



ENVIRONMENTAL STEWARDSHIP PROJECT

YEAR 5 ANNUAL REPORT

OCTOBER 24, 2013



Prepared for:

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Prepared by:

CITY OF TACOMA

1.0 Introduction

In accordance with the terms and conditions of the Settlement Agreement between the U.S. Environmental Protection Agency (EPA) and the City of Tacoma, and the associated Annual Scope of Work, this report presents the progress of the Long Term Environmental Site Stewardship Project during the period between October 1, 2012 and September 30, 2013. This project was undertaken in connection with the settlement of an enforcement action taken by the United States Environmental Protection Agency for violations of CERCLA. As the submittal date for the quarterly report and annual report fall on the same day, we have incorporated all of the information into one document in an effort to reduce redundancy.

The Environmental Stewardship Project (ESP) resulted from the need to provide long-term care for restoration sites within the Commencement Bay/Puyallup River watershed that no longer have regulatory or legal requirements for maintenance, monitoring, or adaptive management. The primary goal of the ESP is to “ensure the health of the restoration projects in the Puyallup River watershed so they continue to provide function and value.” The City is currently fulfilling the role of Steward for the following sites:

- Yowkwala
- Skookum Wulge
- Squally Beach
- Mowitch
- Jordan/Lower Hylebos Marsh
- Middle Waterway, City of Tacoma
- Middle Waterway, Simpson
- Olympic View, City/DNR
- Tahoma Salt Marsh
- Swan Creek

The City will continue to fulfill the role of Steward under the direction of the Natural Resource Damage Trustees (Trustees) until such time that the penalty monies which have been placed in escrow for this purpose have been exhausted.

2.0 Site by Site Summaries

The following is a site by site summary of general site observations, work completed during the reporting period, and a summary of data collected.

2.1 Yowkwala

The Yowkwala site is located on the northeast shore of Commencement Bay near the mouth of the Hylebos Waterway. These 15 acres were set aside for preservation of the shoreline’s intertidal habitat areas and native vegetation. The site consists of a rocky beach, a relatively flat backshore, riparian planted area, and a steep forested hillslope behind (see figure in Attachment 1). The majority of the work on this site takes place in the backslope riparian planting area. Access to this site is primarily from a private marina parking lot, Tyee Marina, to the southeast. In addition, there are two pullouts above the hillslope off of Marine View Drive that provide viewing areas, but no access points.

This site was set aside by the Trustees, and a beach cleanup including the removal of two derelict barges was completed in 2000. Citizens for a Healthy Bay (CHB) performed stewardship, monitoring and maintenance activities at this site under an agreement with the Trustees that expired at the end of 2009. With the execution of the Settlement Agreement in August 2008, the City began providing stewardship of this site. The City has entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 30, 2012, February 12, 2013, May 3, 2013 and August 20, 2013. Photo points were established during Year 1 as shown on the attached figure. Where possible, photos were taken at these points by the City in February and August as required by the Settlement Agreement. Some of the photo point locations were adjusted to accommodate tidal conditions and missing photo points. Photos were taken to best replicate the field of view of previous photos. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 1 in Attachment 1) and are available for review upon request.

Trash, other human impacts and invasive species removal are the primary concerns at this site. Continuing evidence of beach bonfires and associated party trash and fisherman usage of the site were noted and cleaned up. This is a long-standing and recurring problem at this site. Vegetative debris continues to be placed near the entrance to the site, apparently from the adjacent marina property. In August, it also appeared that the pepperweed in the marina area had been sprayed, with overspray affecting the dunegrass.

Invasive species present at the site include pepperweed, Himalayan blackberry, butterfly bush, Scot's broom, morning glory, nightshade and pampas grass. Poison oak is continuing to spread into open areas, and is encroaching on the social trail. It is likely not possible to eradicate invasive species at this site due to the intermixing of invasives with the poison oak. The focus during Year 5 continued to be the removal of invasives and replanting with native species. Roses in particular are coming in well in the cleared areas, and planted species are showing good survival. Mulch was placed around the plants in July and Dri-Water was also placed.

Early in Year 5, the small back marsh area was continuing to show success with good plant diversity and many volunteers. In December, a high tide storm caused a significant gravel push that covered most of the plants in this area with gravel and wood debris. The plants have begun to come back and are filling in the marsh area once again. Some additional plantings have been made behind the marsh at the end of the social trail as well as farther to the northwest along the benched area. These recently planted species are generally showing good survival. The beaked hazelnut and dunegrass were noted as doing quite well at the site along with the gumweed and roses.

Due to the shifting beach, remnants of the barge on the shoreline became exposed creating a somewhat hazardous situation. Exposed rebar and other metal spikes were cut at the mudline by the WCC in August 2012 to remove the hazard. Based on observations during the Year 5 August inspection, it appears that the continued shifting of the beach has led to further rebar exposure. This additional rebar should be cut at low tide to remove the hazard. As noted before, this problem may arise again in the future depending on the dynamics of the beach.

Quarterly monitoring data are summarized in the Site Record (see Table 1 in Attachment 1). The following activities were completed at the site during the reporting period:

- October 4 – The WCC picked up plants and delivered them to the site in preparation for upcoming volunteer event. Invasives were also removed and soils loosened to facilitate planting.
- October 6 – CHB conducted a volunteer planting event.
- October 9 – The WCC watered the new plants.
- October 23 – The WCC transported bags of mulch to the site and placed mulch rings around the plants.
- November 13 – The WCC performed an invasive sweep.
- November 20 – The WCC cleared blackberry and placed brambles on the social trail to discourage usage.
- December 11 – The WCC planted 72 Douglas fir trees.
- January 21 – CHB and WCC conducted a beach cleanup event.
- March 14 – The WCC performed an invasive sweep and pulled gravel away from the conifers.
- March 16 – CHB conducted a volunteer invasive removal event.
- April 13 – CHB conducted a volunteer invasive and trash removal event as part of their Earth Month work. CHB staff worked with an EarthCorps crew and 26 volunteers to remove blackberry from the mid-portion of the site. Approximately 1,685 square feet of new area was cleared, and approximately 150 square feet of area previously cleared was also cleaned up. Significant trash was removed from the site, primarily styrofoam mixed with fine wood debris. Volunteers collected 20 bags of debris weighing over 900 pounds.
- May 8 – The WCC performed trash removal.
- June 5 – The WCC performed an invasive sweep.
- June 26-27 – The WCC removed invasives.
- July 2-3 – The WCC delivered mulch to the site via boat and placed mulch rings around the plants.
- July 9 – The WCC performed an invasive sweep with particular focus on curled dock.
- July 20 – CHB hosted a volunteer beach cleanup event. Ninety-six volunteers worked with CHB to remove approximately 3,220 pounds of trash and 1,000 pounds of metal debris from the shoreline between Yowkwala and Squally Beach. Trash was taken to the landfill and metal debris was taken to recycling. An educational display was also provided to demonstrate the effects of marine debris on aquatic organisms and the environment.
- July 27 – CHB conducted a volunteer invasive removal event at the site. CHB staff worked with an EarthCorps crew and five volunteers to remove thistle, blackberry, curled dock, tansy ragwort and pepperweed from the site. In addition, 50 Dri-Water units were placed and old compost material was removed.
- August 17 – CHB conducted a volunteer event at the site. CHB staff worked with an EarthCorps crew and four volunteers to install 50 Dri-Water units around plants and remove old compost debris.
- September 14 – CHB conducted a volunteer invasive removal event at the site. CHB staff, an EarthCorps crew and one adult volunteer removed ~1,200 sq. ft. of invasive species including blackberry, morning glory, thistle and nightshade.

Project work scheduled to be completed before the end of 2013 consists of a CHB planting and mulching event on November 9 near the trail area. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, butterfly bush, pampas grass, and pepperweed) as directed by the Trustees; and
- Quarterly trash removal.

2.2 Skookum Wulge

The Skookum Wulge site is located on the northeast shore of Commencement Bay near the mouth of the Hylebos Waterway. This narrow strip of 1.19 acres has been set aside for preservation of the shoreline's intertidal habitat areas and native vegetation. The site consists of a rocky beach, a small backshore embayment, and an upper riparian planted area (see figure in Attachment 1). There is approximately a 4-5 foot elevation difference between the planted area and the upper beach due to continued erosion. The majority of the work on this site will take place in the riparian planting area, although some marsh development is also planned. Access to this site is primarily from a turnout off of Marine View Drive adjacent to the site.

This site was set aside by the Trustees for protection in 1999. No active restoration of the site happened initially. CHB performed stewardship, monitoring and maintenance activities at this site under an agreement with the Trustees that expired at the end of 2009. With the execution of the Settlement Agreement in August 2008, the City began providing stewardship of this site. The City has entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 30, 2012, February 12, 2013, May 3, 2013 and August 20, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 2 in Attachment 1) and are available for review upon request.

Invasive removal is the primary ongoing activity which is needed at this site. Invasive species present at the site include Himalayan blackberry, ivy, wild pea, Scot's broom and reed canary grass. Overall, most plant species, both planted and volunteers, are doing quite well at the site. Species noted as doing particularly well include coastal strawberry, Oregon grape, red-flowering currant, dunegrass, lamb's quarter, cottonwood, rushes, alder and maple. One established maple has died, but overall, the vegetation at the site is doing well.

The high tide winter storm washed away much of the large woody debris in the north marsh as well as the recently installed plants in the south marsh. Additional plantings in this southern area would help to re-establish this marsh area more quickly.

Erosion of the shoreline continues, and as the central upland area continues to erode, the plants near the edge are salvaged and relocated to other areas of the site. Planting near the eroded slope could be considered with the intent that established root systems may help stabilize the area. City staff has seen establishment of dunegrass happen in this manner at other highly eroding sites.

Quarterly monitoring data are summarized in the Site Record (see Table 2 in Attachment 1). The following activities were completed at the site during the reporting period:

- October 24 – The WCC received a mulch delivery and placed mulch rings around plants in the upland planting area.
- December 6 – The WCC planted 45 gumweed and 30 dunegrass.
- December 13 – The WCC planted 25 snowberry plants.
- January 14 – The WCC moved plants back from the eroding edge.
- January 21 – CHB and WCC conducted a beach cleanup event.
- May 6 – The WCC performed trash removal.
- May 8 – The WCC performed an invasive sweep.
- July 8 – The WCC performed an invasive sweep as well as micro-weeding in the planting area.
- This site was included in the shoreline cleanup event held on July 20.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry and ivy) as directed by the Trustees;
- Monitor on-going erosion and salvage plants as needed; and
- Quarterly trash removal.

2.3 Squally Beach

The Squally Beach site is located on the northeast shore of Commencement Bay just north of the 11th Street Bridge (see figure in Attachment 1). Seeps from the hill above are diffused over the shoreline creating an area of brackish marsh and backwater pools. This 0.66 acre site provides intertidal habitat, riparian habitat and native vegetation. The site consists of small raised island areas within the marsh area. A wooded strip of riparian area separates the site from the adjacent roadway. The majority of the work takes place in the marsh area, but some work may be required in the wooded area adjacent to the roadway. Access to the site is from a turnout off of Marine View Drive toward the northwest end of the site.

Development of this site was completed by the Trustees in 2000. CHB performed stewardship, monitoring and maintenance activities at this site under an agreement with the Trustees that expired at the end of 2009. With the execution of the Settlement Agreement in August 2008, the City began providing stewardship of this site. The City has entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement, and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 30, 2012, February 12, 2013, May 3, 2013 and August 20, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 3 in Attachment 1) and are available for review upon request.

The site appears to be generally well-established with native vegetation including willow, roses, snowberry, ocean spray, Douglas fir, gumweed, pickleweed, dunegrass, and Lyngby's sedge among those noted as doing well. Some additional willow stakes were placed this year and are showing good growth. A slight increase in the amount of erosion at the north end of the site under the willows was observed, as well as at the opening to the west island. This acceleration may have been caused by the high tide storm this year.

The two issues of primary concern at this site continue to be related to invasive species. The first is the ongoing presence of knotweed in the area at the northwest end as well as in the middle of the site. In particular, controlling it at the northwest end will be necessary to prevent it from continuing to be a problem on this site; however, this will be very difficult due to the extensive presence on the adjacent property. The WCC applied herbicide to the knotweed in May 2013. However, unless knotweed eradication is addressed as part of a large effort along Marine View Drive, this species will continue to be a problem at this site as well as other sites located in this vicinity.

The second issue is the noted presence of *Spartina angelica*. Its presence was first identified on the site in October 2009, and the Department of Agriculture was notified. This was the first identified presence of this species in Commencement Bay. A Department of Agriculture crew specializing in the control of this invasive species continues to monitor the site and remove any plants that are identified per their plan/discretion. To the City's knowledge, no spartina was observed/removed from this site during Year 5.

Quarterly monitoring data are summarized in the Site Record (see Table 3 in Attachment 1). The following activities were completed at the site during the reporting period:

- December 31 – The WCC performed an invasive sweep.
- January 2 and 7 – The WCC grubbed blackberry and then planted 25 Douglas firs, 50 Nootka roses and 10 red-flowering currant shrubs in the southernmost area closest to 11th Street.
- January 8 – The WCC placed mulch rings around the new plants.
- January 21 – CHB and WCC conducted a beach cleanup event.
- May 6 – The WCC performed trash removal.
- May 29 – The WCC injected knotweed.
- July 11 – The WCC pruned vegetation to improve access to the information sign.
- This site was included in the shoreline cleanup event held on July 20.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, knotweed, pepperweed and *Spartina*) as directed by the Trustees; and
- Quarterly trash removal.

2.4 Mowitch

The Mowitch site is located at the head of the Hylebos Waterway. This 2.3 acre site provides intertidal backwater fingers that enable brackish marsh vegetation to grow, and foraging and refuge habitat for salmonids. The site consists of one island marsh area near the mouth and

three other marsh areas separated by backchannel areas. An upland riparian zone separates the habitat area from an adjacent industrial site (see figure in Attachment 1). Work on this site takes place in both the riparian and the marsh areas. Access to the site is from the southeast corner off of Marine View Drive and adjacent to the railroad tracks.

Development of this site was completed by the Trustees in 2000. CHB performed stewardship, monitoring and maintenance activities at this site under an agreement with the Trustees that expired at the end of 2009. With the execution of the Settlement Agreement in August 2008, the City began providing stewardship of this site. The City has entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 30, 2012, February 12, 2013, May 3, 2013 and August 20, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 4 in Attachment 1) and are available for review upon request.

Overall, the site appears healthy with many plant species doing well and only minor drought stress noted this summer. Vegetation is very slowly populating the island areas with species including brass buttons, saltgrass and pickleweed. Several species of plants noted as doing well in the riparian and backshore areas include hawthorne, dogwood, cottonwood, snowberry, red-flowering currant, rose and lupine. There are also some invasive plant species present, most notably Himalayan blackberry, curled dock, pepperweed and phragmites. Overall, the site is mature, well-established and in good condition.

Quarterly monitoring data are summarized in the Site Record (see Table 4 in Attachment 1). The following activities were completed at the site during the reporting period:

- October 11 – The WCC performed an invasive sweep.
- December 19 – The WCC performed an invasive sweep.
- February 21 – CHB and EarthCorps planted four 6 ft. Douglas fir trees on the berm.
- March 7 – The WCC knocked over dead trees and mulched around small plants and conifers. In addition, they cut and removed exposed netting on the islands.
- April 8 – The WCC cut and removed exposed netting from the islands.
- May 6 – The WCC performed trash removal.
- June 20 – The WCC placed Dri-Water around four fir trees and staked up one of the trees.
- July 29 – The WCC performed invasive removal at the site.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, pepperweed and phragmites) as directed by the Trustees; and
- Quarterly trash removal.

2.5 Jordan/Lower Hylebos Marsh

The Jordan/Lower Hylebos Marsh site is located directly adjacent to Hylebos Creek in Fife, just downstream of the 4th Street bridge. The 15.3 acres site provides off channel intertidal habitat for fish migration, rearing, foraging, and refuge. The site consists of a steep, wooded hillslope, a public walking trail, planted riparian areas, marsh areas, and islands (see figure in Attachment 1). The majority of work at this site is performed in the planted riparian and marsh areas, as well as on the islands. Some work may be performed on the lower hillslope adjacent to the walking path. Access to the site is from 4th Street East or 8th Street East at the northwest or southeast sides of the site, respectively.

Development of this site was completed by the Trustees in 2005. Formerly, the non-profit group Friends of the Hylebos (FOH) performed stewardship, monitoring and maintenance activities at this site under an agreement with the Trustees. The FOH agreement with the Trustees expired in June 2008. With the execution of the Settlement Agreement in August 2008, the City began providing stewardship of this site. The City entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 30, 2012, February 12, 2013, May 30, 2013 and August 22, 2013. Photo points were established during Year 1 as shown on the attached figure. Where possible, photos were taken at these points by the City in February and August as required by the Settlement Agreement. Some of the photo point locations were adjusted to accommodate site conditions and missing photo points. Photos were taken to best replicate the field of view of previous photos. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 5 in Attachment 1) and are available for review upon request.

Overall the site appears to be in excellent condition with many species well established and continuing to thrive. Invasive species are the primary concern at this site, with primary species being reed canary grass and Himalayan blackberry. The City of Fife's WCC crew did some blackberry removal on the hill slope above the bowl area east of the trail near platform 2. Replanting of this slope should be considered. Plantings in the bowl area appear to be doing well although some invasive removal is needed to confirm. Overall the site appears to be quite healthy.

Quarterly monitoring data are summarized in the Site Record (see Table 5 in Attachment 1). The following activities were completed at the site during the reporting period:

- November 7 and 8 – The WCC worked on site in preparation for the upcoming volunteer event. Blackberry canes were raked out of the planting area and plants were picked up and delivered to the site.
- November 10 – CHB conducted a volunteer planting event.
- November 13 – The WCC raked out the planting area by Platform 2 and hauled over 1,000 lbs of blackberry canes to the landfill.
- January 16 – The WCC performed an invasive sweep.
- February 21 – CHB and EarthCorps planted three 6 ft. Douglas fir trees in the central

portion of the site.

- May 6 – The WCC performed trash removal.
- June 20 – The WCC placed Dri-Water around three fir trees.
- July 11 – The WCC scouted and mapped invasive species locations.
- July 17 – The WCC performed an invasive sweep.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, reed canary grass and purple loosestrife) as directed by the Trustees; and
- Quarterly trash removal.

2.6 Middle Waterway, City of Tacoma

The Middle Waterway, City of Tacoma site is located at the head of the Middle Waterway near 11th Street (see figure in Attachment 1). This 1.85 acre site provides intertidal habitat and saltmarsh vegetation beneficial for juvenile salmonid migration. The riparian areas provide habitat for shore birds and other wildlife. Work at this site is performed in both the marsh and riparian areas. Access to this site is off of F Street or 11th Street.

This site was constructed by the City of Tacoma in 2000. While the City's obligation under its Consent Decree required monitoring and maintenance of the site for only five years, the City continued to maintain the site after those five years lapsed in 2006. With the execution of the Settlement Agreement in August 2008, the City is again under obligation to provide ongoing stewardship of this site. The City entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 28, 2012, February 14, 2013, May 31, 2013 and August 22, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 6 in Attachment 1) and are available for review upon request.

Overall, the site is well established and in very good condition. Invasive species removal is the primary concern at this site with primary species being white sweet clover, Himalayan blackberry and reed canary grass. Most vegetation is mature and species noted as doing well include willows, alder, cottonwood, saltgrass and pickleweed. Overall the site appears healthy with little maintenance needed.

Quarterly monitoring data are summarized in the Site Record (see Table 6 in Attachment 1). The following activities were completed at the site during the reporting period:

- November 6 – The WCC performed an invasive sweep.
- December 6 – The WCC placed dead wood removed from the MWW - Simpson site to increase habitat diversity.
- March 6 – The WCC performed an invasive sweep.
- May 6 – The WCC performed trash removal.
- June 6 – The WCC performed an invasive sweep.
- June 26 – The WCC removed white sweet clover.
- June 27 – The WCC pruned and trimmed willows away from the sidewalk and information sign.
- July 31 – The WCC pruned trees along the property line.
- August 12 – The WCC relocated the information sign to a new location per request from adjacent property owner. Tree limbs crossing the property line were also trimmed as the owner intends to install a six foot chain link fence around the perimeter of his site.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, butterfly bush and reed canary grass) as directed by the Trustees; and
- Quarterly trash removal.

2.7 Middle Waterway, Simpson

The Middle Waterway, Simpson site is located at the head of the Middle Waterway near 11th Street, and adjacent to the Middle Waterway, City site. This site provides intertidal habitat and salt marsh vegetation beneficial for juvenile salmonid migration. The riparian areas provide habitat for shore birds and other wildlife. A combination of mudflat areas, beach areas, and bank/wooded areas are present at the site (see figure in Attachment 1). Work at the site takes place both on the beach and in the riparian/wooded areas. Access to this site is off of the Middle Waterway Access Road.

This site was constructed by Simpson in 1996. CHB performed stewardship, monitoring and maintenance activities at this site under an agreement with the Trustees that expired at the end of 2009. With the execution of the Settlement Agreement in August 2008, the City began providing stewardship of this site. The City has entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 28, 2012, February 14, 2013, May 31, 2013 and August 22, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 7 in Attachment 1) and are available for review upon request.

Overall, the site is in very good condition and is well established. Invasive species removal is the primary concern at this site, along with the recurring presence of transients. Invasive

species at the site include Himalayan blackberry, poison hemlock, common tansy and reed canary grass. The primary location where transient camps have been found is in the riparian area at the south end of Middle Waterway near 11th St. A second camp area was found during the August inspection, located at the north end of the site on the peninsula between this site and the Middle Waterway Tideflat Habitat site. The Tacoma Police Department has been notified and will work toward removal and cleanup of these sites.

Plantings in the marsh that were done during 2009 and 2010 are continuing to do well with good survival and spreading noted. Overall, the site is mature and vegetation is healthy with many species thriving at the site.

Quarterly monitoring data are summarized in the Site Record (see Table 7 in Attachment 1). The following activities were completed at the site during the reporting period:

- November 6 – The WCC performed an invasive sweep.
- December 6 – The WCC removed two dead trees to clear an area for the upcoming volunteer planting event. Resulting woody debris was placed at the Middle Waterway – City site.
- December 8 – CHB conducted a volunteer planting event. Two CHB representatives and 7 volunteers planted over 200 trees and shrubs and placed mulch around the new plants.
- March 6 – The WCC performed an invasive sweep.
- March 6 – The WCC performed an invasive sweep.
- August 15 – The WCC performed an invasive sweep.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry) as directed by the Trustees; and
- Quarterly trash removal.

2.8 Olympic View (City) / Olympic View Triangle (DNR)

The Olympic View site is located at the tip of the peninsula between the Thea Foss and Middle Waterways (see figure in Attachment 1). This 12.4 acre site consists of riparian areas, restored beach, and tidelands. On-site, but just off-shore, is one of the few remaining eelgrass beds in Commencement Bay. The majority of the work on this site takes place on the upper beach/riparian area. Access to this site is from the end of East F Street near Foss Maritime.

The Olympic View project that included both cleanup and restoration was constructed by the City of Tacoma in 2002. In 2007, the DNR Triangle portion of the site (OVT) was completed by DNR, including removal of contaminated soils and excavation to create a salt marsh bench. While the City's obligation under its Consent Decree required monitoring and maintenance of its portion of the site for only five years, the City continued to maintain the site after those five years lapsed in 2007. With the execution of the Settlement Agreement in August 2008, the City is again under obligation to provide ongoing stewardship of its portion of this site. The City entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary. In addition,

DNR currently has ongoing responsibility for monitoring and maintenance of its portion of the site, and the City is working with DNR and the Trustees to coordinate those efforts as well.

Year 5 inspections took place at this site on November 28, 2012, February 15, 2013, May 31, 2013 and August 22, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 8 in Attachment 1) and are available for review upon request.

Overall, the site is in good condition with minor drought stress noted due to recent dry summer weather. Invasive species removal in the riparian area around the marsh and near the gate is one of the primary concerns at this site. Invasive species present at the site include pepperweed, curled dock, St. John's wort, mustard and tansy ragwort. In addition, the fireweed near the gate needs to be thinned so that it doesn't out-compete the planted species in the area. Salt marsh species continue to slowly populate the marsh area. Algae was present on the standing water in the marsh, and small amounts of potentilla, pickleweed, atriplex, gumweed, brass buttons and saltgrass were also observed. Red goosefoot was noted on the outer shoreline for the first time. Other species doing well in the riparian area include ninebark, willow, Oregon grape and roses.

The other key issue at this site is the movement of shoreline gravels on the bayward face of the site. Erosion of the outer slope of the berm continues along with a push of the beach materials across the face of the marsh opening. The City understands that DNR and the Trustees considered a modification to the design of the site so that the planned function of the site can be maintained, but determined that the no action alternative was preferred. The City will continue to observe and note these changes to the site, and is available to assist in the implementation of any future site modifications as directed by the Trustees to resolve this issue.

Quarterly monitoring data are summarized in the Site Record (see Table 8 in Attachment 1). The following activities were completed at the site during the reporting period:

- November 13 – The City accompanied the Trustees on-site to discuss the build-up of materials at the opening to the site.
- November 15 and 20 – The WCC performed an invasive sweep.
- January 14 – The WCC removed rebar, PVC pipes, t-posts and fences from the site.
- April 23 – The WCC removed poison hemlock.
- May 29 – The WCC performed an invasive sweep.
- June 25 – The WCC performed an invasive sweep with a focus on tansy.
- July 9 – The WCC performed an invasive sweep with particular focus on tansy ragwort.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species with focus on noxious weeds and other priority species (Himalayan blackberry and pepperweed) as directed by the Trustees;
- Quarterly trash removal; and
- Monitoring of sedimentation/erosion in the salt marsh and overall site beach shift and assistance with implementation of site modifications as directed by the Trustees.

2.9 Tahoma Salt Marsh

The Tahoma Salt Marsh site is located along the Ruston Way shoreline near the Jack Hyde and Chinese Reconciliation Parks. This 1.95 acre bowl-shaped riparian and salt marsh habitat provides intertidal habitat for juvenile salmonids. The riparian areas provide habitat for shore birds and other wildlife. The site consists of a planted intertidal salt marsh area and surrounding riparian berms (see figure in Attachment 1). The majority of the work at this site occurs within this bowl area in both the intertidal marsh and riparian zones. Access to this site is through the parking lot located across Ruston Way from Jack Hyde Park.

The Tahoma Salt Marsh project was constructed by the City in 2004. While the City's obligation under its Consent Decree required monitoring and maintenance of its portion of the site for only five years, the City continued to maintain the site after those five years lapsed in 2009. CHB has also provided some stewardship activities at this site since 2008 on behalf of the Trustees. With the execution of the Settlement Agreement in August 2008, the City is again under obligation to provide ongoing stewardship of its portion of this site. The City entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 28, 2012, February 13, 2013, May 31, 2013 and August 20, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 9 in Attachment 1) and are available for review upon request.

Overall, the site is in excellent condition with only minor drought stress noted due to the recent dry summer weather. Vegetation in the salt marsh continues to thrive, with saltgrass showing the most dominance and fleshy jaumea also doing well. The riparian area appears very healthy with significant growth noted. Most species are doing quite well including Oregon grape, spruce, Douglas fir, shore pine, ninebark, black twinberry and ocean spray. Several Douglas fir trees were planted at the site to fill in spaces in the vegetation, and all are doing well so far. Invasive species removal is a primary concern at this site. Invasive species present include Himalayan blackberry, pepperweed, thistle, reed canary grass and tansy ragwort. The grasses in the riparian area are doing quite well, but continue to require periodic, although less frequent removal from around the shrubs and trees. This need will continue to lessen as the tree canopy shade increases.

Quarterly monitoring data are summarized in the Site Record (see Table 9 in Attachment 1). The following activities were completed at the site during the reporting period:

- November 14 – The WCC performed an invasive sweep.
- February 21 – CHB and EarthCorps planted three 6 ft. Douglas fir trees along the berm near the roadway.
- March 7 – The WCC performed an invasive sweep.
- May 6 – The WCC performed trash removal.

- June 20 – The WCC placed Dri-Water around three fir trees and performed an invasive sweep.
- July 11 – The WCC pruned vegetation to improve access to the information sign.

There is no scheduled project work to be completed at this site before the end of 2013. Work proposed for this site in the coming year includes:

- Quarterly invasive species with focus on noxious weeds and other priority species (Himalayan blackberry and pepperweed) as directed by the Trustees; and
- Quarterly trash removal.

2.10 Swan Creek

The Swan Creek site is located just outside the City of Tacoma limits, bordered by Pioneer Way and the railroad tracks. These 12 acres include Swan Creek, the Haire wetland and associated riparian areas. The created channels provide an improved surface water connection that allows easier passage for fish into the wetland complex. This site consists of many habitat types that provide avian, amphibian, and fish habitat for rearing, refuge, and foraging. The majority of the work at this site takes place in the riparian areas and near Channels A and B. Access to this site is from turnouts on Pioneer Way.

The Swan Creek project was constructed by the City in 2000. While the City's obligation under its Consent Decree required monitoring and maintenance of its portion of the site for only five years, the City has continued to maintain the site after those five years lapsed in 2006. With the execution of the Settlement Agreement in August 2008, the City is again under obligation to provide ongoing stewardship of its portion of this site. The City entered into a contract with CHB to provide assistance with stewardship, monitoring, community involvement and maintenance activities required by the Agreement. The City and CHB are working cooperatively to ensure that the efforts of each entity are complementary.

Year 5 inspections took place at this site on November 28, 2012, February 13, 2013, May 31, 2013 and August 22, 2013. Photo points were established during Year 1 as shown on the attached figure. Photos were taken at these points by the City in February and August as required by the Settlement Agreement. The photographs from February were provided to the Trustees in the Year 5 Second Quarter Report in April, and the photographs from August are included in Attachment 2 along with the field form from that inspection. Field forms from the remainder of the Year 5 inspections are summarized in the Site Record (Table 10 in Attachment 1) and are available for review upon request.

Invasive species control and native plant establishment continue to be the primary concerns at this site. Prevalent invasive species present at the site include Himalayan blackberry, ivy, policeman's helmet, reed canary grass and Herb Robert. New trees and shrubs were planted on the island are generally doing well. Most of the established tree and shrub species at the site are doing quite well and are showing good growth. Several trees are down across the creek, likely from beaver activity. Overall the site appears in very good condition.

The Little Red Smoke Shack (Puyallup Tribe ownership) near the south end of the site was demolished during Year 2, and the debris is still piled partially on site. A cell tower was constructed on the site during Year 4, but still does not appear to have cells on top. Overall the site appears to be doing better now that the LRSS is gone as there is less evidence of human

presence. The Puyallup Tribe was notified of the debris issue, and the City will continue to work with them to remove this material and restore the site.

Quarterly monitoring data are summarized in the Site Record (see Table 10 in Attachment 1). The following activities were completed at the site during the reporting period:

- October 2 and 3 – The WCC performed invasive removal with a focus on blackberry.
- October 24 – The WCC performed a wetland side invasive sweep with a focus on ivy removal.
- November 19 – The WCC performed an invasive sweep.
- November 26 – The WCC performed an invasive sweep.
- November 27 – The WCC harvested and installed 255 red twig dogwood stakes for reed canary grass control.
- November 28 – The WCC planted 28 shrubs and 11 trees received from CHB.
- December 18 – The WCC performed an invasive sweep and planted 100 Douglas fir trees.
- December 19 – The WCC planted a western red cedar tree salvaged from the Mowitch site.
- March 6 – The WCC performed an invasive sweep.
- March 26 – The WCC cut ivy rings and grubbed blackberry in the back edge of Channel B.
- April 15 – The WCC planted 65 trees and shrubs.
- May 6 – The WCC performed trash removal.
- May 13 – The WCC performed an invasive sweep along the road.
- May 15 – The WCC performed litter pick-up.
- May 29 – The WCC performed an invasive sweep with specific emphasis on poison hemlock.
- June 8 – CHB conducted a volunteer invasive removal event at the site. CHB staff worked with an EarthCorps crew and 21 volunteers to remove policeman's helmet, herb Robert, dame's rocket, tansy ragwort, blackberry, poison hemlock and reed canary grass from the perimeter of the wetland area as well as both sides of Channel A, parts of Channel B and the east bank of the creek past Photopoint 2. Approximately 49,600 square feet was covered during the event. The poison hemlock and seed heads of the reed canary grass were bagged and removed while other vegetation was left onsite to compost.
- June 18 – The WCC installed Dri-Water on plants planted within the last year.
- June 24 – The WCC performed an invasive sweep.
- July 8 – The WCC performed an invasive sweep.
- July 10 – The WCC cut and barked 250 feet of trail from the gravel drive to the information sign. Approximately 10 cu. yds. of mulch was placed.
- July 11 – The WCC placed mulch rings around plants and watered.
- July 17 – The WCC tied and stomped reed canary grass.
- July 18 – The WCC performed an invasive sweep of the creek/channels with particular emphasis on policeman's helmet and yellow flag iris seed pods.
- July 31 – The WCC watered the front planting area between the road and Channel A.
- August 1 – The WCC watered plants.
- September 10 – The WCC performed an invasive sweep.

Project work scheduled to be completed before the end of 2013 consists of CHB staking and mulching event on November 16 on the island area. Work proposed for this site in the coming year includes:

- Quarterly invasive species with focus on noxious weeds and other priority species (Himalayan blackberry, Scot's broom, reed canary grass, policeman's helmet, poison hemlock and knotweed) as directed by the Trustees; and
- Quarterly trash removal.

3.0 Volunteer Involvement

See below for a summary of approximate WCC, CHB, EarthCorps and volunteers hours worked at the stewardship sites during the fourth quarter of Year 5.

Site	WCC (hours)	CHB (hours)	EarthCorps (days)	Volunteer (hours)
Yowkwala	19	97	3	178
Skookum Wulge	9	13	--	128
Squally Beach	2	13	--	128
Mowitch	12	--	--	--
Jordan/Lower Hylebos Marsh	10	--	--	--
Middle Waterway – City	4	--	--	--
Middle Waterway – Simpson	4	--	--	--
Olympic View	3	--	--	--
Tahoma Salt Marsh	2	--	--	--
Swan Creek	39	--	--	--

CHB continued work on recruiting and involving volunteers in site activities as well as providing environmental education to the community. Volunteers were recruited at various events and through CHB's and other volunteer websites. Volunteer participation events were conducted at the Yowkwala, Skookum Wulge and Squally Beach shoreline habitat areas. These events were fairly well attended with 1 to 96 volunteers present at each event in addition to the CHB staff members. Ninety-six volunteers worked on the 6th Annual Shoreline cleanup event of the area including the Yowkwala, Skookum Wulge and Squally Beach sites on July 20, 2013, removing trash and other debris; 5 volunteers worked at the Yowkwala site on July 27, 2013, and performed invasive removal; 4 volunteers worked at the Yowkwala site on August 17, 2013, and installed Dri-Water and removed old composting material; and 1 volunteer worked at the Yowkwala site on September 14, 2013, and performed invasive removal. An EarthCorps crew worked at each of the three Yowkwala events along with the volunteers and CHB staff members. Volunteer events are generally scheduled at the sites approximately once a month throughout the year.

CHB provided an educational display at the shoreline cleanup event in July. In addition, CHB performed volunteer education and recruitment at several events including the Maritime Fest, Dockfest, the Salmon Homecoming event and the Make Your Mark event, performed volunteer recruitment and education with the Veterans Corps, and posted other volunteer recruitment opportunities on various websites.

4.0 Financial Summary

Financial information documenting the City's costs for each task performed from July 1, 2013 through September 30, 2013 (Year 5, Quarter 4) is provided in Attachment 3. Financial information for Year 5, Quarters 1, 2 and 3 has been provided in previous quarterly reports. The

work performed at each site is summarized in Section 2.0. As documented in Attachment 3 and previous quarterly reports, the City incurred the following costs between October 1, 2012 and September 30, 2013:

Task 1	Project Management	\$2,939.33
Task 2	Reporting and Documentation	\$4,661.58
Task 3	Site Monitoring	\$3,344.60
Task 4	Site Maintenance	\$3,786.58
Task 5	Adaptive Management	\$1,848.94
	General Maintenance and Monitoring	<u>\$34,246.89*</u>
Total		\$50,827.92

* Based on WCC crew rate of \$48.08/hr. Please note that this rate will increase to \$76.04/hr as of October 1, 2013 based on an increase in actual costs per the Department of Ecology/City WCC contract.

As identified in the Settlement Agreement, the reimbursable expenses for project management and reporting (Tasks 1 and 2) are limited to 11% of the amount placed in the Escrow Account. The maximum allowable reimbursement for these tasks was exceeded in the first quarter of Year 4, so the disbursement request amount is less than the total listed above (see the Year 5 Reimbursement Summary in Attachment 3). In accordance with this summary, the City hereby requests disbursement from the escrow account in the amount of \$43,227.01 for work completed under the Settlement Agreement between October 1, 2012 and September 30, 2013. Following this disbursement, \$31,180.36 will remain in the escrow account for future stewardship activities at these sites.

Based on forecasted spending rates, it is anticipated that the remaining monies could last for an additional year. However, it is anticipated that EarthCorps will assume a lead stewardship role in 2014 and that, if agreeable with EPA and the Trustees, any remaining funds in the Escrow account could be transferred into the Trustee's long-term stewardship endowment fund. In lieu of a proposed task list, the City proposes to continue basic services: garbage and invasive removal at these sites on a quarterly basis, quarterly site visits by staff (Feb/Aug) or CHB (May/Nov), and other tasks if requested. In addition, CHB will continue to conduct volunteer events for invasive removal at the sites, with support from EarthCorps.