EVERETT RIVERFRONT PUBLIC AMENITIES MASTER PLAN

BIOLOGICAL ASSESSMENT AND HABITAT MANAGEMENT PLAN SUPPLEMENT

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City of Everett

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1.0 INTRODUCTION

This report represents a supplement to the *Revised Report - Biological Assessment and Habitat Management Plan - Everett Riverfront Redevelopment, Everett, Washington,* prepared by GeoEngineers in April 2008 for OliverMcMillan, LLC. The abovementioned report was included as Appendix D to the Final Environmental Impact Statement (FEIS) for the Everett Riverfront Redevelopment project issued on June 11, 2008, and Addendum 1 issued on November 24, 2008. Following finalization of the EIS, the City prepared a Riverfront Development Public Amenities Master Plan (MacLeod Reckord, 2009) to specifically address project elements to be provided by the city for the benefit of the public.

The original Riverfront Development proposal included the construction of a mixed-use commercial/residential development, shoreline and habitat restoration, and rehabilitation of a former industrial site. The developer's Master Plan includes the construction of up to 900,000 square feet of mixed commercial use; 200,000 square feet of hotel space; and up to 1,400 residential units (multi- and single-family). The development is a public/private partnership. The proposal also included a rezone to Waterfront Commercial and the approval of a Planned Development Overlay Zone and Development Agreement for the proposed Master Plan. These were approved by the City Council in March 2009. The proposal also included the issuance of a shoreline substantial development permit; state and federal permits for construction of the Master Plan; various real property and street vacation actions by the city of Everett; public works and public amenities improvements and permits; and related agreements and authorizations to implement the project.

The 2008 *Revised Report - Biological Assessment and Habitat Management Plan - Everett Riverfront Redevelopment, Everett, Washington* (2008 BA/HMP) addresses amenities to be provided by the developer, OliverMcMillan, including wetland and buffer enhancements, trail extensions, a 1.5-acre Central Gathering Place, park and open spaces within the residential development, and a possible multi-purpose boat dock. The 2008 BA/HMP generally evaluated public amenities to be provided by the city.

The purpose of this addendum to the 2008 BA/HMP is to evaluate the more detailed improvements set forth in the Everett Riverfront Development Public Amenities Master Plan. This addendum analyzes the effects of construction and future operations of the public amenities upon species and critical habitats listed or proposed for listing under the Endangered Species Act (ESA).

1.1 Site History

A detailed history of the site can be found in the *Riverfront Development Public Amenities Master Plan* (MacLeod Reckord, 2009); the *Final Environmental Impact Statement – Everett Riverfront Redevelopment, Everett, Washington* (City of Everett, 2008a); and the *Revised Report - Biological Assessment and Habitat Management Plan - Everett Riverfront Redevelopment, Everett, Washington* (GeoEngineers, 2008).

In summary, the Everett Riverfront is a 211-acre amalgamation of existing wetlands, railroad, post-industrial, and former landfill properties on the banks of the Snohomish River (MacLeod Reckord, 2009). Lumber industries dominated the site from 1891 to 1972, which was followed by a refuse transfer station and animal shelter. The Burlington Northern Santa Fe (BNSF) Railway has vacated the spur lines that ran north to south along the western edge of the properties (MacLeod Reckord, 2009).

The historic land uses have left their mark on the landscape. The site contains areas of potentially contaminated subsurface soils, a riverbank armored with pilings, altered wetland hydrology (ditched wetlands), and altered topography as a result of dredge spoil deposits across the site.

1.2 Purpose of the Biological Assessment

This BA/HMP report addresses the responsibilities of the city of Everett as set forth in the city's Shoreline Master Program (SMP), City of Everett Municipal Code (EMC), Title 19, Chapter 33D Shoreline Overlay District and Chapter 37 Critical Areas (EMC 19.33D and 19.37). This BA/HMP has been prepared by ESA Adolfson on behalf of the city to evaluate the potential effects of the proposed project on species and habitats federally listed under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), jointly referred to as the Services.

This document is not meant for consultation with the Services at this time and is only meant to meet the current requirements of local regulations. In addition to addressing federally listed species, this report contains a Habitat Management Plan component necessary to meet the requirements of EMC 19.33D and 19.37.

This document will be revised at a later date and submitted for consultation between the U.S. Army Corps of Engineers (Corps) and the Services. Section 7 of the ESA requires that, through consultation (or conferencing for proposed species) with the Services, federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat. The proposed action will require Section 404 and Section 10 permits from the Corps, which is the federal nexus for the proposed project.

In addition, this BA/HMP addresses the proposed action in compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267). These require federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). The objective of this EFH assessment is to determine whether or not the proposed action "may adversely affect" designated EFH for relevant commercially, federally-managed fisheries species within the proposed Action Area. For the purpose of this assessment, the proposed action for the EFH assessment and BA incorporate the same project elements as those discussed. The EFH Assessment is included as Appendix A to this document.

1.3 Objectives of the Biological Assessment

This study has the following objectives:

- To review information on species within the Action Area. Information on baseline conditions was drawn from public resource documents as referenced in the text. In addition, regional experts with specific knowledge of habitat conditions and fish use within the Action Area were contacted. A listing of pertinent references and contacts is provided at the end of this report. Where applicable, this document will reference the 2008 BA/HMP.
- To conduct a review of the project area to observe species habitat and site-specific conditions.
- To discuss impacts of the proposed action and effects on the species and habitats.
- To discuss permit conditions and additional impact avoidance and minimization measures.
- To provide a recommendation with regard to effect determinations.

1.4 Consultation History

Pre-consultation meetings have not been held with either the federal lead agency or the Services prior to submittal of this document. This document is not meant for consultation purposes at this time. When the project proponent is ready to apply for federal permits, this document will be revised and submitted for consultation. On April 2, 2009 an agency meeting coordinated by the Governor's Office of Regulatory Assistance was held in Ecology's Northwest Regional headquarters. State agencies (WDFW, Ecology) and Corps of Engineers staff were present.

2.0 PROJECT LOCATION

2.1 Project Area

The project site is located on the west side of the Snohomish River, east of I-5, south of Pacific Avenue, and north of Rotary Park and Lowell Snohomish River Road (Figure 1). The proposed redevelopment area entails approximately 211 acres. The geographic scope of the project site is broadly defined such that it includes properties that are not presently controlled by the city or OliverMcMillan LLC (the owner/developer and applicant for the majority of redevelopment of the site) but may be added later (Figure 2).

2.2 Project Setting

The Riverfront Development site includes nine public amenity elements, generally identified with the following site descriptions and shown in Figure 3.

2.2.1 3-Acre Park

The 3-Acre Park is located at the northern end of the Riverfront Development site (Figure 3). Overall, topography in the vicinity is flat with localized areas with historic fill storage and ditching. Typical ground elevations in the area range between 12 and 14 feet North American Vertical Datum (NAVD) 88. The area drops off abruptly into the Snohomish River. Several areas of bank instability have been identified along this section of riverbank. Currently, the bank is partially stabilized with wooden piers.

2.2.2 Railroad Corridor Enhancements North

The Railroad Corridor Enhancements area is located west of the Simpson Pad (Figure 3). Topography in the vicinity is flat, with two parallel railroad grades separated by ditched wetlands/streams. In the western portion of the railroad corridor, the topography slopes up toward a capped landfill. Elevations in the area range between approximately 8 and 14 feet NAVD 88. The majority of this area is within the 100-year (1 percent annual chance) floodplain of the Snohomish River.

This location has been significantly altered by past land uses, including railroad grade installation and maintenance. Drainage is generally directed to the Snohomish River via a 30-inch metal pipe near River Mile (RM) 5.6. Drainage in this area is subject to backwater from the Snohomish River during high tide/flow conditions.

2.2.3 North Wetland Complex Enhancements

The North Wetland Complex Enhancements area includes: (1) Wetland C, (2) a portion of the left (west) bank of the Snohomish River, (3) portions of the former West Ditch/Bigelow Creek drainage within the former railroad corridor, and (4) the northern portion of the Simpson Pad (Figures 3, 4, and 5). Elevations within Wetland C range between 8 and 12 feet NAVD 88, with smaller pools and channels with bottom elevations that likely extend to 4 feet NAVD 88 or lower.

Wetland C is surrounded on the landward side by an abrupt topographic break at the toe of a fill slope (Figure 4). A paved trail runs along the south side of Wetland C. The west and north sides of the wetland extend to former railroad berms that extend up to around elevation 14 NAVD 88. On the river side of Wetland C, the wetland is partially separated from the river and most water levels by higher areas that range from 12 to 15 feet NAVD 88. Much of the riverbank is forested or dominated by shrubs.

2.2.4 West Wetland Complex Enhancements

The West Wetland Complex includes only Wetland D, which has been described in past site documentation (e.g., ESA Adolfson, 2007, GeoEngineers, 2008).

Wetland D is located within an elongated depression that runs along the west side of the Simpson Pad (Figure 4). Wetland D is dominated by open water and emergent vegetation communities.

Dominant plant species are common cattail and reed canarygrass. The buffer of Wetland D includes a thin strip of trees or shrubs along most of the wetland's perimeter.

Wetland D's hydroperiod (typical patterns of water extent, depth, and fluctuation) is likely driven by groundwater discharge and direct precipitation supported by the overall high groundwater levels determined by the Snohomish River. Wetland D currently receives surface flow from Bigelow Creek and from portions of the Simpson Pad. Flow from Bigelow Creek appears to split at the south side of Wetland D, and some of the flow likely bypasses the wetland to the west via the stream channel between former railroad tracks. Wetland D is within the 100-year floodplain of the Snohomish River. Flow from the river can reach Wetland D as overbank flow from the south side of the Simpson Pad and via backwater from Wetland C.

Significant portions of Wetland D are within a restrictive covenant that prohibits excavation greater than 1 foot deep, and restricts any increases in flow velocity through the area (Macleod Reckord, 2009).

2.2.5 Riverfront Trail, Group Picnic, and Connections to Simpson Pad

This element of the Public Amenities Master Plan covers the area generally between the Simpson Pad and the Snohomish River. This area includes several depressional wetlands (Wetlands E, F, G, H, and I) in a low area between the Simpson Pad and the existing paved trail (Figure 4). These five wetland areas are at similar elevations (around 14 to 15 feet NAVD 88) and are typically separated from one another by small topographic rises. These areas are usually disconnected from the Snohomish River but are inundated during flood events.

These wetlands are forested by red alders with some conifers. The water supply to the wetlands is likely supported by high groundwater resulting from proximity to the Snohomish River, surface drainage from the Simpson Pad, and inundation from the river.

2.2.6 Lowell Crossing

The Lowell Crossing would replace the existing at-grade crossing near 2nd Avenue and Junction Avenue near the southwest corner of the Simpson Pad. This area is near the existing alignment of Bigelow Creek, Wetland Z, and at the south end of Wetland D (Figure 4).

2.2.7 Bigelow Creek and South Wetland Complex Enhancements

The South Wetland Complex includes Wetlands Z, N, P, O, T, and D, as well as the reach of Bigelow Creek after it passes under the BNSF Railway tracks until it flows into Wetland T (Figures 4 and 5). Wetlands associated with Bigelow Creek (Z and T) are highly degraded, confined within ditches, and dominated by nonnative invasive plants.

Wetlands R, Q, P, N, O, and D are depressional wetlands located on previously disturbed areas within the Snohomish River floodplain. The majority of these areas are impounded by artificial berms, some of which now serve as trails or access roads. The primary source of hydrology for these wetlands appears to be groundwater discharge, combined with high groundwater levels

associated with the Snohomish River. Surface water can enter these wetlands from Bigelow Creek during significant storm events, and/or from the Snohomish River during high flow periods. Wetland Q is connected to the Snohomish River via a 48-inch corrugated metal pipe (CMP). In general, the South Wetland Complex has a greater variety of plant species and canopy layers than in other portions of the site. Wetland N has been rated a Category I wetland using the Washington State Department of Ecology Wetland Rating System for Western Washington (Hruby, 2004).

2.2.8 Lowell Riverfront Park Improvements

Lowell Riverfront Park includes approximately 850 linear feet of the west bank of the Snohomish River at the 90-degree bend in the river channel (Figures 3 and 5). Most riparian vegetation has been removed in this area, and there are several areas of erosion and bank instability (GeoEngineers, 2007). No wetlands have been mapped in this area, and most of the park consists of a gravel parking area, paved trail, and lawn.

Elevations within the park range from around 8 feet NAVD 88 on the riverbank to between 20 and 22 feet NAVD 88 on the west side of the parking lot. The base flood elevation in this area is between 17 and 18 feet NAVD 88, so much of the park is within the 100-year floodplain.

3.0 PROJECT DESCRIPTION

The Public Amenities Master Plan proposes to increase the active and passive uses of the site, with a specific goal of increasing public access to the Snohomish River and its shoreline in the Everett Riverfront District. Proposed improvements include the following:

- A new 3-Acre Park;
- Proposed improvements to Lowell Riverfront Park at the south end of the site;
- An expanded and upgraded Riverfront Trail system;
- The conservation, enhancement and restoration of natural areas and wetlands, streams, and buffer areas, including rerouting current streamflows to be consistent with their historic courses;
- Removing pilings in strategic locations, where shoreline restoration and enhancement efforts are planned; and
- Multiple interpretive elements located with picnic facilities, trails, overlooks, and potentially a facility at the south end of the site in Lowell Riverfront Park.

A more detailed project description can be found in the *Riverfront Development Public Amenities Master Plan* (MacLeod Reckord, 2009) and Section 1 of *Addendum No. 2 - Final Environmental Impact Statement – Everett Riverfront Redevelopment, Everett, Washington* (City of Everett, 2008).

3.1 Interrelated and Interdependent Actions

An interrelated action is any activity that depends on the larger action for its justification. An interdependent action is one that has no independent utility apart from the proposed action.

Interdependent actions that may occur include widening and grading existing trails, grading and paving of existing parking areas, and maintenance of these facilities following construction.

Interrelated activities resulting from the proposed action include mitigation for wetland and stream impacts within the construction areas and replanting impacted areas with native vegetation.

4.0 IMPACT AVOIDANCE AND MINIMIZATION MEASURES

Conservation measures and Best Management Practices (BMPs) have been incorporated into the proposed project to avoid and minimize short-term and long-term impacts to listed fish and wildlife species and their habitats in the project vicinity. The following BMPs and conservation measures are designed to avoid, minimize, and mitigate project impacts to listed species:

- The engineer will limit the amount of soil disturbance to that which can be adequately controlled.
- Soil disturbance will be limited to the summer and early fall months when precipitation is least likely to occur.
- Temporary fencing will be placed around critical areas such as streams and wetlands to prevent inadvertent disturbance, where necessary.
- Disturbed areas will be planted or paved as soon as possible after completion of construction.
- Construction entrances will contain either rock pads or tire wash facilities to prevent tracking of soil onto local roadways and to prevent the potential for sedimentation and turbidity of receiving waters as a result of runoff from roadways.
- All stockpile areas will be contained and protected by erosion control measures such as silt fencing and straw bales. Stockpiles shall also be covered if inclement weather is forecast.
- Appropriate stockpile and staging areas will be identified and approved prior to construction.
- Staging areas will be located to prevent the potential contamination of any wetland or water body. Servicing and refueling of vehicles will not occur within 150 feet of the river to reduce potential spills of petroleum and hydraulic fluids in sensitive areas. Additionally, drip pans will be fitted with absorbent pads and placed under all equipment being fueled.
- Appropriate temporary erosion and sediment control (TESC) plans will be approved prior to construction and will comply with the city's erosion control standards.

- During construction, monitoring programs could be required to ensure compliance with the site erosion control plan and with local regulatory requirements.
- A Stormwater Pollution Prevention Plan (SWPPP) and TESC plan will be included with project design documents.
- Routine inspections of erosion control and sediment control BMPs will be performed as well as BMP maintenance.
- Turbidity curtains may be necessary during soil disturbance activities along the shoreline of the Snohomish River.
- Concrete piles for in-water construction will be used in lieu of steel piles and will be cured prior to installation. Steel piles, if necessary, may only be used if proofing piles with an impact hammer is not required and a vibratory hammer is used to install piles.
- Sound dampening equipment will be used during pile driving to attenuate both underwater sound pressure and terrestrial noise levels. This may include use of wood blocks between the impact hammer and pile or bubble curtains, although the use of a bubble curtain may be ineffective in areas with higher current.
- A Spill Prevention, Control, and Countermeasure Plan will be in place prior to commencing construction activities.
- All vehicles operated within 150 feet of any stream or waterbody will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation. When not in use, all vehicles will be stored on paved surfaces in the staging areas. Other vehicles that may be stored in place will be inspected daily for fluid leaks.
- All mechanical equipment will be fueled at least 150 feet from surface waters. All vehicles will be inspected daily for fluid leaks. Spill response equipment will be on-site for potential fluid leakage.
- Work within the Snohomish River and Snohomish River tributary streams will require a Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife (WDFW). The project will comply with all permit conditions to minimize impacts on aquatic resources. The approved in-water work window is anticipated to be from June 1 to October 31 to minimize impacts to bull trout, steelhead and Chinook.
- Equipment operating below the ordinary high water mark (OHWM) will use vegetable oil-based hydraulic fluids.
- Fish removal activities will be restricted to the later summer months when adult and juvenile salmonid presence is least likely to occur and when flows are at their lowest point, in accordance with the HPA. However, we anticipate that juvenile steelhead may be present year-round in the project Action Area.
- Fish removal and work area isolation will incorporate NMFS fish exclusion protocols and standards. Fish will be removed from the Action Area by the least harmful methods.
- Construction will take place no earlier than two hours after sunrise and end two hours before sunset, in order to minimize noise impacts to marbled murrelets.

- Disturbed areas around the construction area will be replanted.
- Site specific details related to construction will be updated during the final design of the proposed action and for each phase of construction.

5.0 ACTION AREA

The ESA requires that potential effects to listed and proposed endangered and threatened species be evaluated in relation to the complete extent of area influenced by the proposed action (the "Action Area") (50 CFR Part 402.02). The Action Area encompasses the complete extent where measurable direct and indirect effects resulting from the proposed action are foreseeable and are reasonably certain to occur (USFWS 1999, NMFS 1996). The Action Area often includes both terrestrial and aquatic zones of impact, as is the case for this project. The Action Area for the proposed project is similar to that described in the 2008 BA/HMP.

The project will include large areas of ground disturbance associated with site preparation, stockpiling, grading and filling, excavation, wetland and stream fill, building construction and paving, as well as areas outside the construction footprint that may be affected either directly or indirectly by the proposed action. The project includes the construction of a small dock, which may potentially increase human disturbance and water quality issues associated with the Snohomish River. The project may increase the level of use of the site, thus resulting in increased traffic in the project area. These interrelated and interdependent actions would have physical, chemical, and biological impacts that could influence the extent of the Action Area.

Of the construction activities discussed above, effects of the action that may extend beyond the construction footprint include noise, water quality, air quality, and the effects associated with an increase in human activity.

The Action Area discussed below is a conservative estimate of the extent to which water quality impacts could result from the proposed project should BMPs fail, and in which noise disturbance from construction activities has the potential to affect fish and wildlife species.

5.1 Noise

5.1.1 In-Water Noise

Pile driving activities associated with the construction of a small boat dock would temporarily increase underwater noise levels in the Snohomish River (GeoEngineers, 2008). The dock structure proposed for the 3-Acre Park would likely use concrete piles instead of steel piles due to the low corrosive nature of the material and the reduced sound pressure levels generated during installation in comparison to steel piles.

The 2008 BA/HMP determined that sound pressure levels would travel in a linear direction away from the source, and when the sound intersects land, it is assumed that it attenuates to background levels. Underwater noise should not reflect off the land or through the bends in the Snohomish River. Therefore, the Action Area includes an aquatic zone of effect, related to noise,

within a straight line-of-sight distance extending approximately 0.5 mile south and 0.5 mile north of the proposed dock structure located adjacent to the 3-Acre Park (Figure 6).

5.1.2 Terrestrial Noise

The proposed action will require the use of construction equipment and heavy trucks similar to those described in the 2008 BA/HMP. Using ambient noise level data and noise assessment guidance from the Washington State Department of Transportation (WSDOT, 2006), including the rules for decibel addition for construction equipment noise, the distance was calculated at which the noise from construction would attenuate to background noise levels. Background noise was determined to be 88 dBA (Cavanaugh and Tocci *in* WSDOT 2006) for the project area due to its setting in an urban environment adjacent to freeway traffic.

It was determined that the effects of construction noise would attenuate to background levels within a radius of 1,600 feet (0.30 mile) around the project construction area (Figure 6).

5.2 Water Quality and Quantity

Similar to the information contained in the 2008 BA/HMP, the proposed action has the potential to alter the water quantity and water quality conditions in the project area during the construction, operation, and maintenance phases of the proposed action.

The proposed action has the potential to result in altered peak flows, base flows, and the duration of these events through an increase in new impervious surface area (e.g., rooftops, trails, and parking lots), which could generate runoff that would otherwise infiltrate into subsurface groundwater/soils. The altered flow patterns may also indirectly affect water quality. Increased recreational opportunities including boating activities could result in discharge of pollutants to surface waters. Construction activities both in-water and in upland areas, particularly soil disturbance, could result in the erosion of upland soils or mobilization of bottom sediments and subsequently result in sedimentation and increased turbidity of aquatic environments. An increase in traffic could also result in increased pollutant loads to the Snohomish River and other streams in the project area.

The project proponent will minimize potential direct and indirect effects to water quantity and quality through implementation of appropriate TESC measures, and enhancement of on-site wetland/riparian vegetation and habitats.

The potential for a temporary increase in fine sediments is the greatest concern for water quality during in-water work and the work associated with all restoration and enhancement activities (such as the proposed rerouting and alterations to Bigelow Creek, West Ditch Creek, and Walton Creek and shoreline hardening activities).

For the purposes of this assessment and to account for tidal variation, the aquatic zone of effect associated with water quality and quantity will include the entire Snohomish River extending from RM 8.0 downstream to the confluence with the Snohomish estuary (Figure 6). This is based primarily upon information found in the 2008 BA/HMP and the Biological Opinion (NMFS

Tracking No. 2001/00533) issued in response to the 41st Street Overcrossing Freight Mobility Project and Railroad Track Removal and Upgrade Project. This project is located adjacent to the proposed action and included the potential development of the Riverfront Development site in its cumulative effects analysis.

5.3 Human Disturbance

The development of additional trail systems, improvements to existing trails, development of public park facilities, and the installation of a small boat/kayak dock will likely result in increased human activity and increased traffic at the site during and following construction of the new facilities. An increase in human activity will likely result in increased noise, waste generation, use of herbicides and chemicals, mowing, tree trimming, and maintenance of roads/trails and parking areas, including the use of salting and sand application during the winter months. Increased automobile emissions, light emissions, smoke, and dust may result from the proposed action. Dust emissions would likely occur during construction and during earth disturbing activities. The effects of these activities are largely dependent upon wind and moisture content of the soil. These effects would be minimized by adhering to appropriate erosion control BMPs and conservation measures employed during soil disturbing activities. Wind and climate will influence emissions from these activities. For these reasons, emissions have the same action area as noise.

6.0 SPECIES AND HABITAT EVALUATIONS

The sources of information used to identify species and habitats that may potentially occur in the project area are the same as those addressed in the 2008 BA/HMP. However, more current sources were used to verify this information. NMFS (2009a; 2009b) and the USFWS (2007) indicate that the project will occur within the general range of the federally listed species and designated critical habitats shown in Table 1. Appendix B contains the complete NMFS and USFWS species lists.

Other sources consulted include the Washington State Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) maps and database (WDFW, 2008) and the Washington State Department of Natural Resources (WDNR) Natural Heritage Program database (WDNR, 2008).

Table 1. Occurrence of Listed Species and Critical Habitat within the Action Area

Common Name	Scientific Name	ESA Status	Jurisdiction	Critical Habitat
Puget Sound Evolutionarily Significant Unit (ESU) Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened	NMFS	Yes
Puget Sound Distinct Population Segment (DPS) Steelhead	*O. mykiss*	Threatened	NMFS	No
Coastal-Puget Sound DPS Bull Trout	*Salvelinus confluentus*	Threatened	USFWS	Yes
Steller Sea Lion	*Eumetopias jubatus*	Threatened	NMFS	No
Marbled Murrelet	*Brachyramphus marmoratus*	Threatened	USFWS	No

In addition to the species identified in Table 1, the USFWS and NMFS have also identified several other species with threatened or endangered federal status in Snohomish County. The USFWS is no longer providing site-specific species lists due to current workload and budget constraints. Therefore, the species list provided for this project is a county-wide species list that includes species that would not normally be found in the project area due to their limited range or specific habitat requirements. For this project, these species include northern spotted owl, gray wolf, grizzly bear, and Canada lynx (USFWS, 2007). There are no mature forests within the Action Area that contain habitat elements suitable for northern spotted owl. Grizzly bear, Canada lynx, and gray wolf habitat may occur in parts of eastern Snohomish County; however, habitat is non-existent within urban areas of Snohomish County. Due to a lack of suitable habitat, these species are not expected to occur in the Action Area and will not be affected by the proposed project and they are not discussed further in this document. Southern Resident killer whale (*Orcinus orca*) and humpback whale (*Megaptera novaeangliae*) are not known to inhabit the Snohomish River within the project Action Area and their presence is extremely unlikely.

The sections below review relevant information regarding each of the species listed in Table 1 that were not ruled out because of their limited range, lack of suitable habitat, and absence from the project Action Area. These sections address the environmental baseline and designated critical habitat for each threatened and endangered species currently listed as occurring in the project Action Area. Life history for each threatened and endangered species potentially occurring near the project area may be found in Appendix C. Candidate species evaluations are included in Appendix D in the event that they are listed prior to initiation of the proposed action.

6.1 Aquatic Species Evaluation

This section outlines the distribution, listing and stock status, and critical habitat designations for listed fish species.

6.1.1 Puget Sound ESU Chinook Salmon

6.1.1.1 Life History

The life history of Puget Sound ESU Chinook is described in the *Endangered and Threatened Species: West Coast Chinook Salmon; Listing Status Change; Proposed Rule* (63 Federal Register 45) and *Status Review of Chinook Salmon from Washington, Idaho, Oregon and California* (Myers et al., 1998) and is included herein by reference. This information has been summarized to assist in the discussion of effects related to the proposed action, and is included in Appendix C.

6.1.1.2 Occurrence in the Action Area

Puget Sound ESU Chinook salmon are documented within the freshwater and estuarine waters of the Action Area, including Bigelow Creek (WDFW, 2008a; WDFW, 2008b). The 2008 BA/HMP contains more detailed information on the timing and occurrence of adult and juvenile Chinook salmon within the project Action Area.

In summary, Chinook use of the project area is limited to mainly upstream migration of adults and downstream migration of juveniles with some year-round rearing. However, most rearing is anticipated to occur between February and July (Williams et. al, 1975). Adult Chinook are expected to occur within the Snohomish River on their annual upstream spawning migrations. Spawning habitat is not available in the Action Area, with most spawning occurring from the city of Snohomish, approximately six miles upstream, continuing upstream. Peak adult migration through the Action Area occurs from May through October with peak spawning occurring in September and October. The project area contains adequate foraging opportunities for Chinook salmon.

6.1.1.3 Critical Habitat

On September 2, 2005, NMFS designated critical habitat for 12 salmon and steelhead ESUs in California and the Pacific Northwest (70 Federal Register 170). Critical habitat for Puget Sound Chinook salmon has been designated in the Snohomish River within the project Action Area.

Specific primary constituent elements (PCEs) for Chinook salmon in freshwater and marine/estuarine areas, as defined by NMFS (70 Federal Register 170) include:

- Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.
- Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions, and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic

vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

- Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.
- Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.
- Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

6.1.2 Puget Sound DPS Steelhead

6.1.2.1 Life History

The life history of Puget Sound Steelhead (*O. mykiss)* is described in the *Proposed Endangered Status for Five ESUs of Steelhead and Proposed Threatened Status for Five ESUs of Steelhead in Washington, Oregon, Idaho, and California* (61 Federal Register 155) and is included herein by reference. This information has been summarized to assist in the discussion of effects related to the proposed action, and is included in Appendix C.

6.1.2.2 Occurrence in the Action Area

Puget Sound DPS steelhead are documented within the freshwater and estuarine waters of the Action Area, including Bigelow Creek (WDFW, 2008a; WDFW, 2008b). The 2008 BA/HMP contains more detailed information on the timing and occurrence of adult and juvenile steelhead within the project Action Area.

In summary, steelhead use of the Action Area includes upstream and downstream migration of adult steelhead, downstream migration of juvenile steelhead, and year-round rearing of juvenile steelhead. Suitable spawning habitat is not available in the project area due to the small size of substrate present (silt and clay); therefore, it is also unlikely that eggs or alevins will be encountered. Due to the presence of both a winter and summer steelhead stock in the Snohomish River, upstream migration of adults could occur throughout the year with seasonal peaks. Peak spawning occurs from March through June for the winter stocks and February through April for the summer stocks. The closest adequate spawning habitat occurs within the Pilchuck River and near the confluence with the Skykomish River, approximately eight miles upstream. Juveniles and adults could be present year-round foraging in Bigelow Creek and the Snohomish River.

6.1.2.3 Critical Habitat

Critical habitat for Puget Sound DPS steelhead has not been designated or proposed at this time; however, the designation of critical habitat is currently under review.

6.1.3 Coastal-Puget Sound DPS Bull Trout

6.1.3.1 Life History

The life history of the Coastal-Puget Sound DPS bull trout is described in the *Endangered and Threatened Wildlife and Plants: Determination of Threatened Status for Bull Trout in the Coterminous U.S.; Final Rule* (USFWS, 1999) and is included herein by reference. This information has been summarized to assist in the discussion of effects related to the proposed action, and is included in Appendix C.

6.1.3.2 Occurrence in the Action Area

Coastal-Puget Sound DPS bull trout are documented within the freshwater and estuarine waters of the Snohomish River, but have not been documented within Bigelow Creek or any of the other streams/drainages within the project Action Area (WDFW, 2008a; WDFW, 2008b). The 2008 BA/HMP contains more detailed information on the timing and occurrence of adult and juvenile bull trout within the project Action Area.

In summary, the extent of known bull trout spawning areas is limited within the Snohomish River basin; however, certain life history requirements such as the need for clean and cold water, stream conditions and attributes within these pristine areas for successful spawning and early rearing limit the potential for bull trout to use the Action Area for spawning or early rearing purposes. Juveniles migrate downstream to Puget Sound every spring to rear in the estuary environment near the mouth of the river. Sub-adults are assumed to return to the lower Snohomish River each fall to overwinter. Adults migrate through the project area to upstream spawning areas in the upper Skykomish River and tributaries beginning in early summer and extending through early fall. Foraging opportunities are generally available in the project Action Area, including Bigelow Creek.

6.1.3.3 Critical Habitat

Critical habitat for the Coastal-Puget Sound distinct population segment (DPS) bull trout was recently designated (70 Federal Register 185). The USFWS has designated bull trout critical habitat in the Snohomish basin from Puget Sound (RM 0) upstream and outside the project Action Area.

PCEs for bull trout in estuarine areas, as defined by USFWS (70 Federal Register 185) are:

1. Permanent water having low levels of contaminants such that normal reproduction, growth, and survival are not inhibited.

2. Complex stream channels with features such as woody debris, side channels, pools, and undercut banks to provide a variety of depths, velocities, and in-stream structures.

3. Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine substrate less than 0.63 cm (0.25 in) in diameter and minimal substrate embeddedness are characteristic of these conditions.

4. A natural hydrograph, including peak, high, low, and base flows within historic ranges or, if regulated, a hydrograph that demonstrates the ability to support bull trout populations.

5. Springs, seeps, groundwater sources, and subsurface water connectivity to contribute to water quality and quantity.

6. Migratory corridors with minimal physical, biological, or chemical barriers between spawning, rearing, overwintering, and foraging habitats, including intermittent or seasonal barriers induced by high water temperatures or low flows.

7. An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

8. Few or no predatory, interbreeding, or competitive nonnative species present.

9. Permanent water of sufficient quantity and quality such that normal reproduction, growth, and survival are not inhibited.

6.2 Terrestrial Species Evaluation

This section outlines the distribution, ESA listing and stock status, and critical habitat for ESA listed terrestrial wildlife species.

6.2.1 Marbled Murrelet

6.2.1.1 Life History

The life history of the marbled murrelet is described in the *Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Marbled Murrelet; Final Rule* (USFWS, 1996) and is included herein by reference. This information has been summarized to assist in the discussion of effects related to the proposed action, and is included in Appendix C.

6.2.1.2 Occurrence in the Project Area

Priority Habitat and Species (PHS) data do not indicate the presence of marbled murrelets in the project Action Area (WDFW, 2008a). The closest suitable nesting habitat is located 15 miles east of the project Action Area in the Cascade Mountains of eastern Snohomish County. The closest foraging habitat is located in the marine waters of Port Gardner Bay and Possession Sound several miles downstream of the project Action Area (City of Everett, 2007). The project Action Area is located inland from any marine foraging habitat and a considerable distance from any suitable nesting habitat; however murrelets could migrate along the Snohomish River from foraging and nesting areas.

6.2.1.3 Critical Habitat

The critical habitat designation includes 11 units in Washington State, including 1.2 million acres of federal land, 421,500 acres of state forest land, and 2,500 acres of private land. Not all

suitable habitats are included in this designation, as only areas designated as most essential to murrelet survival in terms of quality, distribution, and ownership are included. The USFWS is currently proposing to revise the 1996 critical habitat designation for marbled murrelets (USFWS, 2006). The closest designated critical habitat to the proposed action is located 15 miles east in Snohomish County (USFWS, 2009).

6.2.2 Steller Sea Lion

6.2.2.1 Life History

A detailed life history of the Steller Sea Lion is included in Appendix C.

6.2.2.2 Occurrence in the Project Area

PHS data do not indicate the presence of Steller sea lions in the project Action Area (WDFW, 2008a). Steller sea lions uses haulout sites along the outer coast from the Columbia River north to Cape Flattery as well as occasionally on navigation buoys in Puget Sound. Steller sea lion abundance varies seasonally with the largest concentrations occurring on the outer coast (1,000 animals) during the fall and winter months (Jeffries et. al, 2000). There are likely only one or two Steller sea lions in Puget Sound at any one time (Gearin, 2002).

Due to some similarities in behavior, forage habitat, and prey species between the Steller sea lion and the much more common California sea lion, if Steller sea lions were to be in Puget Sound, it is likely they would seek out habitats similar to those of California sea lions. A haulout site has been documented within Port Gardner Bay, within the Snohomish estuary, just outside the Action Area (WDFW, 2008a). No documented recordings of California sea lions have occurred within the Snohomish River; however, it is possible that they could venture into the lower river foraging on seasonally abundant prey. Therefore, if California sea lions could potentially be present, than Steller sea lions cannot be precluded from the Action Area.

6.2.2.3 Critical Habitat

There is no critical habitat designated for Steller sea lion in the project Action Area.

6.2.3 Non-Listed Species

The description of non-listed species and habitats that may occur within the project action area has not changed from the information documented in the 2008 BA/HMP, which was based on WDFW PHS data and the *Plants and Animals Technical Data Summary, Everett Riverfront Redevelopment Everett, Washington* (GeoEngineers, 2007). These species may potentially prey upon or be prey for ESA-listed species described in this document. The following is a list of species and habitats identified by the resources above and that have a high likelihood of occurrence within the Action Area. This information has been verified by a review of more current PHS information (WDFW, 2008a). These species and habitats include:

- Bald eagle;
- Bullfrog;

- Osprey;
- Great blue heron;
- Priority waterfowl concentrations;
- Peregrine falcon;
- Purple martin;
- Arctic tern ;
- California sea lion;
- Harbor seal;
- Non-priority species (cottontail rabbit, coyote, beaver, weasel, rat);
- Non-ESA listed fish species (see Table 7 of the 2008 BA/HMP); and
- Bird Species (see Table 8 of the 2008 BA/HMP).

7.0 ENVIRONMENTAL BASELINE

7.1 Aquatic Resources

The environmental baseline for the proposed action is the same as that described in the 2008 BA/HMP. Aquatic resources discussed in the document include: wetlands; the Snohomish estuary; Snohomish River; Bigelow Creek; and Streams AA, BB, and CC. Additional information has been provided below for the Snohomish River, West Ditch Creek (not previously discussed), Streams AA, BB, and CC, and wetlands.

7.1.1 Wetlands

The Riverfront Development site is surrounded by extensive wetlands within the floodplain of the Snohomish River (Figure 4). Twenty-two wetlands were identified in the project vicinity, which are summarized in Table 2. Wetland locations are shown in Figure 4.

Table 2: Wetland Summary

Wetland Name	Size (onsite acres)	Size (total acres)	Cowardin Vegetation Classes	HGM Classification	Western Washington Wetland Rating Functions (points)			Ecology Rating[2]	Buffer Width (feet)	
					Water Quality	Hydro-logic	Habitat		Standard[3]	Simpson Pad[4]
C	21.608	21.608	PFO, PSS, PEM, PAB	Riverine	28	18	25	I	100	75
D	16.123	16.293	PFO, PSS, PEM, PAB	Depressional	22	20	24	II	100	50
E	0.419	0.419	PFO	Depressional & Riverine[1]	16	14	17	III	50	50
F	1.100	1.100	PFO	Depressional & Riverine[1]	16	14	17	III	75	50
G	0.007	0.007	PFO	Depressional & Riverine[1]	20	14	11	III	50	50
H	0.173	0.173	PFO	Depressional &	16	14	16	III	50	50

Wetland Name	Size (onsite acres)	Size (total acres)	Cowardin Vegetation Classes	HGM Classification	Western Washington Wetland Rating Functions (points)			Ecology Rating[2]	Buffer Width (feet)	
					Water Quality	Hydro-logic	Habitat		Standard[3]	Simpson Pad[4]
				Riverine[1]						
I	2.713	2.713	PFO	Depressional & Riverine[1]	16	14	22	II	75	50
J	0.050	0.195	PEM	Depressional	16	8	6	III	50	N/A
K	0.084	0.219	PFO, PSS	Depressional	16	8	7	III	50	N/A
L	0.110	0.110	PFO	Depressional & Riverine[1]	18	10	14	III	50	N/A
M	0.016	0.016	PEM	Depressional	16	8	7	III	50	N/A
N	3.941	6.962	PFO, PSS, PEM	Depressional	26	24	20	I	75	N/A
O	0.039	0.039	PEM	Riverine	10	10	14	III	50	N/A
P	0.006	0.006	PEM	Depressional	16	8	9	III	50	N/A
Q	0.076	0.076	PFO	Depressional	16	8	12	III	50	N/A
R	2.081	2.081	PFO, PSS, PEM	Depressional	16	12	19	III	75	N/A
T	1.313	0.722	PEM	Depressional & Riverine[1]	16	8	8	III	75	N/A
U	0.501	0.359	PEM	Depressional & Riverine[1]	22	16	10	III	50	N/A
V	0. 730	0.730	PEM	Depressional & Riverine[1]	16	8	8	III	50	N/A
W	0.861	0.861	PEM	Depressional & Riverine[1]	16	8	8	III	50	N/A
X	0.293	0.293	PFO, PSS, PEM	Depressional & Riverine[1]	16	14	12	III	50	N/A
Y	0.078	0.078	PFO	Riverine	20	16	17	II	50	N/A

[1] Considered depressional for the purpose of completing the *Washington State Wetland Rating System for Western Washington* form (Hruby, 2004).

[2] *Washington State Wetland Rating System for Western Washington* (Hruby, 2004).

[3] Buffer widths were assigned based upon Everett Municipal Code Title 19, Chapter 33D

[4] Buffer widths pertaining to the Simpson Development Pad are the minimums allowed by the City's SMP and the Settlement Agreement between The Tulalip Tribes and the city of Everett (Tulalip Agreement).

Wetlands J, K, and M are small, hydrologically isolated wetlands surrounded by the railroad grade and dike berms. The wetlands are located in ditches with steeply-sloped edges. Wetlands J and M contain emergent vegetation classes, and Wetland K contains scrub/shrub and forested vegetation classes. The buffers associated with these wetlands are essentially non-existent due to human disturbance and the existing railroad grades.

Wetlands L, X, and Y are relatively small, linear, ditched wetlands surrounded by railroad grades and/or diked berms. Wetlands L and X are hydrologically isolated, while Wetland Y has a partial connection to the Snohomish River along its eastern boundary. Wetlands L and Y contain forest vegetation classes, and Wetland X contains forest, shrub/shrub, and emergent vegetation classes. All of these wetlands are within the floodplain of the Snohomish River, and receive overbank flow during significant flood events. The buffers associated with these wetlands are highly disturbed due to human activity and the existing railroad grades.

Wetlands T, U, V, and W are long, linear, ditched wetlands associated with the construction of adjacent railroad grades. Wetland T currently serves as a conveyance channel for a portion of the streamflow in Bigelow Creek. Wetlands U, V, and W have hydrologic connections to the Snohomish River through culverts and Stream CC. Wetlands T, U, V, and W contain emergent vegetation classes. The buffers associated with these wetlands are highly disturbed from historic land use, filling, and construction of the adjacent railroad grades.

Wetland C, also referred to as "North Wetland Complex" and "Simpson Category I Wetlands," is a large wetland complex located to the north of the Simpson Pad. Due to its large size, diverse habitat, seasonal and permanent open water habitat, association with Bigelow Creek, and the tidal influence of the Snohomish River, Wetland C is considered a "Significant Biological Area of Local Importance" by the city. Wetland C contains forested, scrub/shrub, emergent and aquatic bed vegetation classes. In general, the existing Wetland C buffer is highly disturbed by fill, and construction and maintenance of the adjacent railroad grades.

Wetland D, referred to as the "West Wetland Complex," is a large wetland complex located to the west of the Simpson Pad. The wetland is connected to the Snohomish River via Stream AA. Wetland C contains forested, scrub/shrub, emergent and aquatic bed vegetation classes. In general, the existing Wetland D buffer is significantly impacted from historical land use, fill, presence of access roads, and construction and maintenance of the adjacent railroad grades.

Wetlands E, F, G, H, and I, referred to as the "East Wetland Complex," are a series of small- to moderate-sized wetlands located east of the Simpson Pad. All of the wetlands are isolated and separated from each other and the Snohomish River by a series of berms and/or raised trails. The wetlands all contain forested habitat. In general, the existing buffers of Wetlands E through I are narrow and significantly impacted by historical land use and disturbance associated with fill.

Wetlands N, O, P, Q, and R, referred to as the "South Wetland Complex," are a series of relatively small- to moderate-sized wetlands located to the south of the Simpson Pad. These wetlands are hydrologically connected to the Snohomish River via drainage channels and/or Stream BB. Wetlands O and P contain emergent habitat; Wetland Q contains scrub/shrub habitat; and Wetlands N and R contain emergent, scrub/shrub, and forest habitat. In general, the buffers of Wetlands N through R are significantly impacted from historical land use, presence of access roads and paved trails, and construction and maintenance of the adjacent railroad grades.

7.1.2 Snohomish River

The project area is bordered on the east by the Snohomish River from north of RM 5 to RM 7. In the project area, the river consists of steeply sloped and diked banks, with areas of riprap revetment and occasional pilings. The extensive man-made earthen dikes have been in place since the mid-1930s and confine the limits and influence of the river. The water surface elevation of the river within the project area rises and lowers with the flow and ebb of the tides. In general, the existing buffer of the Snohomish River in the project vicinity is highly degraded, containing existing structures, debris piles, and impervious surfaces, with a few scattered patches of native trees and shrubs. The overall lack of riparian vegetation and species diversity, in conjunction with historic and present use activities, has limited the recruitment of large woody debris in the river (Figure 5).

7.1.3 Bigelow Creek, West Ditch Creek, and Streams AA, BB, and CC

Several streams flow through the Riverfront Development site and adjacent areas. These streams drain from urbanized areas and generally flow from west to east, discharging to the Snohomish River. These streams are currently routed through highly modified ditches associated with current and former railroad lines. Five jurisdictional streams were identified within the project vicinity (Table 3, Figure 5).

Table 3: Stream Summary

Stream Name	Total Length in Project Area (linear feet)	Stream Rating[1]	Standard Buffer Width (feet)
Stream AA	262	I	100
Stream BB	164	I	100
Stream CC / Bigelow Creek	5,100	I	100
West Ditch	3,300	I	100
Snohomish River	11,000	I	100

[1] Everett Municipal Code Title 19, Chapter 33D, Section 480 (EMC 19.33D.480) and Section 490 (EMC 19.33D.490).

Stream AA is a linear, ditched channel that begins at the mouth of a culvert that discharges water from Wetland D. The stream passes through a second culvert before entering the Snohomish River. Stream AA is tidally influenced. The stream buffer is somewhat degraded, due to the construction of adjacent access roads and paved walking trails.

Stream BB is a small channel that discharges water from Wetland N and is a tributary to Stream AA. Stream BB is tidally influenced. The buffer of Stream BB is degraded due to past land uses and dominance by invasive plants.

Bigelow Creek is a linear, channelized stream that enters the Riverfront Development site through a culvert near the southwestern corner. Bigelow Creek flows through a series of incised railroad ditch wetlands before draining into the Snohomish River near Wetland Y, in a segment

referred to as "Stream CC." Stream CC is tidally influenced. The buffer of Bigelow Creek/Stream CC is in poor condition, primarily due to construction and maintenance of the adjacent railroad grades.

West Ditch Creek is a linear, channelized stream that is connected to Bigelow Creek through a culvert beneath a railroad grade. West Ditch Creek then drains into Stream CC and subsequently into the Snohomish River. The stream buffer is in poor condition, due to construction and maintenance of the railroad grades.

7.2 Terrestrial Resources

Terrestrial habitat for the project Action Area is consistent with that discussed in the 2008 BA/HMP. In summary, four land cover types are located on the site including forested uplands; agricultural/cleared/herbaceous areas; urban lands; and areas of buffer associated with wetlands and streams (Figure 2). In general most of these areas have been highly disturbed by past land uses at the site. A description of buffer conditions for streams and wetlands is provided above under aquatic habitats.

8.0 ANALYSIS OF EFFECTS

Under the ESA, when a discretionary federal action may adversely affect listed species or critical habitat, federal agencies must analyze the direct and indirect effects of the action, as well as effects of future state or private actions reasonably certain to occur related to the action (50 CFR 402.02. 402.03, 402.14). Direct effects include the action's immediate effects on a species or habitat (50 CFR 402.02; USFWS and NMFS, 1998). Indirect effects are defined as those that are caused by the proposed action and occur later in time, but are reasonably certain to occur (40 CFR 1508.8; 50 CFR 402.02). These are discussed in the following sections.

8.1 Direct Effects

Activities necessary to construct the proposed action will result in direct effects to the Action Area that may affect listed species. Direct effects of the proposed action are expected to be similar to those discussed in the 2008 BA/HMP and include:

- Construction noise;
- Habitat loss;
- Increased turbidity/sedimentation;
- Increased human activity;
- Potential for accidental spills of contaminants during construction.

8.1.1 Construction Noise

Construction noise is anticipated to be similar to that discussed in the 2008 BA/HMP. The project area is estimated to have a background noise level of 88 dBA, which is consistent with noise levels associated with an urban environment next to a freeway (WSDOT, 2006). Noise from operation of heavy equipment and trucks is expected to attenuate to background levels within 0.08 mile of the proposed action, while more intensive noise associated with pile driving would attenuate to background levels within 0.3 mile of the proposed action for assessing effects to terrestrial species. Noise associated with in-water work is primarily related to impact pile driving of concrete piles and will attenuate to background levels within 0.73 mile of the proposed action.

The marbled murrelet is the only listed species susceptible to the effects of terrestrial noise. Marbled murrelets are known to avoid areas of human activity and are not known to acclimate to human activity. They are therefore expected to avoid the urban area that encompasses the project Action Area. No suitable nesting or foraging habitat exists within the project Action Area. However, marbled murrelets may use the Snohomish River as a migratory corridor between inland nesting areas and marine foraging habitat. If present and migrating through the Action Area, it is expected that marbled murrelets would avoid the project area.

Additional conservation measures may include restricting construction during the breeding season two hours before sunset and two hours after sunrise, which is when marbled murrelets are commonly observed moving between nesting and foraging areas.

Listed fish species as well as Steller sea lions could potentially be affected by in-water work. Steelhead adults and juveniles, juvenile Chinook, and juvenile and sub-adult bull trout are likely to occur in the project area during construction. Adult Chinook and bull trout are unlikely to be in the project area during the approved in-water work window. Steller sea lion presence is extremely unlikely; however, if present, they could easily avoid the construction area. Noise generated by pile driving activities is likely to be minimized not only by the use of concrete piles as opposed to steel, but also by the channel morphology in the project area. Since noise is transmitted in a linear direction away from the source and is rapidly attenuated to background levels when it comes into contact with land, pile driving related noise is not anticipated to travel beyond the upstream and downstream bends in the Snohomish River.

8.1.2 Loss/Alteration of Habitat

The proposed action will result in the direct loss of wetland and stream habitat; however, these habitats are generally degraded. The proposed action includes enhancement activities to both wetlands and streams, including restoration of Bigelow Creek to its historic channel location. Additional habitat enhancement within wetlands will occur via increased species diversity, invasive species control, and installation of habitat features such as downed logs and upland hummocks. Off-channel habitats within Wetland C will be restored, and banks along the Snohomish River will be stabilized. While some trails and other facilities will require wetland fill, overall improvements to the natural functions of the wetlands are expected to provide beneficial effects to both fish and wildlife in the project Action Area.

The proposed action will reroute a portion of Bigelow Creek, removing it from its current location within a ditch that runs parallel to the east side of the BNSF Railway, and returning it to the approximate location where it historically discharged to the Snohomish River. Approximately 5,100 linear feet of the existing Bigelow Creek channel will be abandoned and replaced with approximately 1,800 linear feet of new channel, which includes multiple tidal channels with a new outlet constructed to the Snohomish River. While this will result in a net loss of stream channel, the return of tidal influence will provide a substantial benefit through providing off-channel habitat for rearing salmonids that is currently not available at the site.

The proposed action will also result in the loss of approximately 1,500 linear feet of the West Ditch Creek that flows north to northeast along the northwest project limits. This portion of the West Ditch Creek will be rerouted through Wetland C and connected to existing wetland channels, creating 3,400 linear feet of new tidally influenced channels, which will be renamed Walton Creek. Improvements will also be made to the outlet to the Snohomish River. Currently, beaver dams are located near the existing outlet from the wetlands, which limits the amount and extent of tidal influence in these areas.

Along the Snohomish River, several areas of streambank will be hardened. This includes approximately 400 linear feet along Lowell Riverfront Park. This area is located at a bend in the Snohomish River where flows have eroded away much of the streambank, leaving a near vertical bank in this location. Approximately 125 linear feet of hardening will occur at the 3-Acre Park to accommodate the proposed dock structure, and 200 linear feet will be hardened near the proposed outlet of Bigelow Creek in the South Wetland Complex area. Another approximately 215 linear feet will be hardened to protect portions of the Riverfront Trail improvement area that are in immediate danger of eroding. In total, approximately 940 linear feet of Snohomish River shoreline will be hardened. While hardening is proposed for some areas, approximately 2,200 linear feet of Snohomish River shoreline will be restored to natural conditions or enhanced with native plantings.

In total, approximately 58.2 acres of the site will be affected to some degree by the proposed action, either through wetland fill, vegetation/tree removal, limited and short-term grading to perform wetland restoration/enhancement activities, and grading necessary to accommodate trail widening or new trails and facilities. While on-site habitats will be altered, the overall functions and values of wetlands, streams, and buffer areas are anticipated to improve due to the proposed enhancement and restoration activities. It is anticipated that an increase in both plant and wildlife species diversity will occur, as well as the creation of new off-channel habitat for rearing salmonids.

All of the above activities have the potential to result in the erosion of upland soils and increased sedimentation and turbidity of the Snohomish River and on-site streams unless appropriate BMPs are in place to minimize these effects (see Section 8.1.5).

8.1.3 Increased Human Disturbance

The 2008 BA/HMP provides a detailed explanation of effects of increased human disturbance, which will be similar for the proposed action. In summary, it can be anticipated that human activity and traffic may increase during construction of the proposed action; however, this will

be temporary in nature and not continue at the same level following construction. In the long term and given the historic land uses at the site (industrial), which contributed to the degradation of the site, the proposed action is anticipated to improve environmental baseline conditions at the site.

8.1.4 Potential Release of Contaminants

Projects of this scope typically involve the use of various types of heavy equipment and may involve multiple construction crews. Construction will require the use of heavy machinery along the banks of the Snohomish River, Bigelow Creek, West Ditch Creek, and other on-site streams both above and below the OHWM. Although not likely, accidents such as spills of hazardous materials (typically green cement or grout, fuel, oils, and hydraulic fluids) or unanticipated additional construction accidents could occur. This would degrade water quality and/or be toxic to fish. The potential effect of accidental discharges, should they occur, will be mitigated in large part by the installation of in-stream diversions and other BMPs discussed herein. Adherence to site-specific SPCC Plan will minimize the potential for direct effects associated with accidental spills to insignificant levels.

8.1.5 Sedimentation/Turbidity

The proposed action will include the temporary disturbance of soils during grading and excavating activities and potential construction dewatering activity. Site grading and excavating necessary for trail construction, habitat improvement activities, and building construction could result in erosion from disturbed upland soils and increase the sediment load in runoff potentially entering the Snohomish River, Bigelow Creek, and other on-site streams. Pile installation for dock installation and restoration activities along the shoreline of the Snohomish River may mobilize existing bottom sediments and lead to increased turbidity and sedimentation of downstream areas.

Sedimentation is a concern since it can degrade spawning habitat, increase scour potential, degrade rearing habitat, and alter riparian vegetative structure. Increased turbidity can affect both primary food production and fish feeding efficiency. In addition, high turbidity (high total suspended solids [TSS] concentrations) can also impair respiration in salmonids and possibly hinder salmonid reproductive efforts.

Site specific erosion control measures will not be determined until final design is complete. However, a TESC Plan and erosion and sediment control BMPs that meet city of Everett and Ecology standards for construction will be required. Because of the implementation of site specific erosion and sediment control BMPs, sedimentation and turbidity within the Snohomish River and other on-site streams is anticipated to be short-term and minimal.

In addition, work will occur during the late summer and in accordance with the allowed in-water work window (June 1 to October 31), which will reduce the overlap of construction with the presence of listed fish species. Most juvenile outmigration will have been completed prior to any in-water work. However, steelhead presence can be anticipated during any time of the year.

8.2 Analyses of Effects to Critical Habitat PCEs

An analysis of effects to designated critical habitat for Chinook salmon and bull trout will be prepared at a later date. This biological assessment will be revised for Phase 1 construction activities for the proposed action and will include an analysis of effects for critical habitat.

8.3 Indirect Effects

Indirect effects are those impacts that are caused by the action and occur later in time but are still reasonably certain to occur (USFWS and NMFS, 1998). The indirect effects analysis provided in the 2008 BA/HMP adequately addresses these effects for the proposed action. Indirect effects may include operational impacts, stormwater, shoreline development, and impacts to prey species and food sources for listed species.

8.3.1 Operational Effects

The proposed action will likely result in an increase in human activity and traffic at the site including:

- Increased pedestrian and vehicular traffic;
- Increased stormwater runoff from new impervious surface area;
- Increased boat traffic and associated pollutants in the Snohomish River;
- Increased use of shoreline and sensitive areas;
- Increased waste generation (garbage, emissions); and
- Increased noise.

Measures to minimize these impacts may include, but are not limited to, deterring access to sensitive areas with signage, educational materials, and dense vegetation plantings; confining pedestrian traffic to trails lined with shrubs or on walkways; limiting use of pesticides and dumping of household and yard wastes; treating all runoff from impervious surfaces in accordance with the 2005 Stormwater Manual for Western Washington (Ecology, 2005); and educating the public about the natural resources and the responsibility for protecting them.

8.3.2 Shoreline Development

Shoreline development at the site includes the dock structure planned for the 3-Acre Park and its associated boating uses. Such development could indirectly affect upstream and downstream movement of juvenile and adult salmonids, and result in increased predation of juvenile salmonids. With an increase in boat traffic, there is always a potential for accidental release of fuel or other chemicals, which has the potential to degrade water quality and adversely affect listed fish species.

The conceptual design for the in-water structure has taken into consideration the adverse effects of shoreline development upon salmonid migration and predation by increasing the diversity of the nearshore environment. Conservation measures include providing grating or other similar design to reduce the impacts of shading and reduce hiding places for predators; using inert, durable, and non-toxic materials; minimizing the size of piles; using concrete instead of creosote piles; and maximizing pile spacing to minimize potential for creating migratory barriers.

In addition, the shoreline next to the dock structure will be planted with native tree and shrub species to provide cover and LWD to increase habitat complexity. To limit the potential for accidental spills or release of other chemical wastes by boaters using the facility, the project design has minimized adverse effects by not including any waste disposal facility or refueling station at the proposed dock facility. Indirect effects from shoreline development are considered insignificant based on adherence to these design standards.

8.4 Beneficial Effects

NMFS and USFWS (1998) identify beneficial effects as those that "are contemporaneous positive effects without any adverse effects." The proposed project will result in on-site enhancement and habitat improvement activities. While these may have some limited beneficial effects on the Action Area scale, these factors are not considered "beneficial effects" as defined in relation to the ESA.

9.0 CONCLUSIONS AND EFFECT DETERMINATIONS

Based on the proposed project actions and their anticipated effects (as discussed in Section 8), and considering the minimization and avoidance measures outlined in Section 4, the following effect determinations have been made in accordance with the Endangered Species Act (as amended, 1996).

9.1 Threatened Species

9.1.1 Puget Sound ESU Chinook

The effect determination for Puget Sound ESU Chinook salmon as a result of the proposed action is "**may affect, not likely to adversely affect**."

A "may affect" determination is warranted based on the following rationale:

1. Chinook salmon are documented as occurring within the Snohomish River and Bigelow Creek, including the project Action Area.

2. The project will require in-water work (pile driving) including installation of a new boat dock within the Snohomish River and relocation of a segment of Bigelow Creek.

3. Clearing and grading activities will occur within 100 feet of the Snohomish River, Bigelow Creek, and other surface waters in the project vicinity.

4. Shoreline development may result in indirect effects by reducing nearshore habitat for juvenile Chinook and potentially increasing prey species abundance.

5. Forage for Chinook is available within the Action Area.

A "not likely to adversely affect" determination is warranted based on the following rationale:

1. In-water work will be restricted to a time period when juveniles and adults are least likely to occur in the project area.

2. Migration of adult Chinook would not be impaired.

3. Suitable spawning habitat is not located within the Action Area. Suitable spawning habitat begins approximately six miles upstream.

4. Fish will be excluded from wetland, shoreline, and stream segments (excluding the Snohomish River during pile installation) during in-water construction.

5. The effects of underwater noise will be minimized by using concrete piles instead of steel piles and by using sound attenuation reduction measures such as blocks and bubble curtains. Pile installation will be temporary and short in duration.

6. The effects of sedimentation and turbidity will be minimized by adhering to a TESC plan and implementing erosion control BMPs such as silt fencing, straw bales, and earthen dikes; stabilizing soils following construction with either native plantings, grasses, or asphalt/pavement; and limiting soil disturbance to that necessary for each phase of construction. Implementation of BMPs for erosion and sediment control would render effects to Chinook insignificant.

7. Refueling will occur farther than 150 feet from any surface water feature, including the Snohomish River. All equipment operators will be trained in spill response, and a Spill Prevention Plan will be prepared specifically for this project.

8. The proposed action includes restoration of stream channel habitat within Bigelow Creek and creation of off-channel habitats in Wetland C that may provide suitable rearing habitat for juvenile Chinook or, at a minimum; it will provide refugia during high flow events.

9. Shoreline development has been designed to include provisions for a more diverse and complex nearshore habitat than what currently exists and to minimize potential predation of juvenile Chinook.

10. The amount of foraging habitat impacted is insignificant in comparison to the available foraging habitat in the project vicinity. In addition, these habitats are protected by local critical areas regulations.

9.1.2 Puget Sound DPS Steelhead

The effect determination for Puget Sound DPS steelhead as a result of the proposed action is "**may affect, not likely to adversely affect**."

A "may affect" determination is warranted based on the following rationale:

1. Steelhead are documented as occurring within the Snohomish River and Bigelow Creek, including the project Action Area. Adult and juvenile steelhead may be in the Action Area year-round.

2. The project will require in-water work (pile driving) including installation of a new boat dock within the Snohomish River and relocation of a segment of Bigelow Creek.

3. Clearing and grading activities will occur within 100 feet of the Snohomish River, Bigelow Creek, and other surface waters in the project vicinity.

4. Shoreline development may result in indirect effects by reducing nearshore habitat for juvenile and adult steelhead and potentially increasing predator abundance.

5. Forage for adult and juvenile steelhead is available within the Action Area.

A "not likely to adversely affect" determination is warranted based on the following rationale:

1. In-water work will be restricted to a time period when juveniles and adults are least likely to occur in the project area.

2. Migration of adult steelhead would not be impaired.

3. Suitable spawning habitat is not located within the Action Area. Suitable spawning habitat begins approximately eight miles upstream.

4. Fish will be excluded from wetland, shoreline, and stream segments (excluding the Snohomish River during pile installation) during in-water construction.

5. The effects of underwater noise will be minimized by using concrete piles instead of steel piles and by using sound attenuation reduction measures such as blocks and bubble curtains. Pile installation will be temporary and short in duration.

6. The effects of sedimentation and turbidity will be minimized by adhering to a TESC plan and implementing erosion control BMPs such as silt fencing, straw bales, and earthen dikes; stabilizing soils following construction with either native plantings, grasses, or asphalt/pavement; and limiting soil disturbance to that necessary for each phase of construction. Implementation of BMPs for erosion and sediment control would render effects to steelhead insignificant.

7. Refueling will occur farther than 150 feet from any surface water feature, including the Snohomish River. All equipment operators will be trained in spill response, and a Spill Prevention Plan will be prepared specifically for this project.

8. The proposed action includes restoration of stream channel habitat within Bigelow Creek and creation of off-channel habitats in Wetland C that may provide suitable rearing habitat for juvenile steelhead or, at a minimum; it will provide refugia during high flow events.

9. Shoreline development has been designed to include provisions for a more diverse and complex nearshore habitat than what currently exists and to minimize potential predation of juvenile steelhead.

10. The amount of foraging habitat impacted is insignificant in comparison to the available foraging habitat in the project vicinity. In addition, these habitats are protected by local critical areas regulations.

9.1.3 Bull Trout

The effect determination for Coastal-Puget Sound DPS bull trout as a result of the proposed action is "**may affect, not likely to adversely affect**".

A "may affect" determination is warranted based on the following rationale:

1. Bull trout are documented as occurring within the Snohomish River within the project Action Area and may occur and forage in the lower portion of Bigelow Creek. Juvenile bull trout may be in the Action Area during the construction period.

2. The project will require in-water work (pile driving) including installation of a new boat dock within the Snohomish River and relocation of a segment of Bigelow Creek.

3. Clearing and grading activities will occur within 100 feet of the Snohomish River, Bigelow Creek, and other surface waters in the project vicinity.

4. Shoreline development may result in indirect effects by reducing nearshore habitat for juvenile and adult bull trout and potentially increasing predator abundance.

5. Forage for adult and juvenile bull trout is available within the Action Area.

A "not likely to adversely affect" determination is warranted based on the following rationale:

1. In-water work will be restricted to a time period when juveniles and adults are least likely to occur in the project area. The probability of encountering bull trout is considered extremely low.

2. Migration of adult bull trout would not be impaired.

3. Suitable spawning habitat is not located within the Action Area. Suitable spawning habitat is located much farther upstream in the upper Skykomish River and tributaries.

4. Fish will be excluded from wetland, shoreline, and stream segments (excluding the Snohomish River during pile installation) during in-water construction.

5. The effects of underwater noise will be minimized by using concrete piles instead of steel piles and by using sound attenuation reduction measures such as blocks and bubble curtains. Pile installation will be temporary and short in duration.

6. The effects of sedimentation and turbidity will be minimized by adhering to a TESC plan and implementing erosion control BMPs such as silt fencing, straw bales, and earthen dikes; stabilizing soils following construction with either native plantings, grasses, or asphalt/pavement; and limiting soil disturbance to that necessary for each phase of construction. Implementation of BMPs for erosion and sediment control would render effects to bull trout insignificant.

7. Refueling will occur farther than 150 feet from any surface water feature, including the Snohomish River. All equipment operators will be trained in spill response, and a Spill Prevention Plan will be prepared specifically for this project.

8. The proposed action includes restoration of stream channel habitat within Bigelow Creek and creation of off-channel habitats in Wetland C that may provide suitable foraging habitat for juvenile and sub-adult bull trout, or at a minimum, it will provide refugia during high flow events.

9. Shoreline development has been designed to include provisions for a more diverse and complex nearshore habitat than what currently exists and to minimize potential predation of juvenile bull trout.

10. The amount of foraging habitat impacted is insignificant in comparison to the available foraging habitat in the project vicinity. In addition, these habitats are protected by local critical areas regulations.

9.1.4 Marbled Murrelet

The effect determination for marbled murrelet as a result of the proposed action is "**no effect.**"

A "no effect" determination is warranted based on the following rationale:

1. Marbled murrelet foraging is not likely to occur in the Action Area due to existing urban land use and avoidance of these areas by marbled murrelet. Marine foraging is available in the marine waters of Possession Sound and Port Gardner Bay several miles downstream of the proposed action.

2. The proposed action will generate noise that is expected to attenuate to background levels within 1,600 feet of construction.

3. No suitable nesting habitat is located within 15 miles of the proposed action.

4. No documented sightings of marbled murrelet have occurred within the project Action Area.

5. All construction will occur two hours after sunrise and be completed two hours before sunset to minimize the potential for disturbing marbled murrelets in flight between marine foraging areas and inland nesting habitats during the breeding and late breeding season.

6. The proposed action will not adversely affect prey species or prey species abundance within the Action Area or within marine foraging areas.

9.1.5 Steller Sea Lion

The effect determination for Steller sea lion as a result of the proposed action is "**no effect."**

A "no effect" determination is warranted based on the following rationale:

1. The presence of Steller sea lion in Puget Sound is usually limited to only one or two individuals at a time. The potential for their occurrence at RM 5.0 of the Snohomish River is highly unlikely and would be considered an extremely rare event.

2. Foraging, if it were to occur, would be more likely in the marine waters of Possession Sound and Port Gardner Bay near the Snohomish estuary, far outside the project Action Area.

3. The proposed action is not likely to adversely affect Pacific salmon and steelhead, a primary prey species of Steller sea lion.

9.1.6 Critical Habitat

A determination of effect for critical habitat for Chinook salmon and bull trout will be prepared at a later date. This biological assessment will be revised for Phase 1 construction activities for the proposed action and will include a determination of effect for critical habitat.

10.0 HABITAT MANAGEMENT PLAN

10.1 Mitigation Plan

The proposed action will result in unavoidable impacts to wetlands, streams, and their associated buffers similar to those discussed in the 2008 BA/HMP. Where possible, these impacts have been avoided or limited to areas already degraded and where compensatory mitigation can result in a net benefit and an overall improvement in function and value of these resources. Typically,

mitigation consists of preservation, enhancement, creation, or restoration either on-site, off-site, in-kind, out-of-kind, wetland banking, or any combination of the above.

Wetlands and streams on the Riverfront Development site are regulated at the federal, state, and local levels of jurisdiction. For the city of Everett, wetland and stream impacts would be regulated pursuant to the city's Shoreline Master Program (SMP) codified in Title 19 Chapter 33D of the city's Zoning Code. Mitigation standards for areas within the city's SMP jurisdiction are based on the Snohomish Estuary Wetland Integration Plan (SEWIP) (City of Everett et al., 1997).

The 1997 SEWIP generally requires compensation at no less than a 1:1 ratio of wetland fill to creation area. Additional mitigation to compensate for indirect impacts to wetland habitat function, if indicated by the 1997 SEWIP assessment, would be provided through enhancement or restoration of degraded wetland areas within the Railroad Corridor Enhancements area, North Wetland Complex, Riverfront Trail improvements corridor, West Wetland Complex, or South Wetland Complex.

10.1.1 3-Acre Park

Impacts to wetlands and streams associated with the 3-Acre Park include: (1) fill of a portion of Wetland K, (2) potential erosion and sedimentation during construction of the park facilities, (3) impacts to the Snohomish River associated with the proposed dock and boat launch, (4) disturbance to the Snohomish riverbank associated with bank stabilization measures, (5) potential water quality impacts if floodwaters engage the proposed 36-stall parking lot, and (6) disturbance to wetland and stream buffers.

Direct impacts would occur to 0.043 acre of Wetland K. As described above, this area has been significantly disturbed during past use of the site, and the wetland is contained within an excavated ditch that extends north of the 3-Acre Park site. Bank stabilization measures would occur over approximately 425 linear feet of the west bank of the Snohomish River.

Mitigation Measures

Mitigation to compensate for adverse impacts to wetlands would be provided as part of the project as required by city code and based on the mitigation standards stated in the 1997 SEWIP. To the extent possible, mitigation would be constructed in advance of or concurrent with associated impacts. Site-specific mitigation to compensate for impacts to Wetland K would be provided through the creation of new tidal or palustrine wetland in a manner consistent with the 1997 SEWIP. Wetland creation would occur in upland areas adjoining existing wetlands in the Railroad Corridor Enhancements area, Riverfront Trail improvements corridor, or South Wetland Complex.

Specific mitigation measures for the 3-Acre Park include:

1. Compensation for lost wetland functions through the construction of compensatory wetland mitigation consistent with the 1997 SEWIP, as required by the city's Zoning

Code. Compensatory mitigation would be accomplished through wetland creation and enhancement of existing degraded wetlands within the Riverfront Development site.

2. Compensatory mitigation for adverse wetland impacts would be constructed in advance of, or concurrent with, projects elements that affect wetlands.

3. The city would develop a detailed wetland assessment and compensatory mitigation plan consistent with 1997 SEWIP assessment methodology and submit the plan to the city planning and community development department and other agencies with jurisdiction in advance of acquiring construction permits for proposed improvements. The mitigation plan would address the hierarchy of mitigation sequencing identified in Section 19.33D.040 of the city's Zoning Code, WAC 173-26-201, and WAC 197-11-768, as applicable. The mitigation plan would include an assessment of the functions of impacted wetlands, including an evaluation of anticipated changes or alterations in the hydroperiod of remaining wetlands or wetlands associated with proposed mitigation areas. The mitigation plan would identify site-specific performance criteria used to measure the success of the wetland mitigation program, identify both short-term and long-term maintenance requirements, and identify adaptive management measures that would ensure the success of the mitigation program. The wetland mitigation plan would also include a detailed mitigation monitoring plan based on a minimum five-year post-construction monitoring period.

4. Upland riparian area (0.4 acre) along the Snohomish River would be enhanced.

5. Implementation of construction Best Management Practices (BMPs) would avoid and minimize erosion and sedimentation during construction. These measures should be consistent with the most recent Washington State Department of Ecology Stormwater Management Manual for Western Washington.

6. Treated lumber would be avoided in construction of the dock and boat launch.

7. The dock and boat launch would be designed to withstand anticipated water elevations and velocities.

8. Parking areas would be minimized within the 100-year (1 percent annual chance) floodplain.

9. Plantings of native riparian shrub and tree species would be incorporated into any bank stabilization measures installed along the Snohomish River.

10.1.2 Railroad Corridor Enhancements

The Railroad Corridor Enhancement element would result in direct impacts to Wetlands W, V, and C totaling 1.293 acres (Table 4). Impacts would occur as both direct wetland fill and through covering of the wetland by boardwalks (MacLeod Reckord, 2009). Impacts to wetland buffers would also occur throughout the Railroad Corridor Enhancements area. Both Bigelow

Creek and the West Ditch Creek would be realigned, impacting 6,600 linear feet of stream and resulting in a net decrease in stream length of approximately 4,800 linear feet.

This element includes a trail and boardwalk system, portions of which would extend into the outer edge of Wetland C. Boardwalks and/or small spans would be installed to prevent impacts to overall water circulation within Wetland C. These areas are intended to provide focused public access to the wetland system. These access points are proposed for a short loop in the southern portion, and a longer sinuous path along the western edge of the wetland (MacLeod Reckord, 2009).

Table 4: Wetland Impacts within the Railroad Corridor Enhancements Project Element

Wetland/Stream	Total Area (acres)	Fill Impact Area (acres)	Boardwalk Coverage Impact Area (acres)
Wetland V	0.730	0.138	0.020
Wetland W	0.861	0.736	0
Wetland C	21.608	0.292	0.107

Bigelow Creek would be realigned from its current location in a railroad ditch to a new channel through the South Wetland Complex that more closely approximates a natural condition (see Bigelow Creek and South Wetland Complex Enhancement below). This would result in a net loss of stream linear footage through the Railroad Corridor Enhancements area. Approximately 5,100 linear feet of Bigelow Creek and 1,500 linear feet of the West Ditch Creek would be lost, and replaced with approximately 1,800 linear feet of new Bigelow Creek channel within the South Wetland Complex. A portion of the drainage from the former West Ditch Creek would also be realigned from its current railroad ditch location, to a new channel through Wetland C.

Mitigation Measures

Mitigation to compensate for adverse impacts to wetlands would be provided as part of the project as required by city code and based on the mitigation standards stated in the 1997 SEWIP. Please see Section 1.2.4 for additional discussion of the regulatory mitigation requirements.

Specific mitigation measures for the Railroad Corridor Enhancements element include:

1. Compensation for lost wetland functions would occur through the construction of compensatory wetland mitigation consistent with the 1997 SEWIP, as required by the city's Zoning Code. Mitigation would be provided through enhancement or restoration of degraded wetland areas within the Railroad Corridor Enhancements area, North Wetland Complex, Riverfront Trail improvements corridor, West Wetland Complex, or South Wetland Complex.

2. Compensatory mitigation for adverse wetland and stream impacts would be constructed in advance of, or concurrent with, projects elements that affect wetlands.

3. The city would develop a detailed wetland assessment and compensatory mitigation plan consistent with 1997 SEWIP assessment methodology and submit the plan to the city planning and community development department and other agencies with jurisdiction in advance of acquiring construction permits for proposed improvements.

4. Trails within Wetland C would be installed in a manner that does not impact overall water circulation within the wetland.

5. Human intrusion into the wetland and stream systems would be limited through the use of upland viewing areas and appropriate signage.

10.1.3 North Wetland Complex Enhancements

Impacts to the North Wetland Complex would occur during construction of a portion of the trail system, wetland enhancement elements, and the adjacent OliverMcMillan wetland restoration project west of Wetland C. Impacts from trail construction are discussed in both the Railroad Corridor Enhancements and Riverfront Trail sections above, and impacts from the OliverMcMillan wetland restoration are discussed in the 2007 DEIS and 2008 FEIS.

Specific impacts anticipated for the North Wetland Complex as a result of the public amenities include:

1. Temporary construction impacts to Wetland C and the Snohomish River during construction of distributary channels. Proposed work in the North Wetland Complex would result in temporary disturbance to approximately 16.5 acres of wetland regulated by the city, and would add approximately 3,400 linear feet of stream channel.

2. Indirect impacts to wetland hydroperiod resulting from adjustments to site drainage, including rerouting of Bigelow Creek, adjustments to the West Ditch Creek drainage, addition of stormwater generated on the Simpson Pad, and alteration of existing channels within Wetland C.

There is the potential for erosion and sedimentation during the earthwork necessary to excavate the channels and river connections. There is also the potential for long-term channel scour at the excavated inlets. This potential is dependent on local hydraulic conditions, which will be investigated during restoration design.

Several adjustments to the contributing area of Wetland C would occur as part of the overall Riverfront Development project. These modifications include:

- Removing any flow from Bigelow Creek from Wetland C.

- Directing a portion of flows from the West Ditch Creek to Wetland C.

- Directing infiltrated stormwater from the Simpson Pad to Wetland C via a proposed raingarden system.

While these modifications would change the amount of surface water being directed to Wetland C, it does not appear that these changes would result in any adverse impacts to the wetland. Water levels in Wetland C are influenced by a number of factors, and the primary sources appear to be high groundwater due to proximity of the Snohomish River, inundation from the river, direct precipitation, and the discharge of groundwater. All of these factors would remain in place after the proposed project is completed. The distributary channel element of the wetland enhancement is intended to increase tidal and riverine influence within the wetland system.

Mitigation Measures

The primary enhancement measure proposed for Wetland C is the excavation of a more extensive network of distributary channels totaling approximately 3,400 linear feet. Channels exist on the site, but have likely been created and/or altered as a part of past land uses. The connections between these channels and the Snohomish River are limited to two openings. The proposed distributary channel network would increase the overall length of small channels within Wetland C, and increase the number of connection points to the Snohomish River. These enhancement measures are intended to allow for greater tidal influence and distribution, as well as exchange of tidal water throughout the area. The enhancement would also include dense plantings of native tree and shrub species to reduce the dominance of nonnative reed canarygrass. Enhancements would include work along approximately 750 feet of the west bank of the Snohomish River.

These channels and new connections to the river would be excavated using low-ground-pressure equipment, likely with the use of mats to allow for access. Excavation spoils would be placed within the wetland to create low (approximately 1 foot) mounds or berms that would be densely planted with native species of trees and shrubs.

These enhancement measures would be designed consistent with the overall management objectives of the 1997 SEWIP.

Specific mitigation measures for the North Wetland Complex element include:

1. Compensation for lost wetland functions would occur through the construction of compensatory wetland mitigation consistent with the 1997 SEWIP, as required by the city's Zoning Code. Mitigation would be provided through enhancement or restoration of degraded wetland areas within the Railroad Corridor Enhancements area, North Wetland Complex, Riverfront Trail improvements corridor, West Wetland Complex, or South Wetland Complex.

2. Compensatory mitigation for adverse wetland and stream impacts would be constructed in advance of, or concurrent with, projects elements that affect wetlands.

3. The city would develop a detailed wetland assessment and compensatory mitigation plan consistent with 1997 SEWIP assessment methodology and submit the plan to the city planning and community development department and other agencies with jurisdiction in advance of acquiring construction permits for proposed improvements.

4. All channel construction would take place during the dry season.

Appropriate BMPs (e.g., coir logs surrounding placed berms/hummocks) would be used to avoid erosion and sedimentation.

10.1.4 West Wetland Complex Enhancements

Impacts to Wetland D would include temporary construction impacts during installation of the enhancement elements and indirect impacts from the redirection of Bigelow Creek.

Enhancement work within Wetland D is anticipated to consist of limited placement of topsoil and/or compost amendments and dense plantings of native tree and shrub species. The limited fill placement would require temporary construction access that would likely consist of low-ground-pressure excavating equipment and the use of mats.

Bigelow Creek would be realigned to flow directly to the Snohomish River south of the Simpson Pad. This realignment would result in a reduction of surface water inflow from Bigelow Creek to Wetland D. Currently, most surface flow within Bigelow Creek appears to bypass Wetland D. Therefore, this inflow appears to be a minor component of the overall water supply to Wetland D, and the project is not anticipated to result in adverse impacts. Direct impacts to the southern portion of Wetland D would occur with the installation of the fire access road, discussed in the Bigelow Creek and South Wetland Complex Enhancement discussion below.

Mitigation Measures

Proposed mitigation measures for the West Wetland Complex include:

1. Install hummocks during the dry season.
2. Avoid any alterations that would focus flow of water, including during flood stage in the Snohomish River, through Wetland D.
3. Install appropriate measures (e.g., coir logs) surrounding hummocks to avoid erosion and sedimentation.
4. Continue monitoring water levels in Wetland D on at least a monthly basis for a minimum of five years to confirm that wetland hydrology persists.

10.1.5 Riverfront Trail, Group Picnic, and Connections to the Simpson Pad

There would be direct impacts to wetlands as a result of new trail connections from the Simpson Pad to the Riverfront Trail. A Snohomish County PUD access road would also be extended from the Riverfront Trail to the existing PUD transmission tower at the southern end of Wetland C. Culverts will be installed beneath the connector trails that lead from the Riverfront trail to the Simpson Pad as well as beneath the Snohomish County PUD access road to maintain wetland connectivity .Wetland fill resulting from these elements would total 0.181 acre, with an additional 0.001 acre of impact resulting from installation of a boardwalk (Table 5). Impacts to wetlands have been avoided and minimized by locating the connecting trails either between

existing wetlands, or through a narrow section of existing wetland. All work within this element would occur within wetland buffer and buffer from the Snohomish River.

Table 5: Wetland Impacts within the Riverfront Trail Project Element

Wetland/Stream	Total Area (acres)	Fill Impact Area (acres)	Boardwalk Coverage Impact Area (acres)
Wetland F	1.100	0.023	0.001
Wetland I	2.713	0.087	0
Wetland H	0.173	0.001	0
Wetland Q	0.076	0.017	0
Wetland R	2.081	0.007	0
Wetland C	21.608	0.046	0

Impacts to the Snohomish riverbank would result from disturbance to install bank stabilization measures. These areas are anticipated to consist of bioengineered solutions, combined with realigning the Riverfront Trail farther (west) from the active channel.

Mitigation Measures

Mitigation to compensate for adverse impacts to wetlands would be provided as required by city code and based on the mitigation standards stated in the 1997 SEWIP.

Specific mitigation measures for the Riverfront Trail element include:

1. Compensation for lost wetland functions would occur through the construction of compensatory wetland mitigation consistent with the 1997 SEWIP, as required by the city's Zoning Code. Mitigation would be provided through enhancement or restoration of degraded wetland areas within the Railroad Corridor Enhancements area, North Wetland Complex, Riverfront Trail improvements corridor, West Wetland Complex, or South Wetland Complex.

2. Compensatory mitigation for adverse wetland and stream impacts would be constructed in advance of, or concurrent with, projects elements that affect wetlands.

3. The city would develop a detailed wetland assessment and compensatory mitigation plan consistent with 1997 SEWIP assessment methodology and submit the plan to the city planning and community development department and other agencies with jurisdiction in advance of acquiring construction permits for proposed improvements.

4. Trail construction would occur during the dry season, using appropriate BMPs to avoid erosion and sedimentation.

5. Plantings of native riparian shrub and tree species would be incorporated into any bank stabilization measures installed along the Snohomish River.

6. Culverts will be installed beneath the connector trails that lead from the Riverfront Trail to the Simpson Development Pad to maintain hydrologic connectivity between the wetlands. At the northern limits of this area, a culvert beneath a proposed maintenance access road for a PUD Tower will maintain the surface water regime to flow to the Wetland C, which will serve as the natural outfall for these wetlands to the Snohomish River.

10.1.6 Lowell Crossing

No direct impacts to wetlands or streams would result from the Lowell Crossing element, assuming that the Lowell Crossing is built after the realignment of Bigelow Creek.

Mitigation Measures

1. Buffer enhancements (e.g., weed removal and native plantings) would be installed between the proposed trail and Wetland D.

10.1.7 Bigelow Creek and South Wetland Enhancements

Proposed work within the South Wetland Complex would result in wetland fill of 1.72 acres and coverage of 0.001 acre. Bank stabilization along the Snohomish River would disturb approximately 300 linear feet of channel bank. Impacts to wetlands and streams within the South Wetland Complex include:

1. Permanent impacts from the installation of a constructed wetland and associated berm.

2. Permanent impacts from the installation of a fire access road.

3. A trestle bridge that would result in new coverage over wetlands and streams at the proposed mouth of Bigelow Creek.

4. Temporary construction impacts resulting from wetland and stream restoration activities.

5. Construction and installation of trails, fire access road, and constructed treatment wetland within wetland buffers.

There would be direct impacts to Wetlands N and D as a result of the construction of the constructed treatment wetland and realigned Bigelow Creek channel. The constructed wetland is proposed to retrofit water quality treatment for flows from the highly urbanized contributing basin. To provide sufficient volume to provide a base level of water quality treatment, the

constructed wetland and associated berms would result in direct, permanent impacts to a 1.008-acre portion of Wetland N (Table 6, Figure 4).

Table 6: Wetland Impacts within the South Wetland Complex

Wetland/Stream	Total Area (acres)	Fill Impact Area (acres)	Bridge Coverage Impact Area (acres)
Wetland D	16.293	0.712	0
Wetland N	6.962	1.008	0
Wetland O	0.039	0	0.001[1]

[1]Coverage due to trestle bridge

A fire access road is proposed to allow emergency access to the southwest corner of the Simpson Pad. This fire access road and a portion of the treatment wetland would be constructed in Wetland D, resulting in 0.712 acre of wetland fill. Impacts in this area have been minimized by aligning the fire access road to match an existing upland berm that extends into Wetland D. The fire access road would bisect Wetland D and therefore has the potential to impact water circulation, especially during periods of inundation from the Snohomish River.

The area due east of the proposed constructed wetland would be restored to a functioning wetland complex. This area includes all or part of Wetlands N, O, P, Q and D. These wetlands are currently disconnected from each other by artificial berms, and from the Snohomish River by a berm with a culvert. The proposed restoration would include removing berms, adding soil amendments, and installing dense plantings of native tree, shrub, and emergent species. The South Wetland Complex would have a restored, free-flowing connection to the Snohomish River spanned by a bridge. The bridge would allow for trail circulation and maintenance access. The realigned Bigelow Creek would flow through the restored South Wetland Complex, so channel excavation would be necessary to provide sufficient conveyance capacity.

The amount of excavation that would occur as part of this restoration has yet to be determined, but would likely range from minimal material removal to allow for Bigelow Creek to flow through the area, to a more substantial excavation that would result in an intertidal area. The largest excavation likely within the South Wetland Complex would result in a bottom elevation near 0.0 feet NAVD 88 to allow for significant tidal influence.

Temporary construction impacts to the South Wetland Complex would include, at a minimum:

- Construction access and associated noise.
- Vegetation disturbance, including tree removal.
- Potential for erosion and sedimentation.

If the larger intertidal project were to occur, impacts would be the same, but the quantity of excavation and vegetation removal would be greater.

Mitigation Measures

Mitigation to compensate for adverse impacts to wetlands would be provided as required by city code and based on the mitigation standards stated in the 1997 SEWIP.

The restoration and enhancement measures would result in temporary impacts to 4.2 acres of existing wetland. These measures would be designed to improve the functions within the overall wetland system.

Specific mitigation measures for the South Wetland Complex element include:

1. Compensation for lost wetland functions would occur through the construction of compensatory wetland mitigation consistent with the 1997 SEWIP, as required by the city's Zoning Code. Mitigation would be provided through enhancement or restoration of degraded wetland areas within the Railroad Corridor Enhancements area, North Wetland Complex, Riverfront Trail improvements corridor, West Wetland Complex, or South Wetland Complex.

2. Compensatory mitigation for adverse wetland and stream impacts would be constructed in advance of, or concurrent with, projects elements that affect wetlands.

3. The city would develop a detailed wetland assessment and compensatory mitigation plan consistent with 1997 SEWIP assessment methodology and submit the plan to the city planning and community development department and other agencies with jurisdiction in advance of acquiring construction permits for proposed improvements.

4. Excavations for the wetland restoration would be done during the dry season. The culvert to the river would be blocked before any excavation within the wetland system. The earthen plug would be removed after earthwork is complete and initial soil stabilization measures installed.

5. The large quantities of excavation and water present on the site will likely require additional measures beyond the traditional, including the capture of turbid water from the site to be retained on site in a temporary pond or storage tank prior to release to the river.

6. Plantings of native riparian shrub and tree species would be incorporated into any bank stabilization measures installed along the Snohomish River.

7. A small span or culverts would be provided under the fire access road to retain flood flow conveyance in the area.

8. Standard BMPs would be used to avoid and minimize erosion and sedimentation

10.1.8 Lowell Riverfront Park Improvements

Impacts to the Snohomish River resulting from the Lowell Riverfront Park improvements consist of disturbance to construct bank stabilization measures. Bank stabilization measures are

currently being developed and could consist of bioengineering techniques, sheet pile, rock riprap, or some combination of these.

Mitigation Measures

Mitigation measures for the Lowell Riverfront Park improvements include:

1. Focus and limit human access via trails and viewpoints.
2. Incorporate plantings of native riparian shrub and tree species into any bank stabilization measures installed along the Snohomish River.
3. Include native tree and shrub plantings between the trail and riverbank.

10.2 Monitoring Plan

A detailed Habitat Restoration Plan and Wetland and Stream Mitigation Report will be prepared during final design and will coordinate all proposed restoration and mitigation activities on the site. For the purposes of this report, the methods and performance standards identified in the 2008 BA/HMP will apply to the proposed action.

10.3 Maintenance Plan

The details of the Maintenance Plan found in the 2008 BA/HMP would be consistent with that required for the proposed action.

10.4 Contingency Plan

The details of the Contingency Plan found in the 2008 BA/HMP would be consistent with that required for the proposed action.

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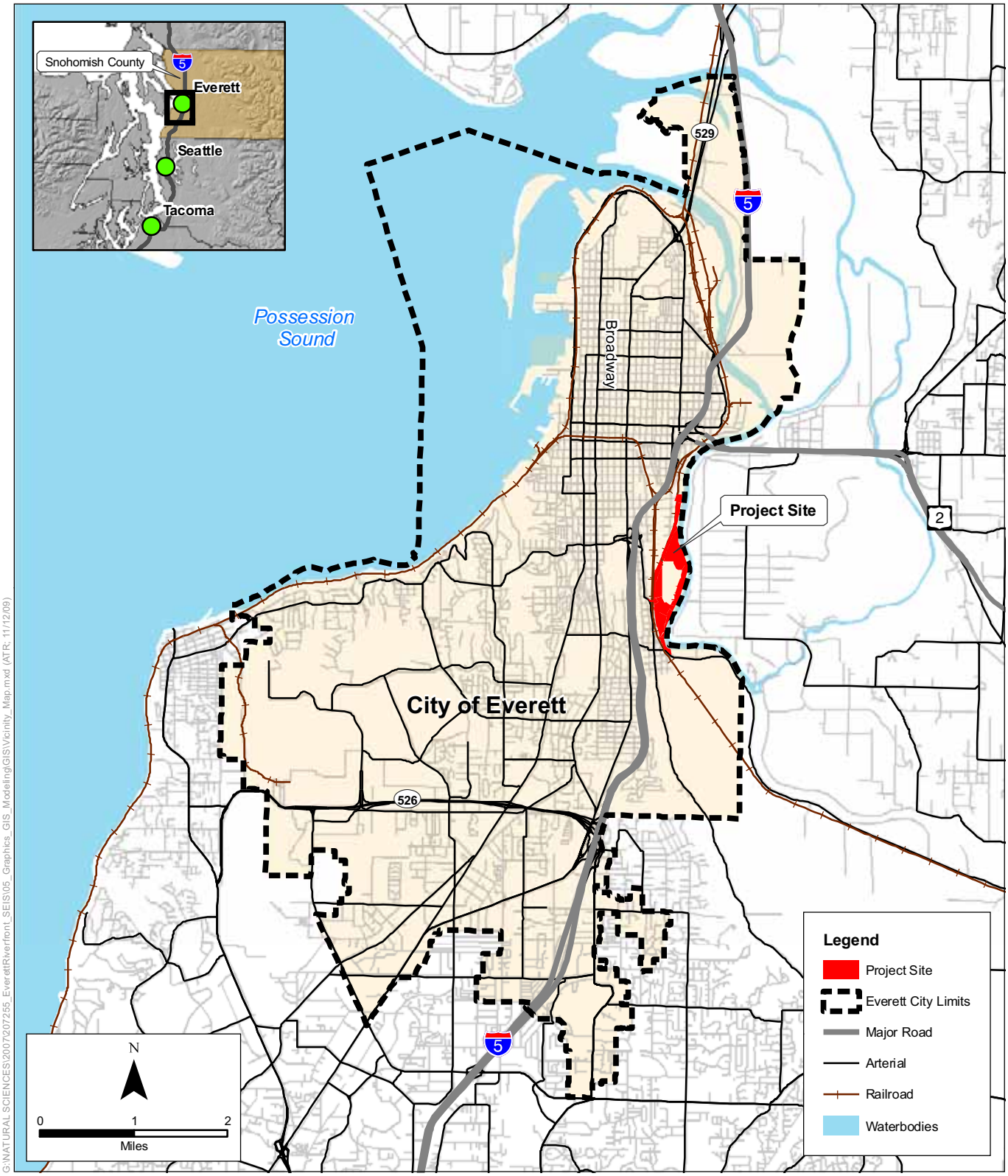
FIGURES



SOURCE: Snohomish County 2003, 2004, 2005

Everett Riverfront . 207255

Figure 1

Vicinity Map

Everett, Washington

N

0 370 740
Feet

Project Area

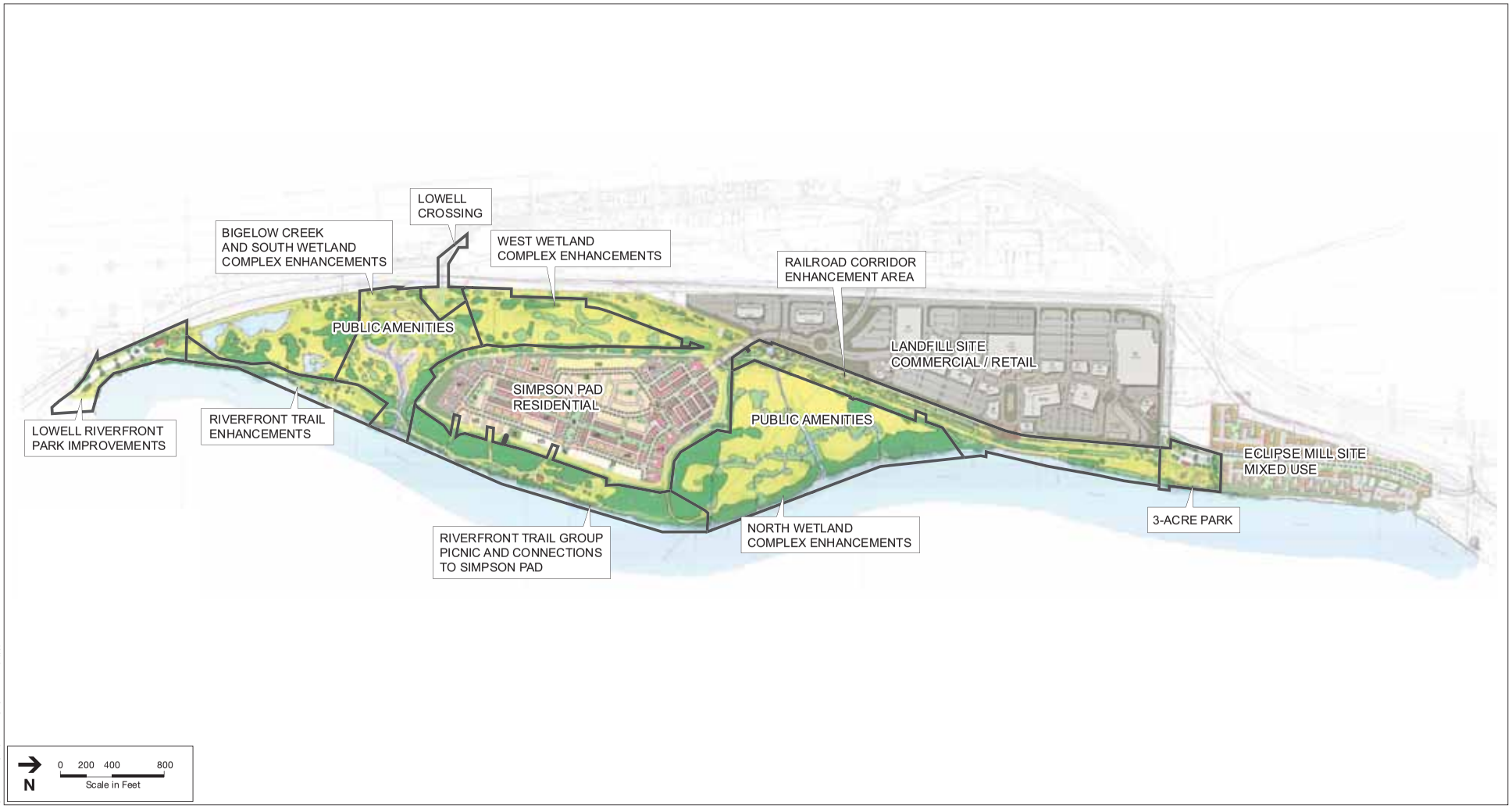
NOTE: This is a draft figure and the aerial map will be updated for the final version.

FILE NAME: Fig02_ExistingConditions.ai / BA
CREATED BY: JAB / DATE LAST UPDATED: 11/12/09

SOURCE: GeoEngineers, 2007; ESA Adolfson, 2009.

Everett Riverfront . 207255

Figure 2
Existing Conditions
Everett, Washington



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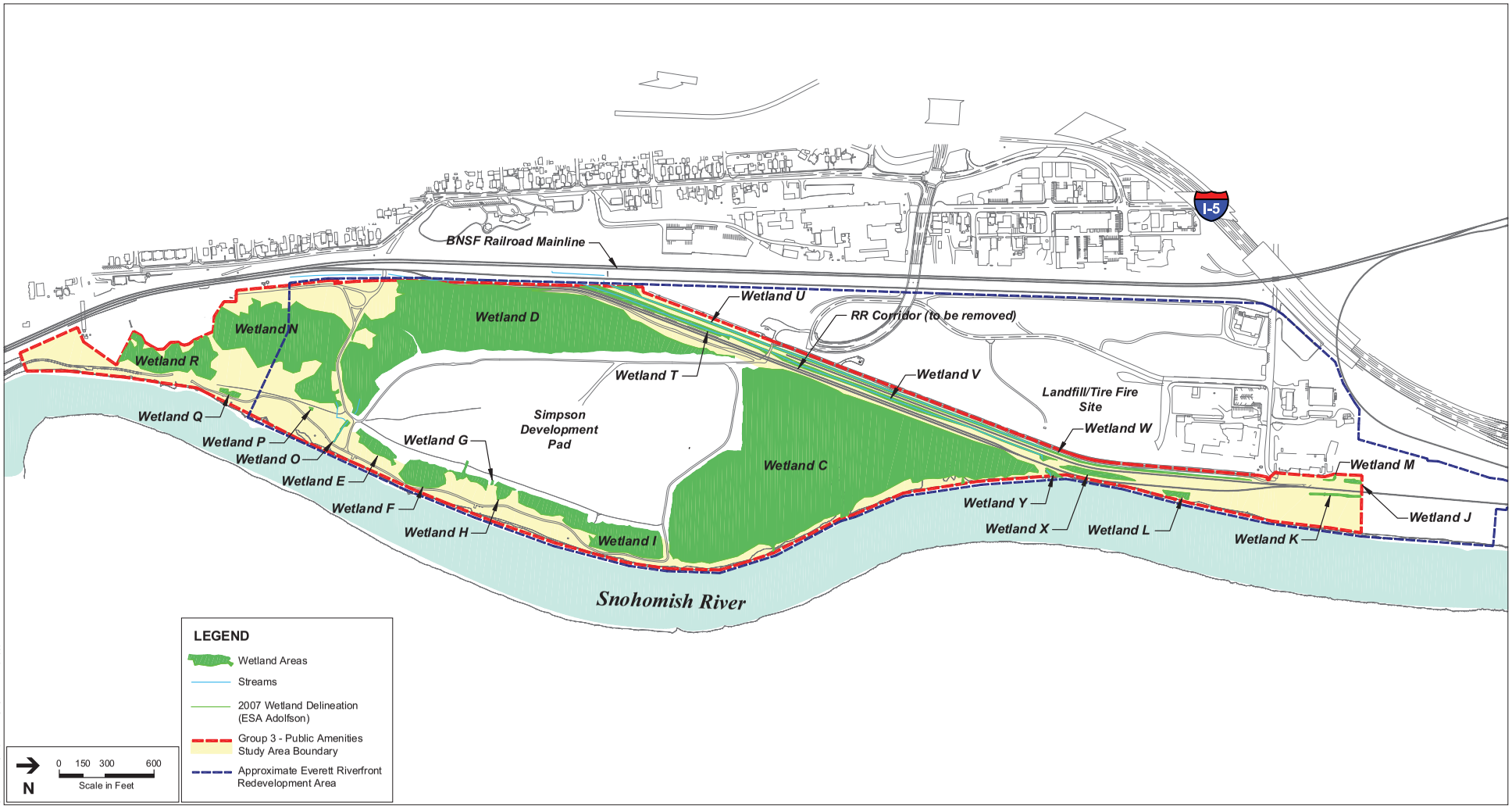
SOURCE: MacLeod Reckord.

Everett Riverfront . 207255

Figure 3
Proposed Site Layout
Everett, Washington



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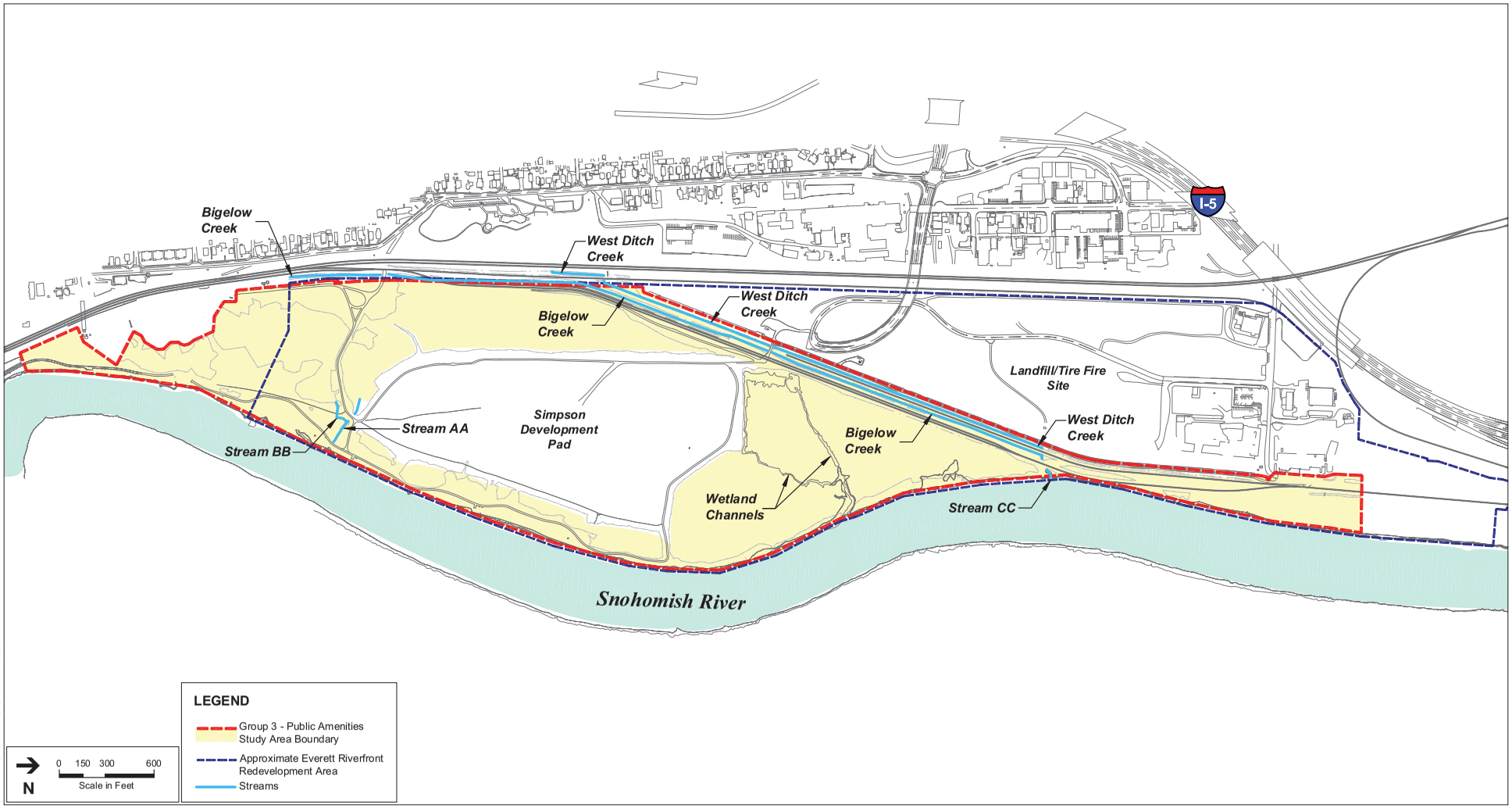
SOURCE: Perteet, 2008.

Everett Riverfront . 207255

Figure 4
Wetlands within the Study Area
Everett, Washington



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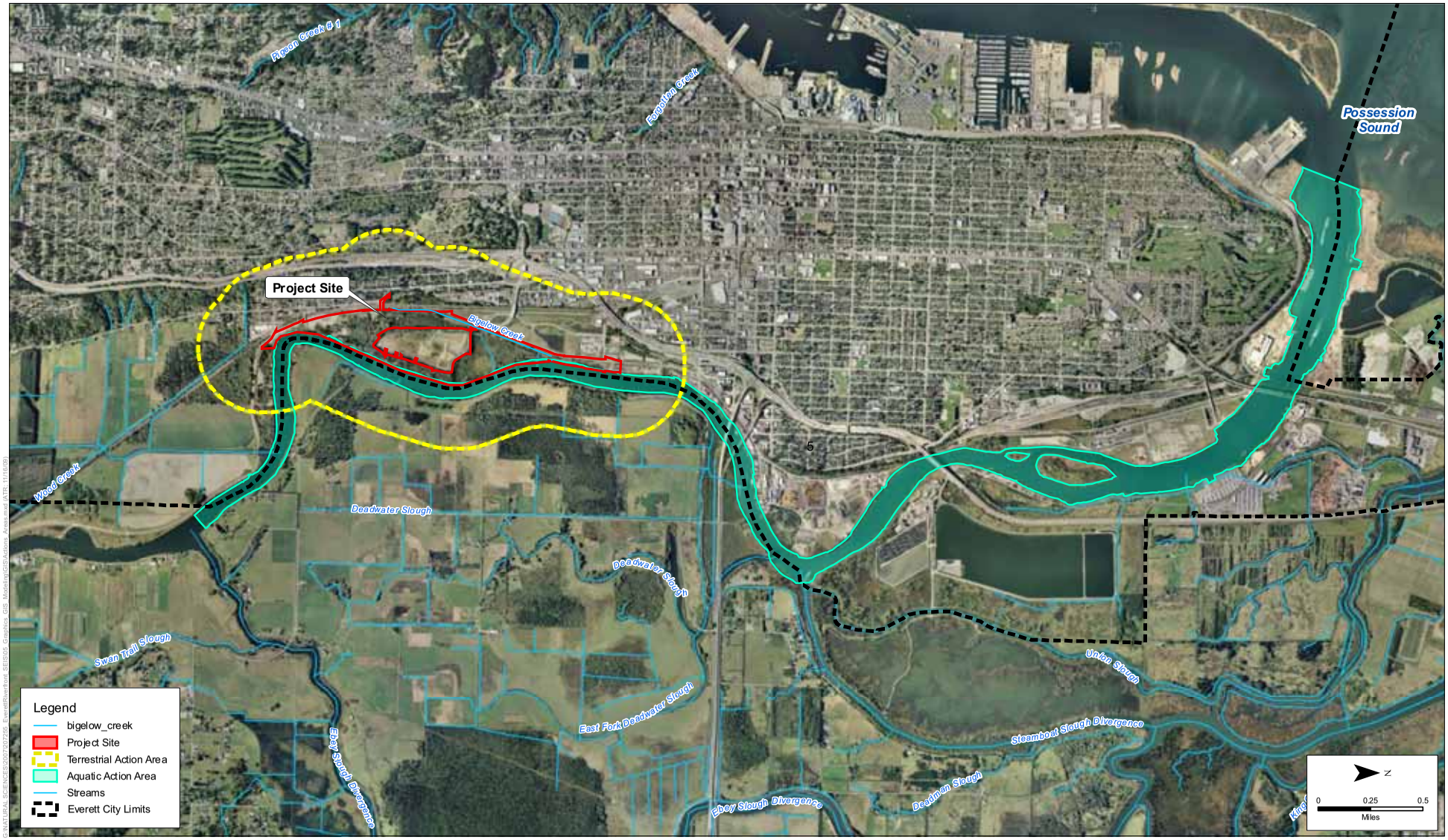
SOURCE: Perteet, 2008.

Everett Riverfront . 207255

Figure 5
Streams within the Study Area
Everett, Washington



SOURCE: Snohomish County, 2004; Microsoft Live (Aerial), 2007 (Approx)

Everett Riverfront . 207255

Figure 6
Action Areas
Everett, Washington

APPENDIX A:
ESSENTIAL FISH HABITAT ASSESSMENT

EFH Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires Federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). The Pacific Fisheries Management Council (PFMC) has designated EFH for the Pacific salmon fishery, federally managed ground fishes, and coastal pelagic fisheries (NOAA Fisheries 1999; PFMC 1999).

The EFH designation for the Pacific salmon fishery includes all those streams, lakes, ponds, wetlands, and other water bodies, currently or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers indentified by PFMC (1999). In estuarine and marine environments, proposed designated EFH extends from near-shore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone offshore of Washington, Oregon, and California north of Point Conception (PFMC, 1999).

The Pacific salmon management unit includes Chinook, coho, and pink salmon. All three species have been documented in the Snohomish River. The project area does not provide any spawning habitat for these species due its location within the tidally influenced lower reach of the Snohomish River, which lacks suitable spawning substrate; however, the project area does provide adequate habitat for adult migration, juvenile out-migration, and the physiological transformations that take place prior to entry into salt water for the juveniles and returns to freshwater for adults of all three species.

In addition to Pacific salmon, EFH has been designated for groundfish and coastal pelagic species. EFH for Pacific coast groundfish is generally defined as the aquatic habitat from the mean higher high water line, and the upriver extent of saltwater intrusion in river mouths seaward. Pacific coast groundfish that may potentially occur within the Action Area during some life history phase include: spiny dogfish, California skate, ratfish, lingcod cabezon, kelp greenling, Pacific cod, Pacific whiting (hake), sablefish, Boccacio, brown rockfish, copper rockfish, quillback rockfish, English sole Pacific sanddab, rex sole, and starry flounder. The *Coastal Pelagic Species Fishery Management Plan* describes the habitat requirements of five pelagic species: Northern anchovy, Pacific sardine, Pacific (chub) mackerel, jack mackerel and market squid (PFMC, 1998). These four finfish and market squid are treated as a single species complex because of similarities in their life histories and habitat requirements. EFH for coastal pelagic species is generally defined all marine and estuarine waters from the shoreline offshore above the thermocline.

The objective of this EFH assessment is to determine whether or not the proposed action "may adversely affect" designated EFH for relevant commercially, federally-managed fisheries species within the proposed Action Area. It also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action.

Description of the Proposed Action

For the purpose of this assessment, the proposed action for the EFH assessment and BA incorporate the same project elements. The project proponent is proposing to provide wetland and stream enhancement activities, install and upgrade existing pedestrian trails, develop a 3-acre park with associated dock structure into the Snohomish River, upgrade and pave parking areas, and provide some limited streambank stabilization work along the Snohomish River. A detailed description of the proposed action is included in Section 3.0 of the BA.

Potential Adverse Effects of the Proposed Action

Potential impacts of the proposed action to ESA listed fish species and habitats are discussed in Section 8.0 of this BA and are expected to be similar for all federally managed fish species that occur within the Action Area.

Adverse Effects on Essential Fish Habitat for Salmonids

Adverse effects on EFH for salmonids is primarily related to reduced water quality (sedimentation and turbidity) as a result of sediment disturbance during dock installation, clearing, grading, excavation and fill activities associated with wetland and stream enhancement activities, trail construction dock installation, construction of picnic facilities, and shoreline stabilization work. The disturbance of sediments will be minimized adherence to a TESC plan and installation and monitoring of appropriate erosion control BMPs during construction, limiting earthwork to only those areas necessary to complete that phase of construction, stabilization of disturbed soils shortly after work is completed, and adhering to approved in-water work windows. These effects are anticipated to be short in duration and are not expected to persist following construction.

Other effects include long-term habitat degradation through increased human activity at the site and development of the shoreline. A short-term increase in underwater noise levels and resuspension of bottom sediments, as a result of pile driving, and short term impacts to forage fish species as they may avoid the project area during construction thereby increasing energy expenditure and competition for resources.

Adverse Effects on Essential Fish Habitat for Ground Fishes

Potential adverse effects on EFH for ground fishes are similar to that discussed above for salmonids. Ground fishes associated with bottom sediments such as flat fishes may be temporarily displaced during construction and benthic prey organisms may be removed and ground fishes may compete for other resources. The small area of impact, prey availability in adjacent habitats, and the temporary nature of the disturbance will minimize adverse effects of the action upon ground fish.

Adverse Effects on Essential Fish Habitat for Coastal Pelagic Species

Potential adverse effects on EFH for coastal pelagic species are similar to that discussed above for salmonids and groundfishes.

Essential Fish Habitat Conservation Measures

The following measures will be implemented to minimize the potential adverse effects on designated EFH described above:

- The engineer will limit the amount of soil disturbance to that which can be adequately controlled.
- Limit soil disturbing activities to the summer and early fall months when precipitation is least likely to occur.
- Placement of temporary fencing around critical areas such as streams and wetlands to prevent inadvertent disturbance, where necessary.
- Plant or pave disturbed areas as soon as possible after completion of construction.
- Construction entrances will contain either rock pads or tire wash facilities to prevent tracking of soil onto local roadways and further to prevent the potential for sedimentation and turbidity of receiving waters as a result of runoff from roadways.
- All stockpile areas will be contained and protected by erosion control measures such as silt fencing, and straw bales. Stockpiles shall also be covered if inclement weather is forecast.
- Appropriate stockpile and staging areas will be identified and approved prior to construction.
- Staging areas will be located in areas that will prevent the potential of contamination of any wetland or water body. Servicing and refueling of vehicles will not occur within 150 feet of the river to reduce potential spills of petroleum and hydraulic fluids in sensitive areas. Additionally, drip pans will be fitted with absorbent pads and placed under all equipment being fueled.
- Appropriate temporary erosion and sediment control (TESC) plans will be approved prior to construction and comply with the City's erosion control standards.
- During construction, monitoring programs could be required to ensure compliance with the site erosion control plan and with local regulatory requirements. A Stormwater Pollution Prevention Plan (SWPPP) and Temporary Erosion and Sediment Control (TESC) plan are being included within project design documents.
- Routine inspections of erosion-control and sediment-control BMPs will be performed as well as BMP maintenance.
- The engineer will limit the amount of soil disturbance to that which can be adequately controlled.
- Turbidity curtains may be necessary during soil disturbance activities along the Shoreline of the Snohomish River

- Concrete piles for in-water construction will be used in lieu of steel piles and will be cured prior to installation. Steel piles, if necessary, may only be used if proofing piles with an impact hammer is not required and a vibratory hammer is used to install piles.
- The use of sound dampening equipment during pile driving to attenuate both underwater sound pressure and terrestrial noise levels. This may include use of wood blocks between the impact hammer and pile or bubble curtain, although the use of a bubble curtain may be ineffective in areas with higher current.
- A Spill Prevention Control and Countermeasure Plan will be in place prior to commencing construction activities.
- All vehicles operated within 150 feet of any stream or waterbody will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation. When not in use, all vehicles will be stored on paved surfaces in the staging areas. Other vehicles that may be stored in place will be inspected daily for fluid leaks.
- All mechanical equipment will be fueled at least 150 feet from surface waters. All vehicles will be inspected daily for fluid leaks. Spill response equipment will be on-site for potential fluid leakage.
- Work within the Snohomish River and Snohomish River tributary streams will require a Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife (WDFW). The project will comply with all permit conditions to minimize impacts on aquatic resources. The approved in-water work window is anticipated to be from June 1 to October 31 to minimize impacts to bull trout, steelhead and Chinook.
- Equipment operating below the OHWM will use vegetable oil-based hydraulic fluids.
- Fish removal activities will be restricted to the later summer months when adult and juvenile salmonid presence is least likely to occur and when flows are at their lowest point, in accordance with the HPA.
- Fish removal and work area isolation will incorporate NMFS fish exclusion protocols and standards. Fish will be removed from the action area by the least harmful methods.
- Disturbed areas around the construction area will be replanted.

Conclusion and Effect Determination

EFH for Pacific salmon, coastal pelagic species, and ground fish are present in the project Action Area. The proposed action may potentially increase sediment load and turbidity, potentially degrade water quality due to presence of heavy equipment in and near surface waters, and increase underwater sound pressure levels during pile driving activities. These effects are expected to be short in duration and will not persist beyond the construction period. Over the long term, the installed dock and increased human activity at the site may provide addition sources of contamination through increased boat traffic and use of the shoreline habitat and will permanently remove in-water habitat (pile footprint) from use by federally managed species. Therefore, the proposed action **may adversely affect** EFH for all federally managed species.

However, the proposed action is anticipated to be beneficial to EFH in the project area by improving connections to off-channel habitats, improving riparian habitat conditions by removing fish passage barriers and planting native tree and shrub species, which will also improve sediment delivery to the Snohomish River and increase LWD recruitment to the lower Snohomish River system over the long-term; which will benefit EFH for all federally managed species.

EFH References

PFMC. 1998. The Coastal Pelagic Fishery Management Plan: Amendment 8. Pacific Fishery Management Council.

PFMC 1999. Amendment 14 to the Pacific Coast salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon. Pacific salmon Management Council.

APPENDIX B: SPECIES LISTS

Endangered Species Act Status of West Coast Salmon & Steelhead

(Updated July 1, 2009)

Species[1]			*Current Endangered Species Act Listing Status*[2]	*ESA Listing Actions Under Review*
Sockeye Salmon (*Oncorhynchus nerka*)	1	Snake River	***Endangered***	
	2	Ozette Lake	***Threatened***	
	3	Baker River	*Not Warranted*	
	4	Okanogan River	*Not Warranted*	
	5	Lake Wenatchee	*Not Warranted*	
	6	Quinalt Lake	*Not Warranted*	
	7	Lake Pleasant	*Not Warranted*	
Chinook Salmon (*O. tshawytscha*)	8	Sacramento River Winter-run	***Endangered***	
	9	Upper Columbia River Spring-run	***Endangered***	
	10	Snake River Spring/Summer-run	***Threatened***	
	11	Snake River Fall-run	***Threatened***	
	12	Puget Sound	***Threatened***	
	13	Lower Columbia River	***Threatened***	
	14	Upper Willamette River	***Threatened***	
	15	Central Valley Spring-run	***Threatened***	
	16	California Coastal	***Threatened***	
	17	Central Valley Fall and Late Fall-run	***Species of Concern***	
	18	Upper Klamath-Trinity Rivers	*Not Warranted*	
	19	Oregon Coast	*Not Warranted*	
	20	Washington Coast	*Not Warranted*	
	21	Middle Columbia River spring-run	*Not Warranted*	
	22	Upper Columbia River summer/fall-run	*Not Warranted*	
	23	Southern Oregon and Northern California Coast	*Not Warranted*	
	24	Deschutes River summer/fall-run	*Not Warranted*	
Coho Salmon (*O. kisutch*)	25	Central California Coast	***Endangered***	
	26	Southern Oregon/Northern California	***Threatened***	
	27	Lower Columbia River	***Threatened***	• Critical habitat
	28	Oregon Coast	***Threatened***	
	29	Southwest Washington	*Undetermined*	
	30	Puget Sound/Strait of Georgia	***Species of Concern***	
	31	Olympic Peninsula	*Not Warranted*	
Chum Salmon (*O. keta*)	32	Hood Canal Summer-run	***Threatened***	
	33	Columbia River	***Threatened***	
	34	Puget Sound/Strait of Georgia	*Not Warranted*	
	35	Pacific Coast	*Not Warranted*	
Steelhead (*O. mykiss*)	36	Southern California	***Endangered***	
	37	Upper Columbia River	***Threatened***	
	38	Central California Coast	***Threatened***	
	39	South Central California Coast	***Threatened***	
	40	Snake River Basin	***Threatened***	
	41	Lower Columbia River	***Threatened***	
	42	California Central Valley	***Threatened***	
	43	Upper Willamette River	***Threatened***	
	44	Middle Columbia River	***Threatened***	
	45	Northern California	***Threatened***	
	46	Oregon Coast	***Species of Concern***	
	47	Southwest Washington	*Not Warranted*	
	48	Olympic Peninsula	*Not Warranted*	
	49	Puget Sound	***Threatened***	• Critical habitat
	50	Klamath Mountains Province	*Not Warranted*	
Pink Salmon (*O. gorbuscha*)	51	Even-year	*Not Warranted*	
	52	Odd-year	*Not Warranted*	

1 The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NOAA Fisheries Service considers an evolutionarily significant unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NOAA Fisheries Service has delineated distinct population segments (DPSs) for consideration as "species" under the ESA.

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN IN SNOHOMISH COUNTY AS PREPARED BY THE U.S. FISH AND WILDLIFE SERVICE WESTERN WASHINGTON FISH AND WILDLIFE OFFICE

(Revised November 1, 2007)

LISTED

Bull trout (*Salvelinus confluentus*)

Canada lynx (*Lynx canadensis*)

Gray wolf (*Canis lupus*)

Grizzly bear (*Ursus arctos = U. a. horribilis*)

Marbled murrelet (*Brachyramphus marmoratus*)

Northern spotted owl (*Strix occidentalis caurina*)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed species include:

1. Level of use of the project area by listed species.
2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

DESIGNATED

Critical habitat for bull trout

Critical habitat for the marbled murrelet

Critical habitat for the northern spotted owl

PROPOSED

None

CANDIDATE

Oregon spotted frog (*Rana pretiosa*)
Yellow-billed cuckoo (*Coccyzus americanus*)

SPECIES OF CONCERN

Bald eagle (*Haliaeetus leucocephalus*)
Beller's ground beetle (*Agonum belleri*)
California wolverine (*Gulo gulo luteus*)
Cascades frog (*Rana cascadae*)
Long-eared myotis (*Myotis evotis*)
Long-legged myotis (*Myotis volans*)
Northern goshawk (*Accipiter gentilis*)
Olive-sided flycatcher (*Contopus cooperi*)
Pacific lamprey (*Lampetra tridentata*)
Pacific Townsend=s big-eared bat (*Corynorhinus townsendii townsendii*)
Peregrine falcon (*Falco peregrinus*)
River lamprey (*Lampetra ayresi*)
Tailed frog (*Ascaphus truei*)
Western toad (*Bufo boreas*)
Botrychium pedunculosum (stalked moonwort)

ESA-Listed Marine Mammals

Under the jurisdiction of NOAA Fisheries Service that may occur:

off Washington & Oregon

- Southern Resident Killer Whale (E), *Orcinus orca*; critical habitat
- Humpback Whale (E), *Megaptera novaeangliae*
- Blue Whale (E), *Balaenoptera musculus*
- Fin Whale (E), *Balaenoptera physalus*
- Sei Whale (E), *Balaenoptera borealis*
- Sperm Whale (E), *Physeter macrocephalus*
- Steller Sea Lion (T), *Eumetopias jubatus*; critical habitat

in Puget Sound

- Southern Resident Killer Whale (E), *Orcinus orca*; critical habitat
- Humpback Whale (E), *Megaptera novaeangliae*
- Steller Sea Lion (T), *Eumetopias jubatus*; critical habitat

(E) = Endangered
(T) = Threatened

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APPENDIX C: LISTED SPECIES LIFE HISTORY INFORMATION

Puget Sound ESU Chinook Salmon Life History

NMFS completed an ESA status review of Chinook salmon populations from Washington, Oregon, Idaho, and California and defined 15 evolutionarily significant units (ESUs) within the region. Naturally spawned spring, summer/fall, and fall Chinook salmon runs from the Puget Sound ESU were considered likely to become endangered in the foreseeable future (Myers et al. 1998). The abundance of Chinook salmon in the Puget Sound ESU has declined substantially from historic levels, and there is concern over the effects of hatchery supplementation on genetic fitness of stocks, as well as severely degraded spawning and rearing habitats throughout the area (Myers et al., 1998). In addition, harvest exploitation rates in excess of 90 percent were estimated to occur on some Puget Sound Chinook salmon stocks. Subsequent to this status review, NMFS issued a ruling in May 1999 listing the Puget Sound ESU as threatened (NMFS, 1999b). Primary factors contributing to declines in Chinook salmon in the Puget Sound ESU include habitat blockages, hatchery introgression, urbanization, logging, hydropower development, harvests, and flood control (NMFS, 1998).

Chinook salmon have a historic range from the Ventura River in California to Point Hope, Alaska in North America; and from Hokkaido, Japan to Anadyr River in Russia (63 Federal Register 45 and Myers *et al.* 1998). Chinook require varied habitats during different phases of their life. Spawning habitat typically consists of riffles and the tailouts of pools with clean substrates dominated by cobbles. These habitats are located in the mainstem of rivers and large tributaries. Juvenile Chinook rear in the lower mainstem of rivers and tributaries before entering the estuary and salt marshes (Myers et al., 1998). Adult Chinook salmon spawn in freshwater streams in the late summer and fall. Fry emerge in the late winter and early spring. Juvenile Chinook may rear in freshwater from three months to two years (63 Federal Register 45; Weitkamp et al., 2000); however, most juvenile Chinook in the Puget Sound Basin are expected to smolt within the first year after emergence. Chinook generally migrate to salt water in the spring and summer. Most Chinook spend from two to four years feeding in the North Pacific before returning to spawn. Adult Chinook salmon return to spawn in their natal streams from mid-May through October (Myers et al., 1998). Chinook salmon die after spawning.

Puget Sound DPS Steelhead

On May 7, 2007, the National Marine Fisheries Service (NMFS) announced the listing of the Puget Sound distinct population segment (DPS) of steelhead as a threatened species under the Endangered Species Act. The listing was published in the Federal Register on May 11, 2007 and took effect on June 11, 2007. The DPS includes all naturally spawned anadromous winter-run and summer-run populations in streams and river basins of the Strait of Juan de Fuca (east of and including the Elwha River), Puget Sound (north to include the Nooksack River), and Hood Canal.

Possible factors influencing the depletion of Puget Sound steelhead populations include habitat destruction and fragmentation, inadequate regulatory mechanisms of hatchery practices and land use activities, and potential genetic introgression between hatchery - and natural-origin steelhead. Presently, the species distribution extends from the Kamchatka Peninsula, east and south along the Pacific coast of North America, to at least Malibu Creek in southern California.

Presently, the species distribution extends from the Kamchatka Peninsula, east and south along the Pacific coast of North America, to at least Malibu Creek in southern California. The Puget Sound steelhead Distinct Population Segment (DPS) distribution extends from the United States/Canada border and includes river basins of the Strait of Juan de Fuca (east of and including the Elwha River), Puget Sound (north to include the Nooksack River), and Hood Canal. Steelhead exhibit one of the most complex suite of life history traits of any salmonid species. Steelhead may be anadromous or freshwater residents (which are usually referred to as rainbow or redband trout). Biologically, steelhead can be divided into two reproductive ecotypes: "stream maturing" and "ocean maturing." Stream maturing, or summer run steelhead enter fresh water in a sexually immature condition and require several months to mature and spawn. Ocean maturing, or winter run steelhead enter fresh water with well-developed gonads and spawn shortly after river entry. Steelhead adults typically spawn between December and June. Depending on water temperature, steelhead eggs may incubate in redds for 1.5 to 4 months before hatching. Puget Sound DPS steelhead typically smolt after 2 years, though they may spend 1 to 4 years in fresh water. They then reside in marine waters for typically 2 or 3 years prior to returning to their natal stream to spawn. Steelhead are iteroparous, but rarely spawn more than twice before dying; most that do so are females (64 CFR 222).

Coastal – Puget Sound Bull Trout

In 1998, USFWS completed a status review of bull trout, identifying five distinct population segments (DPSs) in the continental U.S. (USFWS, 1998a). The Coastal-Puget Sound bull trout DPS is composed of 34 subpopulations (USFWS, 1998b and 1999a). USFWS listed bull trout in the Coastal-Puget Sound DPS as threatened under the ESA on November 1, 1999 (USFWS, 1999a).

Bull trout have a complex life history that includes a resident form and a migratory form. The individuals of the migratory form may be stream dwelling (fluvial), lake dwelling (adfluvial), or ocean/estuarine dwelling (anadromous) (USFWS 1998). Resident bull trout spend their entire life cycle within their natal or nearby streams. Fluvial populations spawn in tributary streams where the young rear from two to three years before migrating to a river where they grow to maturity (Knowles and Gumtow 1999). Adfluvial forms spawn and rear in headwater streams like fluvial fish, but migrate to lakes and reservoirs to mature (KCDNR 2000). Anadromous bull trout spawn in tributary streams, with major growth and maturation occurring in the marine or estuarine environment (Sims, 2000). Individuals of each form may be represented in a single population; however, migratory populations may dominate where migration corridors and subadult rearing habitats are in good condition (USFWS, 1998).

Like many other salmonids, bull trout migrate to fresh water streams to spawn. Spawning begins in late August, peaking in September and October, and ending in November (WDFW, 2000). Bull trout spawn in streams with clean gravel substrates and cold water temperatures (less than 9ºC/48ºF) (USFWS, 1998). Redds are dug by females in water 8 to 24 inches deep, in substrate gravels 0.2 to 2 inches in diameter (Wydoski and Whitney, 1979). Fecundity for bull trout can reach up to 5,000 eggs. Emergence from the streambed typically occurs in late winter and early spring (KCDNR, 2000). Among migratory forms (fluvial, adfluvial, and anadromous), outmigration to larger rivers, lakes and the ocean most commonly occurs at age two, but has been observed for ages of one to three years.

Bull trout are opportunistic feeders, consuming fish in the water column and insects on the bottom (WDW, 1991). Low stream temperatures and clean substrates are key features of bull trout habitat. This species is most commonly associated with pristine or only slightly disturbed basins (USFWS, 1998).

The Coastal-Puget Sound DPS of bull trout, which includes bull trout of the Snohomish River, is unique because it is thought to contain the only anadromous forms of bull trout within the continental U.S. (USFWS, 1998a). The status of the migratory (fluvial, adfluvial, and anadromous) forms is of greatest concern throughout most of their range. The majority of the remaining populations in some areas may be largely composed of resident bull trout (Leary et al., 1991; Williams and Mullan, 1992).

Marbled Murrelet

USFWS listed marbled murrelets as threatened under the ESA in 1992 due to a decline in abundance and habitat degradation in the southern portion of their range. Marbled murrelets are marine birds that forage in nearshore environments from northern California through Alaska. They nest in mature coniferous forests west of the Cascade crest at low to moderate elevations (Smith et al., 1997). Marbled murrelets are resident year-round on coastal waters. Exact numbers are unknown. Historical data are limited, but murrelets are currently rare and uncommon in areas where they were common or abundant in the early 1900s, especially along the southern coast of Washington, northern coast of Oregon, and coast of California south of Humboldt County (Sealy and Carter, 1984; Marshall, 1988; Carter and Erickson, 1992; Nelson et al., 1992; Ralph, 1994). An estimate for the number of individuals in Washington is 5,000 to 6,000 birds (Speich et al., 1992; Speich and Wahl, 1995). The breeding population in Washington is estimated to be 1,900 to 3,500 pairs (Speich et al., 1992).

Marbled murrelet population decline has been attributed primarily to the loss and fragmentation of old-growth nesting habitat caused by logging and development (Ralph and Miller, 1995). It is believed that forest fragmentation may be making nests near forest edges vulnerable to predation by other birds, such as jays, crows, ravens, and great-horned owls. In addition, this species is vulnerable to fishing nets and oil spills (Marshall, 1988).

The USFWS conducted a 5-year review of marbled murrelet status in 2003 (USFWS, 2004b). Based on available information in the Washington, Oregon, and California, the status review estimated there are currently 2,223,048 acres of suitable murrelet nesting habitat. The status review found that the marbled murrelet population is not stable through reproduction due to low fecundity levels across the 3-state area, as determined through nest success values (i.e., the number of fledglings per breeding pair of murrelets per year). In general, both radio telemetry and at-sea survey methods indicate that murrelet breeding success appears to decline from north to south. Predation has consistently been the most significant cause of nest failure. Murrelets appear to select platforms that provide protection from predation (USFWS, 2006). The factors affecting rates of predation on murrelet nests are not fully clear, yet key elements seem to be proximity to humans, abundance of avian predators, and proximity and type of forest edge to the nest. The status review did not find that a change in classification from threatened was warranted.

Steller Sea Lion

The Steller sea lion ranges from the Channel Islands off the southern California coast north to the Bering Sea. These are relatively large mammals, weighing up to 2,200 pounds. They are opportunistic predators that forage on squid, herring, and other fish (including salmonids) at depths up to 600 feet (Ingles, 1965; Carl, 1971). Some Steller sea lions have also been known to hunt seals and sea otter pups to supplement their diet (NMFS, 2005). Males mature between 3-8 years of age, while females begin to reproduce at ages 4-6 (NMFS, 2005). Although they occur regularly in Puget Sound, populations of this species are largest in waters off the coast of British Columbia and Alaska. Breeding colonies occur on islands along the Oregon coast, the Scott Islands (north of Vancouver Island), and on British Columbia and Alaska coastal islands. Pupping and breeding occur in May and July.

The species is divided into two distinct stocks, the eastern and western, at 144 degrees west latitude. The western stock, which encompasses the Aleutian Islands, Commander Islands, Japan and Siberia, has seen dramatic declines over the past quarter century (NMFS, 2005). There is no critical habitat designated for Steller sea lions in Puget Sound. The nearest designated critical habitat for Steller sea lions is in Oregon and California, at specified haulout sites.

APPENDIX D: CANDIDATE SPECIES

Two candidate species, Oregon spotted frog and yellow-billed cuckoo have been identified as having the potential to occur near the project (USFWS, 2007). No protection for candidate species is afforded under the ESA, and Section 7 consultation or conference with USFWS is not required for anticipated affects to Oregon spotted frog or yellow-billed cuckoo. Summary information for these species is included herein in the event that they become listed or proposed for listing prior to project completion.

Life History

YELLOW-BILLED CUCKOO

The yellow-billed cuckoo (*Coccyzus americanus*) is a member of the avian family *Cuculidae*. Most species have moderate to heavy bills, somewhat elongated bodies, a ring of colored bare skin around the eye, and loose plumage. The yellow-billed cuckoo is a medium-sized bird approximately 12 inches in length and weighing about 60 grams (two ounces).

Yellow-billed cuckoos breed in large blocks of riparian habitats (particularly woodlands containing cottonwoods and willows) (Erhlich et al., 1988). Dense understory foliage appears to be an important factor in nest site selection, while cottonwood trees are an important foraging habitat in areas where the species has been studied in California (66 Federal Register 210).

Along the Sacramento River in California, nesting yellow-billed cuckoos occupied home ranges, which included 25 acres or more of riparian habitat. Nesting west of the Continental Divide occurs almost exclusively close to water, and biologists have hypothesized that the species may be restricted to nesting in moist river bottoms in the West because of humidity requirements for successful hatching and rearing of young (66 Federal Register 210).

The breeding range of the yellow-billed cuckoo formerly included most of North America, from southern Canada to the Greater Antilles and northern Mexico. In recent years, the species' distribution in the West has declined. The northern limit of breeding in the coastal states is now in Sacramento Valley, California (66 Federal Register 210). The species overwinters from Columbia and Venezuela, south to northern Argentina (Ehrlich et al., 1992; 66 Federal Register 210).

The available data suggest that the yellow-billed cuckoo's range and population numbers have declined substantially across much of the western United States over the past 50 years. Based on historic accounts, the species was widespread and locally common in California and Arizona; locally common along a few river reaches in New Mexico; common very locally in Oregon and Washington; generally local and uncommon in scattered drainages of the arid and semi-arid portions of western Colorado, western Wyoming, Idaho, Nevada, and Utah; and probably uncommon and very local in British Columbia. In the Pacific Northwest, the species was formerly fairly common locally in willow river bottoms along the Willamette and Columbia Rivers in Oregon; in the Puget Sound lowlands; and along the lower Columbia River in Washington. The species was rare east of the Cascade Mountains in the states and provinces. The last confirmed breeding records were in the 1930s in Washington and in the 1940s in Oregon. This species may now be extirpated from Washington (66 Federal Register 210).

OREGON SPOTTED FROG

The Oregon spotted frog is endemic to the Pacific Northwest, historically distributed in the Puget Trough Physiographic Province as well as the Willamette Valley province and the Cascade Mountains of south-central Washington and Oregon (McAllister and Leonard, 1997). In Washington they were historically distributed through the lowlands of Puget Trough from the Canadian border south to Vancouver Island and east into the southern Washington Cascades (McAllister et al., 1993; McAllister, 1995). Only four populations are extant in Washington today, one in south Puget Sound lowlands (Mason County), one in Thurston County at Dempsey Creek, and two in the Cascade Mountain range in south-central Washington (WDFW, 2000; McAllister and Leonard, 1997). The spotted frog (*Rana pretiosa*) is nearly always found in or near emergent wetlands within forested areas and is also associated with lakes in the prairie landscape of the Puget Sound lowlands (Slipp, 1940). Though not typically found in locations with a forest canopy, spotted frogs have been found in riparian areas with dense shrub cover (McAllister and Leonard, 1997). Project construction will occur in emergent wetlands and riparian areas adjacent to the Snohomish River and Bigelow Creek. The Oregon spotted frogs is not anticipated to be present due to the past land uses at the site (industrial), limited distribution, and degraded habitat conditions at the site.

Effects Analysis

YELLOW-BILLED CUCKOO

The potential effects to the yellow-billed cuckoo are related to its occurrence in the Action Area and anticipated alterations to suitable habitat. No effects to the yellow-billed cuckoo are anticipated because this species is no expected to occur in the project vicinity. The last confirmed breeding records for the yellow-billed cuckoo were in the 1930s in Washington and in the 1940s in Oregon, and the species was historically rare east of the Cascades (66 Federal Register 210). A yellow billed cuckoo was observed flying over Interstate 5 (I-5) near 220th Street several miles south of the project Action Area in 2000. Immature cottonwood trees are located in the project vicinity. These trees are sparse in the project area, as is healthy, contiguous riparian habitat of significant acreage sufficient to support this species. Past land use (industrial) has resulted in degraded habitat conditions, making it unlikely the project area would contain suitable habitat for the yellow-billed cuckoo. However, this species may occasionally occur in the Action Area.

OREGON SPOTTED FROG

Oregon spotted frog habitat (freshwater riparian riverine, riverine corridors, wetlands, and wetland/upland complexes with less than 1 kilometer between wetlands) does occur within the Action Area. The proposed action will impact mostly riparian and wetland habitats, including emergent wetlands, areas that are preferred by this species. Due past land uses, degraded habitat conditions, and commercial development, and the lack of documented occurrence in the project area, Oregon spotted frogs are not anticipated to occur in the Action Area.

Candidate Species Effect Determination

YELLOW-BILLED CUCKOO and OREGON SPOTTED FROG

This assessment has identified that the yellow-billed cuckoo and Oregon spotted frog are unlikely to occur within the vicinity of the proposed project area. The proposed action **is not likely to significantly affect** yellow-billed cuckoo or Oregon spotted frog populations, individuals, or suitable habitat.

If these species become proposed for listing or are listed under the ESA prior to completion of the proposed action, the action agency will confer with the USFWS to determine if additional coordination or consultation is warranted. In the interim, the provisional effect determination for these species is **no effect**.