



ENVIRONMENTAL STEWARDSHIP PROJECT

YEAR 3 ANNUAL REPORT

OCTOBER 25, 2011



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, 2010 and September 30, 2011. 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, 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 will take 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 3 inspections took place at this site on October 24, 2010, December 23, 2010, February 9, 2011, April 23, 2011, June 16, 2011, and August 10, 2011. 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 3 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 3 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, and pampas grass. Poison oak is continuing to spread into open areas, and is encroaching on the social trail. Gumweed, pickleweed, fleshy jaumea, orache and dune grass are volunteering at the site and the small back marsh area is doing notably well with good plant diversity. Some additional plantings have been made behind the marsh at the end of the social trail, and the shore pine and Oregon grape in this area are doing well. Other species doing well at the site include snowberry, 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.

This site is owned by the Puyallup Tribe of Indians. On November 1, 2010, the license for the City to enter tribally owned properties to perform stewardship duties was executed. Previously, authorization for site access was provided on a case-by-case basis.

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:

- October 2 – CHB conducted a volunteer invasive removal event;
- October 9 – CHB conducted a volunteer planting event;
- January 22 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge and Squally Beach sites;
- February 23 – WCC completed a garbage sweep of site and removed two party structures;
- April 23 – CHB conducted an Earth Day volunteer invasive and trash removal event;
- May 12 – WCC removed invasives from the planted area and did a pepperweed sweep;
- June 28 – WCC completed an invasive and garbage sweep;
- July 23 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge and Squally Beach sites;
- August 11 – WCC tore down the party structure, removed pepperweed and did a garbage sweep;

- September 14 – WCC performed an invasive sweep of the planting nodes, and began a pepperweed sweep; and
- September 21 – WCC completed the pepperweed sweep.

Project work scheduled to be completed before the end of 2011 consists of a CHB planting event on November 12 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;
- Cutting the exposed rebar left from barge removal to below grade at a lower tide; and
- Evaluation of the need/cost of mass invasive species removal and planting in the affected area with native species.

The complete 2012 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 19, 2010, December 15, 2010, February 9, 2011, April 29, 2011, June 16, 2011, and August 10, 2011. 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 3 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 3 inspections are summarized in the Site Record (Table 2 in Attachment 1) and are available for review upon request.

Invasive removal and new, native plantings are the primary activities which are needed at this site. Invasive species present at the site include Himalayan blackberry, ivy, morning glory, white sweet clover, pepperweed and Japanese Knotweed. The knotweed was injected in August 2010 and again in September 2011. Some big leaf maple, cottonwood, alder, salt grass and gumweed are volunteering/present at the site. Both coastal strawberry and bog rush is

doing notably well in the central portion of the site. 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.

A large part of the stewardship efforts at this site during Year 3 relate to the ongoing efforts to remove invasives and establish native vegetation on the riparian slopes. The north slope and central area were completed previously and are being maintained as plants continue to establish. Additional planting may be needed on the north slope. In the southern area slope, the ivy and other invasives have been removed and jute mat has been placed on the slope to help prevent erosion. The planting of the area is scheduled to occur in mid-October. In addition, a small back marsh area was identified below the south slope following removal of the ivy and will be planted in mid-October with salt grass, dune grass, tufted hairgrass and gumweed.

This site is owned by the Puyallup Tribe of Indians. On November 1, 2010, the license for the City to enter tribally owned properties to perform stewardship duties was executed. Previously, authorization for site access was provided on a case-by-case basis.

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 14 – CHB conducted a volunteer invasive removal event;
- October 30 – CHB conducted a volunteer planting event on the south uplands;
- November 8 –WCC spread mulch on the recently planted area;
- November 17 –WCC grubbed blackberry from the site;
- January 13 and 24 –WCC grubbed invasives on the hillside and pulled mulch away from the new plants;
- February 23 –WCC salvaged plants from the eroding edge and replanted them farther back on the site. The remaining silt fence was also removed;
- April 5 –WCC performed an invasive and trash sweep;
- May 16 –WCC performed an invasive and trash sweep;
- May 21 – CHB conducted an invasive removal event;
- May 25 –WCC picked up debris removed during the volunteer event and hauled it to the landfill;
- June 1 –WCC performed a trash sweep;
- June 8, 9, 22 and 30 –WCC continued work on ivy removal;
- June 27 – CHB conducted a volunteer invasive removal event;
- June 30 –WCC performed ivy removal and debris disposal;
- July 23 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge and Squally Beach sites;
- July 14 –WCC continued work on ivy removal and placed jute mat on the slope;
- August 3 –WCC opened up the connection to the marsh below the south slope and did a pepperweed sweep;
- August 15 –WCC continued the pepperweed sweep at the site;
- August 30 –WCC continued jute mat placement and the pepperweed sweep, and performed a trash sweep;
- August 31 –WCC injected knotweed;
- September 14 –WCC performed an invasive sweep;
- September 21 –WCC completed the invasive sweep; and

- September 28 –WCC performed spot spraying of the English ivy and Himalayan blackberry.

Project work scheduled to be completed before the end of 2011 consists of a CHB planting event on October 15 on the south uplands and in the south marsh 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, ivy, knotweed and pepperweed) as directed by the Trustees;
- Evaluate for and propose if needed additional plants to achieve sufficient coverage and survivability,
- Monitor on-going erosion and salvage plants as needed, and
- Ongoing trash removal.

The complete 2012 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 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 3 inspections took place at this site on October 20, 2010, December 15, 2010, February 9, 2011, April 29, 2011, June 16, 2011 and August 10, 2011. 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 3 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 3 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, fleshy jaumea, pickleweed, dune grass, and Lyngby's sedge noted as doing well. There are some invasive species present as well. The two issues of primary concern at this site continue to be related to these invasive species. The first is the knotweed that is present 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 knotweed was not injected in 2010 due to permitting and access issues; but it was sprayed and injected in September 2011. 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 a threat to 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.

This site is owned by the Puyallup Tribe of Indians. On November 1, 2010, the license for the City to enter tribally owned properties to perform stewardship duties was executed. Previously, authorization for site access was provided on a case-by-case basis.

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 3 –WCC performed removal of invasives;
- November 4 – CHB conducted a volunteer invasive removal and planting event, which the WCC also participated in;
- November 8 –WCC completed planting in the marsh area;
- January 24 through 26 –WCC performed blackberry grubbing and a trash sweep and took 3 CY of debris to the dump;
- February 23 –WCC did a trash sweep;
- March 14 –WCC harvested willow stakes for placement at another site;
- April 5 –WCC performed an invasive sweep;
- May 16 –WCC did a pepperweed and trash sweep;
- June 27 – CHB conducted a volunteer invasive removal event;
- June 28 –WCC performed a trash and invasive sweep;
- July 23 – CHB conducted a volunteer shoreline cleanup event that included the Yowkwala, Skookum Wulge and Squally Beach sites;
- August 15 –WCC performed a pepperweed sweep;
- August 31 –WCC performed knotweed injection; and
- September 6 –WCC performed knotweed injection and spraying.

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 negatively impacting the marsh plants. Therefore, removal of all of the posts is a proposed activity for 2012.

There is no scheduled project work to be completed at this site before the end of 2011. 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;
- Injecting the knotweed population to the west of the site to control encroachment onto the site as well as on site;

- Cutting and removing the exposed fish netting to the extent that it will not damage plants during removal; and
- Cutting the remaining fence bollards to 6" below the mudline.

The complete 2012 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 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.

This site is owned by the Port of Tacoma. On October 6, 2010, the license for the City to enter this Port property to perform stewardship duties was executed. Previously, authorization for site access was provided on a case-by-case basis.

Year 3 inspections took place at this site on October 29, 2010, December 15, 2010, February 9, 2011, April 29, 2011, June 16, 2011, and August 10 and 11, 2011. 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 3 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 3 inspections are summarized in the Site Record (Table 4 in Attachment 1) and are available for review upon request.

The site appears generally healthy with some plant stress in the riparian area noted during summer dry weather. It was generally observed that shrubs tend to do better at this site than trees. Some marsh species are starting to establish on the island areas in significant amounts, species noted include brass buttons, salt grass and pickleweed. Several species of plants noted as doing well in the riparian area include lupine, roses, willows, spruce, shore pine, Douglas fir, big leaf maple, Lyngby's sedge, salt grass and tufted hairgrass. There are also some invasive plant species present, most notably Himalayan blackberry, pepperweed, tansy, reed canary grass and phragmites. The goose exclusion fencing has all been removed, and no increase in predation was noted. 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:

- November 18 –WCC moved 15 CY of mulch to the site in preparation for the volunteer planting event;
- November 20 – CHB conducted a volunteer invasive removal and planting event;
- November 30 –WCC dug and removed phragmites;
- March 17 and 23 –WCC performed invasive and trash removal and cut back some of the exposed fish netting;
- June 23 –WCC performed a trash and invasive sweep; and
- July 9 – CHB conducted a volunteer invasive removal event.

There is no scheduled project work to be completed at this site before the end of 2011. 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; and
- Cutting and removing the exposed fish netting to the extent that it will not damage plants during removal.

The complete 2012 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 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 3 inspections took place at this site on October 27, 2010, December 14, 2010, February 2, 2011, April 29, 2011, June 9, 2011, and August 11, 2011. 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 3 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 3 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, knotweed, yellow flag iris and purple loosestrife being of the most concern. Big leaf maple and madrone were identified as volunteering at the site. Alder continue to thrive at the site and a removal/thinning action was performed in August 2010. The extent and methods used in the removal/thinning action (performed by Restoration Logistics, under subcontract to FOH, who is under subcontract to CHB) were brought into question by the Trustees. Subsequently, the Trustees reached a resolution with EarthCorps representatives (negotiating on behalf of FOH) to replant 46 plants in the affected areas to remedy the issue. This planting is scheduled to occur in late fall 2011. There continue to be some human impacts at this site, including knocked over/cut trees, small structure/fort building, and a fire pit.

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 7, 12, 13, 14, 21, 25 and 26 –WCC worked on removal of alder slash from the site, chipped the debris, and cut the stumps to ground level*;
- November 1 –WCC continued chipping and cutting stumps*;
- November 3 –WCC removed a locust tree from the site;
- January 3, 4 and 5 –WCC cut alder stumps to ground level*;
- February 8 and 10 –WCC performed invasive and trash removal;
- March 23 –WCC performed invasive and trash removal;
- April 6 –WCC performed an invasive sweep along the water's edge;
- May 17 –WCC performed an invasive sweep with particular attention to yellow flag iris;
- May 25 –WCC grubbed invasives;
- June 28 and 29 –WCC performed invasive removal;
- July 14 –WCC performed an invasive sweep;
- July 27 –WCC completed the invasive sweep;
- August 22 –WCC performed an invasive and trash sweep;
- August 31 –WCC injected knotweed;
- September 1 –WCC continued knotweed injections;
- September 6 –WCC sprayed knotweed; and
- September 10 – CHB conducted a volunteer invasive removal event to remove Himalayan blackberry and purple loosestrife.

(* Note that these activities are associated with the alder thinning actions and therefore not charged against the ESP account.)

Project work scheduled to be completed before the end of 2011 consists of a CHB planting event on November 5 on the east side of the trail toward the 4th St. entrance. 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; and
- Ongoing trash removal.

The complete 2012 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 11th 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 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 3 inspections took place at this site on October 28, 2010, December 20, 2010, February 2, 2011, April 29, 2011, June 17, 2011, and August 9, 2011. 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 3 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 3 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, reed canary grass and morning glory. Fleshy jaumea is becoming well established in the marsh area, and pickleweed and saltgrass are continuing to spread at the site as well. Gumweed, Oregon ash, willows, rose and Garry oak were noted as volunteering. 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 4 –WCC grubbed invasives;
- October 23 – CHB conducted a volunteer planting event;
- November 2 –WCC finished planting emergent plants;
- November 17 –WCC planted additional natives and removed invasives;
- December 8 –WCC performed invasive removal and a garbage sweep;
- January 24 –WCC planted six salvaged shore pines;
- February 2 –WCC brushcut reed canary grass along 11th St and sheet mulched plantings;
- February 23 –WCC performed a trash sweep;
- March 21 and 24 –WCC performed invasive removal and a garbage sweep;
- May 3 –WCC performed an invasive sweep;
- May 10 –WCC brushcut reed canary grass;
- May 26 –WCC performed a trash sweep;
- May 31 –WCC performed an invasive sweep;
- June 27 –WCC brushcut around the native plants;

- July 12 –WCC brushcut reed canary grass;
- August 13 – CHB conducted a volunteer invasive removal event; and
- August 16 –WCC brushcut reed canary grass, performed a peavine sweep, and watered new plantings.

There is no scheduled project work to be completed at this site before the end of 2011. 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; and
- Ongoing trash removal.

The complete 2012 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 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 3 inspections took place at this site on October 28, 2010, December 20, 2010, February 2, 2011, April 29, 2011, June 20, 2011, and August 9, 2011. 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 3 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 3 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 with some heat stress noted as a result of the dry summer weather. Invasive species removal is the primary concern at this site. Invasive species of primary concern at the site include Himalayan blackberry and knapweed. Quite a bit of pickleweed along with smaller amounts of fleshy jaumea and carex were found to be volunteering, and some predation of the shrubs was noted. Plantings in the marsh that were done during Year 3 are doing well with good survival noted. It was determined that the goose exclusion fencing was no longer needed and could be removed.

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 13 – CHB conducted a volunteer invasive removal, trash removal, and planting event at the site;
- February 3 –WCC completed an invasive and garbage sweep;
- April 7 –WCC performed a garbage sweep;
- May 3 –WCC performed an invasive sweep;
- June 2 –WCC performed an invasive sweep; and
- September 7 –WCC removed the goose exclusion nodes.

There is no scheduled project work to be completed at this site before the end of 2011. 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 2012 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 3 inspections took place at this site on October 25, 2010, December 28, 2010, February 2, 2011, April 29, 2011, June 17, 2011, and August 9, 2011. 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 3 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 3 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 a primary concern at this site. Invasive species present at the site include pepperweed, poison hemlock, white sweet clover, Himalayan blackberry, and tansy. Salt marsh species continue to establish slowly. Species identified in the marsh include scirpus, salt grass, pickleweed, orache and potentilla.

The other key issue at this site is the movement of materials on the bayward face of the site. Erosion of the outer slope of the berm has been noted along with a push of the beach materials across the face of the marsh opening. On March 8, City staff met onsite with DNR, and Ecology's Coastal Geologist to discuss the gravel push and erosion. It was determined at the meeting that the observations were consistent with the expectations for the site that were discussed during design. The City will continue to observe and note these changes, but physical modification to the site does not appear warranted.

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:

- November 15, 16, 18, 22 and 29 –WCC removed invasive species;
- December 4 – CHB conducted a volunteer invasive and debris removal event;
- February 2 –WCC removed invasives;
- March 8 – City staff met with DNR and Ecology representatives on site to discuss the need for adaptive management for erosion and gravel push areas;
- March 14 and 24 –WCC removed invasive species;
- May 2 –WCC removed invasive species and garbage;
- May 31 –WCC removed invasive species;
- June 21 –WCC performed an invasive sweep;
- July 25 –WCC performed an invasive and garbage sweep;
- August 15 –WCC performed an invasive sweep; and
- September 6 –WCC performed a pepperweed and garbage sweep.

There is no scheduled project work to be completed at this site before the end of 2011. 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; and
- Monitoring of sedimentation/erosion in the salt marsh and overall site beach shift.

The complete 2012 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 3 inspections took place at this site on October 27, 2010, December 18, 2010, February 2, 2011, April 9, 2011, June 16, 2011, and August 9, 2011. 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 3 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 3 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 heat stress due to recent dry summer weather noted. The salt marsh continues to fill in with vegetation, with salt grass showing the most dominance. Many new salt grass and pickleweed volunteers were noted in the marsh area where none were before. Fleshy jaumea was also found volunteering in the marsh, and cottonwood in the riparian area. A salt marsh planting event was performed in April near the mouth of the site, and overall the survival rate was fairly good. Invasive species removal is a primary concern at this site. Invasive species present include Himalayan blackberry, thistle, reed canary grass, pepperweed, morning glory, 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 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:

- January 13 –WCC removed grasses from around the plants in preparation for mulching;
- January 17 – CHB hosted an MLK Day project with volunteers placing mulch in rings around the native trees and shrubs;
- February 10 and 24 –WCC tightened the cables on the LWD and did a garbage sweep;
- March 14 –WCC performed an invasive and garbage sweep;
- April 9 – CHB conducted a volunteer invasive removal and native planting event;
- May 2 –WCC performed a garbage sweep;
- May 25 –WCC performed a pepperweed sweep;
- June 9 –WCC performed an invasive sweep;
- July 25 –WCC performed an invasive sweep;
- August 11 –WCC removed the fire pits that had been found during inspection and performed a pepperweed sweep;
- August 25 –WCC removed dead alder trees;
- August 30 –WCC performed a garbage sweep; and
- September 21 –WCC grubbed blackberry and performed a pepperweed sweep.

There is no scheduled project work to be completed at this site before the end of 2011. 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 2012 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 3 inspections took place at this site on October 29, 2010, December 15, 2010, February 9, 2011, April 29, 2011, June 9, 2011, and August 11, 2011. 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 3 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 3 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, Scott's broom and knotweed. Hop vine was also observed at the north end of the site during the August inspection. Some areas are showing minor plant stress due to the recent dry summer weather. New shrubs were planted in an area at the south end and on the island. These new plantings are generally doing well. The Little Red Smoke Shack (Puyallup tribal ownership) near the south end of the site was demolished during Year 2, and the debris is still piled partially on site. It is anticipated that this site will again be developed. Utility work is currently underway. The chain and bollard barrier was also damaged during demolition and the chain and/or rope has been stolen multiple times. 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 4 and 6 –WCC performed invasive removal;
- November 9 –WCC performed invasive removal;
- December 2, 7, 9 and 13 –WCC grubbed invasives;
- January 24 and 25 –WCC planted 8 salvaged Douglas fir trees on the island and grubbed blackberry along the roadside;
- February 2, 9, 10 and 15 –WCC performed invasive and trash removal and sheet mulching of plants;
- March 16, 22 and 23 –WCC removed ivy at the north end of the site and did an overall invasive and trash sweep;
- April 5 –WCC grubbed blackberry along the roadside at the north end;
- April 11 –WCC performed an invasive sweep;
- May 5 and 9 –WCC removed nightshade and policeman’s helmet from the island;
- May 7 – CHB conducted a volunteer invasive removal event;
- May 12 –WCC strung rope around the parking area of the former Little Red Smoke Shack to temporarily replace the damaged fence;
- May 18 –WCC brushcut reed canary grass at the south end and watered the native plants on the island;
- June 1 –WCC performed invasive removal focused on ivy, nightshade and yellow flag iris;
- June 6 –WCC watered plants on the island;
- June 21 –WCC performed invasive removal with a focus on hemlock, nightshade and policeman’s helmet;
- July 13 –WCC grubbed invasives at the north end of the site;
- July 26 –WCC performed an invasive sweep with a focus on nightshade and policeman’s helmet;
- July 28 –WCC performed a water based invasive sweep pulling nightshade, yellow flag iris seed pods and policemen's helmet;
- August 11 –WCC performed an invasive and garbage sweep and hauled material to the landfill;
- August 22 and 23 –WCC performed an invasive sweep at the south end and a water based sweep for nightshade and yellow flag iris pods;
- August 25 –WCC removed a downed tree from the area of the informational sign;
- August 31 –WCC grubbed blackberry at the north end of the site;
- September 1 and 7 –WCC continued blackberry grubbing at the north end;
- September 6 –WCC sprayed and injected knotweed; and
- September 8 –WCC grubbed blackberry on the island.

There is no scheduled project work to be completed at this site before the end of 2011. 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; and
- Ongoing trash removal.

The complete 2012 Proposed Task List is included in Attachment 3.

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 3.

Site	WCC (hours)	CHB (hours)	EarthCorps (days)	Volunteer (hours)
Yowkwala	6	8	--	34
Skookum Wulge	17	7	--	33
Squally Beach	3	7	--	33
Mowitch	--	14	--	45
Jordan/Lower Hylebos Marsh	12	15	1	30
Middle Waterway – City	13	10	--	14
Middle Waterway – Simpson	6	0	--	--
Olympic View	9	0	--	--
Tahoma Salt Marsh	11	0	--	--
Swan Creek	66	0	--	--

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 Mowitch, the Yowkwala, Skookum Wulge and Squally Beach shorelines, Middle Waterway-City and Jordan/Lower Hylebos Marsh sites, and were fairly well attended with 4 to 25 volunteers present at each event in addition to the CHB staff members. Nine volunteers worked at the Mowitch site on July 9, and performed invasive removal and mulching; 25 volunteers participated in the shoreline cleanup event at the Yowkwala, Skookum Wulge and Squally Beach sites on July 23 removing trash and other debris; four volunteers worked at the Middle Waterway-City site on August 13 and performed invasive removal; and 6 volunteers worked at the Jordan/Lower Hylebos Marsh site on September 10, and performed invasive removal. An EarthCorps crew worked at the Jordan/Lower Hylebos Marsh event along with the volunteers and CHB staff members. Volunteer events are generally scheduled at the sites approximately once a month throughout the year.

Education booths were provided at Milton Days and the Maritime Fest. In addition, a new steward recruitment meeting was held along with a site tour for stewards.

4.0 Financial Summary

Financial information documenting the City's costs for each task performed from July 1, 2011 through September 30, 2011 (Year 3, Quarter 4) is provided in Attachment 4. Financial information for Year 3, 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, 2010 and September 30, 2011:

Task 1	Project Management	\$2,308.09
Task 2	Reporting and Documentation	\$5,704.69
Task 3	Site Monitoring	\$2,922.91
Task 4	Site Maintenance	\$32,339.34*
Task 5	Adaptive Management	\$7,554.10

	General Maintenance and Monitoring	\$28,689.30
Total		\$79,518.43

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

In accordance with this summary, the City hereby requests disbursement from the escrow account in the amount of \$79,518.43 for work completed under the Settlement Agreement between October 1, 2010 and September 30, 2011. Following this disbursement, \$124,255.23 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 September 2011, the City requested a site visit with NOAA project managers to go over the current scope of work under the ESP and to evaluate the need for potential modifications to the approach to site stewardship based on the documented site conditions over the past three years. Three years have passed since the execution of the Settlement Agreement, and just over half of the money originally placed in the Escrow Account has been expended. The City's intent in requesting the site visit was to ensure that implementation of the Scope of Work and the rate of fund expenditure was reasonable and consistent with the Trustees needs/expectations.

City and NOAA representatives toured the sites on September 27, and the majority of the ESP sites were visited. All of the sites where the City is currently providing stewardship are established, well-diversified, and essentially in "maintenance mode". The following topics were discussed during this site visit:

- Evaluating of the need for bi-monthly monitoring. Because of the consistent history of many of the sites over the last three years, the opportunity to decrease the frequency was discussed.
- Allowing the existing native plants on well-established sites to grow and spread naturally versus supplemental planting events was discussed;
- Focusing invasive species removal on identified noxious weeds and targeted species on each site; and
- Adding 3 Trustee NRDA stewardship sites as the required maintenance and monitoring is completed.

Based upon the discussion at the meeting, the City recommends the following modifications to the ESP Scope of Work:

- 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;
- 2012 CHB Work Plan will be developed 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;
- Specific targeted invasive species will be established for each site to focus work efforts on the most problematic species. Recommendations for targeted species on each site are identified on the 2012 Proposed Task List in Attachment 3; and

- 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).

Pending Trustee approval, the City will begin implementation of these recommendations.