

FACT SHEET

Program Title: Draft Programmatic Natural Resources Restoration Plan and Environmental Assessment for The Tulalip Landfill CERCLA Site

Lead Agencies: The Tulalip Tribes of Washington

Cooperating Agencies: U. S. Department of the Interior
State of Washington, Department of Ecology
National Oceanic and Atmospheric Administration

Abstract:

The draft programmatic natural resources restoration plan and environmental assessment document is presented for public comment by the Natural Resources Trustees (Trustees) for the Tulalip Landfill Superfund site. It identifies the Trustees, cites the purpose and authority for the proposed action to be taken by the Trustees, illustrates the site history, describes the affected environment, the potential restoration alternatives, their environmental consequences and selects a preferred alternative to restore replace or acquire the equivalent of injured natural resources. Various elements are listed for analysis in making the restoration decision. Areas of the Snohomish estuary near the impacted resource are advanced as potential sites for a restoration project. This plan evaluates five alternatives for a restoration action(s). These alternatives are (A.) estuarine habitat creation/restoration, (B.) habitat enhancement, (C.) species specific enhancement, (D.) combined action, and (E.) no action/natural recovery.

In this document, the Trustees announce to the general public their intention to select alternative D, combined action for a restoration project. This alternative involves actions to acquire and restore resources. They anticipate a restoration project on an area of land in the range of 290 to 360 acres utilizing settlement funds received from various parties settling their potential liability at the Tulalip Landfill.

The Trustees present this draft plan decision document to the public and encourage written comments from interested citizens, organizations and governments concerning the Trustees anticipated decision.

Contact Persons: T. McKinsey; C/O Natural Resources Trustees; 6326 33rd Ave NE; Marysville, WA 98271; PH 360-651-3279

Comment Period for Draft Plan: Notice of availability of the draft plan was published in local news media on December 10, 1997 and copies of the plan were sent to public officials for review and comment. The comment period runs for 30 days. The Trustees will consider all comments received prior to January 12, 1998. Comments should be sent to: Comments, Tulalip Landfill Natural Resources Trustees, 6326 33rd Ave NE, Marysville, WA 98271.

Availability of Copies: Copies of the draft plan are available for review at the Marysville Public Library, 6120 Grove St., Marysville, WA 98270. Additional copies may be obtained from the contact person noted above.

PUBLIC NOTICE

Notice of Publication For Public Review of the Draft Programmatic Natural Resources Damages Restoration Plan and Environmental Assessment for the Tulalip Landfill CERCLA Site, and Notice of Public Meeting

Notice is hereby given by the Natural Resources Trustees for the Tulalip Landfill Superfund Site, located on Ebey Island in Puget Sound and within the exterior boundaries of the Tulalip Indian Reservation, that a Draft Programmatic Natural Resources Damages Restoration Plan and Environmental Assessment is available for public review and comment. The Draft Programmatic Natural Resources Damages Restoration Plan and Environmental Assessment summarizes proposed restoration alternatives and selects an alternative to address damages to natural resources resulting from the release of hazardous substances at that site. The Natural Resources Trustees for the Tulalip Landfill site are the State of Washington Department of Ecology, the Tulalip Tribes of Washington, the National Oceanic and Atmospheric Administration, and the United States Department of Interior.

The Draft Natural Resources Restoration Plan may be examined at the Marysville Public Library, 6120 Grove St., Marysville Washington. The draft plan may be reviewed on the internet at <http://www.doi.gov/oepc>

The Trustees for the Natural Resources will receive for a period of thirty (30) days from the date of this publication (December 10, 1997), comments relating to the proposed plan. The Trustees will consider all public comments received prior to a closing date of January 12, 1998. Comments should be addressed to: Comments, The Tulalip Landfill Natural Resources Trustees, 6326 33rd Ave NE, Marysville, WA 98271.

Notice is hereby given that a public meeting will be held by the Natural Resources Trustees concerning the Draft Programmatic Natural Resources Damages Restoration Plan and Environmental Assessment on December 17, 1997 at 01:00 p.m. at the Marysville, WA city library's community room. Representatives of the Natural Resources Trustees will be available to receive comments concerning the Draft Natural Resources Restoration Plan.

The Tulalip Landfill
Natural Resources Trustees

REQUEST FOR REVIEW AND COMMENT

December 10, 1997

Re: Draft Programmatic Natural Resources Restoration Plan And Environmental Assessment
for The Tulalip Landfill Superfund Site

Dear Public Official:

The Trustees for the Natural Resources at the Tulalip Landfill Superfund Site, located on Ebey Island in Puget Sound and within the exterior boundaries of the Tulalip Indian Reservation, send to you a Draft Programmatic Natural Resources Damages Restoration Plan and Environmental Assessment review and comment. The draft plan and environmental assessment summarizes proposed restoration alternatives and selects an alternative to address damages to natural resources resulting from the release of hazardous substances at that site. The Natural Resources Trustees for the Tulalip Landfill site are the State of Washington Department of Ecology, the Tulalip Tribes of Washington, the National Oceanic and Atmospheric Administration, and the United States Department of Interior.

The Trustees will receive for a period of thirty (30) days comments relating to the proposed plan. The Trustees will consider all public comments received prior to a closing date of January 12, 1998. Comments should be addressed to:

Comments
Tulalip Landfill Natural Resources Trustees
6326 33rd Ave NE
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Sincerely,

Natural Resources Trustees
Tulalip Landfill

DRAFT PROGRAMMATIC NATURAL RESOURCES RESTORATION PLAN
AND
ENVIRONMENTAL ASSESSMENT
FOR THE
TULALIP LANDFILL CERCLA SITE

TRUSTEES:

U. S. DEPARTMENT OF THE INTERIOR
STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
THE TULALIP TRIBES OF WASHINGTON

December 10, 1997

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ABSTRACT

This draft programmatic natural resources restoration plan and environmental assessment document (the plan) is presented for public comment by the Natural Resources Trustees (Trustees) for the Tulalip Landfill Superfund site (the site). It identifies the Trustees, cites the purpose and authority for the proposed action to be taken by the Trustees, illustrates the site history, describes the affected environment, the potential restoration alternatives, their environmental consequences and selects a preferred alternative to restore replace or acquire the equivalent of injured natural resources. Various elements are listed for analysis in making the restoration decision. Areas of the Snohomish estuary near the impacted resource are advanced as potential sites for a restoration project. This plan evaluates five alternatives for a restoration action(s). These alternatives are (A.) estuarine habitat creation/restoration, (B.) habitat enhancement, (C.) species specific enhancement, (D.) combined action, and (E.) no action/natural recovery.

In this document, the Trustees announce to the general public their intention to select alternative D, combined action for a restoration project. This alternative involves actions to acquire and restore resources. They anticipate a restoration project on an area of land in the range of 290 to 360 acres utilizing settlement funds received from various parties settling their potential liability at the Tulalip Landfill.

The Trustees present this draft plan decision document to the public and encourage written comments from interested citizens, organizations and governments concerning the Trustees anticipated decision.

I. INTRODUCTION

I.A. PURPOSE OF AND NEED FOR ACTION

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 42 USC 9601 et. seq. (as amended), (CERCLA) and the State of Washington Model Toxics Control Act (MTCA) at 70.105D RCW (Revised Code of Washington) (1989) and chapter 173-3 WAC (1992) provides the federal, state, and tribal natural resource trustees with authority to seek damages for injury to, destruction of, or loss of natural resources resulting from releases of hazardous substances. The purpose of this provision is to authorize the Trustees to bring and resolve natural resource damage claims and to use recovered damages to compensate the public for losses by restoring, replacing, rehabilitating or acquiring the equivalent of the injured or destroyed resources.

The underlying **need** to which the trustees are responding is to insure the public is made whole for injury to trust resources. The **purpose** of the draft plan is to identify actions restore, replace, rehabilitate, or acquire the equivalent of any natural resources and/or services potentially injured or destroyed as a result of releases of hazardous substances from the Tulalip Landfill to insure the recovery of those potentially injured resources.

This plan identifies the Trustees for the Tulalip Landfill, informs the public of anticipated Trustee actions, describes alternatives for restoration, establishes guidelines and criteria for restoration project selection, and selects a restoration alternative under the guidelines listed in federal regulations. These actions are also in accordance with NEPA 92 USC 4321-4370(d), as amended and the State of Washington Policy Act (SEPA) Ch 43 RCW.

A Tulalip Restoration Committee, consisting of representatives from each of the Trustees, has been established to develop a plan and select restoration activities to be funded with monies available in the Trust Fund. In developing the plan, the committee followed the guidance in the Consent Decree for the settlement of natural resource damages which states that monies paid for natural resource damages "... shall be used only for assessing, restoring, rehabilitating, replacing or acquiring the equivalent of injured natural resources as provided in 42U.S.C. § 9607 (f) (1) and Chapter 70.105D RCW" and the NEPA and SEPA statutes and regulations.

I.B. Natural Resources Trustees

Natural resource trustees with the authority for managing and protecting natural resources in the impacted area include the Department of the Interior (DOI), the National Oceanic and Atmospheric Administration (NOAA) of the US Department of Commerce (DOC), the State of Washington, and the Tulalip Tribes of Washington. Assessment of natural resource injuries and development of a plan are responsibilities of the Trustees. These Trustees are designated pursuant to 40 CFR subpart G, § 300.600

I.C. Trustee Action

CERCLA, 42 USC §9607 (f); 40 CFR Part 300, subpart G, charges the Trustees of the natural resources at a superfund site with responsibility for assessing injury to natural resources and damages to the public from such environmental harm resulting from releases of hazardous substances at a Superfund site. This responsibility extends beyond the clean up of a site. On behalf of the public, the designated Trustees are responsible for recovering from potentially responsible parties the costs of restoration and the value of natural resources associated with natural resource damages resulting from hazardous substance contamination. The Trustees are compelled by the statutes to expend monies received for the natural resource damages to restore, replace, rehabilitate or acquire the equivalent of the injured natural resources.

To develop a basis for an early settlement requested by de minimis potentially responsible parties, the Trustees reviewed state and federal remedial investigation documents.¹ EPA's analysis of ecological injury resulting from releases of hazardous substances at or from the site concludes that "the presence of these chemicals at concentrations above the screening criteria and established standards indicates that there are releases of hazardous substances that pose actual or potential threats to animal and plant life in the wetland areas around the Tulalip Landfill." The Trustees reviewed the data from these reports and determined that exposed natural resources have been lost, impacted and/or injured due to the release of hazardous substances. The Trustees also considered the area of exposure, the period of exposure, the type of resources impacted, the period until resources could be restored, the cost effectiveness of settlement and restoration, and various restoration strategies. Based upon this discussion the trustees determined that a simple and conservative basis for valuing the total injury to natural resources at the site was to determine the cost to replace the habitat services of 147 acres (on source) of wetlands that have been lost or injured. The conservative nature of this approach is demonstrated by the fact that it does not take into consideration the wetlands immediately adjacent to the source that have been impacted, nor the wetlands and mudflats west of the site that are of diminished value or traditional use for hunting and fishing due to such releases.

I.D. Location

The Tulalip Landfill site occupies approximately 147 acres of land and is located on a low-lying island (commonly referred to as North Ebey Island) in the Snohomish River delta. This island is within the floodplain of the Snohomish River. Located within the exterior boundaries of the

¹ These investigation documents include the Remedial Investigation Report, May 4, 1995 with supporting electronic data; the Final Tulalip Risk Assessment for Interim Remedial Action, August 1995; the Stage 1 Annual Baseline Leachate Seep Monitoring Report, April 28, 1995; Geotechnical Investigation and Landfill Gas Evaluation Report, July 26, 1994; the Annual Baseline Groundwater Monitoring Report, February 1, 1995; various data validation reports and monthly progress reports.

Tulalip Indian Reservation, the landfill lies generally between the cities of Marysville and Everett, Washington (see Figure 1). North Ebey Island is bounded to the north by Ebey Slough and to the south by Steamboat Slough. The island is located in Snohomish County, Township 30N, Range 5E, Section 32.

I.E. Site History

Prior to landfilling activities, the acreage where the landfill is located consisted of relatively undisturbed intertidal wetlands, and reached heights of about three to six feet above mean sea level (MSL). Today, the landfill source area is at an elevation of about 12 to 20 feet above MSL. The landfill is bounded by a perimeter berm that is approximately 15 feet high. During landfilling operations, barge canals were cut into the island to allow water barges bearing refuse to transport waste into the central portions of the landfill. Initially, waste was removed from the barges and placed directly on top of adjacent wetlands. During later operations, wetlands adjacent to the canals were dredged and waste was placed into these deeper dredged areas. In general, the barge canals were significantly deeper than other parts of the landfill. The average depth of the fill throughout most of the landfill is about 17 feet; in the old barge canals the fill depth reaches about 30 feet. Three to four million tons of mixed commercial and industrial waste were deposited in the landfill during its period of operation from 1964 to 1979. The waste is covered with silt, silty sand, clay and medium sand, and demolition and construction debris at depths ranging from six inches to eleven feet.

In February and March 1988, a contractor, Ecology Environment, Inc. (E&E) on contract to the US Environmental Protection Agency (EPA) performed a site inspection of the landfill as a part of the process to evaluate whether to place the landfill on the National Priorities List (NPL) of waste sites. The inspection revealed groundwater contamination with unacceptably high levels of arsenic, barium, cadmium, chromium, lead, mercury, and silver. Water samples taken in the wetlands adjacent to the site showed exceedences of marine chronic criteria for cadmium, chromium, and lead as well as exceedences in marine acute criteria for copper, nickel and zinc. In addition, a variety of metals were found in on-site pools and leachate. The study concluded that contamination was migrating off-site.

In August 1993, EPA signed an Administrative Order on Consent with several Potentially Responsible Parties (PRPs) to conduct a Remedial Investigation and Feasibility Study (RI/FS).

Site investigation efforts, including sampling done recently in the RI/FS by the parties noted as part of this investigation, show that landfill leachate leaving the site exceeded water quality criteria and standards for pesticides such as DDT, heptachlor, aldrin, polychlorinated biphenyls, heavy metals and other contaminants including chromium, copper, lead, mercury, nickel, zinc, and ammonia. This leachate flows directly into sensitive, ecologically valuable wetlands that surround the site and into sloughs connected with the Snohomish River and Puget Sound. The investigation documents the presence of hazardous substances in the soils, sediments, surface water, and ground water at the site.

This RI/FS investigation indicates that there is a mound of contaminated ground water (landfill leachate) within the landfill waste. Design fieldwork in early 1997 confirmed the presence of this mound. This leachate mound is fed by precipitation, and its height varies between approximately 10-16 feet above MSL. Because the mound is considerably higher than the mean sea level and the ground water level surrounding the landfill, the weight of this leachate mound drives landfill contaminants out and away from the landfill. Some of the leachate (between approximately 5-35%) is pushed out the outer edge of the perimeter berm and flows onto wetlands and into tidal channels surrounding the landfill. Most of the leachate seeps occur at the edge of the landfill on the downward slope of waste mass, but one seep that was sampled during the investigation originates on the landfill surface. The remainder of the leachate (approximately 65-95%) is driven downward by the weight of the hydraulic head into ground water beneath the landfill, where it migrates outward and is discharged to waterways surrounding the landfill.

EPA proposed adding the Tulalip Landfill to the NPL on July 29, 1991. Although the public comment period on the proposed NPL listing closed in October 1991, one potentially responsible party made 11 submissions of comments between May 1993 and February 1995. On April 25, 1995, with the support of the Governor of the State of Washington, EPA published the final rule adding the site to the NPL.

I.F. IMPACTED RESOURCES

The Snohomish River supports a diverse aquatic community. One of the most important functions of estuarine wetlands is that they provide nursery areas for many fish and wildlife species. The intertidal mudflats and emergent marsh habitat in the vicinity of the Tulalip Landfill serve as spawning, nursery and feeding habitats for a diverse population of anadromous and demersal fish; mammals; migratory, overwintering, resident and breeding birds; amphibians; reptiles and invertebrates.

Species of concern under the Federal Endangered Species Act or comparable Washington State regulations that have been observed in the vicinity of the site, or that may be expected to use habitat areas near the site are listed in Table 1-1. The bald eagle and the stellar (northern) sea lion are considered threatened under State and Federal law. A plant, the choribo bog orchid, has State status as a threatened species.

II. AFFECTED ENVIRONMENT

The Snohomish Estuary is approximately nine miles long and three to four and one half miles broad at its widest point, encompassing six major islands within its 19.5 square miles. The Estuary is located at the mouth of the Snohomish River and consists of 1,780 square miles of

land and water. The Skykomish and Snoqualmie Rivers are the two main tributaries to the Snohomish River and converge 23 miles upstream from the mouth of the Estuary at Monroe, Washington.

Prior to diking, the Estuary was a mosaic of tidal marshes, forested wetlands, sloughs and mudflats that were periodically tidally inundated. Since the estuary was diked in the early 1900's, agriculture has been a primary land use in the Estuary, with the exception of log yards and a timber mill on the west side. New uses include the City of Everett Sewer Ponds and Langus Park on the southern portion of Smith Island.

The Estuary tidal wetlands and river mouth areas support a very diverse population of mammals, including: mink, raccoon, muskrat, deer, small rodents, beaver, river otter, raccoons, harbor seals and California sea lions. Freshwater marshes within the Estuary support coyote, porcupine, river otter, deer, cougar, beaver, muskrat, mink raccoons and smaller mammals. Most of these mammals readily migrate throughout most of the Estuary, with the larger mammals swimming the sloughs to access mainland upland habitat. A list of the mammals found in the estuary can be found in figure 1-1.

The diverse habitat types within the Estuary, including agricultural lands, provide a wide range of foraging, nesting and roosting habitats for migratory, overwintering, resident and breeding birds. Birds found in the Estuary include: canada geese, brant geese, tundra and trumpeter swans, great-blue herons, arctic terns, bald eagles, osprey, bonaparte's gulls, ring-billed and mew gulls, green-winged teal, wood ducks, redheads, red-tailed hawks, kingfishers and great-horned owls. A list of the birds observed in the estuary can be found in figure 1-1.

Wetlands within the estuary provide important fish habitat and supports the runs of seven salmonid species including: coho, chum, pink, chinook, sea-run cutthroat, steelhead and dolly varden. The wetlands provides refuge, nursery and feeding areas within the meandering channels of salt marsh, cattail-bullrush wetlands and sitka spruce swamps. The wetland channels provide habitat for terrestrial and aquatic insects that are a major food source for salmonid smolts. The areas within the dikes, drainage channels connected to the river through tide gates, provide no habitat for anadromous species but do support abundant populations of three-spined stickleback that provide food for great blue herons and kingfishers.

Freshwater ponds, ditches and emergent wetlands (rushes, sedges) that are not tidally influenced provide habitat for amphibians and reptiles. Typical species found in the estuary include the pacific tree frog, northern red-legged frog, bullfrog, and common garter snake. These species play an important role in controlling insect and rodent populations and in turn serve as a valuable food source for raptors and other piscivorous (fish-eating) birds.

III. RESTORATION ALTERNATIVES

III.A. Plan Goals and Objectives

While CERCLA requires the Trustees to seek restoration of injured trust resources, Trustee actions should benefit the entire ecosystem by meeting statutory objectives, providing alternatives for resources that will not recover without assistance and providing a sustainable habitat. The Trustees focus on four primary objectives. They are; (1) providing a functioning and sustainable ecosystem, (2) integrating restoration strategies to increase the probabilities of a return to estimated baseline, (3) coordinating project efforts with other regulatory activities, and (4) involving the public in planning and implementation.

To insure project objectives are achieved the Trustees establish the following functions as critical and essential aspects of a restoration project(s). The evaluation of alternatives should include the ability of each alternative to achieve the following functions:

- (1.) Strengthen the Food Chain: Estuarine marsh habitats produce large amounts of vegetative biomass and have relatively high rates of primary production. During tidal cycles, decomposed plant material is transported onto adjacent mudflats where it supports large communities of invertebrates. These invertebrates are an important food source for fish and wildlife.
- (2.) Nutrient Transport: Wetlands would have a high value associated with the transport of nutrients if it was linked with a nearby slough of the Snohomish River system. Detrital export from the restored marsh would be transported to the estuary and utilized by a variety of organisms.
- (3.) Provide Foraging and Schooling Areas: Estuarine habitats would provide schooling and feeding areas for anadromous and demersal fish.
- (4.) Shellfish Habitat: Restoration of intertidal mudflats would increase habitats for shellfish.
- (5.) Bird Habitat: The Snohomish estuary is located within the Pacific Flyway, an important migratory route for waterfowl and shorebirds. Intertidal mudflats and salt marsh habitats provide areas for feeding, rearing and nesting for both migratory and resident birds.

The Trustees reviewed in detail the available literature concerning the estuary surrounding and in the vicinity of the site. Of particular interest is the Snohomish Estuary Wetland Integration Plan (SEWIP). The SEWIP provides a thorough inventory of the estuary in terms of potential projects, an analysis of potential restoration areas along with a description of resources found in the estuary. It notes eighteen important functions provided by the estuary and identifies essential

functions for various geographic elevations. Concepts advanced in the SEWIP should be an excellent guide if a restoration project is advocated. The Trustees found the identification of Ecological Management Units to be of particular value.

The Trustees examined a variety of possible restoration activities to restore injured natural resources. Five potential restoration alternatives are introduced for consideration: estuarine habitat creation/restoration, habitat enhancement, species specific enhancement, combined action, and no action/natural recovery. These alternatives with a broad description of potential restoration projects are described below, along with an evaluation of the possible environmental impacts (direct and indirect) for each alternative.

III.B. Alternatives

III.B.1. Alternative A. Estuarine Habitat Creation/Restoration

Estuarine habitat creation and/or restoration would involve actions to increase intertidal habitats within the Snohomish River estuary. Potential natural resource injury occurred to species utilizing estuarine habitats adjacent to or impacted by leachate from the landfill. This alternative assumes that restoration of similar functional habitats would result in use by injured species, and injured species and services would be restored.

Description: This alternative consists of land acquisition or management actions that provide protection to lands that have low functioning habitats, or are ripe for conversion to target habitats.

Typical Actions: Possible actions under this alternative could include, but are not limited to, breaching dikes along the river to return tidal waters to former wetland and riparian habitats, removal of dike materials that remain but have already been breached by the river to increase tidal exchange, establishing tidal channels within formerly diked lands, removal of drain tiles, and planting vegetation.

Potential Location(s): Potential projects would likely be focused in the immediate vicinity of the impacted resources. The potential project area is defined as the SEWIP management areas 3, 2 and 1 as delineated at figure 2.

Environmental Consequences: An estimated 74.4 to 85 percent of original estuarine habitats in the Snohomish Estuary have been lost due to diking and draining for agriculture. This alternative would result in an increase in these important habitats and would provide direct and indirect benefits to injured species.

Intertidal mudflats, salt marsh and associated tidal channels would provide refuge, nursery and feeding areas for fishery resources, resident and migratory birds, and prey resources for

predatory birds. Adverse impacts to wildlife could occur by conversion of a terrestrial habitat to an aquatic habitat. Upland bird species and small mammals could be adversely affected by such habitat conversions. Projects that leave or incorporate the upland buffer habitat would retain existing functions for upland species. Carefully planned projects should include corridors for access to existing habitats by upland species.

Diked agricultural lands are abundant in the estuary. Under this alternative existing lands in agricultural production would be converted to estuarine lands. This project would not have a negative impact on adjacent existing agricultural lands.

Habitat creation/restoration typically provides benefits outside the project area, including detrital export, improved water and sediment quality, and nutrient flux. Although the long term effects of this alternative would be beneficial, adverse effects could result from construction activities, including short term noise and air pollution, short term reductions in sediment and/or water quality, and disturbance of existing plant communities.

Subsidence appears to have occurred in the estuary as a result of diking, draining and farming activities (SEWIP, 1997). Due to subsidence it may be difficult, through dike breaching, to reestablish higher elevation historic intertidal communities such as, high salt marsh; intertidal scrub-shrub; and/or Sitka spruce. Nevertheless, additional measures could be taken to accelerate establishment of these community types. Maximum removal of dike materials and reestablishment of tidal channels would allow the greatest degree of tidal exchange resulting in higher accretion rates. Restoration/creation actions could include increasing marsh elevations to achieve emergent communities. However, regardless of whether the historic community can be reestablished in the near future, lower elevation intertidal habitats would be restored under this alternative and should improve overall conditions in the estuary for fish and wildlife resources.

Under this alternative, no adverse impacts to threatened or endangered species are anticipated. Actions that restore or create additional intertidal habitats would be expected to indirectly benefit the endangered peregrine falcon, threatened bald eagle and marbled murrelet. Habitat creation/restoration should result in increased prey resources, and nesting and feeding habitat for all avifauna.

Habitat creation/restoration can be expensive due to acquisition, design and construction costs. Costs under this alternative could be reduced by purchasing less productive lands, reducing the need to build set back levees, working in areas where existing elevations would allow the establishment of emergent plant communities, and finding cost-share opportunities.

A significant time lag occurs between habitat creation/restoration actions and replacement of diverse ecological function. Recognizing the drawbacks of this time lag, interim consideration could be given to other alternatives, or components of other alternatives, to reduce the time lag for replacement of ecological functions.

III.B.2. Alternative B. Habitat Enhancement

Habitat enhancement would involve actions to increase the function of intertidal habitats and associated uplands within the Snohomish River estuary. This alternative assumes that enhancement of degraded habitats would result in use by injured species, and injured species and services would be restored.

Description: This alternative consists of land acquisition and/or management actions that provide enhancements to lands that have low functioning habitats or that buffer existing functioning habitat.

Typical Actions: Possible actions under this alternative could include, but are not limited to the creation of corridors between larger patches of habitat and buffers around existing habitats by planting trees and shrubs, widening ditches and sloughs to provide a greater tidal exchange and additional shallow water habitat, and removal of log storage from mudflats.

Potential Location(s): Potential projects would likely be focused in the immediate vicinity of the impacted resources. The potential project area is defined as the SEWIP management areas 3, 2 and 1 as delineated at figure 2.

Environmental Consequences: This alternative would result in a functional increase of existing mudflats, marsh habitats and associated uplands and would provide direct and indirect benefits to injured species.

Log rafts that bottom out during low tides degrade benthic habitat. During high tide log rafts located along the shoreline impede the use of the shoreline by juvenile salmoides and other species dependent upon near shore habitats. Bark and log debris increase the biological oxygen demand in bottom sediments and smother benthic organisms that are important food resources for fish and wildlife. Removal of log rafts would increase feeding and refuge areas for juvenile salmoides, macro-invertebrates, waterfowl and shorebirds, and increase acreage available for colonization by shellfish. Under this scenario, existing log rafting storage areas would be acquired from willing owners.

There should be no adverse impacts to fish and wildlife resources under this alternative as there would be no conversion of habitat types. This alternative will not have a negative impact to existing logging operations or the logging industry.

Planting of trees and shrubs would reduce habitat fragmentation, increase buffering adjacent to areas with existing habitat value, and provide nutrient inputs via plant material and associated invertebrates. Increases in the habitat carrying capacity would result in increased numbers and survival of upland birds and small mammals.

Construction under this alternative would be minimal; however, there could be short-term

impacts from widening channels, including short-term increases in noise and air pollution, and short-term degradation of sediment and/or water quality.

The costs under this alternative would not be as great due to the reduced need for construction. There would still be acquisition or management costs to provide available sites, materials and design costs.

Since this alternative involves only enhancement actions, there would be no increase in habitats available to injured resources. While the increase in function of existing habitats would benefit injured resources, the restoration of injured resources would likely not be as consequential as under the habitat creation/restoration alternative.

III.B.3. Alternative C. Species Specific Enhancement

This alternative focuses on a specific species or group of species injured as a result of release of hazardous substances from the Tulalip Landfill. Species specific enhancement would be considered in situations where most species will recover naturally after implementation of source control, but additional actions are required to assure restoration of a specific species, or when the target species has such an important ecological role that species specific enhancement would produce significant benefits to other injured resources or services.

Description: This alternative consists of restoration actions designed to increase the numbers and/or distribution of specific species or groups of species that have been injured. Potential resources that could benefit from this alternative include salmonids, shellfish and waterfowl.

Typical Actions: Possible actions under this alternative could include, but are not limited to, constructing hatcheries, creating or enhancing feeding, rearing or spawning habitat, seeding intertidal mudflats with clams or oysters, and erecting nest boxes or perches.

Potential Location(s): Potential projects including seeding mudflats, erecting nest boxes or perches, and enhancing feeding and rearing habitats would be located within the estuary. Potential projects involving hatcheries, and creating spawning and rearing habitats would be located within tributaries in the Snohomish basin.

Environmental Consequences: The environmental impacts of this alternative would depend upon the particular restoration project.

Creating or enhancing feeding, rearing or spawning habitats could have adverse short-term water quality, and noise and air impacts associated with construction activities, and short-term disruptions of existing plant and animal communities. These projects would have long-term benefits for fishery resources.

Artificial propagation has been shown to maintain populations in aquatic systems. For example, the Muckleshoot Indian Tribe's White River Hatchery is one element of the White River Spring Chinook recovery plan. However, hatcheries can degrade water and sediment quality over the long-term by raising concentrations of organic material, inorganic nutrients and bacteria and using certain chemicals to control diseases, and increase competition, predation, and genetic interactions with native anadromous and resident fish species. Some fishery resources could be enhanced by this action; however, other fishery resources, such as native salmonids, could be adversely impacted.

Seeding of mudflats with clams or oysters could have short-term water and sediment quality impacts from construction activities, and increased organic matter and nutrient flux. Over time, increases in shellfish number could improve water quality due to the water filtering abilities of these animals. Shellfish survival would directly benefit from this action.

Under this alternative, only the habitat requirements of a single species or group of species would be considered. The proposed restoration actions would benefit the target species, but may not improve conditions for other injured species. Species specific restoration should be considered when an injured resource is unable to recover as part of a general habitat restoration program. This alternative would not meet the specific functional requirements of nutrient export and food chain support identified by the Trustees as essential aspects of a restoration project(s).

III.B.4 Alternative D. Combined Action

This alternative maximizes the opportunity for restoring, replacing, rehabilitating or acquiring the equivalent of the natural resources injured at the site, by integrating the best elements of three alternatives (estuarine habitat creation/restoration, habitat enhancement, and species specific enhancement). This alternative includes all of the actions contemplated under alternatives A (estuarine habitat creation/restoration) and B (habitat enhancement) and all actions under alternative C (species specific), except for construction of hatcheries.

Description: This alternative consists of land acquisition or management actions that provide protection and enhancement to lands that have low functioning habitats, or are ripe for conversion to target habitats. It further incorporates the opportunity to include actions designed to increase the numbers and/or distribution of specific species or groups of species that have been injured and are unable to recover as part of a general habitat restoration program.

Typical Actions: Potential actions under this alternative include those listed under alternatives A, B, and C, excluding construction of hatcheries.

Potential Location(s): Potential projects would likely be focused in the immediate vicinity of the impacted resources, with additional projects located within tributaries in the Snohomish basin.

Environmental Consequences: This alternative would result in an overall increase in important estuarine habitats and would provide direct and indirect benefits to injured species. This alternative provides for both an increase in desired habitats and an increase in the function of existing habitats through enhancement actions, as well as actions targeted at specific species needs.

Adverse impacts to wildlife could occur under this alternative by conversion of a terrestrial habitat to an aquatic habitat. However, this alternative provides for the incorporation of upland buffer habitat around creation sites and increasing the buffers adjacent to areas with existing habitat value. Including all of these actions should mitigate for impacts to wildlife from habitat conversion.

Adverse effects could result from construction activities, including short-term noise and air pollution, short-term degradation of sediment and/or water quality, and disturbance of existing plant and benthic animal communities.

Seeding of mudflats with clams or oysters would also result in short-term water and sediment quality degradation, and increased organic matter and nutrient flux. However, increases in shellfish numbers would improve water quality and more than offset the short-term adverse effect of seeding. In addition, shellfish resources would directly benefit from this action because an increase in numbers of shellfish would improve long-term shellfish reproduction and survival.

The combined action alternative would generally benefit most fish and wildlife resources in the long-term through an increase in intertidal habitats, functional improvement of existing habitats, and improved food web and energy connectivity. The combined action alternative compensates injured resources and for the slow ecological development of constructed habitats by incorporating actions to increase specific species.

No adverse impacts to threatened or endangered species are expected to result from this alternative because construction activities would be minimal and could be timed to eliminate the possibility of adverse impacts. Actions under this alternative could indirectly benefit a variety of federally threatened and endangered species and Washington State listed species by providing nesting, feeding, rearing, and other forms of habitat utilized during the lives of these species.

III.B.5. No Action/Natural Recovery

Description: Under this alternative no actions would be taken to restore resources potentially injured at the Tulalip Landfill CERCLA site. This alternative contemplates that natural recovery would be sufficient to restore the resources in a reasonable period of time to the original baseline (without a discharge or release) condition or that existing or proposed programs outside the NEPA process would be able to conduct restoration activities.

No benefits would arise. The Trustees believe that injured resources may be unable to recover to pre-release levels without restoration actions. No benefits would be realized from the settlement funds received thus far from deminimis parties and the obligations contemplated by the statutes would not be met.

Possible Projects: No projects would be conducted under this alternative.

Environmental Consequences: The no action/natural recovery alternative would continue to have adverse impacts on fish and wildlife over the long-term because no actions would be taken to restore or enhance habitats that injured species utilize. Although some natural recovery may occur over time, the uncertainty associated with this alternative makes recovery a long and dubious process.

The Trustees recognize (see 43 CFR 11.73 (b)) that a natural recovery of resources around the landfill is not feasible due to the fact that the habitat services of the filled acreage have been permanently removed.

IV. SELECTED ALTERNATIVE

The criteria for selecting a specific restoration project includes consideration of the area of exposure, the period of exposure, the type of resource impacted, the period until resources could be enhanced or restored, and the cost effectiveness of early settlement and restoration. Additional consideration is given to each potential alternative developed above against the elements noted in section IV (cost effectiveness of a project, location of a project(s); site attributes; public acceptability) and the essential functional attributes in section III.A.

IV.A. Selected Alternative

Based on the foregoing, the Trustees identify alternative D, the combined action alternative as the preferred alternative. This alternative allows the Trustees maximum flexibility in selecting a restoration project(s) in order to take full advantage of opportunities to protect and enhance the impacted ecosystem. This alternative would result in an increase in the greatest diversity of important estuarine habitats and would provide direct and indirect benefits to injured species. This alternative incorporates those elements from the species specific alternative that have minimal adverse environmental impacts, thereby increasing the ability of the combined action alternative to restore habitats for specific target species.

The first step will be acquisition of real property which fits the Trustees restoration criteria. Other vehicles such as conservation easements will be considered. The Trustees anticipate approaching owners of real property in the immediate vicinity of the impacted area to develop

agreements to purchase or lease property or properties that would provide those habitat functions deemed by the Trustees as critical and essential aspects of a restoration project (see III.A.). Transactions will be only from willing landowners.

In the event properties are not available within the budget or project scope allocated for this project, the Trustees will seek assistance with the purchase, look in other estuary management units or team with other projects to achieve an equivalent functional project.

The Trustees will expend funds recovered from settlement for actions described herein.

IV.B. Scope

As previously discussed in Section I.C. the Trustees determined that a simple and conservative basis for valuing the total injury was to determine the cost to replace the habitat services of 147 of wetlands that have been lost or injured. This acreage was used only as a measure to quickly equate potential damages for a potential restoration project.

A number of replacement ratios were reviewed by the Trustees. The Washington State's Wetlands model recommendation replacement ratio for Category 1 wetlands is six to one. This rationale would suggest a replacement project of approximately 900 acres of a similarly functioning habitat. A previous restoration project in the immediate vicinity of this CERCLA site used three to one as a replacement ratio. This project also suggests a large habitat restoration project of nearly 450 acres. Using conservative assumptions, habitat equivalency analysis suggests that an appropriate project would be in the range of 290 to 360 acres to replace the habitat services lost from the year 1980 through the project completion of remediation. The Trustees will search for a potential project providing the services in a realm of 290 to 360 acres.

IV.C. Estimated Budget

The schedule and budget for implementation of restoration projects will be completed when the plan is finalized following public review and when the most settlements are consummated. At that time the restoration project(s) will be selected along with detailed schedules and budgets. The potential scope of the project was broadly defined at \$6.6 million in documents sent to parties considering settlement (see figure 4). It is anticipated that additional settlements will provide funding for restoration projects under this plan.

V. CRITERIA FOR LAND ACQUISITION

To select a project site, the Trustees will use the criteria listed herein to assess the value and suitability of a specific project. These criteria represent the elements for a logical decision process that will serve as the basis to select a site. The trustees view the criteria in this paragraph as necessary to select a project site and to achieve the critical functions and elements

noted in section III. A site will be selected based on the strengths and weakness of the available site(s) and giving equal weight to the criteria listed.

V.A. Availability and timing: While the selection of a project site would ideally be from the totality of acreage in the estuary, reality limits the selection to sites where willing property owners are agreeable to working with the trustees. Preference should be given to a property or project that is manageable or constructable in the near term.

V.B. Location: Selection of a project site in the immediate vicinity of the affected environment will enhance the probability of achieving a restoration to a near baseline condition. The location of the project site should be in an area with similar tidal actions to the impacted area. This will permit the restoration project to develop wetland conditions with functions similar to the impacted environment with the least construction cost.

V.C. Elevation: The various types of wetlands in tidally influenced estuarine systems are critically dependent upon surface elevations. To permit restoration to a near baseline equivalent estuarine condition, a potential project site should contain existing elevations that may permit the creation of various types of target wetlands with a minimum of surface grading.

V.D. Preference for one site: Selection of one site versus several smaller sites with equivalent acreage, permits the trustees an economy of scale in the project management and construction. Larger sites will allow for greater heterogeneity of habitat attributes.

V.E. Cost effectiveness: When considering potential project sites, the Trustees will consider the cost effectiveness of various sites with the intent of getting the most acreage of high quality functional estuarine acreage within the limit of (settlement) available funds. Particular emphasis will be given to the cost efficiency of projects on otherwise comparable sites.

By including these elements in the restoration decision, the Trustees will maximize the potential for the success of a restoration project. A project will be selected to insure replacement of a resource or habitat to a condition not greater than baseline or to an equal habitat service. The essential functional criteria noted in section III.A. will be included in this decision process.

VI. IMPACTS OF SELECTED ALTERNATIVE

VI.A. Environmental Justice

The Tulalip Tribes of Washington is a distinct community of Native Americans who rely on Treaty reserved fish and shellfish resources of the Snohomish Estuary for subsistence, economic and spiritual purposes. The Trustees are not aware of any adverse impacts on human health or environmental effects on implementation of the preferred alternative on members of this Native American community or any other low income population.

VI.B. Wetlands Impacts

Environmental planning documents to implement site specific restoration work will include sufficient information to (1) identify the type of any wetlands influenced, (2) describe any impacts to wetlands, (3) evaluate alternatives to avoid any negative impacts, and (4) identify methods to minimize harm to wetlands. During any construction, mitigation measures will be employed to reduce or minimize impacts.

VI.C. Floodplain Impacts

Depending on a specific project selected, the Trustees will describe significant effects of the proposed action on areas subject to tidal action and or flooding. Should the project involve encroachment, the final assessment will identify concerns and impacts (positive and negative) of the project on the floodplain. Final planning documents will include a section "Floodplain finding".

VI.D. Coastal Zone Impacts

Final planning documents will include a brief description of Washington's Coastal Zone Management Plan by identifying potential impacts and evidence of coordination with the State's Coastal Zone Management Agency. The selected project will go through the local Shoreline Management Review Process.

VI.E. Social and Economic Impacts

The restoration alternative selected in this plan should not have a negative impact upon the community because no neighborhoods or ethnic groups will be isolated or segregated. The project should not impact property values of the surrounding community. It is the objective of the Trustees to benefit all groups of the community. The project will not change traffic patterns, school zoning, fire protection or negatively impact recreation in the area. The long term impact upon the communities economic will non-existent.

VI.F. Displacement Impacts

The alternative selected visions converting low productive non-populated lands to estuarine, thus the project will not cause any involuntary displacement or relocation.

VI.G. Land Use Impacts and Aesthetics

The alternative selected will be implemented on lands consistent with zoning and land use plans of the local county and city.

VII. ADDITIONAL PLANNING

After a specific project site has been selected and purchased to implement a combined action alternative, and prior to specific on-site planning work, the Trustees will prepare and provide site specific NEPA documents to affected government agencies and the public for comment. The Trustees anticipate that these actions will incorporate site specific requirements of the National Environmental Policy Act, 40CFR Parts 1500 - 1508, (NEPA). Planning documents will include the following topics:

- Analysis of site specific alternatives
- Monitoring and maintenance plan
- Management actions
- Funding and budget

VIII. PUBLIC INVOLVEMENT

The Trustees are committed to involving the public in restoration planning activities and stewardship opportunities where appropriate. Before commencing a specific natural resource damage restoration action, the Trustees are required to solicit public comments on a plan for restoration and comply with other procedural and substantive requirements. This document, with notice published in public media, solicits comments from the general public.

The Trustees will send written notification of the availability of this draft plan to Potentially Responsible Parties (see a list of parties at figure 5) identified in the Tulalip Landfill CERCLA volumetric documents by the U.S. Environmental Protection Agency.

IX. LIST OF AGENCIES AND PERSONS CONSULTED

The Trustees will send copies of this draft restoration document to parties listed below. Parties indicating further interest will be provided copies of subsequent documents. The Trustees will provide a public announcement of the availability of this plan in local public media.

IX.A. State agencies

Department of Fish and Wildlife
Department of Natural Resources
Department of Ecology

IX.B. Federal agencies

National Marine Fisheries Services
US Forest Service
Bureau of Indian Affairs

Natural Resources Conservation Service
US Fish and Wildlife Service
Department of Interior
US Army Corp of Engineers

IX.C. Counties

Snohomish County

IX.D. Cities

City of Everett
City of Marysville
Port of Everett

IX.E. Organizations

Citizens for Puget Sound
Northwest Indian Fish Commission

IX.F. Indian Tribes

The Tulalip Tribes of Washington

IX.G. News media

The Marysville Globe

IX.H. Libraries

The Marysville Municipal Library

IX.I. US Congressional delegation

Senator Slade Gorton
Senator Patty Murray
Congressman Jack Metcalf

IX.J. State elected officials

Representative Dan Anderson
Representative Jeralita Costa

X. COORDINATION OF RESTORATION PLANING ACTIONS

The Trustees anticipate convening a non-voting steering group to assist and to consult on various aspects of the restoration project. Representatives invited will include:

X. A. County

Snohomish County, Planning Department

X. B. City
City of Everett, Planning Department
City of Marysville, Planning Department

X. C. State
Department of Ecology
Fish and Wildlife Service

X. D. Federal agencies
Natural Resource Conservation Service
US Fish and Wildlife Service
US Army Corp of Engineers
Bureau of Indian Affairs
Federal Emergency Management Agency

XI. ADMINISTRATION

Copies of this plan are available for public review in the Marysville library.

The Trustees for the Natural Resources designated above encourage the interested public to comment on the contents and intent of this plan. Please send written comments to the address listed below. Copies of your comments will be considered by the Trustees before a final plan is completed.

Comments
Tulalip Landfill Natural Resources Trustees
6326 33rd Ave NE
Marysville, WA 98271

XII. REFERENCES

City of Everett, Department of Planning and Community Development; Snohomish Estuary Wetland Integration Plan, April, 1997

Ecology and Environment (E&E), 1988 Site Inspection Report for Tulalip Landfill. July 1988

National Oceanic and Atmospheric Administration (NOAA) 1991. Preliminary Natural Resource Survey, Tulalip Landfill, Marysville, WA.

US Environmental Protection Agency, Region X, Remedial Investigation Report, Vols I, II, III, May 1995

US Environmental Protection Agency, Region X, Record of Decision, Tulalip Landfill Superfund Site, Interim Remedial Action, March 1996

Washington State Wetlands Rating System, Washington State Department of Ecology, 2nd edition, August 1993 (Pub #93-74).

US Environmental Protection Agency, Region X, Final Tulalip Landfill Comprehensive Baseline Risk Assessment for the "Off Source" Area, August 1997.

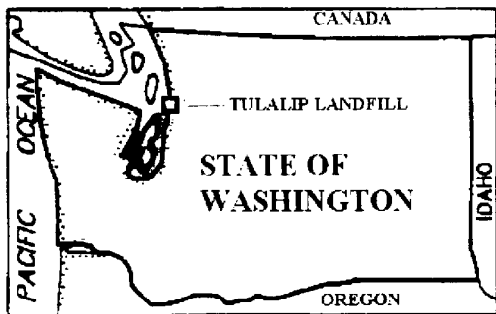
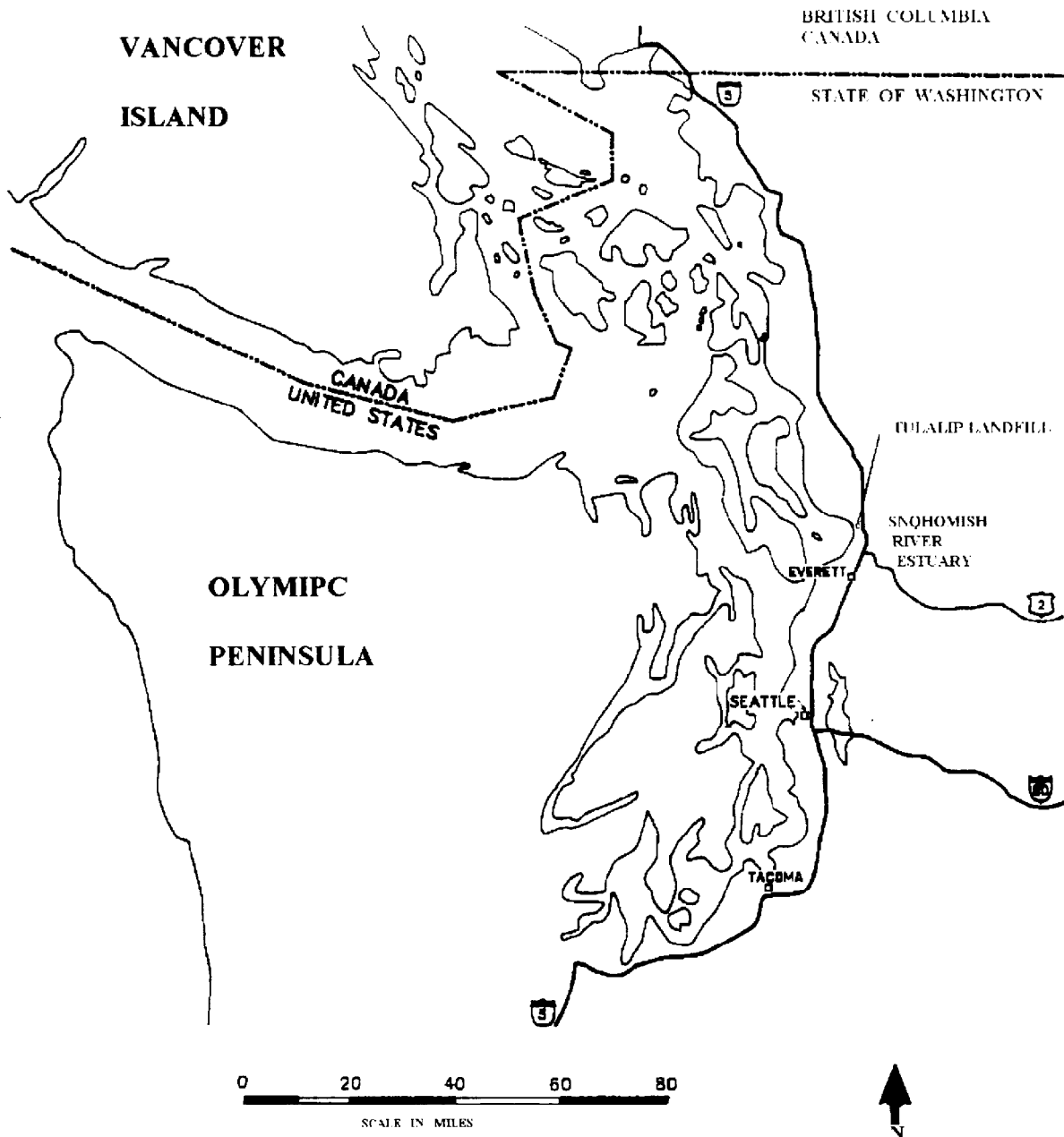


Figure 1
LOCATION MAP
TULALIP LANDFILL
Marysville, WA
August 1997

FIGURE 1-1 - POTENTIALLY IMPACTED MEDIA IN THE AREA
OF THE TULALIP LANDFILL

MEDIA	SPECIES	SCIENTIFIC NAME	REPRODUCTION	NURSERY	FORAGE
AIR					
WATER					
MAMMALS	Racoon		X	X	X
	Deer		X	X	X
	Coyote		X	X	X
	Voies		X	X	X
FISH	Ameerican Shad	Alosa sapidissima	X	X	X
	English Sole	Parophrys vetulus	X	X	X
	Starry Flounder	Platichthys stellatus	X	X	X
	Pink Salmon	Onchorynchus gorbuscha		X	
	Chum Salmon	Onchorynchus keta		X	
	Coho Salmon	Onchorhynchus kisutch		X	
	Chinook Salmon	Onchorhynchus tshawytscha		X	
	Steelhead	Onchorhynchus mykiss		X	
	Cutthroat Trout	Salmo clarki		X	
	Longfin Smelt	Spirinchus thaleichthys	X	X	X
	Shiner Perch	Cymatoggaster aggregata		X	X
	Striped Seaperch	Embiotoca lateralis		X	X
	Threespine Stickleback	Gasterosteus aculeatus	X	X	X
	Gunnel	Pholis spp.			X

Figure 1 - 1

FIGURE 1-1 - POTENTIALLY IMPACTED MEDIA IN THE AREA
OF THE TULALIP LANDFILL

MEDIA	SPECIES	SCIENTIFIC NAME	REPRODUCTION	NURSERY	FORAGE
FISH	Gunnel	Pholis spp.			X
	Pacific Staghorn Sculpin	Leptocottus armatus	X	X	X
SHELLFISH	Dungeness Crab	Cancer magister	X	X	X
	Ghost Shrimp	Callinassa californiensis	X	X	X
	Blue Mud Shrimp	Eupogebia pugettensis	X	X	X
	Macoma Clam	Macoma irus	X	X	X
	Baltic Clam	Macoma balthica	X	X	X
	Edible Mussel	Mytilus edulis	X	X	X
	Scud	Corophium salmonis	X	X	X
	Shore Crab	Hemigrapsus spp.	X	X	X
	Nereid Worm	Nereis vexellosa	X	X	X
Birds	Great Blue Herron				X
	Bald Eagle				X
	Ducks		X	X	X
	Geese		X	X	X
	Hawk			X	X
	Falcon				X
	Barn Owl			X	X
	Snow Owl				X
	Sparrow				X
	Robin				X
	Starling				X
	Osprey				X

Figure 1 - 1

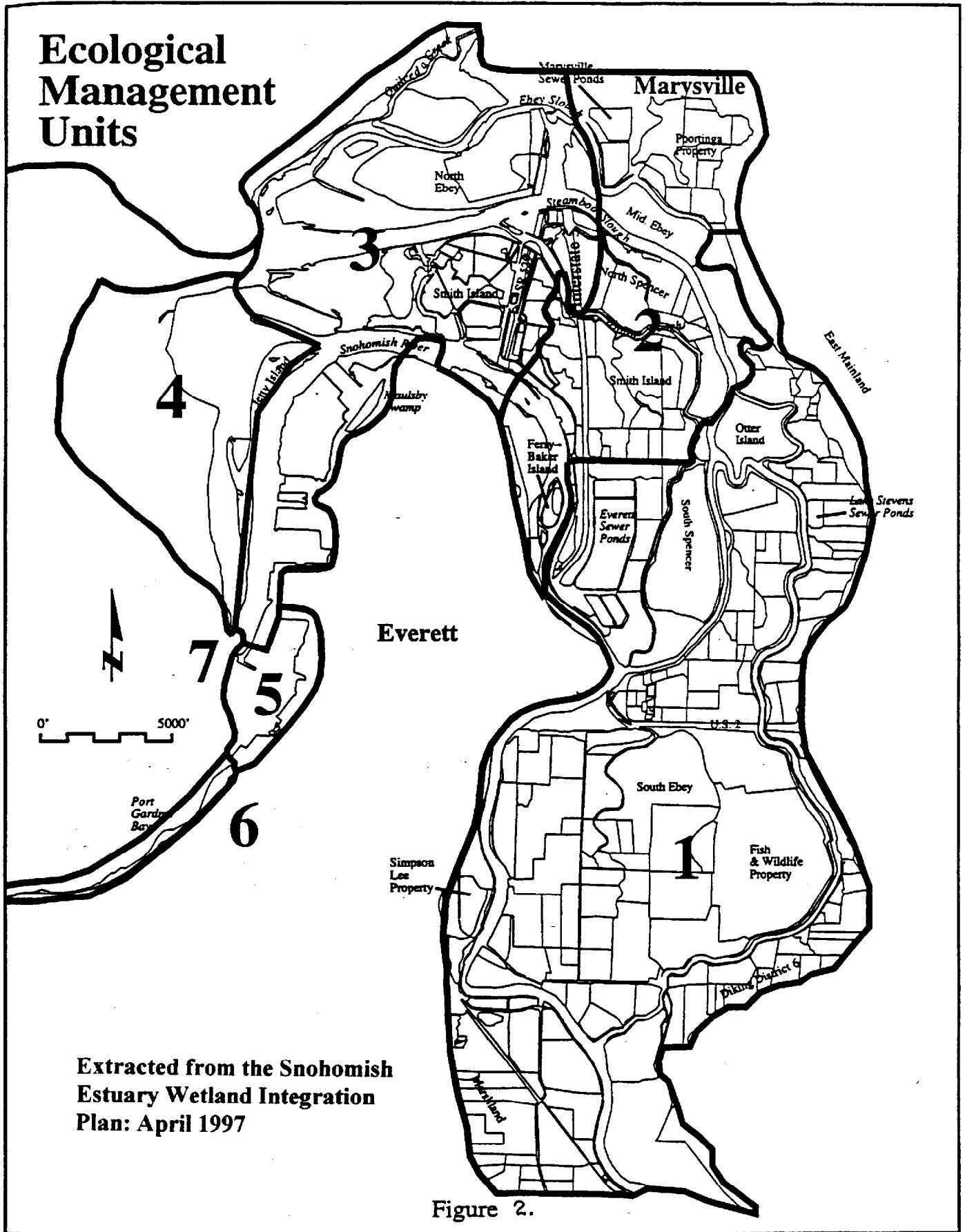
FIGURE 1-1 - POTENTIALLY IMPACTED MEDIA IN THE AREA
OF THE TULALIP LANDFILL

MEDIA	SPECIES	SCIENTIFIC NAME	REPRODUCTION	NURSERY	FORAGE
INSECTS			X	X	X
PLANTS			X		
REPTILES			X	X	X
AMEBA					X

Source: (NOAA 1991; Weston React, 1992, McKinsey, personal observation)

Figure 1 - 1

Ecological Management Units



Extracted from the Snohomish Estuary Wetland Integration Plan: April 1997

Figure 2.

LIST OF POTENTIALLY RESPONSIBLE PARTIES

SEATTLE DISPOSAL COMPANY	SHOP & SAVE	EVERGREEN WASHELLI
WASTE MANAGEMENT	ELAN CONSTRUCTION	SATO CORPORATION
MONSANTO COMPANY	STARROW ENTERPRISE	BROADMOOR GOLF CLUB
NATIONAL DISPOSAL (WMX/BFI)	STUARTS AT SHILSHOLE	MARCO
QUEMETCO	MORRISON CONSTRUCTION	MCFARLAND,
US NAVY/SANDPT. NAVY	STATE OF WASH (DPT OF PUB AST)	DON/MCFARLAND
UNIV OF WASHINGTON	WILLAMETTE WESTERN CO.	WRECKING
/HARBORVIEW	DIAMOND PARKING	MEHRER DRYWALL
SEATTLE SCHOOL	ERNST HARDWARE	SEAFOOD PROCESSING (CITY ICE & COLD STORAGE)
DISTRICT	CHURCH, ART	SEATTLE GOLF & COUNTRY CLUB
SEARS & ROEBUCK	WEST COAST WIRE & ROPE	ACE GALVANIZING
LOCKHEED SHIPBUILDING	ALLIED BODY	ALASKAN COPPER & BRASS
PORT OF SEATTLE	CASES MARKET	ALBERTSONS FOOD CENTER
TODD'S SHIPYARDS	LE CLERCQ MARINE	ALL CITY FENCE COMPANY
ASSOCIATED	CONSTRUCTION	AMERICAN BUILDING MAINTENANCE (ABM)
GROCIERS/THRIFTWAY	SOUTHGATE DISPOSAL COMPANY	AMERICAN CAN COMPANY (MCR HOLDINGS)
SAFEWAY STORES	PETERBUILT WESTERN	AMERICAN PRES LINE/AMERICAN MAIL
KAISER GYPSUM	SEATTLE ENGLISH MUFFIN	ARDEN FARMS
WASHINGTON IRON	BOAT YARD	ARTS FOOD CENTER
WORKS (EDERER)	KENNEDY CONSTRUCTION	AUTO WAREHOUSING
BOEING COMPANY	STATE OF WASH (DPT OF LAB)	BACON HENRY
CITY OF MERCER ISLAND	GORDON KUSE	BAUGH CONSTRUCTION
GENERAL DISPOSAL COMPANY	TIREGON	BAYLESS BINDERY
R.M. HALFFMAN	FLOHR & COMPANY	BAYLEY CONSTRUCTION (ROBERT E.)
TRUCKING	PIERCE ENTERPRISES	BETHLEHEM STEEL
R.W. RHINE, INC.	BILL PIERRE FORD.	BOISE CASCADE OFFICE SUPPLY
SKYWAY LUGGAGE	CROWLEY MARTIME/PUGET	BON MARCHE
NW INDUSTRIES	SOUND TUG	BRANDRUD
HOFFMAN CONSTRUCTION	CUDAHY FOODS	MANUFACTURING
MODEL CITY	FOGTITE METER SEAL, INC.	BUFFALO SANITARY
GA'S BAKERY	KMART	WIPERS
VERMICULITE	MCABEE CONSTRUCTIC)N	BURLINGTON NORTHERN, INC.
NORWEST GYPSUM	NATIONAL TRANSFER COMPANY	CANTEEN SERVICE
VALUE VILLAGE	PEOPLES NATIONAL BANK	CAPITAL INDUSTRIES
CITY SANITARY	POLYNESIA RESTAURANT	CASES, INC. (FLIGHT FORM CASES, INC.)
SERVICE/RABANCO	QUEEN CITY ROOFING	CHAMPION BLD PRODUCTS/ST REGIS
SHILSHOLE BAY	RAINER ICE & COLD STORAGE	
GREAT AMERICAN FOOD AND BEV	SHAFFER CRANE & RIGGING SERVICE	
CENTER DOZING	SMITH & SON (SMITH & SONS)	
PUGET SOUND SALVAGE	ACE TANK COMPANY	
ALASKA MARINE SHIPPING	DELTA MARINE	
LIGHTHOUSE FOR THE BLIND		
BENTON, HUGH		

CHEMITHON
CORPORATION ID
CHILDREN'S ORTHOPEDIC
HOSPITAL
CITY OF KIRKLAND
CITY OF SEATTLE: CITY
LIGHT
COMMERCIAL
WAREHOUSE
CONSOLIDATED
FREIGHTWAY
CONSTRUCTORS PACIFIC,
PAMPCO CONSTRUCTION
CONTOUR LAMINATES
(RADKE CORP)
CRAFTSMAN PRESS
CREE CONSTRUCTION
CROSBY & OVERTON
CROW ROOFING
CX PROCESSING (GRETAG
IMAGING, INC.)
DARIGOLD
DAVID A. MOWAT
COMPANY
DEENY CONSTRUCTION
E&E MEATS
EAGLE METALS (ALCAN
ALUMINUM)
ELLSTROM
MANUFACTURING
EVERETT COMMUNITY
COLLEGE
EVERETT HERALD
FABRICATORS, INC.
(FURON)
FENTRON INDUSTRIES
FIRESTONE TIRE & RUBBER
COMPANY
FISHER FLOUR MILLS, INC.
FISHERMANS BOAT SHOP,
INC.
FORD MOTOR COMPANY
FOSS MARITIME
FOSTER &
KLEISER/ACKERLEY COMM
FRED MEYER, INC
GALL & LANDAU
CONSTRUCTION
GENERAL CONSTRUCTION
GENERAL HASKELL
AMELCO

GENERAL HOSPITAL
(PROVIDENCE GENERAL)
GENERAL SERV ADMIN
(FED BLDINGS)
GENERAL TELEPHONE (GTE)
GORDON BROWN, INC.
GROUP HEALTH
H.S. WRIGHT
CONSTRUCTION
HAIGHT ROOFING
HARDWOOD'S, INC.
HENSEL PHELPS
CONSTRUCTION
HERR LUMBER, INC.
HILLIS HOMES (CENTEX
REAL ESTATE)
HONEYWELL, INC.(ALLIANT
TECHSYSTEMS)
HURLEN CONSTRUCTION
HUSSMAN CORPORATION
IMPRESSIONS N.W. (KP
CORP)
INDEPENDENT
PAPER(jefferson smurfit)
INDUSTRIAL TRANSFER &
STORAGE
IVAR'S REST(CAPT TABLE
PIER 54
J.C. PENNEY'S
JACOBSEN BRO
AKA/JACOBSON TERM
JOHN FLUKE
MANUFACTURING CO
K & N MEATS
KELLER SUPPLY
KING COUNTY (VARIOUS
ENTITIES)
KOHKOKU USA, INC.
(ACHILLES USA, INC.)
LAKE UNION DRY DOCK
LAKE UNION
TERMINAL(WARDS COVE
PACKING)
LAKESIDE SCHOOLS
LUCKY STORE
MANSON CONSTRUCTION
(b)
MARKETIME DRUGS, INC.
MAUST TRANSFER
MELTEC
MERIDIAN EXCAVATING &

WRECKING
METRO(CARKEER AUCI
ALKI TUKWILLA
MOREL FOUNDRY
NC MACHINERY(SC
DISTRIBUTION)
NEW RICHMOND LAUNDRY
NEWELL, CA
NOAA/PITTMON
JANITORIAL
NORDSTROMS
NORTH SEATTLE
COMMUNITY COLLEGE
NORTH SHORE SCHOOL
DIST
NORTHWEST GLASS(TBG
INC.)
NORTHWEST HOME
FURNITURE MART
NORTHWEST HOSPITAL
NORTHWEST TANK
SERVICES(NW
ENVIRONMENTAL
SERVICES)
NUCLEAR PACIFIC,
INC.(VIOX CORP)
OBERTO SAUSAGE
OLSON'S MARKET FOODS
OLYMPIC HOTEL FOUR
SEASONS
OLYMPIC STAINED
PRODUCT(CLOROX)
OSCAR LUCKS
OWENS CORNING
FIBERGLAS CORP
PACCAR INC. (KENWORTH)
PACIFIC FISHERMAN
PACIFIC IRON & METALS
PACIFIC MULTIFORM
PACIFIC N.W. BELL (US
WEST)
PACIFIC
PARTITIONS(PACIFIC
CONSTRUCTION SYSTEMS)
PAYLESS DRUGS/PAY N
SAVE (THRIFTY)
PEPSI/SEVEN-UP
BOTL/GLASER BEV
PETER PAN SEAFOODS
PETSCHL'S MEATS
PIKE PLACE MARKET

AUTHORITY
PIRATES PLUNDER (GREAT
WESTERN PACIFIC)
PLAZA 600 (THE VANCE
CORP)
PROVIDENCE MEDICAL
CENTER
PSF INDUSTRIES
PURDY COMPANY
QFC (QUALITY FOOD
CENTERS)
R.C. HEDREEN COMPANY
RECREATIONAL
EQUIPMENT, INC. REI
RED DOT
REYNOLDS ALUMINUM
CORPORATION
RICHARDSON & HOLLAND
(BUNGE FOODS)
RICHES & ADAMS (ADAMS
NEWS INC.)
RICHMARK PRINTING
RUBATINO REFUSE
REMOVAL, INC.
SAFECO INSURANCE
SALMON TERMINAL
(OLYMPIC STEAMSHIP CO.)
SANITARY SERVICE
COMPANY, INC./CITY OF
BELLINGHAM
SCOTT PAPER COMPANY
(KIMBERLY CLARKE)
SCOUGAL RUBBER
CORPORATION
SEABOARD LUMBER
SEALAND SERVICE, INC
SEATTLE CENTRAL
COMMUNITY COLLEGE
SEATTLE COMMUNITY
COLLEGE DIST
SEATTLE DISTRICT CORPS
OF ENG
SEATTLE FIRST NATIONAL
SEAFIRST
SEATTLE IRON & METALS
SEATTLE POST
INTELLIGENCER
SEATTLE SEAFOOD(OCEAN
BEAUTY)/WA
SEATTLE TIMES
SEATTLE TRADE CENTER

SEATTLE UNIVERSITY
SELLEN CONSTRUCTION
SKYWAY LUGGAGE
SNOHOMISH COUNTY PUD
SOUTH SEATTLE
COMMUNITY COLLEGE
SQI ROOFING
STAR MACHINERY
COMPANY
SWEDISH HOSPITAL
DOCTORS HOSP
TEXACO, INC
THURMAN ELECTRIC &
PLUMBING SUP
TIZ'S DOORS SALES
TRIDENT IMPORTS
TULLUS GORDON
CONSTRUCTION
TURNER & PEASE
U.S. COAST GUARD
U.S. POST OFFICE
UNITED PARCEL SERVICE
V.A. HOSPITAL
VIRGINIA MASON
W.G. CLARK
CONSTRUCTION COMPANY
W.W. WELLS MILLWORK
WALL & CEILING SUPPLY
WASHINGTON CHAIN &
SUPPLY
WASHINGTON NATURAL
GAS
WASHINGTON PLAZA
(WESTIN)
WASHINGTON STATE
FERRY/COLEMAN
WASHINGTON STATE
LIQUOR WHSE
WASHINGTON STATE
MILITARY DEPT
WELCO LUMBER
WEST COAST
CONSTRUCTION
WEST WATERWAY LUMBER
WESTERN
GEAR(BUCYRUS-ERIE)
WEYERHAEUSER
GOODWILL INDUSTRIES
SALVATION ARMY
FEDERAL PARTIES
TULALIP TRIBES OF

WASHINGTON