MAUL FOSTER ALONGI
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November 1, 2024
Project No. M008022.08.005

Melinda Butterfield
Oregon Department of State Lands
Melinda.Butterfield@dsl.oregon.gov

Re: Year 3 Annual Vegetation Monitoring Report – Cover Letter
63213-PW (USACE #2018-492)

Dear Melinda Butterfield:

Maul Foster & Alongi, Inc. (MFA) prepared this cover letter to the Year 3 Annual Vegetation Monitoring Report to provide responses to the questions received from the Oregon Department of State Lands in an email dated October 3, 2024. Each question is presented below in *italics* along with the MFA response.

Permit Condition 25(c)(5,6,9). *The As-built report states that final contour were not the same as proposed. For example, the proposed habitat bench in Area 2 was moved to Area 3 and the area was reduced. Yet, Figure 3 in the monitoring requires list square foot acreage identical to what was permitted. Please explain how that is possible.*

- **Response.** As noted, a portion of the emergent plantings planned for installation in Area 2 were moved to Area 3 but the planting quantities remained consistent with the design drawings from the Completion Report. Our Figure 3 did not accurately reflect that and has been updated consistent with the as-built drawings.

Permit Condition 25(e). *Data should be submitted using the DSL Mitigation Monitoring Vegetation Spreadsheet or presented in a similar format as described in DSL's Routine Monitoring Guidance for Vegetation.*

- **Response.** The data for Year 3 of the vegetation monitoring was entered into the DSL Mitigation Monitoring Vegetation Spreadsheet.

Permit Condition 30. *There is <60% cover of native herbaceous species in the Emergent Planting area. Please take appropriate action to meet this permit condition.*

- **Response.** The Year 3 invasive species removal in March of 2024 increased the average herbaceous coverage in the Emergent planting areas to 82%. The performance criterion is currently being met.

Permit Conditions 34, 36. *There is not sufficient woody species in the Scrub-Shrub Planting Area nor the Riparian Planting Area. Please take appropriate action to meet this permit condition.*

- **Response.** The Year 3 woody vegetation replanting efforts in the Scrub-shrub and Riparian planting areas increased the density of woody vegetation in both of these areas. The performance criterion is currently being met.

Please let us know if the Oregon Department of State Lands has any further questions.

Sincerely,

Maul Foster & Alongi, Inc.

Michael Pickering, RG
Principal Geologist

Attachment

Year 3 Annual Vegetation Monitoring Report

Attachment

Year 3 Annual Vegetation Monitoring Report

MAUL FOSTER ALONGI

Year 3 Annual Vegetation Monitoring Report

East Whitaker Pond
ECSI 5455, DSL File No. 63213-PW

Prepared for:

Oregon Department of State Lands

November 1, 2024
Project No. M8022.08.005

Prepared by:

Maul Foster & Alongi, Inc.
3140 NE Broadway, Portland, OR 97232

MAUL FOSTER ALONGI

Year 3 Annual Vegetation Monitoring Report

East Whitaker Pond
ECSI 5455, DSL File No. 63213-PW

The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.

Michael Pickering, RG
Principal Geologist

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Abbreviations

DSL	Oregon Department of State Lands
MFA	Maul Foster & Alongi, Inc.
MMNW	Metro Metals Northwest, Inc.
Plot	herbaceous monitoring plot
Site	East Whitaker Pond site

Monitoring Report Cover Sheet

Permit Waiver Number:	63213-PW
Waiver Holder:	Metro Metals Northwest, Inc.
Monitoring Date:	August 22, 2024
Report Year:	Year 3

PERFORMANCE STANDARDS	STANDARD MET? Y/N
Performance Standard 27: Establishment of Permanent Monitoring Locations	**Yes**
Permanent plot locations must be established during the first annual monitoring in sufficient number and locations to be representative of the site. The permanent plot locations must be clearly marked on the ground.	
Performance Standard 28: Wetland Acreage Required	**Not Applicable**
The site will have at a minimum the pre-project acreages for each wetland type as shown in Table 2 of the permit waiver, as determined by a Wetland Delineation Light with data collected during spring of a year when precipitation has been near normal, vegetation has been established, and irrigation has been removed for at least two years. Acreage must be documented on a printed map and in a GIS shapefile (.shp) including attribute information for each unique wetland polygon identifying the size as well as HGM and Cowardin classes.	
Performance Standard 29: Large Wood Debris	**Yes**
Placement of large wood shall be located and installed as shown in Sheets C6.0 and C6.1.	
Emergent Planting Areas Performance Standard 30: Native Species Cover	**Yes**
The cover of native species, as defined in the USDA Plants Database, in the herbaceous stratum is at least 60%.	
Emergent Planting Areas Performance Standard 31: Bare Substrate Cover	**Yes**
Bare substrate represents no more than 20% cover.	
Transitional Planting Areas Performance Standard 32: Bare Substrate Cover	**Yes**
Bare substrate represents no more than 20% cover.	
Scrub-Shrub Planting Areas Performance Standard 33: Bare Substrate Cover	**Yes**
Bare substrate represents no more than 20% cover.	
Scrub-Shrub Planting Areas Performance Standard 34: Woody Vegetation	**Yes**
The density of woody vegetation is at least 1,600 live native plants (shrubs) and/or stems (trees) per acre or the cover of native woody vegetation on the site is at least 50%. Native species volunteering on the site may be included, dead plants do not count, and the standard must be achieved for 2 years without irrigation.	
Riparian Planting Areas Performance Standard 35: Bare Substrate Cover	**Yes**
Bare substrate represents no more than 20% cover.	
Riparian Planting Areas Performance Standard 36: Woody Vegetation	**Yes**
The density of woody vegetation is at least 1,600 live native plants (shrubs) and/or stems (trees) per acre or the cover of native woody vegetation on the site is at least 50%. Native species volunteering on the site may be included, dead plants do not count, and the standard must be achieved for 2 years without irrigation.	

1 Introduction

Consistent with the requirements of the Oregon Department of State Lands (DSL) permit waiver number 63213-PW for Metro Metals Northwest, Inc. (MMNW), Year 3 (2024) vegetation monitoring was conducted on August 22, 2024, at the East Whitaker Pond site (Site) (see Figures 1 and 2). The Site includes the East Whitaker Pond and the adjacent upland area on MMNW property. Figure 3 provides the extent of the vegetation monitoring area on the Site.

Maul Foster & Alongi, Inc. (MFA), conducted the monitoring according to the Final Monitoring, Maintenance, and Contingency Plan (MFA 2022a) and the DSL Routine Monitoring Guidance for Vegetation (DSL 2009).

2 Remedial Action

The remedial action for the Site, specified by the Oregon Department of Environmental Quality in the Record of Decision (DEQ 2016), consistent with Oregon Revised Statutes 465.200 through 465.30 and Oregon Administrative Rules Chapter 340, Division 122, Section 0090, was implemented from June to October 2021 as detailed in the Construction Completion Report (MFA 2022b). Work involved excavation of upland hot spot soils, excavation and capping of contaminated sediment, and Site restoration and planting.

3 Vegetation Management

The irrigation system on Site was installed when restoration was complete for the purposes of ensuring vegetation establishment. The system ran on average of 20 minutes daily for five months out of the year for a period of two years. At the beginning of the third season the system ran two to three times per week but during peak heat periods of the year the system runs two cycles per day.

In March of the third year of the restoration, invasive plant removal was conducted to reduce the overall invasive species coverage. In addition, native woody plants were installed in the scrub-shrub and riparian planting areas to increase native woody plant coverage.

In October of 2024, the irrigation system and all protective plant collars were removed to encourage establishment.

4 Vegetation Monitoring Methodology

MFA established herbaceous monitoring plots and shrub-dominated and forest plots (Figure 3). Herbaceous monitoring plots were used to measure plants with no persistent woody stems above ground and bare substrate. Shrub-dominated and forest plots were used to establish counts of scrub shrubs and live stems. Herbaceous plots were established in the emergent (five plots) and transitional (five plots) planting areas. Shrub and forest plots were established in the scrub shrub (two plots) and riparian (three plots) planting areas. Herbaceous monitoring plots were 1 square meter each, and shrub-dominated and forested monitoring plots were 64 square meters each. In addition, herbaceous plants were monitored within the riparian and scrub-shrub planting areas.

Appendix A provides photos from each fixed photo point established at the monitoring plots and photos of overall Site conditions. Appendix B provides a table summarizing the data collected at each monitoring plot and used to support the status of the Site relative to performance standards.

5 Performance Standards and Results

The August 2024 event was the third year of vegetation monitoring. Monitoring activities were focused on identifying plants and cover percentages to provide management recommendations and to evaluate performance standards (DSL 2009). Figure 3 provides a Site location map that clearly shows the impact site boundaries, and the details required by the permit waiver (contours, planted areas, monitoring plots, etc.).

In general, most of the planted native vegetation is well-established, dense, and diverse in all the planting areas. The Site has a nice, wild look to it. Some invasive species encroachment from the surrounding upland areas was observed in the scrub-shrub, riparian, and transitional and emergent planting areas. Live stakes and shrubs planted in the riparian and scrub-shrub areas are establishing well, and many of them are thriving. The emergent planting areas have shown an increase of invasive species (primarily Eurasian watermilfoil) due to the presence of these species throughout the pond and also in the West Whitaker Pond (to which this pond is hydraulically connected).

Performance standards and determinations of the Site's achievement for each are as follows:

Performance Standard 27: Establishment of permanent monitoring locations. *Permanent plot locations must be established during the first annual monitoring in sufficient number and locations to be representative of the site. Permanent plot locations must be clearly marked on the ground.*

The number and size of plots were established according to the DSL Routine Monitoring Guidance for Vegetation (DSL 2009), as described in the Vegetation Monitoring Methodology section above. Each plot has a survey stake in its center that was placed on September 21, 2022, and were located during the second- and third-year monitoring events. This performance criterion was met.

Performance Standard 28: Wetland Acreage Required. *The site will have at a minimum the pre-project acreages for each wetland type as shown in Table 2 of the permit waiver, as determined by a*

Wetland Delineation Light with data collected during spring of a year when precipitation has been near normal, vegetation has been established, and irrigation has been removed for at least two years. Acreage must be documented on a printed map and in a GIS shapefile (.shp) including attribute information for each unique wetland polygon identifying the size as well as HGM and Cowardin classes.

This performance standard is not currently applicable due to the irrigation system being removed in October 2024.

Performance Standard 29: Large Wood Debris. *Placement of large wood shall be located and installed as shown in Sheets C6.0 and C6.1.*

Large wood was installed as shown in Sheets C6.0 and C6.1, and those installations are reflected on Figure 3. This performance criterion was met.

Emergent Planting Areas Performance Standard 30: Native Species Cover. *The cover of native species, as defined in the USDA Plants Database, in the herbaceous stratum is at least 60%.*

The average native species cover in the herbaceous stratum across the five emergent planting area monitoring plots was 82 percent. This performance criterion was met.

Emergent Planting Areas Performance Standard 31: Bare Substrate Cover. *Bare substrate represents no more than 20% cover.*

The average bare substrate across the five herbaceous stratum emergent planting area monitoring plots was eight percent. This performance criterion was met.

Transitional Planting Areas Performance Standard 32: Bare Substrate Cover. *Bare substrate represents no more than 20% cover.*

The average bare substrate across the five herbaceous stratum transitional planting area monitoring plots was one percent. This performance criterion was met.

Scrub-Shrub Planting Areas Performance Standard 33: Bare Substrate Cover. *Bare substrate represents no more than 20% cover.*

The average bare substrate across the herbaceous stratum within the two scrub-shrub planting area monitoring plots was zero percent. This performance criterion was met.

Scrub-Shrub Planting Areas Performance Standard 34: Woody Vegetation. *The density of woody vegetation is at least 1,600 live native plants (shrubs) and/or stems (trees) per acre or the cover of native woody vegetation on the site is at least 50%. Native species volunteering on the site may be included, dead plants do not count, and the standard must be achieved for 2 years without irrigation.*

The average count of live native plants and stems from the two 64-square-meter monitoring plots was 56. The density of woody vegetation is 2,276 live plants per acre. This performance criterion was met. The irrigation system was removed in October of 2024.

Riparian Planting Areas Performance Standard 35: Bare Substrate Cover. *Bare substrate represents no more than 20% cover.*

The average bare substrate across the herbaceous stratum within the three riparian planting area monitoring plots was zero percent. This performance criterion was met.

Riparian Planting Areas Performance Standard 36: Woody Vegetation. *The density of woody vegetation is at least 1,600 live native plants (shrubs) and/or stems (trees) per acre or the cover of native woody vegetation on the site is at least 50%. Native species volunteering on the site may be included, dead plants do not count, and the standard must be achieved for 2 years without irrigation.*

The average count of live native plants and stems from the three 64-square-meter monitoring plots was 59. The average density of the three riparian plots is 3,309 plants per acre. This performance criterion was met. The irrigation system was removed in October of 2024.

6 Conclusions and Recommendations

The vegetated restoration at the Site is currently meeting or exceeding all of the DSL performance standards. The invasive species removal and replanting efforts in year three have reduced invasive cover and increased native plant coverages. In addition, the recent removal of the irrigation system will encourage drought tolerance and plant establishment.

It has been observed that the immediate adjacent vegetated upland areas, the surrounding wetlands, and the hydraulically connected West Whitaker Pond include a variety of invasive species that are encroaching into the restoration area. Most of these areas do not currently include a vegetation maintenance regimen. The restoration area at the Site could potentially benefit from a more active invasive vegetation management of the surrounding areas.

References

DEQ. 2016. *Record of Decision, Metro Metals Northwest, Inc, Portland Oregon, ECSI #5455.* Oregon Department of Environmental Quality. January.

DSL. 2009. *Routine Monitoring Guidance for Vegetation.* Oregon Department of State Lands. September.

MFA. 2022a. *Final Monitoring, Maintenance, and Contingency Plan, East Whitaker Pond, ECSI #5455.* Prepared for Metro Metals Northwest, Inc. Maul Foster & Alongi, Inc.: Portland, OR. August 15.

MFA. 2022b. *Completion Report, East Whitaker Pond, ECSI #5455.* Prepared for Metro Metals Northwest, Inc. Maul Foster & Alongi, Inc.: Portland, OR. June 20.

MFA. 2022c. *Year 1 Annual Vegetation Monitoring Report, East Whitaker Pond, ECSI #5455.* Prepared for Oregon Department of State Lands. Maul Foster & Alongi, Inc.: Portland, OR. October 28.

MFA. 2023. *Year 2 Annual Vegetation Monitoring Report, East Whitaker Pond, ECSI #5455.* Prepared for Oregon Department of State Lands. Maul Foster & Alongi, Inc.: Portland, OR. November 1.

Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures

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Data Source:
US Geological Survey (2021) 7.5-minute topographic quadrangle: Mount Tabor; township 1 north, range 2 east, section 18.

Legend

Site Boundary

Figure 1
Site Location

Metro Metals Northwest
East Whitaker Pond
Portland, OR

0 1,000 2,000
Feet

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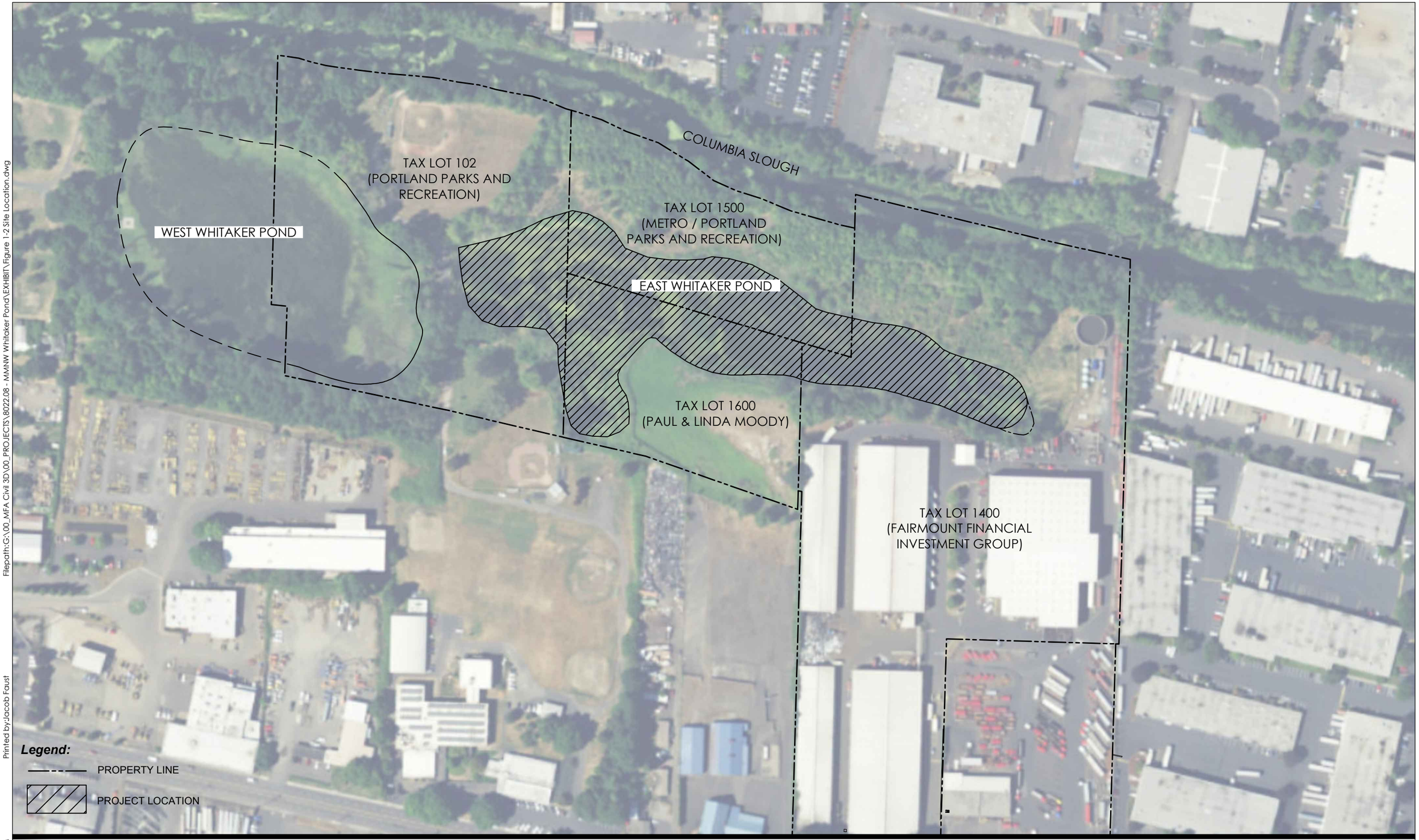
Path: X:\8022.08\005\Fig1_Site_Location.mxd
Print Date: 10/6/2022
Reviewed by: enaylor
Produced By: slumer
Project: M8022.08.005



Filepath:G:\00_MFA Civil 3D\00_PROJECTS\8022.08 - MMNW Whitaker Pond\EXHIBIT\Figure 1-2 Site Location.dwg

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0 200' 400'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

Figure 2
Site Vicinity

Metro Metals Northwest—East Whitaker Pond
Portland, Oregon

Figure 3
Vegetation Monitoring

Metro Metals Northwest
East Whitaker Pond
Portland, OR

Legend

- RIPARIAN PLANTING AREA ELEVATIONS 14+ PER PLAN
- SCRUB-SHRUB PLANTING AREA ELEVATIONS AS SHOWN PER PLAN
- TRANSITIONAL PLANTING AREA BETWEEN ELEVATIONS 11-14
- EMERGENTS PLANTING AREA BETWEEN ELEVATIONS 9-11
- FLOATING AQUATIC PLANTING AREA ELEVATIONS AS SHOWN PER PLAN
- OHWL — ORDINARY HIGH WATER LINE
- PL — PROPERTY LINE
- 25 — EXISTING GRADE MAJOR CONTOUR
- 27 — EXISTING GRADE MINOR CONTOUR
- AS-BUILT GRADE MAJOR CONTOUR (5.0' INTERVAL)
- AS-BUILT GRADE MINOR CONTOUR (1.0' INTERVAL)

0 60' 120'

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Appendix A

Photographs

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Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 1.

Emergent Plot 1

View from the bank to the southwest.

Photo No. 2.

Emergent Plot 2

View from the bank to the south.

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 3.

Emergent Plot 3

Consistent with prior years, the 1-meter square frame was not placed in the water due to difficulty of retrieval. A 1-meter area was centered on the stake (orange arrow) was examined.

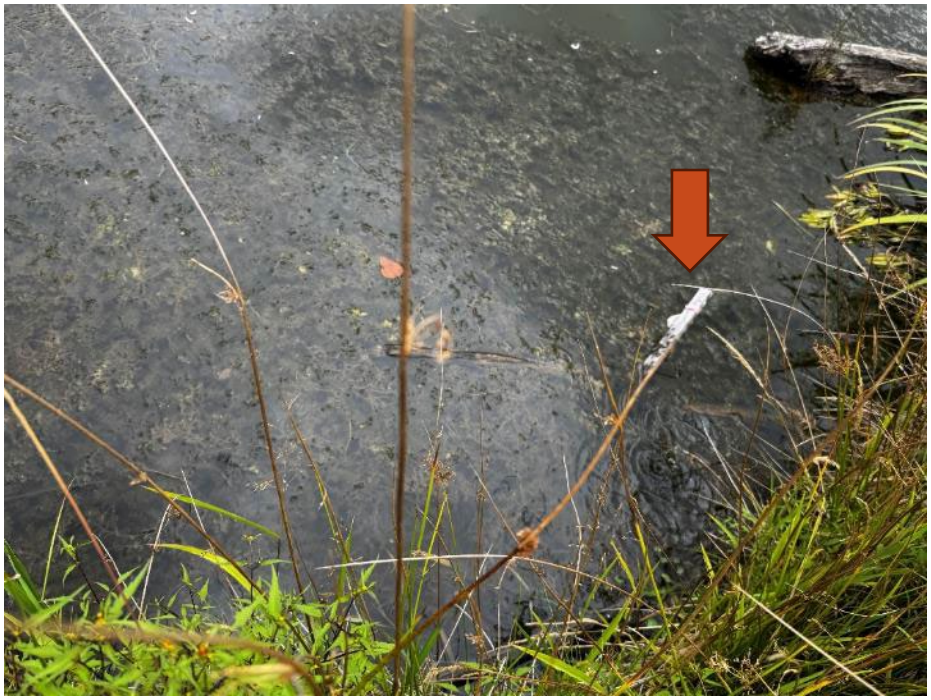

Photo No. 4.

Emergent Plot 4

View from the bank to the west-northwest.

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 5.

Emergent Plot 5

View from the bank to the west.

Photo No. 6.

Transitional Plot 1

View from the bank to the southwest.

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 7.

Transitional Plot 2

Photo No. 8.

Transitional Plot 3

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 9.

Transitional Plot 4

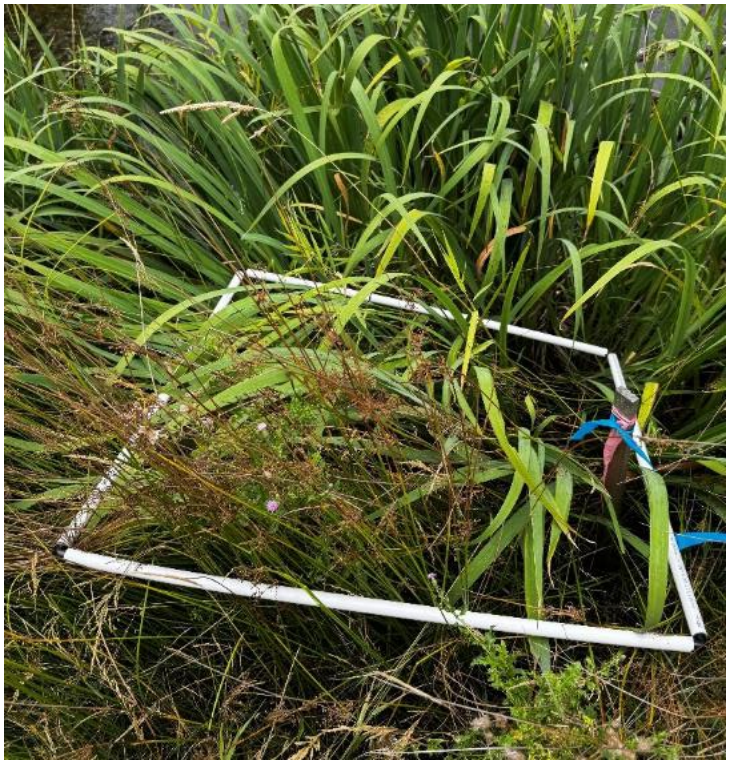

Photo No. 10.

Transitional Plot 5

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 11.

Scrub Shrub Plot 1

View looking toward the east.

Photo No. 12.

Scrub Shrub Plot 1

View looking toward the northeast.

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 13.

Scrub Shrub Plot 1-H1

Photo No. 14.

Scrub Shrub Plot 1-H2

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 15.

Scrub Shrub Plot 2

View looking toward the south.

Photo No. 16.

Scrub Shrub Plot 2-H1

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 17.

Scrub Shrub Plot 2-H2

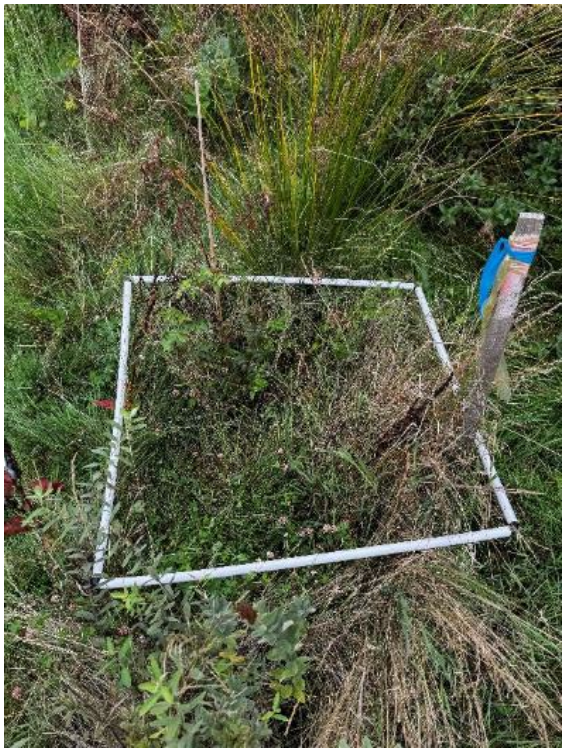

Photo No. 18.

Riparian Plot 1

View looking toward the northeast.

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 19.

Riparian Plot 1

View looking toward the south.

Photo No. 20.

Riparian Plot 1-H1

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 21.

Riparian Plot 1-H2

Photo No. 22.

Riparian Plot 2

View looking toward the northwest.

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 23.

Riparian Plot 2-H1

Photo No. 24.

Riparian Plot 2-H2

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 25.

Riparian Plot 3

View looking toward the north-northwest.

Photo No. 26.

Riparian Plot 3-H1

Photographs

Project Name: Metro Metals Year 3 Vegetation Monitoring
Project Number: M8022.08.005
Location: East Whitaker Pond

Photo No. 27.

Riparian Plot 3-H2

Photo No. 28.

Restoration Area

View of the site from the northern bank of Whitaker Pond, looking toward the southeast.

Appendix B

Data Summary Tables

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Planting Zone:	**Sample Date(s):**	Aug-24					
Emergent Planting Zone		**Monitoring Plot Percent Cover**					
Species	Origin (N, NN, I)	1	2	3	4	5	Row Average
Native Species							
species-latin name							
Schoenoplectus tabernaemontani	N	15	0	0	0	0	3
Scirpus acutus	N	10	0	0	0	0	2
Hydrocotyle ranunculoides	N	10	0	2	30	5	9
Elodia canadensis	N	15	0	30	20	10	15
Lemna minor	N	2	0	2	5	2	2
Potamogeton gramineus	N	0	0	0	0	0	0
Ceratophyllum demersum	N	5	0	28	20	15	14
Juncus effusus	N	8	70	5	0	15	20
Typha latifolia	N	20	10	0	0	38	14
Ranunculus occidentalis	N	0	0	0	0	0	0
Salix sitchensis	N	0	0	0	0	0	0
Salix lucida	N	0	5	0	0	0	1
Alnus rubra	N	0	0	0	0	0	0
Lupinus arboreus	N	0	0	0	0	0	0
Lupinus rivularis	N	0	0	0	0	0	0
Achillea millefolium var. occidentalis	N	0	0	0	0	0	0
Iris douglasiana	N	0	0	0	0	0	0
Paspalum distichum	N	0	0	0	0	0	0
Salix discolor	N	0	5	0	0	0	1
Native Grassses [(a)]	N	0	5	3	0	0	2
		0	0	0	0	0	0
Invasive Species							
species-latin name		0	0	0	0	0	0
Myriophyllum spicatum	I	15	0	30	20	15	16
Phalaris arundinacea	I	0	5	0	5	0	2
Lythrum salicaria	I	0	0	0	0	0	0
Iris pseudacorus	I	0	0	0	0	0	0
Trifolium pratense	I	0	0	0	0	0	0
Cirsium arvense	I	0	0	0	0	0	0

Planting Zone:	**Sample Date(s):**	Aug-24					
Emergent Planting Zone		**Monitoring Plot Percent Cover**					
Species	Origin (N, NN, I)	1	2	3	4	5	Row Average
Dipsacus sylvestris	I	0	0	0	0	0	0
Ranunculus repens	I	0	0	0	0	0	0
Rubus armeniacus	I	0	0	0	0	0	0
Tanacetum vulgare	I	0	0	0	0	0	0
		0	0	0	0	0	0
Non-Native Species							
species-latin name		0	0	0	0	0	0
Trifolium repens	NN	0	0	0	0	0	0
Panicum repens	NN	0	0	0	0	0	0
		0	0	0	0	0	0
Bare Substrate							
		10	0	20	10	0	8
Summary Information		**1**	**2**	**3**	**4**	**5**	**Habitat Average**
Cover of Native Species		85	95	70	75	85	82
Cover of Invasive Species		15	5	30	25	15	18
Bare Substrate		10	0	20	10	0	8
Sum of plant cover		100	100	100	100	100	
Notes							
All emergent monitoring plots are 1 square meter							
[a] Native grasses in Emergent Areas such as American Sloughgrass (*Beckmannia syzigachne*) and Western Mannagrass (*Glyceria occidentalis*)							

Planting Zone:	**Sample Date(s):**	Aug-24					
Transitional Planting Zone		**Monitoring Plot Percent Cover**					
Species	Origin (N, NN, I)	1	2	3	4	5	Row Average
Native Species							
species-latin name							
Schoenoplectus tabernaemontani	N	0	0	0	0	0	0
Scirpus acutus	N	5	0	0	0	0	1
Hydrocotyle ranunculoides	N	0	0	0	0	0	0
Elodia canadensis	N	0	0	0	0	0	0
Lemna minor	N	0	0	0	0	0	0
Potamogeton gramineus	N	0	0	0	0	0	0
Ceratophyllum demersum	N	0	0	0	0	0	0
Juncus effusus	N	10	73	10	60	55	42
Typha latifolia	N	5	3	0	0	0	2
Ranunculus occidentalis	N	0	0	0	0	0	0
Salix sitchensis	N	0	3	0	0	0	1
Salix lucida	N	0	0	0	0	0	0
Alnus rubra	N	0	3	10	0	0	3
Lupinus arboreus	N	0	0	10	0	0	2
Lupinus rivularis	N	0	0	0	0	0	0
Achillea millefolium var. occidentalis	N	0	0	50	0	0	10
Iris douglasiana	N	0	0	0	30	0	6
Paspalum distichum	N	0	0	0	0	0	0
Physocarpus capitatus	N	0	2	0	0	0	0
Salix discolor	N	5	0	0	0	22	5
Native Grassses [(a)]	N	15	4	10	5	0	7
Invasive Species							
species-latin name							
Myriophyllum spicatum	I	0	0	0	0	0	0
Phalaris arundinacea	I	10	3	10	5	0	6
Lythrum salicaria	I	0	0	0	0	0	0
Iris pseudacorus	I	0	0	0	0	0	0
Trifolium pratense	I	0	0	0	0	0	0

Planting Zone:	**Sample Date(s):**	Aug-24					
Transitional Planting Zone		**Monitoring Plot Percent Cover**					
Species	Origin (N, NN, I)	1	2	3	4	5	Row Average
Cirsium arvense	I	0	0	0	0	2	0
Dipsacus sylvestris	I	0	0	0	0	3	1
Ranunculus repens	I	35	2	0	0	5	8
Rubus armeniacus	I	0	2	0	0	5	1
Tanacetum vulgare	I	0	0	0	0	3	1
Non-Native Species							
species-latin name							
Trifolium repens	NN	15	5	0	0	0	4
Panicum repens	NN	0	0	0	0	5	1
Bare Substrate							
		0	5	0	0	0	1
		0	0	0	0	0	0
Summary Information		**1**	**2**	**3**	**4**	**5**	**Habitat Average**
Cover of Native Species		40	88	90	95	77	78
Cover of Invasive Species		45	7	10	5	18	17
Bare Substrate		0	5	0	0	0	1
Sum of plant cover		100	100	100	100	100	
Notes							
All Transitional monitoring plots are 1 square meter.							
[a] Native grasses in Transitional Areas such as American Sloughgrass (*Beckmannia syzigachne*) and Western Mannagrass (*Glyceria occidentalis*)							

Planting Zone:	**Sample Date(s):**		Aug-24	
Scrub-Shrub Wetland Planting Zone		**Monitoring Plot Percent Cover**		
Species	Origin (N, NN, I)	1	2	Row Average
Native Herbaceous Species				
species-latin name				
Juncus effusus	N	15	15	15
Deschampsia cespitosa	N	4	3	4
Scirpus acutus	N	1	1	1
Veronica americana	N	1	2	2
Typha latifolia	N	1	0	1
Native Grassses [(a)]	N	8	15	12
		0	0	0
Invasive Herbaceous Species				
species-latin name				
Ranunculus repens	I	3	2	3
Phalaris arundinacea	I	0	0	0
Cirsium arvense	I	3	4	4
Rumex obtusifolius	I	5	0	3
Rumex crispus	I	0	4	2
Dipsacus sylvestris	I	2	0	1
Non-Native Herbaceous Species				
species-latin name				
	NN	0	0	0
		0	0	0
Native Shrub and Tree Species				
species-latin name		0	0	0
Symphoricarpus albus	N	2	1	2
Spiraea douglasii	N	12	12	12
Cornus sericea	N	15	8	12
Berberis aquifolium	N	4	2	3
Physocarpus capitatus	N	10	5	8

Planting Zone:	**Sample Date(s):**		Aug-24	
Scrub-Shrub Wetland Planting Zone		**Monitoring Plot Percent Cover**		
Species	Origin (N, NN, I)	1	2	Row Average
Rosa nutkana	N	6	18	1
Holodiscus discolor	N	4	4	4
Lonicera involucrata	N	4	4	4
		0	0	0
Non-Native Shrub and Tree Species				
species-latin name		0	0	0
		0	0	0
		0	0	0
Invasive Shrub and Tree Species				
species-latin name		0	0	0
		0	0	0
		0	0	0
Bare Substrate				
		0	0	0
		Plant Count (Shrubs) + Stem Count (Trees)		
Native Shrub and Tree Count				
species-latin name		0	0	0
Symphoricarpus albus	N	3	1	2
Spiraea douglasii	N	9	8	9
Cornus sericea	N	7	4	6
Berberis aquifolium	N	3	1	2
Physocarpus capitatus	N	12	4	8
Rosa nutkana	N	3	9	6
Holodiscus discolor	N	2	2	2
Lonicera involucrata	N	2	2	2
		0	0	0
		0	0	0

Planting Zone:	**Sample Date(s):**		Aug-24	
Scrub-Shrub Wetland Planting Zone		**Monitoring Plot Percent Cover**		
Species	Origin (N, NN, I)	1	2	Row Average
Routine Performance Standards		**1**	**2**	**Habitat Average**
Cover of Native Herbaceous Species		30	36	33
Cover of Invasive Herbaceous Species		13	10	12
Cover of Invasive Shrubs and Trees		0	0	0
Bare Substrate		0	0	0
Sum of plant cover		100	100	
Density of Woody Vegetation		2593	1960	2276
Plot Area (shrub/tree plot)	64			
Per acre multiplier: Input 4,047 if plot area entered in B84 is in sq.meters or 43,560 for sq.feet	4047			
Cover of Native Shrubs and Trees		57	54	56
Notes				
All Scrub-shrub monitoring plots are 64 square meters.				
[(a)] Native grasses in Scrub-shrub Areas such as American Sloughgrass (*Beckmannia syzigachne*) and Western Mannagrass (*Glyceria occidentalis*)				

Planting Zone:	**Sample Date(s):**		Aug-24		
Riparian Planting Zone		**Monitoring Plot Percent Cover**			
Species	Origin (N, NN, I)	1	2	3	Row Average
Native Herbaceous Species					
species-latin name					
Juncus effusus	N	3	5	1	0
Deschampsia cespitosa	N	3	3	8	5
Scirpus acutus	N	1	1	0	1
Veronica americana	N	1	2	0	1
Typha latifolia	N	1	0	0	0
Lupinus arboreus	N	0	0	1	0
Native Grassses [(a)]	N	15	8	10	11
		0	0	0	0
Invasive Herbaceous Species					
species-latin name					
Ranunculus repens	I	8	10	20	13
Rubus armeniacus	I	0	1	1	1
Cirsium arvense	I	0	2	0	1
Lythrum salicaria	I	2	1	1	1
Rumex crispus	I	0	5	2	2
Equisetum telmateia	I	0	8	0	3
Non-Native Herbaceous Species					
species-latin name					
		0	0	0	0
		0	0	0	0
Native Shrub and Tree Species					
species-latin name		0	0	0	0
Symphoricarpus albus	N	1	2	0	1
Spiraea douglasii	N	12	7	7	9
Cornus sericea	N	15	12	8	12
Berberis aquifolium	N	2	3	2	2

Planting Zone:	**Sample Date(s):**		Aug-24		
Riparian Planting Zone		**Monitoring Plot Percent Cover**			
Species	Origin (N, NN, I)	1	2	3	Row Average
Physocarpus capitatus	N	6	3	9	6
Rosa nutkana	N	11	6	5	7
Holodiscus discolor	N	0	2	2	1
Acer circinatum	N	1	0	3	1
Philladelphus lewisii	N	2	0	0	1
Rubus parvifolius	N	0	2	2	1
Lonicera involucrata	N	4	0	0	1
Alnus rubra	N	12	14	15	14
Thuja plicata	N	0	3	3	2
Non-Native Shrub and Tree Species					
species-latin name		0	0	0	0
		0	0	0	0
Invasive Shrub and Tree Species					
species-latin name		0	0	0	0
		0	0	0	0
Bare Substrate					
		0	0	0	0
		Plant Count (Shrubs) + Stem Count (Trees)			
Native Shrub and Tree Count					
species-latin name					
Symphoricarpus albus	N	2	3	0	2
Spiraea douglasii	N	8	6	3	6
Cornus sericea	N	10	8	6	8
Berberis aquifolium	N	4	6	3	4
Physocarpus capitatus	N	3	1	4	3
Rosa nutkana	N	18	12	7	1
Holodiscus discolor	N	0	2	2	1

Planting Zone:	**Sample Date(s):**		Aug-24		
Riparian Planting Zone		**Monitoring Plot Percent Cover**			
Species	Origin (N, NN, I)	1	2	3	Row Average
Acer circinatum	N	1	0	3	1
Philladelphus lewisii	N	2	0	0	1
Rubus parvifolius	N	0	2	2	1
Lonicera involucrata	N	4	0	0	0
Alnus rubra	N	8	14	11	11
Thuja plicata	N	0	1	1	1
Routine Performance Standards		**1**	**2**	**3**	**Habitat Average**
Cover of Native Herbaceous Species		24	19	20	21
Cover of Invasive Herbaceous Species		10	27	24	20
Cover of Invasive Shrubs and Trees		0	0	0	0
Bare Substrate		0	0	0	0
Sum of plant cover		100	100	100	
Density of Woody Vegetation		3794	3478	2656	3309
Plot Area (shrub/tree plot)	64				
Per acre multiplier: Input 4,047 if plot area entered in B84 is in sq.meters or 43,560 for sq.feet	4047				
Cover of Native Shrubs and Trees		66	54	56	59
Notes					
All Riparian monitoring plots are 64 square meters.					
[(a)] Native grasses in Riparian areas such as Blue Wild Rye (*Elumus glaucus*) and California Brome (*Bromus carinatus*)					