Final Environmental Assessment

Puyallup River Side Channel Real Estate Actions

Pierce County, Washington

March 2005

US Army Corps of Engineers®
Seattle District

Puyallup River Side Channel
Real Estate Actions

Final Environmental Assessment

March 2005

Responsible Agency: The responsible agency for this work is the U.S. Army Corps of Engineers, Seattle District.

Summary: This document evaluates the effects of real estate actions by the U.S. Army Corps of Engineers (Corps). The actions are in support of a compensatory mitigation project proposed by the City of Tacoma (City) called the Puyallup River Side Channel Project. The City's purpose is to offset habitat impacts associated with Superfund remedial actions in the Thea Foss Waterway (Commencement Bay Nearshore/Tideflats Superfund site).

For the work proposed by the City, a perpetual flood control levee easement will be granted by the City to the Corps. The Corps will lease its fee land to the City for the wetland enhancement project. Finally, the Corps will issue a license for work on the existing levee that currently exists in Corps navigation servitude. The new levee would be constructed by the City on City property. Construction of the habitat project itself is not specifically addressed by this document as it is a separate action by the City. This environmental assessment is intended to meet the Corps' requirements under the National Environmental Policy Act, consistent with Corps implementing regulations (ER 200-2-2).

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

Appendix A. List Of Figures

1. INTRODUCTION

1.1. Project background

The City of Tacoma (City) is proposing to construct a wetland enhancement project along the Puyallup River in Tacoma, Washington, as compensatory mitigation for the Thea Foss and Wheeler-Osgood Waterways Superfund Remediation Project. The objective of the wetlands enhancement project, otherwise known as the Puyallup River Side Channel (PRSC), is to construct a brackish marsh habitat that will be used by juvenile salmonids for rearing and refuge. The project site is located in an area that currently supports an existing Federal flood control levee system. The City's project would require construction of a new setback levee that would become part of the Federal flood control project. This would be followed by construction of the mitigation project and breaching the existing Federal flood control levee.

The PRSC will be constructed on United States Army Corps of Engineers (Corps) and City property that was historically part of the Puyallup River channel. This requires certain real estate actions to occur allowing each party to conduct work on property owned by the other. This Environmental Assessment (EA) evaluates the effects of these real estate actions. The EA also evaluates expected effects of the PRSC project so that a complete picture of the long-term consequences of the real estate actions is presented. The PRSC project itself is a separate action by the City that is not specifically addressed by this EA.

The PRSC site is located within the Tacoma Tideflats adjacent to the west side of the Puyallup River in the City of Tacoma, Pierce County, Washington (Figure 1). The site lies in the NW ¼ of Section 03, Township 20 North, Range 3 East. Access to the site is via Portland Avenue and the East 18th Street Right of Way.

1.2. Purpose and need

The purpose of the real estate actions is to support construction of the PRSC mitigation project by the City.

The purpose of the PRSC mitigation project is to offset impacts associated with filling aquatic habitat associated with remedial actions in Thea Foss Waterway as part of the Commencement Bay Nearshore/Tideflats Superfund Site. Additional detail about the Superfund activities and the mitigation project can be found at http://yosemite.epa.gov/r10/cleanup.nsf/webpage/Superfund+(CERCLA)#sites.

1.3. Authority

The Tacoma Puyallup River Project was authorized by the Flood Control Act of 1936 and 1938. The project is situated along the two mile stretch of the Puyallup River in the City of Tacoma, Washington. The Corps currently maintains levees for flood control along the lower Puyallup River under 33 CFR, Chapter II, Part 208.10.

The PRSC project is being constructed as compensatory mitigation for remedial activities associated with the Commencement Bay Nearshore/Tideflats Superfund Site. The Superfund project is being constructed under a Consent Decree and associated Statement of Work negotiated between the City and the EPA. The EPA is the regulatory authority and responsible agency for overseeing and authorizing the Superfund remedial actions.

2. ALTERNATIVES CONSIDERED

The development of a mitigation package (i.e., group of habitat development projects) to compensate for habitat loss resulting from the City's remedial actions for the Thea Foss and Wheeler-Osgood Waterways Remediation Project included review and development of a range of possible habitat projects. The identification and selection of habitat projects that comprise the mitigation package involved multiple parties including the EPA, National Oceanographic and Atmospheric Administration (NOAA) Fisheries, U.S. Fish and Wildlife Service (USFWS), Washington Department of Fish and Wildlife (WDFW), Citizens for a Healthy Bay (CHB, a local, public environmental group), as well as other public and private parties. Ultimately, eight habitat mitigation projects were selected, including the PRSC project. The PRSC project was selected because it provides a significant opportunity to return an area of the former river channel to productive use by salmonids and other species. The Biological Opinion (BO) written for the Thea Foss and Wheeler-Osgood Waterways Remediation Project states the following regarding the PRSC project: "This location will be the last available, downstream, off-channel habitat in the channelized lower Puyallup River when completed" (NOAA Fisheries 2004).

2.1. No-Action Alternative

NEPA requires that each EA include an analysis of the "no-action" alternative, against which other alternatives including the proposed action can be compared. Under the "no-action" alternative, the Corps would lease no real estate to the City for construction of the PRSC and the Corps would not lease real estate from the City to maintain the proposed setback levee.

2.2. Description of the Proposed Action

2.2.1. Real Estate Actions

The proposed action includes real estate actions between the Corps and the City that are required to 1) allow the City to construct the PRSC mitigation project and 2) allow the Corps to maintain the new setback levee (Figure 2). Easements will be established. No change in property ownership will occur. The proposed action includes:

1. Grant 25-year lease on 3.31 acres of Corps fee property along the Puyallup River to the City from the Corps so the City can construct and maintain the PRSC mitigation project. Lease to be renewed for operation and maintenance activities.

2. Grant 5-year license on 2.65 acres in Corps navigational servitude along the Puyallup River to the City from the Corps so the City can construct and maintain the PRSC mitigation project. License to be renewed for operation and maintenance activities.

3. Perpetual easement on 2.21 acres along the Puyallup River granted from the City to the Corps so the Corps can maintain the new setback levee.

2.2.2. Puyallup River Side Channel Project

The PRSC project including the new setback levee will be constructed by the City of Tacoma. The project description below has been provided by the City and is included here to provide a complete picture of the expected consequences of the Corps real estate actions described above.

The PRSC project will create 4.17-acres of off-channel, brackish marsh habitat by combining an existing 1.92-acre isolated wetland with new wetlands created on the adjacent 2.25-acre upland property (Figure 3). The goal of the new marsh habitat is to provide rearing and refuge habitat for juvenile salmonids. The PRSC project consists of: 1) constructing a new setback levee that ties into an existing flood control levee, 2) excavation between the existing and setback levee to construct the wetland enhancement project, 3) lowering the elevation of the existing levee (i.e., the portion of the levee in front of the new setback levee) to maximize habitat creation, and 4) breaching approximately 140 ft of the existing levee to provide a connection between the Puyallup River and the wetland (City of Tacoma 2003a).

Approximately 1,700 feet of new setback levee will be constructed that will tie into the existing levee to maintain continuous flood control. The new setback levee will be constructed to meet Corps design standards for safety and stability. It will provide flood control to replace that currently provided by the existing levee. The location of the setback levee will be excavated to an elevation of +9 feet Mean Lower Low Water (MLLW). Imported levee fill material will be used to construct the setback levee on the excavated surface. The setback levee will then be constructed to an elevation of +23 feet MLLW.

The area between the existing levee and the new setback levee will be excavated to –2 feet MLLW at its maximum depth. The elevation of the existing levee (i.e. the portion of the existing levee in front of the new setback levee) will be lowered from +21 feet MLLW to +15 feet MLLW to maximize habitat areas within the site. Approximately 140,000 cubic yards of soil and fill material predominantly comprised of wood debris and sawdust will be excavated to create the PRSC. All excavated material will be disposed offsite.

Once the habitat area and new levee are complete, the existing levee will be breached. The breach will occur at the location of an existing culvert equipped with a tide gate to allow the Puyallup River and tidal hydrology to enter the completed project area. Breach of the existing levee will occur only after July 15 and before February 15 in compliance with the fish window closure period. The breach will be armored with approximately 10,500 tons of filter material, quarry spalls, and rip rap that will be overlain with approximately 600 tons of habitat gravel.

The excavated channel (i.e., breach) and enhanced wetland will contain water during most tides. The mudflat areas below Ordinary High Water (OHW) will be left for natural colonization by native brackish marsh species and riparian assemblages that provide prey for juvenile salmonids and organic matter for export to Commencement Bay. The area on the inside of the existing levee above OHW to the top of the re-contoured levee will be planted with native riparian vegetation.

3. EXISTING CONDITIONS

3.1. Land Use

The project site is currently located within the Tacoma Tideflats that historically have been used for commercial and industrial activities. The Corps and City currently own different areas of the project site. Corps property consists of a flood control levee and some land behind the levee (Figure 2). City lands consist of vacant uplands. The project site is zoned S-9 Shoreline District, Puyallup River. The S-9 Shoreline District is an area that encompasses the Puyallup River and the area lying 200 feet landward from the Corps levees on either side of the river. Habitat improvement is a permitted use of property in this zoning district. Property located north and south of the project site along the Puyallup River is also zoned S-9.

Property located west of the site is zoned Port Maritime and Industrial (PMI) District. The PMI District is characterized by marine and industrial related activities that include shipping terminals, chemical manufacturing and distribution, forest product operations, warehousing and/or storage of cargo, and boat and/or ship building/repair.

3.2. Geology and Hydrology

The site lies within the historic delta of the Puyallup River. The nearby topography is a combination of depositional features associated with Pleistocene glaciation and subsequent erosional and depositional actions. During the last major glacial advance, which reached its maximum about 17,000 years ago, the area was covered by ice estimated to be up to 2,500 feet thick. By 16,500 years ago, much of the Puget Sound lowlands were free of ice. The glaciers left a combination of recessional till and outwash sediments, which formed a broad lowland plain throughout the region.

Up until at least 5,000 years ago, the Puyallup River flowed through a former outwash channel and entered Commencement Bay at a location approximately 10 miles upstream from the current mouth. Around 5,700 years ago, a massive lahar (mudflow) from Mount Rainier flowed down the White River Valley. The mudflow forged into Commencement Bay near the present city of Puyallup and formed the present tide flat area (EHC 2003).

By 1888, the margin of the delta extended to just north of the project site. At that time, the project site was part of the Puyallup River channel. The project site remained part of the river channel up to 1950 (Figure 4). In 1950, the Corps realigned the river and constructed a flood control levee along the lower portion of the Puyallup River. The Corps river realignment and

levee construction project moved the river channel approximately 400 feet east and placed a flood control levee on what is now the eastern boundary of the project site (Figure 5). The portion of the river channel that remained behind the new levee was partially filled with material dredged from the new river channel (EHC 2003).

Subsurface explorations were performed at the site as part of engineering analyses for the PRSC project. The southern portion of the site contained wood chips (intact and decayed) from the surface down to 5 to 15 feet. Loose sand with various amounts of silt and gravel was found below the wood chips, and approximately 4 feet of medium dense sand was found underlying the loose sand. The northern part of the site contained loose sand with various amounts of silt and gravel at the surface overlying 2 to 6 feet of medium stiff to stiff silt with various amounts of sand. Dense to very dense sand with various amounts of silt and gravel was encountered below elevations –5 to –15 feet MLLW across the entire site (City of Tacoma 2004).

3.3. Water Resources and Water Quality

In 1989, a 1.92-acre wetland was created in the northern portion of the site. The wetland is connected to the Puyallup River via a 12-24 inch pipe equipped with a tide gate. During periods of low tide, water from the wetland will flow through the culvert into the Puyallup River. The sources contributing water to the wetland are likely groundwater discharge, precipitation, and stormwater runoff from within the northern portion of the site.

Groundwater is present between approximately elevations 7.0 and 9.5 feet MLLW at the site. The depth to groundwater is approximately 7.5 to 11.5 feet below ground surface on the southern portion of the site (City of Tacoma 2003b). Groundwater likely discharges and becomes surface water at the existing wetland on the northern portion of the site. Neither groundwater nor surface water is used for drinking water or for irrigation.

Sampling and analysis of site groundwater was performed as part of engineering analyses for the project. No chemicals were detected at concentrations that exceeded the state and federal surface water quality standards (City of Tacoma 2003b).

3.4. Biological Resources

3.4.1. Habitat and Vegetation

The existing levee along the Puyallup river contains primarily grasses with some smaller shrubs and trees. Historically, vegetation along the setback levee has been mowed consistent with Corps regulations to ensure the integrity of the levee.

Behind the existing levee, habitat consists of a 1.92 acre wetland that is connected to the Puyallup River by a 12-24 inch pipe. Dominant vegetation behind the levee includes blackberry (*Rubus spp*.), butterfly bush (*Buddleia globosa*), Scotch broom (*Cytisus scoparius*), and tansy (*Tanacetum vulgare*). Wood debris is present at the surface and to various depths across the southern portion of the site likely affecting colonization by other plant species. In general, the site is highly disturbed and does not provide high functioning or unique habitat.

3.4.2. Wildlife

Vegetation on the shorelines and around the wetland may attract waterfowl and raptors that are common to the Commencement Bay area. Open-water fish eating birds (e.g., kingfishers, grebes, cormorants, terns, and mergansers) may be found along the Puyallup River, and the nearshore areas, as well as offshore. Benthic-feeding ducks (e.g., scaup, scoters, goldeneye) may be found within the waterways and near waterway mouths, and the Puyallup River. Songbirds (e.g., wrens, thrushes, vireos, warblers, sparrows, and finches) are associated with vegetated riparian areas. Owls, bald eagles, and red-tail hawk that reside in upland forests may also be found in the immediate vicinity (EPA 2000a).

Mammals that are likely to be present in the Commencement Bay area are opossum, squirrel, weasels, raccoon, river otter, mice, rats, skunk, shrews, muskrat, and nutria (EPA 2000a). These species are common in the area, but have not been specifically identified at the project site.

3.4.3. Fisheries

Although a constructed wetland is connected to the Puyallup River by a pipe, a tide gate does not allow development of a fish population or provide refuge or rearing grounds for fish species. The Puyallup River is immediately adjacent to the site and contains numerous fish species including chinook, coho, chum, and pink salmon, steelhead, and bull trout. This section of the Puyallup River is tidally influenced so likely contains numerous estuarine species similar to those found in Commencement Bay. Sampling in Commencement Bay Waterways has found numerous species including starry flounder, English sole, sandlance, smelt, and sculpins (EPA 2000a).

3.4.4. Threatened and Endangered Species

There are several threatened or endangered species in the Commencement Bay area. A Biological Assessment (BA) for the Thea Foss and Wheeler-Osgood Waterways Remediation Project (which includes the PRSC) identified Puget Sound Chinook salmon, bull trout, and bald eagle as potentially using the project site (City of Tacoma 2003c).

3.5. Air Quality

The project site is located in an industrial area. Multiple industrial and commercial facilities are present in the surrounding area that produce direct and indirect emissions to the air. Additionally, the site is located adjacent to Portland Avenue which is a traffic arterial used for commuting to and from the area and for transporting materials and products to and from industrial and commercial operations. The vehicular traffic also produces direct and indirect air emissions.

There are no activities, present or planned, which produce direct or indirect air emissions on the project site.

3.6. Solid and Hazardous Waste

A recent site investigation characterized material that will be excavated for offsite disposal and soil/sediment that will comprise the completed habitat surface. The results of the investigation identified several localized areas within the site that contained concentrations of inorganic and/or organic chemicals above their respective screening levels. Metals, PAHs, 3&4 methylphenol, benzyl alcohol, and bis (2-ethylhexyl)phthalate were detected most frequently. Debris containing brick and plastic battery casing material were also found. The results of this investigation are detailed in the Puyallup River Side Channel Wetlands Enhancement Project Site Characterization Report (City of Tacoma 2004). Various discarded debris and rubbish is also present on and around the perimeter of the site. Much of the discarded material appears to be the result of illicit dumping activities and is generally small quantities.

3.7. Historic Properties and Cultural Resources

A Cultural Resources survey was performed for the PRSC project site in 2003. The conclusion was that no historic properties exist or have existed on the project site (EHC 2003). The following sections summarize the results of the Cultural Resources evaluation.

The project lies within the historical tide flats of the Puyallup River, in a location that if used, would have been used primarily for fishing. Although the tide marshes typically were exploited for other game, the project site lies directly over the historical channel of the Puyallup River. Sediments in this channel area are associated with the deltaic river channel development. Consequently, the potential for habitation sites is non-existent (EHC 2003).

Historically the project site was a high energy (erosional) area of the river rather than a low energy area. A low energy (depositional) stretch would have a higher potential for burying cultural materials, while the nature of the channel in this area would tend to scour the bottom and destroy vestiges of cultural activities, if they existed.

3.8. Aesthetics and Recreation

The project site contains a narrow road on the top of the levee that is likely used for recreational purposes. The existing site contains a 1.92 acre wetland and pond that is used by waterfowl and provides birding opportunities. The southern portion of the site is dominated by the presence of wood debris at the surface with minimal vegetative cover. The northern portion of the site consists largely of invasive species and the wetland. In addition, piles of discarded rubbish are present on the site that detracts from its visual quality.

3.9. Socioeconomic Data

The site is currently undeveloped on the southern portion and contains a constructed wetland on the northern portion. The existing Corps levee at the project site provides flood control to protect adjacent properties and businesses from Puyallup River flows and has provided this protection since its construction in 1950. The levee is maintained by the Corps for this purpose.

There is no known resident population present within the industrial tideflat area surrounding the project site. As the area is characterized by industrial and commercial activities, people commute to and from the surrounding area for business purposes. There are no people, however, either residing or commuting to the project site for industrial or commercial activities. The project site does not provide a source of employment or income.

4. ENVIRONMENTAL EFFECTS

4.1. No Action

Under the no-action alternative, the real estate actions will not occur thus preventing construction of the PRSC and the new setback levee. The existing wetland would remain in its current condition functionally separate from the Puyallup River, and no additional habitat would be created. The southern, upland portion of the site would either remain undeveloped or it may be developed for commercial/industrial purposes. The site contains wood debris to various depths that may limit development opportunities. Waste materials and wood debris fill would remain on the southern portion of the site.

Air quality and noise levels will remain unchanged, as the project will not be constructed and no temporary declines in these parameters caused by PRSC construction activities will occur. The aesthetic and visual quality of the area will remain unchanged.

Finally, since the PRSC project will not be constructed, the City would be required to find an alternative project to satisfy their compensatory mitigation requirements.

4.2. Proposed Action

The proposed real estate actions by the Corps that are the subject of this EA will by themselves result in no adverse environmental effects. However, the direct consequence and purpose of the real estate actions are to facilitate construction of the PRSC by the City. Since the real estate transactions and PRSC are so closely tied, the expected environmental effects of the PRSC are detailed below.

4.2.1. Land Use

The real estate actions will lead to a change in the location of a portion of the Federal levee currently protecting lands along the Puyallup River. The 4.17 acre project site will no longer be protected by a flood control levee. The new setback levee will be a few hundred feet longer than the existing levee requiring a negligible increase in Corps maintenance responsibility. The proposed project would be operated and maintained as a Federal flood control project to meet its authorized purposes.

Construction of the PRSC is a permitted use of property in the S-9 (Shoreline District, Puyallup River) zoning district. Construction of the PRSC will transform a currently underutilized property into a brackish marsh habitat to be used by juvenile salmonids for rearing and refuge.

4.2.2. Geological and Hydrology

Construction of the PRSC will reconnect the project area to the Puyallup River providing aquatic habitat for salmonids and other species. Approximately 140,000 cubic yards of fill, predominantly consisting of wood debris, will be excavated to create the brackish marsh habitat. The excavation will remove fill material historically placed in the former river channel. The existing levee will be breached to allow connection between the Puyallup River and the project site. This breach will allow tidal flow and water exchange within the site.

4.2.3. Water Resources and Water Quality

Surface water resources will be greatly enhanced by construction of the PRSC project as 4.17-acres of brackish marsh habitat will be created. The PRSC project will provide critical salmon habitat in the Puyallup River system. This project will enhance the existing wetland portion of the site by increasing the total wetland area from 1.92-acres to 4.17-acres.

Construction of the PRSC will have minimal short-term effect on water quality within the Puyallup River. To protect water quality, excavation of the project site and construction of the setback levee will be performed with the existing tide gate closed and prior to breaching the existing levee. Breaching of the existing levee will occur only after July 15 and before February 15 in compliance with the fish window closure period. Additionally, water quality monitoring will be performed during construction in compliance with the project Water Quality Certification (EPA 2003b) to monitor for potential water quality impacts related to construction. This plan will include temporary erosion and sediment control measures and BMPs necessary to protect water quality in the project vicinity during construction. These BMPs may include use of silt fences, minimizing existing vegetation disturbance, minimizing stockpiled soil on-site, and completing in-water construction during periods of low tide.

4.2.4. Biological Resources

The purpose of the PRSC project is to improve habitat for biological resources in the Puyallup River and the Commencement Bay area. The PRSC project will create a 4.17-acre brackish marsh habitat connected to the Puyallup River intended for use by juvenile salmonids. Upland areas will be planted with native riparian vegetation. This type of habitat is extremely limited along the lower Puyallup River and has been identified as an important and needed type of habitat for salmonids by the resource community (Simenstad 2000). A similar project, the Gog-le-hi-te wetland constructed in 1985, is immediately upstream of the project site and served as a model for the PRSC. The PRSC will be the last available, downstream, off-channel habitat in the channelized lower Puyallup River when completed (City of Tacoma 2003c).

This project will not only provide off-channel habitat for salmonids but will also provide increased habitat for wetland related birds, amphibians and other fish species. There are several threatened or endangered species in the Commencement Bay area as described above in section 3.4.4. The PRSC will improve habitat for each one of these species including chinook salmon, bull trout, and bald eagle.

4.2.5. Air Quality

Long-term air quality will remain unchanged as a result of the construction of the PRSC. No new sources of air emissions will result from construction of the PRSC project. During construction, there will be a temporary increase in emissions and noise caused by construction equipment including excavation equipment, compactors, and dump trucks. Increased emissions will include equipment exhaust and possibly, fugitive dust caused by equipment movement. All equipment used on the project will be maintained to minimize excess exhaust emissions. Dust control measures will be performed as needed to suppress excess dust emissions. Dust control BMPs may include dust suppression through application of water to construction surfaces and/or construction access areas, removing material adhering to the outside surface of transport vehicles, sweeping paved surfaces, and/or covering loads during transport. Routine maintenance will be done on equipment to minimize air emissions. Short-term emissions from these activities are not anticipated to significantly impact air quality in the area.

4.2.6. Solid and Hazardous Waste

Construction of the PRSC will remove waste materials from the project site. Various types of debris are present at the project site including wood, brick, battery casings, and rubbish. The waste material will be characterized and disposed of at an appropriate disposal facility(s). Soil containing inorganic and/or organic chemicals will be excavated and transported off-site for disposal during construction. The remaining habitat surface will meet chemical quality criteria established for Commencement Bay.

4.2.7. Historic Properties and Cultural Resources

A Cultural Resources survey and assessment concluded that no archaeological resources, cultural resources, or historic properties exist or have existed on the project site (EHC 2003). Project construction is therefore unlikely to have any effect on cultural resources or historic properties.

4.2.8. Aesthetics and Recreation

The aesthetic and visual quality of the area will be greatly enhanced by the completion of the PRSC project. The PRSC will transform the site into an enhanced wetland habitat. Debris present at the site will be removed. The area on the inside of the existing levee will be planted with native riparian vegetation that will include willows, cottonwoods, and red alder (City of Tacoma 2003a). Recreation opportunities will be altered somewhat in that a continuous road will no longer exist along the Puyallup River. A trail will be constructed in place of the current road that will be interrupted by the breach connecting the wetland to the river. This will alter access around the site. Improved aesthetics (functional wetland, planted native species, debris removal) at the project site are expected to enhance the site for any visitors.

4.2.9. Socioeconomic data

Construction of the PRSC project will not change the socioeconomics of the project area. Since there are no residences in or near the project area, no adverse effect on local populations is expected. No adverse effect on minority or low-income populations is expected.

5. CUMULATIVE IMPACTS

NEPA defines cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR §1508.7).

Over the past 100 years, habitat in Commencement Bay has been altered by dredging, filling, sewage and industrial discharges, and other anthropogenic activities. A portion of Commencement Bay was designated as a Superfund site in 1981 (Commencement Bay Nearshore/Tideflats Superfund Site). Toxic chemicals and heavy metals introduced into the bay from a number of industrial activities continue to have adverse effects on the aquatic environment including benthic organisms, fish, marine mammals, and marine birds. In 1993, the effects of these changes were assessed in the Commencement Bay Cumulative Impacts Study (USACE et. al. 1993). The historic trend in Commencement Bay is one of degradation, particularly with respect to habitat quantity and water/sediment quality.

Cleanup efforts are ongoing within and around the bay, and there is a general trend of improving habitat conditions. Ongoing cleanup efforts, such as dredging and capping of contaminated sediments in the neighboring Thea Foss, Middle, and Hylebos waterways, may result in temporary stress to species in the bay, but long-term effects of these efforts are expected to be beneficial.

Congress authorized the Corps to construct and operate a Federal flood control levee system along the lower stretch of the Puyallup River. The Corps began design work for widening and straightening the channel in the mid-1940s and construction for the existing project was completed in 1950. In the project area, the channel was shifted east with the historic riverbed receiving dredge fill from the new channel (EHC 2003). Wood, comprised of chips and sawdust, as well as other debris was also used as fill on the site. In 1989, a wetland and associated riparian buffer was constructed on the northern portion of the project site by Simpson Tacoma Kraft Company. The PRSC project will incorporate this wetland and create additional habitat intended to restore some of the lost function of the historic tideflats.

Reasonably foreseeable future actions planned for Commencement Bay, the Hylebos Waterway, and the Blair Waterway were identified by querying the City of Tacoma govME web site (http://govme.cityoftacoma.org/govme/panelBeta/permitInfo/LandUse/landUse.aspx) for land use notices and the Seattle District Regulatory Branch permit application database. Several projects involving maintenance or expansion of existing pier or moorage facilities were identified, along with some restoration actions. Two permit applications involving a large amount of dredging, wharf construction, and pier reconfiguration on the Blair Waterway were

also found. There is also a habitat restoration project planned immediately opposite the PRSC project on the east side of the river. This is a Corps section 1135 project that also involves a levee setback. Overall, these reasonable foreseeable future actions would tend to maintain or improve habitat conditions in the project vicinity, as any large projects with substantial impacts would require mitigation, thereby avoiding further significant degradation.

6. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The irreversible and irretrievable commitment of resources is the use of materials, resources, or land during implementation of an alternative that makes these resources unavailable for other uses, given known technology and reasonable economics. No federal resources would be irreversibly and irretrievably committed to the proposed action until this Environmental Assessment is finalized and a "Finding of No Significant Impact" has been signed.

7. ENVIRONMENTAL COMPLIANCE

Development of the design for the PRSC Wetland Enhancement Project was initiated in the late 1990s. Multiple public and private parties were involved in project development and review including EPA, the Corps, NOAA, USFWS, WDFW, Washington State Department of Natural Resources, the Puyallup Tribe of Indians, and a local environmental group, Citizens for a Healthy Bay.

7.1. National Environmental Policy Act

This EA satisfies NEPA requirements for the Corps' real estate actions required to support construction of the PRSC by the City. A Finding of No Significant Impact (FONSI) is included in Appendix B. The public comment period on the draft EA was November 30 to December 30, 2004. Comment letters are included in Appendix C. Response to comments is included in Appendix D.

7.2. Endangered Species Act

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended, Federally funded, constructed, permitted, or licensed projects must take into consideration impacts to Federally listed or proposed threatened or endangered species. The proposed real estate action does not involve construction or other activity that affects endangered species. No ESA documentation for the proposed action is therefore required.

EPA consulted with NOAA Fisheries and US Fish and Wildlife under Section 7 of the Endangered Species Act for remedial actions in the Thea Foss Waterway that included the proposal for compensatory mitigation at the proposed site. The resulting NOAA Fisheries BO concluded that EPA's remedial actions, including conservation measures, is not likely to jeopardize the continued existence of Puget Sound chinook salmon (NOAA Fisheries 2004). The BO identified the PRSC as a suitable conservation measure. USFWS to date has not completed a BO for the Thea Foss Superfund Project.

7.3. Magnuson-Stevens Fishery Conservation and Management Act

The Act requires Federal agencies to consult with NOAA Fisheries regarding actions that may affect Essential Fish Habitat (EFH) for Pacific coast ground fish, coastal pelagic species, and Pacific salmon. The Act defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". Descriptions of EFH are provided in Fishery Management Plans produced by the Pacific Fisheries Management Council.

The proposed real estate action will have no effect on EFH. Consultation with NOAA Fisheries regarding the Thea Foss Superfund Project that included the PRSC occurred in 2003 in conjunction with the ESA consultation. The resulting combined BO and Essential Fish Habitat Consultation issued by NOAA on March 11, 2004 concluded that the proposed action may adversely impact the EFH for groundfish, coastal pelagic, and Pacific salmon species (NOAA Fisheries 2004). However, the conservation measures provided, including the PRSC, were sufficient to conserve the EFH of these species and no additional conservation recommendations were necessary.

7.4. Clean Water Act

Under Section 404 of the Clean Water Act (CWA), a Department of the Army permit is required for the discharge of dredged or fill material into water of the United States, including wetlands. Under Section 401 of the CWA, State Water Quality Certification is required for discharges that may impact water quality. The certification ensures that the discharge will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307 of the CWA. The proposed real estate actions will not result in discharges to waters of the United States and therefore do not require a Section 404 permit or Section 401 water quality certification.

7.5. Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits the unauthorized obstruction or alteration of any navigable water of the United States. Activities that involve the construction of dams, bridges, dikes etc. across any navigable water, or placing obstructions to navigation outside established Federal lines and excavating from or depositing material in such waters, require permits from the Corps. The proposed real estate actions will not affect navigation and therefore do not require a Section 10 permit.

7.6. Coastal Zone Management Act

The Coastal Zone Management Act of 1972, as amended, requires Federal agencies to carry out their activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of a state's approved Coastal Zone Management (CZM) Program. The Shoreline Management Act of 1972 (RCW 90.58) is the core of authority of Washington's CZM Program. Primary responsibility for the implementation of the SMA is assigned to local government. The City of Tacoma implemented the SMA through the preparation of a Shoreline Master Program, codified in Chapter 13.10 of the Tacoma Municipal Code, which has been approved by the Department of Ecology. The project site is in the S-9 Shoreline District – Puyallup River which is described as an area bounded by lines lying 200 feet landward and

generally parallel to the levee of the east and west banks of the Puyallup River. The proposed real estate actions do not involve any construction or alterations to the existing shoreline.

7.7. National Historic Preservation Act

Section 106 of the National Historic Preservation Act (16 USC 470) requires that a Federal agency having direct or indirect authority to issue a license authorizing an undertaking shall take into account the effect of the undertaking on historic properties. The Section 106 process includes research and field investigation in consultation with the Washington State Office of Archaeology and Historic Preservation (OAHP), the Advisory Council on Historic Preservation, concerned Tribes, and local governments. The process generally includes identifying historic properties that may be affected by the project; gathering information sufficient to evaluate the eligibility of properties found for the National Register; and consulting among agencies and other concerned parties to avoid or mitigate adverse impacts on significant properties.

A Cultural Resources Section 106 Assessment was performed for the PRSC project in 2003. This report determined that no historic properties or cultural resources exist or have existed on the project site (EHC 2003). A letter concurring with these findings was received from the OAHP dated October 21, 2003 and is attached in Appendix E.

7.8. Clean Air Act

The Clean Air Act required states to develop plans, called State Implementation Plans (SIP), for eliminating or reducing the severity and number of violations of National Ambient Air Quality Standards (NAAQS) while achieving expeditious attainment of the NAAQS. The Act also requires Federal actions to conform to the appropriate SIP. An action that conforms with a SIP is defined as an action that will not: (1) cause or contribute to any new violation of any standard in any area; (2) increase the frequency or severity of any existing violation of any standard in any area; or (3) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. The proposed real estate actions will not result in changes to air quality.

7.9. Environmental Justice

Executive Order 12898 directs every Federal agency to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations.

Implementation of the real estate actions is not expected to result in any disproportionate adverse environmental effects or impacts on minority/low-income populations. The project does not involve the siting of a facility that will discharge pollutants or contaminants, so no human health effects would occur. Implementation of the proposed projects would not negatively affect property values in the area, or socially stigmatize local residents or businesses in any way.

7.10. Treaty Rights

In the mid-1850's, the United States entered into treaties with a number of Native American tribes in Washington. These treaties guaranteed the signatory tribes the right to "take fish at usual and accustomed grounds and stations . . . in common with all citizens of the territory" [*U.S. v. Washington*, 384 F.Supp. 312 at 332 (WDWA 1974)]. In *U.S. v. Washington*, 384 F.Supp. 312 at 343 - 344, the court also found that the Treaty tribes had the right to take up to 50 percent of the harvestable anadromous fish runs passing through those grounds, as needed to provide them with a moderate standard of living (Fair Share). Over the years, the courts have held that this right comprehends certain subsidiary rights, such as access to their "usual and accustomed" fishing grounds. More than *de minimis* impacts to access to usual and accustomed fishing area violates this treaty right [*Northwest Sea Farms v. Wynn*, F.Supp. 931 F.Supp. 1515 at 1522 (WDWA 1996)]. In *U.S. v. Washington*, 759 F.2d 1353 (9th Cir 1985) the court indicated that the obligation to prevent degradation of the fish habitat would be determined on a case-by-case basis. The Ninth Circuit has held that this right also encompasses the right to take shellfish [*U.S. v. Washington*, 135 F.3d 618 (9th Cir 1998)].

The project alternatives have been analyzed with respect to their effects on the treaty rights described above. The real estate actions will have no adverse effect on treaty fishing rights or usual and accustomed fishing grounds. Existing access to the river will not be affected by the proposed action. PRSC construction is intended to improve fisheries in the Puyallup River.

8. CONCLUSION

Based on this assessment, the proposed action is not expected to result in significant adverse environmental impacts. The proposed action is not considered a major Federal action having a significant impact on the human environment and does not require preparation of an environmental impact statement.

9. REFERENCES

City of Tacoma. 2004. Puyallup River Side Channel Wetlands Enhancement Project Site Characterization, May 2004.

City of Tacoma. 2003a. Final Design, Design Analysis Report, Thea Foss and Wheeler-Osgood Waterways Remedial Design/St. Paul Confined Disposal Facility Project, Tacoma, Washington. Prepared by Hart Crowser, January 31, 2003.

City of Tacoma 2003b. Soil and Groundwater Testing Results, Puyallup River Side Channel and Tacoma Metals Site, Prepared by Hart Crowser, August 7, 2003.

City of Tacoma. 2003c. Biological Assessment Addendum, Thea Foss and Wheeler-Osgood Waterways Remediation Project, Commencement Bay Nearshore/Tideflats Superfund Site, Tacoma, Washington. Prepared by Hart Crowser, December 8, 2003.

EHC. 2003. Puyallup River Side Channel Habitat Restoration Project, Cultural Resources Section 106 Assessment, October 13, 2003.

NOAA Fisheries. 2004. Endangered Species Act - Section 7 Consultation Biological Opinion & Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, Thea Foss and Wheeler-Osgood Waterways Remediation Action Commencement Bay Nearshore/Tideflats Superfund Site, Tacoma, Washington. March 11, 2004.

Simenstad, C. A. 2000. Commencement Bay Aquatic Ecosystem Assessment. School of Fisheries. SoF-UW-2003.

USACE (U.S. Army Corps of Engineers), Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA). 1993. Commencement Bay cumulative impacts study: historic review of special aquatic sites. May/June 1993

US EPA. 2003a. Endangered Species Act - Section 7 Consultation Biological Opinion & Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, NMFS Tracking No.: 2003/00717 Thea Foss and Wheeler-Osgood Waterways Remediation Action Commencement Bay Nearshore/Tideflats Superfund Site, Tacoma, Washington, November 5, 2003.

US EPA. 2003b. Interim No. 4, Water Quality Certification. CERCLA, Remaining Elements of 2003-2005 In-Water Work, Thea Foss, Wheeler-Osgood and St. Paul/Middle Waterways Commencement Bay, Tacoma, Washington. November 10, 2003.

US EPA. 2000a. Biological Assessment, Commencement Bay Nearshore/ Tideflats Superfund Site. Prepared by URS Greiner, July 2000.

US EPA. 2000b. Interim Final. Substantive Compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, Commencement Bay Nearshore/Tideflats Superfund Site, Tacoma, WA. July 31, 2000.

Appendix A.

List Of Figures

Source: Thomas Guide, Metropolitan Puget Sound, pages 773 and 774.

Figure 1. Vicinity Map

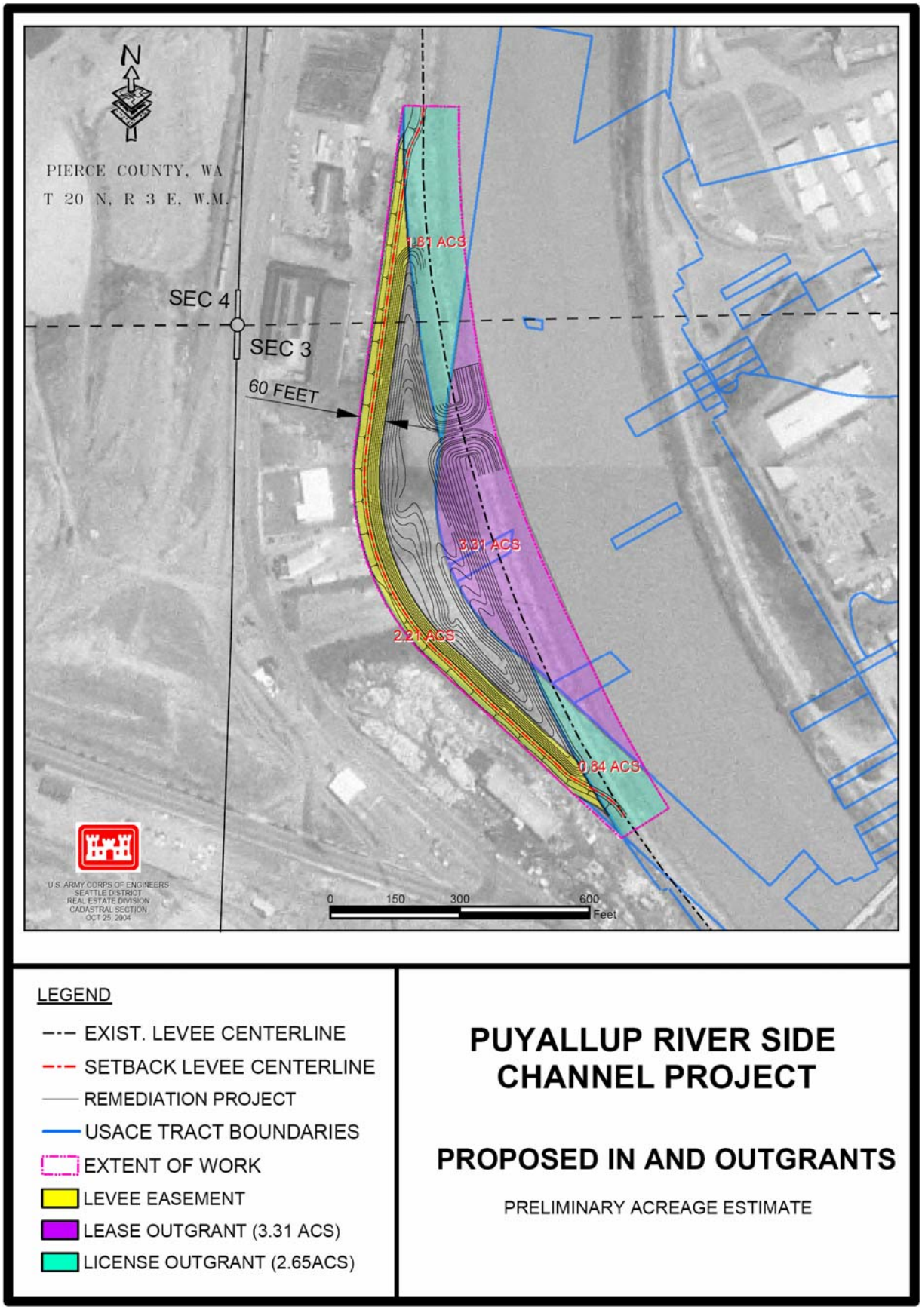

Figure 2. Map of Real Estate Easements

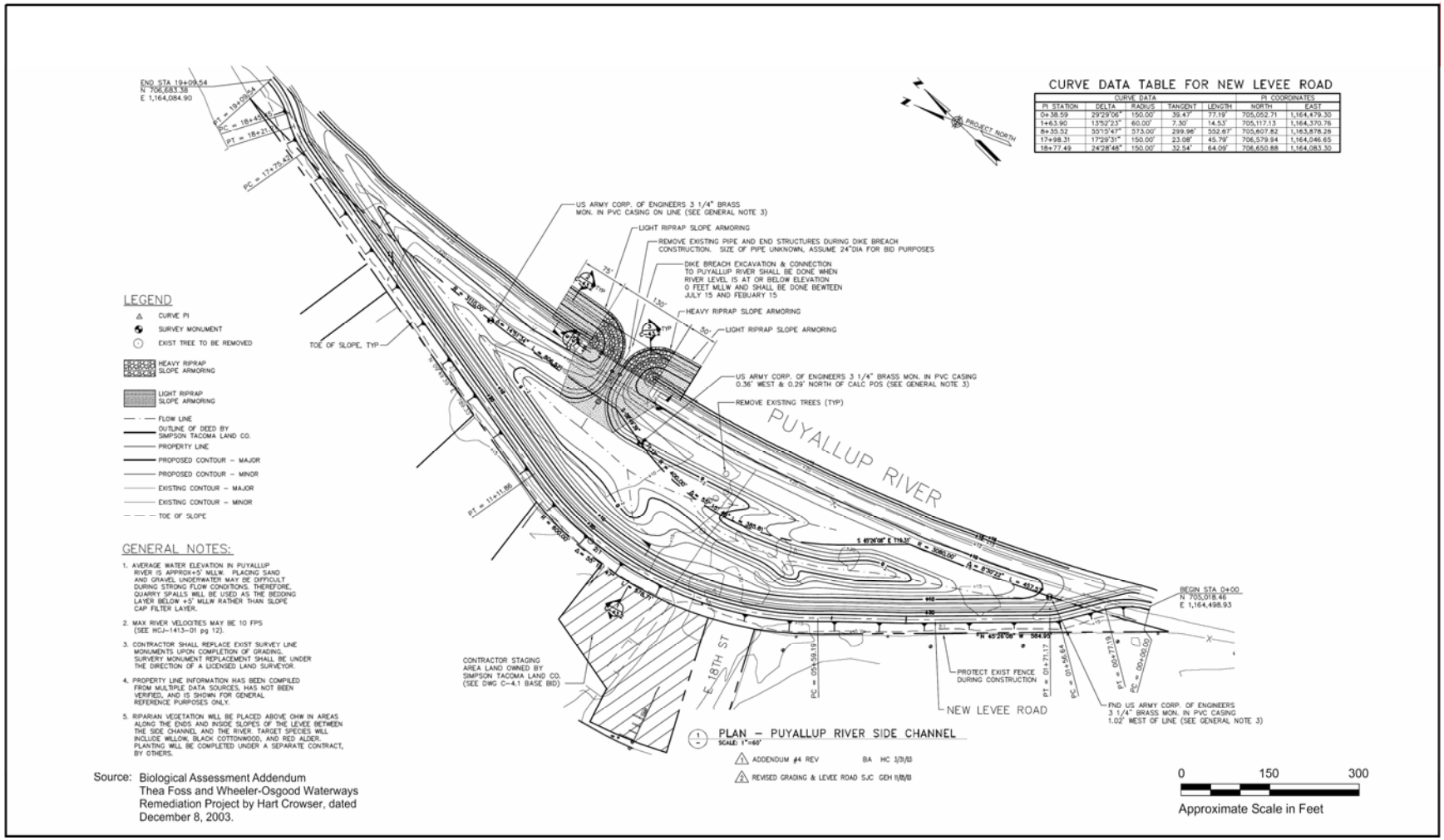

Figure 3. Puyallup River Side Channel Project - Site Plan

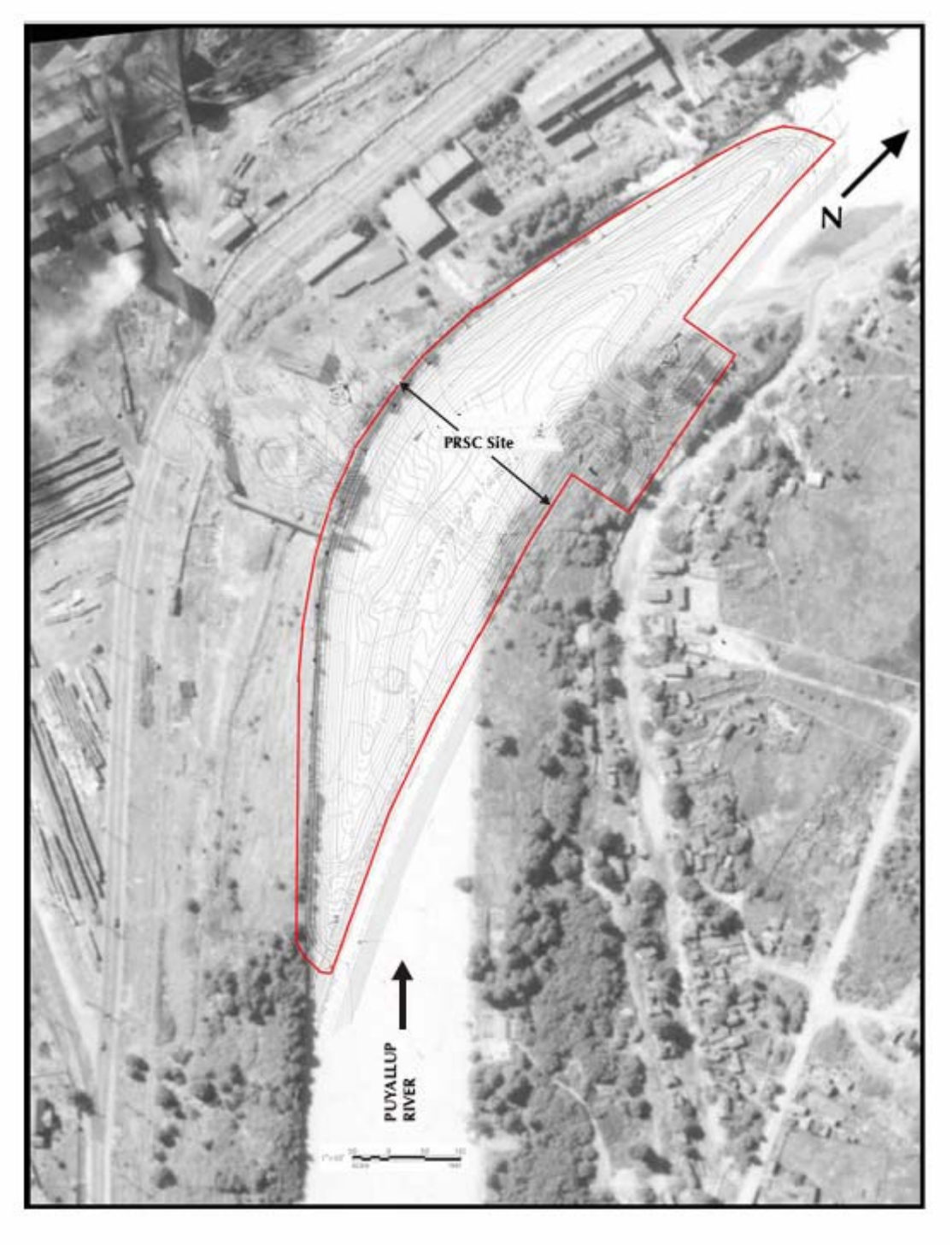

Figure 4. 1940 Corps Aerial Photograph with Overlay of Project Site

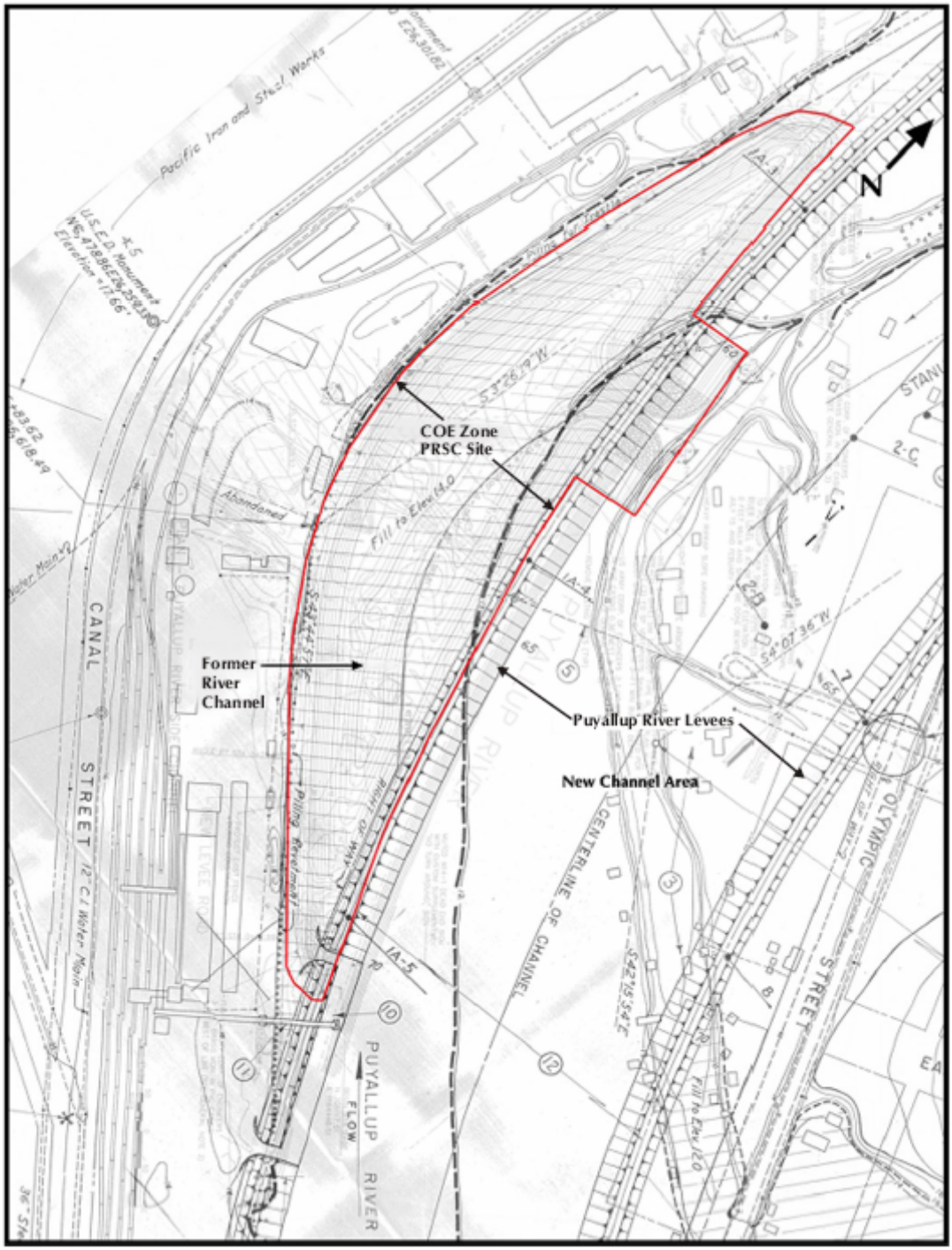

Figure 5. 1945 Design Drawing Illustrating Channel Realignment and Project Site

Appendix B.

Finding of No Significant Impact (FONSI)

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Puyallup River Side Channel Real Estate Actions
Pierce County, Washington

FINDING OF NO SIGNIFICANT IMPACT

1. Background. The Seattle District, U.S. Army Corps of Engineers (Corps) is proposing real estate actions with the City of Tacoma (City) in order to support construction of a City mitigation project along the lower Puyallup River called the Puyallup River Side Channel (PRSC). The real estate actions consist of a lease of Corps fee land to the City, a license to the City from the Corps for land currently in navigation servitude, and a perpetual flood control levee easement granted by the City to the Corps.

The Corps currently maintains levees for flood control along the lower Puyallup River under 33 CFR, Chapter II, Part 208.10. The Tacoma Puyallup River Project was initially authorized by the Flood Control Act of 1936 and 1938. The project is situated along the two mile stretch of the Puyallup River in the City of Tacoma, Washington.

2. Purpose and Need. The purpose of the real estate actions is to support construction of the PRSC mitigation project by the City. The PRSC project is being constructed as a Superfund project under a Consent Decree and associated Statement of Work negotiated between the City and the U.S. Environmental Protection Agency.

3. Action.

- 25-year lease on 3.31 acres of Corps fee property along the Puyallup River granted from the Corps to the City so the City can construct and maintain the PRSC mitigation project.
- 5-year license on 2.65 acres in Corps navigational servitude along the Puyallup River granted from the Corps to the City so the City can construct and maintain the PRSC mitigation project.
- Perpetual easement on 2.21 acres along the Puyallup River granted from the City to the Corps so the Corps can maintain the new setback levee.

4. Summary of Impacts. As outlined in the attached Environmental Assessment, the real estate actions by themselves will result in no environmental impacts. However, the direct result of these actions will be construction of the PRSC project by the City. This latter action will result in improved habitat conditions along the lower Puyallup River for threatened chinook salmon and bull trout. Some temporary environmental impacts such as on turbidity and air quality are possible due to construction activities, but these are expected to be minor.

5. Finding. For the reasons described above, I have determined that the real estate actions will not result in significant adverse environmental impacts. The project will not constitute a major Federal action with significant impacts on the environment and, therefore, does not require an environmental impact statement.

25 Mar 05
Date

Debra M. Lewis
Colonel, Corps of Engineers
District Engineer

Appendix C.

Comment Letters

CHB

CITIZENS FOR A HEALTHY BAY

917 Pacific Avenue
Suite 100
Tacoma, WA 98402
Phone (253) 383-2429
Fax (253) 383-2446
chb@healthybay.org
www.healthybay.org

December 6, 2004

Planning Branch
Department of the Army
Seattle District, Corps of Engineers
P. O. Box 3755
Seattle, WA 98124-3755

Attn: Scott Pozarycki, ERS

Re: Puyallup River Side Channel Real Estate Actions, Pierce County, Washington
Draft Environmental Assessment and Finding of No Significant Impact

The purpose of this letter is to provide comments by Citizens for a Healthy Bay (CHB) regarding the above referenced documents. CHB is a citizen-based, non-profit organization representing the greater Commencement Bay community and working to engage citizens to clean up, restore and protect the Commencement Bay environs. As such, over the past 14 years, we have acted to provide community oversight and public participation into cleanup and restoration actions in the Commencement Bay Superfund problem area.

CHB agrees that the real estate transaction will have no significant environmental impact. Furthermore, the transaction will allow for the construction of the Puyallup River Side Channel (PRSC) habitat mitigation project to be implemented at the site; a project that will:

- Offset impacts associated with filling of St. Paul Waterway for construction of a confined disposal facility for contaminated sediments dredged from the Foss Waterway Superfund problem area;
- Create the last available, downstream, off-channel habitat for juvenile salmonids in the channelized lower Puyallup River, and;
- Provide increased habitat for wetland related birds, amphibians and other fish species;

Thank you for your consideration of our remarks.

Sincerely:

Leslie Ann Rose

Leslie Ann Rose
Senior Policy Analyst

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 30, 2004

Mr. Scott Pozarycki
Environmental Resources Section
U.S. Army Corps of Engineers
PO Box 3775
Seattle, WA 98124-3755

Dear Mr. Pozarycki:

Thank you for the opportunity to comment on the NEPA EA for the Puyallup River Side Channel Real Estate Actions. We reviewed the environmental assessment and have the following comments:

FLOODPLAINS: Kevin Farrell (360) 407-7253

Ensure the structural integrity of the existing levee system; Provide at least a 100-year level of flood protection as quickly as possible to the areas within the FEMA 100-year floodplain. Maintain current level of flood protection. Due to the expected settlement of the dike, the project proponents should consider topping off the levee during a second season construction window to ensure 100-year flood protection elevations.

TOXICS CLEANUP: Marv Coleman (360) 407-6259

This area may have been contaminated with heavy metals due to the smokestack plume originating from the old Asarco smelter in north Tacoma. Ecology recommends that the soils be sampled and analyzed for lead and arsenic. The Washington State Clean Air Act requires the use of all known, available, and reasonable means of controlling air pollution, including dust. Dust generated during construction activities can be controlled by wetting dust sources such as areas of exposed soils, washing truck wheels before they leave the site, and installing and maintaining gravel construction entrances. Construction vehicle track-out is also a major dust source. Any evidence of track-out can trigger violations and fines from Ecology or the local air agency. New construction can be a source of particulate matter and fugitive dust. The applicant should be notified that WAC 173-400-040(2) states: "No person shall cause or permit the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited." In addition, WAC 173-400-040(8) states: "The owner or operator of a source of fugitive dust shall take reasonable precautions to prevent fugitive dust form becoming airborne and shall maintain and operate the source to minimize emissions." If these contaminants and/or others are found at concentrations above the Model Toxics Control Act (MTCA) cleanup levels, Ecology recommends that current owners, potential buyers, construction workers, and others be notified of their occurrence and that you contact the Environmental Report Tracking System Coordinator at the Southwest Regional Office at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact

Marv Coleman at (360) 407-6259 or Joyce Mercuri at (360) 407-6260 with the Toxics Cleanup Program at the Southwest Regional Office.

Historic uses of this site indicate that it is likely to be contaminated with hazardous substances. Any releases known or discovered at the site must be reported to Ecology as required by the MTCA. If contamination is currently known or observed during construction, sampling of the potentially contaminated media must be conducted. It would be prudent to conduct at least some limited sampling prior to construction so contaminated media can be dealt with. If contamination of soil or groundwater is readily visible, or is revealed by sampling, the Department of Ecology must be notified. Contact the Environmental Report Tracking System Coordinator at the Southwest Regional Office at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact Bob Warren with the Toxic Cleanup Program at the Southwest Regional Office at (360) 407-6361.

WATER QUALITY: Margaret Hill (360) 407-0246

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent stormwater runoff from carrying soil and other pollutants into surface water or storm drains that lead to waters of the state. Sand, silt, clay particles, and soil will damage aquatic habitat and are considered to be pollutants.

Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to enforcement action.

During construction, all releases of oils, hydraulic fluids, fuels, other petroleum products, paints, solvents, and other deleterious materials must be contained and removed in a manner that will prevent their discharge to waters and soils of the state. The cleanup of spills should take precedence over other work on the site.

If you have any questions or would like to respond to these comments please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(AW: 04-8390)

cc: Marv Coleman, TCP
Kevin Farrell, SEA
Margaret Hill, WQ

Appendix D.

Comment Summaries and Responses

Puyallup River Side Channel Real Estate Actions, Pierce County, Washington
Final Environmental Assessment – Comments and Responses

January 2005

The Corps received comment letters from Citizens for a Healthy Bay (CHB) and the Washington Department of Ecology. A follow up email from Ecology was also faxed to the Corps. The letter from CHB indicated support for the real estate action and subsequent construction of the side channel habitat project. Ecology's comments and the Corps response is provided below.

Washington Department of Ecology

Comments. Ecology comments were directed at construction of the Puyallup River Side Channel (PRSC) project. These included concerns about maintaining and providing for flood protection, potential for discovering contaminants, and the need for erosion control and spill containment to avoid water quality impacts.

Response. The purpose of this EA is to evaluate effects of the real estate actions that are necessary for the City of Tacoma to proceed with construction of the PRSC. These actions by themselves do not involve any construction activities and as such will have no impact on water quality, contaminant removal, or the integrity of the existing flood control levee. The comments pertain specifically to the design and construction of the PRSC habitat project. This is a separate action by the City of Tacoma. The Corps has reviewed the design of the project to ensure integrity of the Federal flood control project. The comment letter will be forwarded to the City.

Appendix E.

Regulatory Approval Correspondence

STATE OF WASHINGTON
DEPARTMENT OF COMMUNITY,TRADE & ECONOMIC DEVELOPMENT
Office of Archaeology and Historic Preservation
1063 S. Capitol Way, Suite 106 • PO Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065
Fax Number (360) 586-3067 • http:www.oahp.wa.gov

October 21, 2003

Mr. Mark Ziminske
Environmental Resources
Seattle District, Corps of Engineers
PO Box 3755
Seattle, Washington 98124-3755

Re: Puyallup River Side Channel Habitat Restoration Project
Log No: 102003-20-COE-S

Dear Mr. Ziminske:

Thank you for contacting our office and providing the professional cultural resources assessment by Robert Weaver of the proposed Puyallup River Side Channel Habitat Restoration Project in Tacoma, Pierce County. We concur with his recommendations and your finding of No Historic Properties Affected.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised.

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity should be discontinued, the area secured, and the concerned tribes and this office notified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 586-3080
email: robw@cted.wa.gov

cc: J. Wright