control efforts. Diligent, ongoing weed control efforts will be needed, however, in order to ensure continued site success.

Results for Performance Standard 1
(90% survival in the riparian enhancement areas):

The survival of woody plantings in the riparian enhancement areas is 90 percent ($CI_{80\%}$ = 88-93%) (Photo 1). This standard has likely been met. The dominant species in these areas are snowberry (*Symphoricarpos albus*), redosier dogwood (*Cornus alba*), and tall oregongrape (*Mahonia aquifolium*).

Results for Performance Standard 2
(No more than 15% cover of blackberries and Class B noxious weeds):

The cover of blackberries and Class B noxious weeds is visually estimated at less than five percent. The applicable species observed on-site were Himalayan blackberry (*Rubus armeniacus*), Scotch broom (*Cytisus scoparius*), and purple loosestrife (*Lythrum salicaria*). Other invasive species observed on-site include reed canarygrass (*Phalaris arundinacea*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), tansy ragwort (*Jacobaea vulgaris*), and Fuller's teasel (*Dipsacus fullonum*).

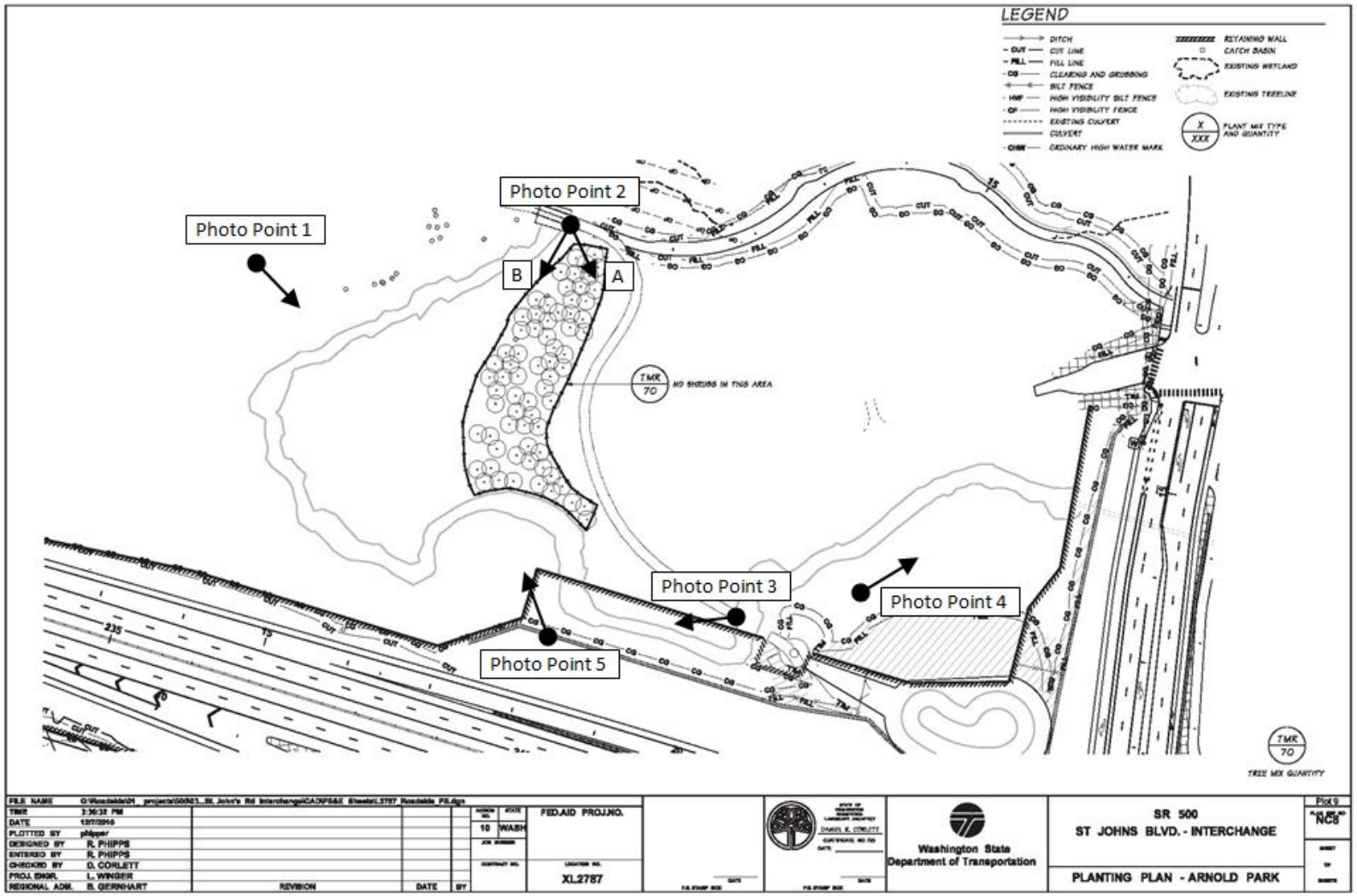
Photo 1
Woody survival (August 2014)

Results for Performance Standard 3
(No presence of Class A noxious weeds, purple loosestrife, or Japanese knotweed):

No Class A noxious weeds or Japanese knotweed were observed on-site. Several purple loosestrife plants were observed along the creek banks during monitoring. These plants were pulled and site managers were notified.

Appendix 1 – Planting Plan with Photopoint Locations

(from WSDOT 2010)



Appendix 2 – Photo Points

The photographs below were taken from permanent photo-points on August 12, 2014 and document current site development.

Photo Point 1

Photo Point 2a

Photo Point 2b

Photo Point 3

Photo Point 4

Photo Point 5

Driving Directions:
From I-5 take Exit 2 onto SR 500 heading east. Travel east on SR 500 for 1.2 miles. Take the St. John's Blvd. exit and turn left onto St. John's Blvd. After 0.2 mile, turn left onto NE Arnold Rd. At the end of the concrete drive, continue straight onto a dirt track and then onto a pedestrian walkway adjacent to the mitigation site. Do not drive on any of the pedestrian bridges. Park beside to the pedestrian walkway.

Literature Cited

1. [USACE] US Army Corps of Engineers. 2010. Department of the Army Nationwide Permit (23) Number NWS-2009-1104.

2. [WSDOT] Washington State Department of Transportation. 2011. Final Critical Areas Mitigation Report SR 500 / St. Johns Blvd Interchange Project. Vancouver (WA): Washington State Department of Transportation, Southwest Region.

3. [WSDOT] Washington State Department of Transportation. 2010. SR 500 St. Johns Blvd. – Interchange Arnold Park 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