



## ENVIRONMENTAL STEWARDSHIP PROJECT

# YEAR 4 ANNUAL REPORT

OCTOBER 23, 2012



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 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, 2011 and September 30, 2012. 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
- Lower Hylebos Habitat Restoration Site (formerly Hauff)\*

\* Note that due to a delay in the transfer of the property to the Trustees, the property is still being managed by Wildlands, Inc. As agreed with the Trustees, the City will discontinue work on the site until such time that the property transfer has been completed.

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, summary of data collected, and proposed tasks.

### **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 4 inspections took place at this site on October 25, 2011, December 9, 2011, February 15, 2012, April 19, 2012, June 15, 2012 and August 14, 2012. 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 4 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 4 inspections are summarized in the Site Record (Table 1 in Attachment 1) and are available for review upon request.

Trash and invasive species removal are the primary concerns at this site. Invasive species present at the site include pepperweed, Himalayan blackberry, butterfly bush, Scott's broom, tansy ragwort 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 on this site due to the intermixing of invasives with the poison oak. The small back marsh area is continuing to show success with good plant diversity and many volunteers. Some additional plantings have been made behind the marsh at the end of the social trail, and the shore pine and snowberry in this area are doing well. Other species succeeding at the site include snowberry, dune grass, gumweed, Douglas fir and rose. Continuing evidence of beach bonfires and associated party trash were noted and cleaned up. This is a long-standing, recurring problem at this site.

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 to remove the hazard. This problem may arise again in the future depending on the dynamics of the beach.

Bi-monthly 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:

- November 9 – The WCC deconstructed existing GED and performed an invasive and garbage sweep.
- November 12 – CHB conducted a volunteer planting event.
- November 15 – The WCC tore down the party house and continued the invasive and garbage sweep.
- January 3 – The WCC performed an invasive sweep of the planting areas and a garbage sweep.

- January 16 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge, and Squally Beach sites.
- January 23 – The WCC removed trash picked up during the CHB volunteer event.
- March 6 – CHB conducted an educational field trip for UWT students at the Yowkwala, Skookum Wulge and Squally Beach sites.
- March 24 – CHB conducted a volunteer invasive removal event.
- April 11 – The WCC planted 100 donated trees.
- July 14 – CHB conducted a volunteer invasive removal event.
- July 21 – CHB hosted a shoreline cleanup event.
- August 14 – The WCC performed invasive removal.
- August 15 and 16 – The WCC removed the rebar and other metal debris.
- September 15 – CHB conducted a volunteer invasive removal event.

Project work scheduled to be completed before the end of 2012 consists of CHB planting events on October 6 and November 10 in the trail area. Work proposed for this site in the coming year includes:

- Ongoing 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;
- Ongoing trash removal;
- Evaluation for and propose if needed additional plants in the trail area to achieve sufficient coverage and survivability; and
- Evaluation of the need/cost of mass invasive species removal and planting in the backshore areas with native species.

The complete 2013 Proposed Task List is included in Attachment 3.

## **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 3 inspections took place at this site on October 15, 2011, December 9, 2011, February 15, 2012, April 20, 2012, June 2, 2012, and August 14, 2012. 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 4 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 4 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, morning glory, Scot's broom and reed canary grass. The ivy was treated with herbicide in July. Many different species are volunteering at the site including alder, maple, fireweed, rushes and black cottonwood. Both coastal strawberry and trailing blackberry are doing notably well at the site along with numerous other species. Erosion of the shoreline continues, although minor amounts of herbaceous species are establishing on the eroded face. 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 dune grass happen in this manner at other highly eroding sites.

Bi-monthly 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 5 – The WCC performed an invasive sweep.
- October 12 and 13 – The WCC removed ivy and placed jute mat on the south uplands in preparation for the volunteer planting event.
- October 15 – CHB conducted a volunteer planting event on the south uplands.
- October 24 – The WCC placed mulch on the newly planted area.
- October 26 – The WCC removed additional ivy from the toe of the slope.
- November 2 – The WCC spread grass seed on the newly planted/mulched slope and planted 30 additional plants.
- December 5 – The WCC performed an invasive sweep at the site.
- January 16 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge, and Squally Beach sites.
- February 1 – The WCC performed a garbage sweep at the site.
- March 6 – CHB conducted an educational field trip for UWT students at the Yowkwala, Skookum Wulge and Squally Beach sites.
- April 24 – The WCC performed an invasive sweep at the site.
- June 2 – CHB conducted a volunteer invasive removal event.
- June 18 – The WCC performed an invasive sweep at the site.
- July 9 – The WCC performed an invasive sweep at the site.
- July 19 – The WCC applied herbicide on the ivy.
- July 21 – CHB hosted a shoreline clean up event.
- August 13 – The WCC performed a trash sweep.
- September 6 – The WCC performed an invasive sweep.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry and ivy) as directed by the Trustees;
- Evaluation for and propose if needed additional plants to achieve sufficient coverage and survivability;

- Monitor on-going erosion and salvage plants as needed;
- Plant dune grass near the eroded slope for stabilization and in the area where knotweed has been eradicated; and
- Ongoing trash removal.

The complete 2013 Proposed Task List is included in Attachment 3.

### **2.3 Squally Beach**

The Squally Beach site is located on the northeast shore of Commencement Bay just north of the 11<sup>th</sup> 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 4 inspections took place at this site on October 25, 2011, December 9, 2011, February 15, 2012, April 19, 2012, June 21, 2012 and August 14, 2012. 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 4 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 4 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, dune grass, and Lyngby's sedge among those noted as doing well.

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 July 2012. 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. A representative from the Spartina Task Force removed one plant from under the willows along the toe of the slope in August.

Bi-monthly 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:

- November 16 and 17 – The WCC grubbed blackberry at the site.
- December 12 – The WCC performed an invasive sweep.
- January 16 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge, and Squally Beach sites.
- February 1 – The WCC performed an invasive sweep.
- March 6 – CHB conducted an educational field trip for UWT students at the Yowkwala, Skookum Wulge and Squally Beach sites.
- April 24 – The WCC performed an invasive sweep at the site.
- April 26 – The WCC performed a site visit to look for irrigation pipes.
- June 18 – The WCC performed an invasive sweep at the site and removed irrigation pipes.
- July 11 – The WCC performed a pepperweed sweep and applied herbicide on the knotweed.
- July 21 – CHB hosted a shoreline clean up event.
- August 13 – The WCC performed an invasive sweep.
- August 15 – The WCC removed large metal fence posts (previously installed for large woody debris deflection).
- September 6 – The WCC performed an invasive sweep.

Large metal fencing was initially installed on the site during construction to protect the young plants from the smothering effects of large woody debris. It was modified in Year 2 to remove the fencing material but the posts were left in place temporarily to provide some barrier. The site was monitored through the winter months of Year 3 and there was no significant accumulation of large woody debris within the site or negative impact on the marsh plants. Therefore, removal of all of the posts was put on the 2012 Task List and was completed in August.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, knotweed, pepperweed and Spartina) as directed by the Trustees;
- Ongoing trash removal;
- Inject/apply herbicide to the knotweed population to the west of the site to control encroachment onto the site as well as on site; and
- Cut and remove any remaining exposed fish netting to the extent that it will not damage plants during removal.

The complete 2013 Proposed Task List is included in Attachment 3.

## 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 4 inspections took place at this site on October 25, 2011, December 17, 2011, February 15, 2012, April 20, 2012, June 18, 2012, and August 14, 2012. 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 4 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 4 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. Some marsh species are continuing to slowly establish on the island areas including brass buttons, salt grass and pickleweed. Several species of plants noted as doing well in the riparian and backshore areas include lupine, roses, willows, snowberry, Douglas fir, salt grass and tufted hairgrass. There are also some invasive plant species present, most notably Himalayan blackberry, thistle, tansy, reed canary grass and phragmites. Overall, the site is in good condition.

Bi-monthly 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:

- December 15 – The WCC performed an invasive sweep.
- April 9 – The WCC planted 40 donated trees and shrubs.
- April 26 – The WCC performed a site visit to look for irrigation pipes.
- May 1 – The WCC performed irrigation system removal and an invasive sweep.
- June 20 – The WCC performed an invasive sweep at the site.
- August 9 – The WCC performed an invasive sweep.
- August 21 – The WCC sprayed the phragmites, and girdled/sprayed the cherry tree.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing invasive species removal with focus on noxious weeds and other priority species (Himalayan blackberry, pepperweed and phragmites) as directed by the Trustees;
- Ongoing trash removal;
- Cut and remove remaining exposed fish netting to the extent that it will not damage plants during removal; and
- Distribute on-site mulch pile around newest plants

The complete 2013 Proposed Task List is included in Attachment 3.

## **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 4<sup>th</sup> 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 4<sup>th</sup> Street East or 8<sup>th</sup> 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 4 inspections took place at this site on October 27, 2011, December 17, 2011, February 15, 2012, April 20, 2012, June 15, 2012, and August 14, 2012. 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 4 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 4 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. Invasive species are the primary concern at this site, with species including Himalayan blackberry, reed canary grass, herb Robert, knotweed, and Scot's broom being of the most concern. Many young conifers were identified as volunteering at the site. Alder continue to thrive at the site along with snowberry, thimbleberry, sword ferns, Douglas fir and numerous other species. Under an agreement with the Trustees related to the previous over-thinning, EarthCorps replanted 46 plants in the affected areas in

November. In addition, trees and shrubs were planted on the east side of the trail near Platform 1.

Bi-monthly 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:

- October 4 – The WCC performed an invasive sweep.
- October 11 – The WCC performed a garbage sweep.
- November 5 – CHB conducted a volunteer planting event.
- November 14 – The WCC brushcut blackberries at the south end of the trail.
- November 22 – The WCC performed invasive removal.
- November 30 – The WCC transplanted native plants out of the mower turnaround area.
- December 15 – The WCC performed invasive removal.
- January 16 – The WCC performed an invasive sweep at the site.
- January 23 – The WCC visited the site to assess damage from recent snow storm.
- April 9 – The WCC planted 60 donated trees and shrubs at the east end of the trail.
- April 26 – The WCC performed a site visit to look for irrigation pipes.
- May 1 – The WCC performed irrigation system removal.
- May 29 – The WCC performed an invasive sweep.
- July 11 and 18 – The WCC sprayed herbicide on the knotweed.
- September 1 – CHB conducted a volunteer invasive removal event.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing 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;
- Planting in the area east of the trail where blackberry was removed during Parks Appreciation Day; and
- Ongoing trash removal.

The complete 2013 Proposed Task List is included in Attachment 3.

## **2.6 Middle Waterway, City of Tacoma**

The Middle Waterway, City of Tacoma site is located at the head of the Middle Waterway near 11<sup>th</sup> Street (see figure in Attachment 1). This 1.85 acre site provides intertidal habitat and salt marsh 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 11<sup>th</sup> 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 4 inspections took place at this site on October 27, 2011, December 13, 2011, February 14, 2012, April 19, 2012, June 6, 2012, and August 15, 2012. 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 4 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 4 inspections are summarized in the Site Record (Table 6 in Attachment 1) and are available for review upon request.

Overall, the site is in very good condition. Invasive species removal is the primary concern at this site as it is generally well established. Invasive species of note at the site include white sweet clover, Himalayan blackberry, common tansy, reed canary grass and morning glory. Recent plantings in the marsh area appear healthy and are doing well while there was more mixed success in the riparian area. Overall the site appears healthy with little maintenance needed.

Bi-monthly 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:

- October 3, 4 and 6 – The WCC performed an invasive sweep with a focus on white sweet clover.
- October 25 – The WCC continued the invasive sweep.
- October 26 – The WCC continued removal of white sweet clover.
- November 2 – The WCC mulched trees along 11<sup>th</sup> Street and transplanted a large shore pine.
- November 21 – The WCC performed an invasive sweep.
- December 6 and 14 – The WCC continued with invasive removal at the site.
- January 4 – The WCC performed an invasive sweep at the site.
- February 9 – The WCC performed a garbage sweep.
- April 9 – The WCC planted 30 donated trees at the site.
- April 24 – The WCC performed an invasive sweep and mowed the reed canary grass.
- April 26 – The WCC performed a site visit to look for irrigation pipes.
- May 3 – The WCC performed an invasive sweep at the site.
- June 11 and 12 – The WCC performed an invasive sweep with a focus on white sweet clover as well as brush cutting at the site.
- June 19 – The WCC performed an invasive sweep and brush cutting at the site.
- July 3 and 4 – The WCC performed an invasive sweep with a focus on white sweet clover.
- August 13, 14, and 29 - The WCC performed an invasive sweep with a focus on white sweet clover.
- September 11 – The WCC removed white sweet clover.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing 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;
- Thinning out of alder around conifers; and
- Ongoing trash removal.

The complete 2013 Proposed Task List is included in Attachment 3.

## **2.7 Middle Waterway, Simpson**

The Middle Waterway, Simpson site is located at the head of the Middle Waterway near 11<sup>th</sup> 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 4 inspections took place at this site on October 27, 2011, December 13, 2011, February 14, 2012, April 19, 2012, June 6, 2012, and August 15, 2012. 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 4 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 4 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. Invasive species of primary concern at the site include Himalayan blackberry, wild pea and St. John's wort. Plantings in the marsh that were done during 2009 and 2010 are continuing to do well with good survival and spreading noted. Specifically, the roses, Oregon grape and coastal strawberries were noted as doing very well. Established plantings that are thriving at the site include strawberry, red-flowering currant, snowberry, Oregon grape, lupine, Douglas fir, dune grass, salt grass and pickleweed. Gumweed is also volunteering. Goose exclusion fencing was removed in fall 2011 and this does not appear to be affecting the continued growth and development of the site.

Bi-monthly 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 2 – The WCC performed an invasive sweep.
- November 28 – The WCC performed an invasive and trash sweep.
- December 6 – The WCC performed an invasive sweep.
- April 26 – The WCC performed a site visit to look for irrigation pipes.
- July 10 – The WCC performed an invasive sweep.
- August 14 – The WCC performed an invasive sweep.
- September 11 – The WCC performed an invasive sweep.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

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

The complete 2013 Proposed Task List is included in Attachment 3.

## **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 4 inspections took place at this site on October 27, 2011, December 3, 2011, February 14, 2012, April 19, 2012, June 16, 2012, and August 15, 2012. 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 4 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 4 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 due to recent dry summer weather noted. Invasive species removal in the riparian area is one of the primary concerns at this site. Invasive species present at the site include pepperweed, poison hemlock, St. John's wort, Himalayan blackberry, and tansy ragwort. Salt marsh species continue to establish very slowly. Essentially no plants are present in the central portion of the marsh, but orache and potentilla are present and healthy around the upper edge. The goose exclusion in the marsh has been removed. The riparian vegetation appears generally healthy with pearly everlasting, roses, fireweed, and gumweed among those noted as volunteering. Other species doing well in the riparian area include ninebark, madrone, willow, Oregon grape, shorepine, roses, and snowberry.

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 are considering a modification to the design of the site so that the planned function of the site can be maintained. The City will continue to observe and note these changes to the site, and is available to assist in the implementation of any site modifications as directed by the Trustees.

Bi-monthly 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:

- October 11 – The WCC removed invasive species from the site with a focus on mustard, tansy and pepperweed.
- October 26 – The WCC removed invasive species from the parking area.
- November 14 and 22 – The WCC performed an invasive sweep.
- November 29 – The WCC removed St. John's wort outside of the gate.
- December 1 – The WCC staked up the cottonwood trees and pulled St. John's wort.
- December 3 – CHB conducted a volunteer planting event.
- December 21 – The WCC performed an invasive sweep.
- February 7 – The WCC was on site to prop up a serviceberry tree that was leaning.
- April 9 – The WCC performed invasive removal focused on tansy ragwort.
- May 29 – The WCC performed an invasive sweep.
- June 27 – The WCC performed an invasive sweep.
- July 12 – CHB conducted an invasive removal event.
- July 31 and August 1 and 2 – The WCC removed posts, rebar and other debris associated with the goose exclusion and the irrigation system in the triangle area.
- August 6 – The WCC performed an invasive sweep and cut the willows from the fence line.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing invasive species with focus on noxious weeds and other priority species (Himalayan blackberry and pepperweed) as directed by the Trustees;
- Ongoing trash removal;
- 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; and
- Potential assistance with engineered solution to keep surface tidal connection open

The complete 2013 Proposed Task List is included in Attachment 3.

## **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 4 inspections took place at this site on October 20, 2011, December 9, 2011, February 14, 2012, April 20, 2012, June 6, 2012, and August 15, 2012. 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 4 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 4 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. The salt marsh continues to fill in with vegetation, with salt grass showing the most dominance. Many new pickleweed volunteers were noted in the marsh area and it was estimated that there is 80% coverage in the marsh area at this time. The riparian area appears very healthy with significant growth noted. Thimbleberry and possibly red-flowering currant are volunteering and other plants including Oregon grape, spruce, Douglas fir, shore pine, black twinberry and ocean spray doing very well. Salt marsh plantings from late last year did not do well. Some of the tufted hairgrass survived but none of the gumweed. Invasive species removal is a primary concern at this site. Invasive species present include Himalayan blackberry, 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.

Bi-monthly 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:

- October 4 – The WCC performed an invasive sweep.
- October 26 – The WCC performed an invasive and garbage sweep.
- November 17 – The WCC performed an invasive sweep.
- December 14 – The WCC performed an invasive sweep.
- January 23 – The WCC visited the site to assess damage from recent snow storm.
- May 24 – The WCC removed the goose exclusion fencing and performed an invasive sweep.
- June 28 – The WCC performed an invasive sweep.
- July 3 – The WCC performed an invasive sweep.
- July 30 – The WCC performed a pepperweed sweep.
- September 13 – The WCC performed an invasive sweep.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

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

The complete 2013 Proposed Task List is included in Attachment 3.

## **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 4 inspections took place at this site on October 20, 2011, December 17, 2011, February 14, 2012, May 1, 2012, June 21, 2012, and August 15, 2012. 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 4 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 4 inspections are summarized in the Site Record (Table 10 in Attachment 1) and are available for review upon request.

Invasive species 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, yellow-flag iris, nightshade and knotweed. New trees were planted on the island, along the roadside and behind the fireworks stand in early spring. These new plantings are generally doing well with the shore pine showing the most success. Chicory, chokecherry, bird's foot trefoil, buttercup and sheep sorrel were found on-site. Most of the tree and shrub species are doing quite well and are showing good growth. 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. 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.

Bi-monthly 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 3 – The WCC grubbed blackberry and performed a poison hemlock sweep. In addition, a locust tree was removed from the island.
- October 5, 6 and 12 – The WCC grubbed blackberry along the roadside at the north end of the site.
- November 2 – The WCC performed an invasive sweep.
- November 7 – The WCC grubbed blackberry along the roadside.
- November 15, 22, 28, 29 and 30 – The WCC pulled ivy in the understory at the north end of the site.
- November 29 – The WCC performed an invasive sweep on the island.
- December 12 – The WCC performed invasive removal at the south end of the site.
- December 14 – The WCC performed an invasive sweep.
- January 3 – The WCC performed a blackberry sweep and a garbage sweep at the north end of the site.
- January 16 – The WCC performed a garbage sweep at the south end of the site.
- January 23 – The WCC visited the site to assess damage from recent snow storm.
- February 1 – The WCC removed ivy along the north roadside and performed a garbage sweep at the site.
- April 3, 4, 10 and 11 – The WCC planted trees along the roadside, behind the fireworks stand and on the island.
- April 18 – The WCC performed an invasive and garbage sweep at the site.
- May 9 – The WCC performed an invasive sweep.
- May 16 – The WCC planted a large fir tree.
- May 17 – The WCC watered plants at the site.
- May 19 – CHB conducted a volunteer invasive removal event.
- May 23 – The WCC performed an invasive sweep.
- June 12 – The WCC performed an invasive sweep on the north roadside.
- June 18 – The WCC performed an invasive sweep at the site.
- June 25, 26 and 27 – The WCC performed an invasive sweep at the site with a focus on nightshade, iris and policemen's helmet. Selective herbicide spraying of morning glory and reed canary grass was also performed.
- July 4 – The WCC girdled two cherry trees and applied herbicide.
- July 10 – The WCC watered trees on site.
- July 11 – The WCC sprayed knotweed along the roadside and creek.
- August 9 – The WCC performed an invasive sweep along the north roadside.
- August 13 – The WCC performed an invasive sweep focused on Policeman's helmet and nightshade.
- August 14 and 20 – The WCC watered plants on site.
- September 10 – The WCC grubbed blackberries along the north roadside.

There is no scheduled project work to be completed at this site before the end of 2012. Work proposed for this site in the coming year includes:

- Ongoing invasive species with focus on noxious weeds and other priority species (Himalayan blackberry, Scott's broom, reed canary grass, policeman's helmet, poison hemlock and knotweed) as directed by the Trustees;
- Harvest on-site willow stakes and plant along the creek on the island in attempt to shade out the reed canary grass; and
- Ongoing trash removal.

The complete 2013 Proposed Task List is included in Attachment 3.

## 2.11 Lower Hylebos Habitat Restoration Site

The Lower Hylebos Habitat Restoration Site (LHHR), formerly identified as the Hauff project site, is located along the lower, tidal section of Hylebos Creek. Goals for this 6.7 acre site included restoring the estuarine salt marsh complex by creating intertidal channels and a vegetated buffer. Restoration activities included cleaning up the site by removing structures and materials, removing the non-native vegetation, excavating the site to reestablish the tidal marsh and mudflats, and planting a vegetative buffer. Under an agreement with the Trustees, Wildlands, Inc. assumed responsibility for managing the acquisition and cleanup of the site and is currently in the process of transferring the property to the Puyallup Tribe of Indians.

In March 2012, the Trustees asked the City to add this site to the list of sites monitored under the ESP. Three inspections and a CHB-coordinated volunteer planting event were conducted at the site between April and August. In September, due to delays in the property transfer process and at the request of Wildlands, Inc., the City discontinued work on the site. The Trustees concurred with this decision. Once the property transfer has been completed, and if requested by the Trustees, the City will pursue an access agreement with Puyallup Tribe to allow for work to occur at this site.

The City performed an initial site visit in May, established photo point locations, and took baseline photos. Year 4 inspections took place at this site on April 20, 2012, June 14, 2012, and August 14, 2012. Photos were taken at the newly established locations by the City in August. The baseline photographs from May were not submitted but are available for review upon request. 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 4 inspections are summarized in the Site Record (Table 11 in Attachment 1) and are available for review upon request.

The following activities were completed at the site during the reporting period:

- May 2 – The City conducted an initial site visit and established photo points (see Attachment 1).
- June 14 – CHB conducted a volunteer invasive removal event.

There is no scheduled project work to be completed at this site at this time. The City will await further direction from the Trustees as to inclusion of this site in the ESP.

## 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 4.

Site	WCC (hours)	CHB (hours)	EarthCorps (days)	Volunteer (hours)
Yowkwala	15	36	2	120
Skookum Wulge	6	8	--	49
Squally Beach	11	8	--	49
Mowitch	6	--	--	--

Jordan/Lower Hylebos Marsh	7	15	--	40
Middle Waterway – City	18	--	--	--
Middle Waterway – Simpson	5	--	--	--
Olympic View	46	13	--	25
Tahoma Salt Marsh	5	--	--	--
Swan Creek	53	--	--	--
Lower Hylebos Habitat Restoration Site	--	--	--	--

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 shorelines, the Jordan/Lower Hylebos Marsh site, and at Olympic View. These events were fairly well attended with 3 to 37 volunteers present at each event in addition to the CHB staff members. Five volunteers worked at the Olympic View site on July 12, and performed invasive removal; 11 volunteers worked at the Yowkwala site on July 14 and performed invasive removal; 37 volunteers participated in the shoreline cleanup event at the Yowkwala, Skookum Wulge and Squally Beach sites on July 21 removing trash and other debris; 8 volunteers worked at the Jordan site on September 1 and performed invasive removal; and 3 volunteers worked at the Yowkwala site on September 15 and performed invasive removal. An EarthCorps crew worked at two of the 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 conducted an educational presentation for a Girl Scout group in July. In addition, CHB participated in a volunteer education and recruitment fair in September 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, 2012 through September 30, 2012 (Year 4, Quarter 4) is provided in Attachment 4. Financial information for Year 4, 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 4 and previous quarterly reports, the City incurred the following costs between October 1, 2011 and September 30, 2012:

Task 1	Project Management	\$4,050.91
Task 2	Reporting and Documentation	\$6,733.60
Task 3	Site Monitoring	\$3,375.71
Task 4	Site Maintenance	\$465.25*
Task 5	Adaptive Management	\$3,674.69
	General Maintenance and Monitoring	\$40,036.91*
Total		\$58,337.07

\* Based on WCC crew rate of \$48.08/hr

As identified in the Settlement Agreement, the reimbursable expenses for project management and reporting 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 4 Reimbursement

Summary in Attachment 4). In accordance with this summary, the City hereby requests disbursement from the escrow account in the amount of \$49,847.86 for work completed under the Settlement Agreement between October 1, 2011 and September 30, 2012. Following this disbursement, \$74,407.37 will remain in the escrow account for future stewardship activities at these sites.

## **5.0 Proposed Modifications to Environmental Stewardship Plan Scope of Work**

In the Year 3 Annual Report, after visiting all of the sites with Trustee representatives, the City recommended several modifications to the ESP Scope of Work. Each recommendation and its current status are as follows:

**Recommendation 1:** Reduce the frequency of monitoring from bi-monthly to quarterly (February, May, August, November). The February and August inspections would still include photo documentation and be performed by City representatives. The May and November inspections would be performed by CHB/volunteer site stewards.

**Status:** This recommendation was approved by the Trustees in July, so effective on that date, the inspection frequency has been changed to quarterly.

**Recommendation 2:** Develop 2012 CHB Work Plan to include primarily invasive species and debris removal events rather than planting events. Planting events will take place on a limited basis only as directed by the Trustees.

**Status:** This recommendation was approved by the Trustees and implemented in 2012 work.

**Recommendation 3:** Identify and target specific invasive species for each site to focus work efforts on the most problematic species. Recommendations for targeted species on each site were identified on the 2012 Task List and are also included in Attachment 3.

**Status:** This recommendation was approved by the Trustees and implemented in 2012 work.

**Recommendation 4:** Add the Sha Dadx and Hauff sites to the ESP Project site list, and also expand the stewardship activities to be performed at the OVRA Triangle site after DNR's required stewardship obligations are completed (anticipated January 2012).

**Status:** The Puyallup Tribe determined that they did not want the City to perform stewardship at the Sha Dadx site. As indicated above, the Hauff (LHRS) site was added to the ESP site list in March but was subsequently removed in September. The City will await further direction regarding work at this site. In addition, the City will perform additional stewardship work at the OVRA Triangle site as directed by the Trustees as DNR completes its obligations.