PUYALLUP-WHITE RIVERS
Geographic Response Plan
(PWR-GRP)
PUYALLUP-WHITE RIVERS

Geographic Response Plan

(PWR-GRP)

JUNE 2017
# Spill Response Contact Sheet

## Required Notifications for Oil Spills & Hazardous Substance Releases

<table>
<thead>
<tr>
<th>Notification Type</th>
<th>Contact Number</th>
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<tbody>
<tr>
<td>Federal Notification - National Response Center</td>
<td>(800) 424-8802*</td>
</tr>
<tr>
<td>State Notification - Washington Emergency Management Division</td>
<td>(800) 258-5990*</td>
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## Other Contact Numbers

### U.S. Coast Guard

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<tr>
<th>District</th>
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<tbody>
<tr>
<td>Sector Puget Sound</td>
<td>(206) 217-6200</td>
</tr>
<tr>
<td>- Emergency / Watchstander</td>
<td>(206) 217-6001*</td>
</tr>
<tr>
<td>- Command Center</td>
<td>(206) 217-6002*</td>
</tr>
<tr>
<td>- Incident Management</td>
<td>(206) 217-6214</td>
</tr>
<tr>
<td>13th Coast Guard District</td>
<td>(800) 982-8813</td>
</tr>
<tr>
<td>National Strike Force</td>
<td>(252) 331-6000</td>
</tr>
<tr>
<td>- Pacific Strike Team</td>
<td>(415) 883-3311</td>
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### U.S. Environmental Protection Agency

<table>
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<tr>
<th>Region 10 – Spill Response</th>
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<tbody>
<tr>
<td>- Washington Ops Office</td>
<td>(360) 753-9437</td>
</tr>
<tr>
<td>- RCRA / CERCLA Hotline</td>
<td>(800) 424-9346</td>
</tr>
<tr>
<td>- Public Affairs</td>
<td>(206) 553-1203</td>
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### National Oceanic Atmospheric Administration

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<tr>
<td>Weather (NWS Seattle)</td>
<td>(206) 526-6087</td>
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### Other Federal Agencies

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<tr>
<td>U.S. Fish &amp; Wildlife Service</td>
<td>(360) 534-9313*</td>
</tr>
<tr>
<td>U.S. Department of Interior</td>
<td>(503) 326-2489</td>
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### Response Contractors (OSRO & PRC)

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<th>Contractor</th>
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<tr>
<td>Global Diving and Salvage</td>
<td>(206) 623-0621*</td>
</tr>
<tr>
<td>Ballard Marine Construction</td>
<td>(866) 270-1114</td>
</tr>
<tr>
<td>Marine Spill Response Corporation</td>
<td>(425) 252-1300*</td>
</tr>
<tr>
<td>NRC Environmental Services</td>
<td>(800) 337-7455*</td>
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* Contact Numbers staffed 24-hour/day

## Tribal Contacts

<table>
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<tr>
<th>Tribe</th>
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<tbody>
<tr>
<td>The Puyallup Tribe of Indians</td>
<td>(253) 573-7000</td>
</tr>
<tr>
<td>Muckleshoot Tribe</td>
<td>(253) 939-3311</td>
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## Industry Contacts

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<th>Company</th>
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<tr>
<td>BNSF (Service Interruption Desk)</td>
<td>(800) 352-2832*</td>
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<tr>
<td>Union Pacific</td>
<td>(888) 877-7267*</td>
</tr>
<tr>
<td>Tacoma Rail</td>
<td>(877) 811-8180*</td>
</tr>
<tr>
<td>McChord Pipeline</td>
<td>(253) 593-6085*</td>
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<tr>
<td>BP Olympic Pipeline</td>
<td>(888) 271-8880*</td>
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## Local Government

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<th>Government</th>
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<tbody>
<tr>
<td>Pierce County Sheriff</td>
<td>(253) 798-3278*</td>
</tr>
<tr>
<td>King County Sheriff</td>
<td>(206) 477-2200*</td>
</tr>
<tr>
<td>City of Auburn</td>
<td>(253) 876-1925</td>
</tr>
<tr>
<td>City of Puyallup</td>
<td>(253) 841-4321</td>
</tr>
<tr>
<td>City of Sumner</td>
<td>(253) 863-6384</td>
</tr>
<tr>
<td>City of Tacoma</td>
<td>(253) 594-7980*</td>
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Before you print this document

Chapter 4 with appendices (pages 27–126) and Appendix 6A (page 136) of this document are provided in “landscape” page orientation; all other chapters and appendices are oriented in “portrait.” The appendices in Chapter 4 (pages 65–126) have been designed for duplex printing (front and back side of paper), “open to top” configuration.
Purpose and Use of this Plan

This Geographic Response Plan (GRP) constitutes the federal and state on-scene coordinators’ orders during the initial phase of an oil spill response in the planning area. It’s meant to aid the response community during the initial phase of an oil spill, from the time a spill occurs until a Unified Command is established. The plan prioritizes tactical response strategies based on locations where spills might occur, and the proximity and relative priority of those locations to sensitive natural, cultural, and economic resources. By using this document it’s hoped that immediate and proper action can be taken to reduce oil’s impact on sensitive resources.
## Record of Changes

<table>
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<th>Name of Person Making Change</th>
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CHAPTER 1
Introduction

This plan focuses on sensitive resource protection after an oil spill on or near the water occurs. It serves as the federal and state on-scene-coordinators’ orders during the initial phase of an oil spill response in the planning area. It has been approved by Regional Response Team 10 and the Chairs and Co-Chairs of the Northwest Area Committee. Geographic Response Plans (GRPs) are living documents that can be revised at any time based on new information from comments and lessons learned from drills and spills. These changes are typically reflected as interim updates on the websites for each GRP until they are fully incorporated into the plan during a future update. We value your input and hope that you’ll let us know how the plan might be improved. Please submit comments online at http://www.rrt10nwac.com/Comment. Comments may also be emailed to GRPs@ecy.wa.gov or submitted by mail using the form and information provided in the appendix of this chapter.

The Puyallup-White Rivers’ planning area (PWR-GRP) is approximately 207.5 square miles, and resides within the boundaries of Pierce and King Counties. Water Resource Inventory Areas (WRIAs) within the PWR-GRP include portions of WRIA 9 (Duwamish/Green), WRIA 10 (Puyallup-White), and WRIA 12 (Chambers/Clover). The PWR-GRP is bordered by the South Puget Sound GRP to the south, the Central Puget Sound GRP to the northwest, and the Green River Duwamish GRP to the north and northeast.

Additional information about the planning area, including physical features, hydrology, climate and winds, tides and currents, and oil spill risks, can be found in Chapter 2 (Site Description). Information about potential response options in the planning area can be found in Chapter 3 (Response Options and Considerations). The bulk of this plan is contained in Chapter 4 (Response Strategies and Priorities). It provides information on tactical response strategies and the order they should be implemented, based on Potential Oil Spill Origin Points (POSOPs) and the proximity and relative priority of sensitive resources near those point locations. Area and sector maps and information on staging areas and boat launch locations are also provided in that chapter.

Control and Containment of an Oil Spill are a Higher Priority than the Implementation of GRP Response Strategies

If in the responder's best judgment, control and containment at or near the source of a spill isn't feasible, or if the source is controlled and contained but oil has spread out beyond initial containment, then the priorities laid out in Section 4.3 of this plan should take precedence until a Unified Command is formed. Spill response priorities, beyond those described in this plan, should rely on aerial observations and spill trajectory modeling. A booming strategy listed as a high priority in Section 4.3 would not necessarily be implemented if a spill trajectory didn't warrant action in that area; however, the priority tables should be followed until spill trajectory information becomes available. During an incident, modifications to the deployment priorities provided in
Section 4.3 of this plan may be made if approved by the Incident Commander, Unified Command, or are identified as necessary by the Environmental Unit.

The downstream movement of oil and the time it takes to mobilize response resources to deploy GRP strategies must always be considered when setting strategy implementation priorities. The strategies discussed in this plan have been designed for use with persistent oils that float on water and may not be suitable for other petroleum products or hazardous substances. For information about non-floating oil spill response, refer to the Non-Floating Oil Spill Response Tool in the Northwest Area Contingency Plan (NWACP), Section 9412. For hazardous substance spills, refer to the NWACP, Chapter 7000. For policy on gasoline and flammable liquid spills refer to the NWACP, Section 4622.

Information meant to support initial Environmental Unit functions can be found in Chapter 6 of this document (Resources at Risk). Chapter 6 and its appendix provide information about the type and location of natural and economic resources in the area. Specific information about the location of cultural sites in the planning area was taken into consideration in the development of this plan but, because of the confidential nature of the material, details about cultural and historic sites aren’t included in this document.

1.1 GRP CHAPTERS AND APPENDICES

Chapter 1 Introduction
Appendix 1A Comments, Corrections, or Suggestions
Chapter 2 Site Descriptions
Chapter 3 Reserved
Chapter 4 Response Strategies and Priorities
Appendix 4A Response Strategies
Appendix 4B Notification Strategies
Appendix 4C Staging Areas
Appendix 4D Boat Launch Locations
Chapter 5 Reserved
Chapter 6 Resources at Risk
Appendix 6A Reserved

1.2 GEOGRAPHIC RESPONSE PLAN DEVELOPMENT PROCESS

GRPs are part of the Northwest Area Contingency Plan, just developed and revised separately. The plans are prepared through the efforts of, and in cooperation with, Washington Department of Ecology, Oregon Department of Environmental Quality, Idaho Bureau of Homeland Security, U.S. Coast Guard, U.S. Environmental Protection Agency, as well as other state and federal agencies, tribes, local governments, natural resource trustees, response organizations, emergency responders, and communities. GRPs are developed through workshops, fieldwork, and meetings.
Participants identify resources that may be at risk of injury from spills and work to develop oil spill response or notification strategies to reduce the chance of injury to those resources.

After compiling information on sensitive resources in the area, site visits are conducted to gather data and determine if spill response strategies near those resources should be added, modified, or deleted. In this, the anticipated effectiveness of existing strategies are reviewed, modifications made as determined necessary, potentially unsafe or ineffective strategies removed, and new strategies added to the plan. Unfortunately, the dynamics of marine and inland water environments, and the present limitations of response technology, make the development of strategies for all sensitive resource locations impracticable. A draft plan is produced after site visits are completed, and made available for public review and comment before a final version of the GRP is produced and published. A responsiveness summary is also published that addresses public comments received during the GRP update and development process.

### 1.3 STANDARDIZED RESPONSE LANGUAGE

In order to avoid confusion in response terminology, this plan uses standard National Interagency Incident Management System, Incident Command System (NIIMS ICS) terminology.

### 1.4 TERMINOLOGY AND DEFINITIONS

The glossary provided in Section 1910 of the NWACP and other sections of the area plan with glossaries independent of Section 1910 should be used when seeking the meaning of terms used in this plan.
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APPENDIX 1A

Comments, Corrections, or Suggestions

Geographic Response Plans (GRPs) are living documents that can be revised at any time based on new information from comments and lessons learned from drills and spills. These changes are typically reflected as interim updates on the websites for each GRP until they are fully incorporated into the plan during a future update.

We value your input and hope that you’ll submit comments on how this plan might be improved. If you have any questions or comments, suggestions for improvement, or find errors in this document please submit comments online at http://www.rrt10nwac.com/Comment, email them to us at GRPs@ecy.wa.gov, or forward them via U.S. Mail to the following agencies:

United States Environmental Protection Agency
Region 10
Office of Environmental Cleanup
1200 Sixth Avenue
Room ECL-116
Seattle, WA 98101

Washington State Department of Ecology
Spill Prevention, Preparedness, and Response (GRPs)
P.O. Box 47600
Olympia, WA 98504-7600

The form on the following page of this attachment can be used to submit comments by mail. Contact information is requested so that we can give you a call if more information or comment clarification is needed.

Please use the GRP Field Report Form for providing information on GRP strategy field visits or the testing of response strategies. The form is available online at http://www.ecy.wa.gov/programs/spills/preparedness/GRP/Form-GRPFieldReport.pdf. Additional information on Geographic Response Plans is available at http://www.rrt10nwac.com/GRP.
GRP Comment Form

Today’s Date: ____________________________
Your Name: ______________________________
Title: _________________________________
Company/Agency: _______________________
Address: ________________________________
City: ___________________________________
State/Province: __________________________ Zip: ________________________________
Email: __________________________________ Ph: _______________________________
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CHAPTER 2

Site Description

2.1 CHAPTER INTRODUCTION

This chapter provides a description of the physical features, hydrology, climate, and winds in the Puyallup-White Rivers GRP planning area, and an oil spill risk assessment in Section 2.6. The Puyallup-White GRP planning area covers approximately 207 square miles, and resides within the boundaries of Pierce and King Counties. Fully or partially, it includes the towns or cities of Auburn, Edgewood, Enumclaw, Fife, Lake Tapps, Orting, Parkland, Puyallup, South Hill, Spanaway, Sumner, and Waller. Portions of WRIA 9 (Duwamish/Green), WRIA 10 (Puyallup/White), and WRIA 12 (Chambers/Clover) falls within this planning area, and includes: Boise Creek, Canyonfalls Creek, Carbon River, Clarks Creek, Clear Creek, Clover Creek, Fennel Creek, Hylebos Creek, Puyallup River, Simons Creek, Swan Creek, Wapato Creek, and the White River. The Muckleshoot and Puyallup Tribes have reservation lands in the area. At least a dozen other tribes have potential interests in the area, including: Lummi, Nisqually, Nooksack, Sauk-Suiattle, Snoqualmie, Squaxin Island, Stillaguamish, Suquamish, Swinomish, Tulalip, Upper Skagit Tribes, and the Yakama Nation. Major roadways in the planning area includes: Interstate 5, Hwy 7, Hwy 161, Hwy 162, Hwy 164, Hwy 165, Hwy 167, Hwy 169, Hwy 18, Hwy 181, Hwy 410, and Hwy 512. BNSF, Union Pacific, Tacoma Rail, and the Tacoma Eastern Railroad are the only companies that own/operate railroad track in the area. The U.S. Oil/McCord Pipeline and BP Olympic Pipeline reside within the boundaries of this planning area. The Puyallup-White GRP is bordered by the South Puget Sound GRP to the south, Central Puget Sound GRP to the northwest, and Green River Duwamish GRP to the north and northeast.

2.2 PHYSICAL FEATURES

Although the eastern boundary of the planning area is far from Mount Rainer, the physical features of this area have been shaped to a large extent by the mountain. All of the major rivers in this area, the Puyallup and its tributaries the Carbon and the White, are fed from glaciers on the west side of Mount Rainer.1 The land through which these rivers flow has been formed by Mount Rainer. Lahars and mudflows, including the Osceola Mudflow of 5,600 years ago, cover much of the area with deposits at least 100 feet thick.2 Since lahars and mudflows can occur at any time, the USGS has installed a lahar detection and warning system in the Carbon and Puyallup River valleys. This

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system would give the tens of thousands of people who live in the area time to evacuate to higher ground during an emergency.3

Development in the planning area varies widely, from the urban areas of Tacoma, to large areas of suburban housing, to rural areas dominated by agricultural fields. Two federally recognized Indian reservations are present in this planning area. The Muckleshoot Reservation spans six land sections extending diagonally along the White River southeast of the city of Auburn4. The Puyallup Indian Reservation covers more than 28 square miles including major parts of Tacoma and lands to the south and east.5

Major transportation corridors pass through this planning area. More than 39 miles of BNSF rail track, 28 miles of Union Pacific track, 15.8 miles of Tacoma Rail track, and 15.8 miles of Tacoma Eastern Railroad track are present in the area. Two petroleum pipelines pass through this area: almost 16 miles of Olympic Pipe Line and 7.3 miles of McChord pipeline. Major highways, including Interstate 5, Highways 164, 167, 410, and 512 crisscross the area. Many of the highways and railroads run parallel to and cross the major rivers throughout the planning area.

2.3 HYDROLOGY

The Puyallup River and its main tributary, the White River, are naturally very braided and meandering. This has caused frequent flooding in the past, and created problems for the cities and towns along the rivers. In order to mitigate this danger, dams and modifications of both rivers have occurred. The Buckley Diversion Dam on the White River (located at the eastern boundary of the PWR planning area), the Mud Mountain Dam on the White River, and the Electron Dam on the Puyallup River (both located outside of this planning area), as well as extensive levees, were built as flood control efforts and have greatly alter the natural flow of the rivers.

In addition to the alterations caused by the flood control dams and levees, the White River Hydroelectric Project, which began in 1910, also greatly altered this planning area. The Project merged Church, Crawford, and Kirtley Lakes to form Lake Tapps. This water body is seven miles in length and has 47 miles of shoreline. The White River Hydroelectric Project, which was developed by Puget Sound Power and Light, has been in operation from 1911 until its decommissioning in 2005. The Cascade Water Alliance, a consortium of eastside cities, now uses the lake as a backup water source for its members’ water distribution system. Development in this planning area varies widely, from the urban areas of Tacoma, to large areas of suburban housing, to rural areas dominated by agricultural fields. Groundwater plays a major role in supplying water in the

planning area. Some of the primary users include the cities of Federal Way, Puyallup, Sumner, and Tacoma, which supplies a portion of its water from wells in the Puyallup-White Watershed.\(^6\)

Portions of WRIA 9 (Duwamish/Green), WRIA 10 (Puyallup-White), and WRIA 12 (Chambers/Clover) fall within the geographic boundaries of this plan. Most of the precipitation arrives during the winter months when water demands are the lowest. During the summer, the snowpack is gone, there is little rain, and naturally low stream flows are dependent on late summer glacial melting and groundwater inflow. This means that groundwater and surface water are least available when water demands are the highest.

**WRIA 9 (Duwamish/Green):** The Duwamish-Green Watershed is situated in southern Puget Sound and comprises most of southern King county, including south Seattle and its adjacent suburban areas of Kent, Des Moines, Covington and other cities. On its west side it is bounded by Puget Sound and its east side includes portions of the Cascade Mountain range. This watershed has a large amount of urban development and high population density on its west side. This watershed includes only one major river, the Duwamish-Green River, which originates in the Cascade Mountains. The Green River is a significant source of drinking water for the Tacoma area. It also includes the Howard A. Hanson Dam, which is used for flood control and reservoir purposes. The watershed includes various smaller streams such as Jenkins, Little Soos, Newaukum and Boundary creeks. Average precipitation ranges from 30-35 inches per year in the coastal areas to 70 inches in the mountains.\(^7\)

**WRIA 10 (Puyallup-White):** The Puyallup-White Watershed is located in western Washington. This watershed includes three major rivers, the Puyallup, White, and Carbon, all of which originate from glaciers on Mt. Rainier. The annual precipitation in the Puyallup-White Watershed ranges from 30 to 40 inches per year in the greater Tacoma area, to over 120 inches in the Cascade Mountains. Only a fraction of this precipitation becomes available for human and economic uses.\(^8\)

**WRIA 12 (Chambers/Clover):** Water Resource Inventory Area (WRIA) 12 consists of Chambers, Clover, and Spanaway Creeks and numerous tributary creeks and streams. This watershed is one of the most intensely populated basins in western Washington. Annual precipitation in the Chambers-Clover Watershed ranges from 40 to 60 inches per year.\(^9\)

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2.4 CLIMATE AND WINDS

The climate in the Puyallup-White planning area is usually mild. The area receives an average of 41 inches of rain per year, and 4 inches of snow.\(^\text{10}\) Precipitation averages 96 days/year. Sunny conditions occur on average 141 days/year. The average percentage of the sky covered by clouds experiences extreme seasonal variation over the course of the year, with the cloudier part of the year beginning in October and lasting over 8 months. Temperatures vary by season between 36F (January) and 77F degrees (July).\(^\text{11}\)

Wind speeds and direction also vary in the planning area. For the majority of the year (Fall to Spring), winds are usually from the south, with an average speed of 2.3mph+. In late June and Early July, winds are usually from the west, then from the north for the rest of the summer season with average speeds around 1.7mph.\(^\text{12}\)

2.5 TIDES AND CURRENTS

The instream flow speed on the Puyallup River at the USGS Puyallup gage (river mile 6.6) has range of flow with a high of 5,180 cubic feet per second (cfs) in January, a low of 1,600 cfs in September, and an annual mean velocity of 3,589 cfs (see Table 4.2). The USGS gage on the Puyallup River at Alderton (river mile 12.2) shows that the Puyallup River upstream of the confluence with the White River has much lower flows throughout the year, with a high of 2,540 cfs in January, a low of 870 cfs in September, and an annual mean velocity of 1,764 cfs. The USGS gage on the White River above Boise Creek in Buckley (RM 24) shows that the instream flow is similar to the flow on the Puyallup River at Alderton, with a high of 2,030 cfs in January, a low of 578 cfs in September, and an annual mean velocity of 1,413 cfs. Each portion of a river will have faster or slower speeds based on a variety of factors, including channel width, channel depth, debris blockages, and elevation change, among others. Sloughs and side channels will have significantly lower flow speeds commensurate with their channel width, depth, and vegetation. There are also tidally influenced sections within the lower reaches of the Puyallup River in this planning area; tides have the potential to greatly impact instream flow. Likewise, the White River Diversion Dam also will alter the instream flow on the White River, downstream of the dam, depending on the amount of water diverted into Lake Tapps.

2.6 RISK ASSESSMENT

The Puyallup-White Rivers are plentiful in natural, cultural, and economic resources, all at risk of injury from oil spills. Potential oil spill risks include, but aren’t limited to, road transportation, rail


transportation, oil pipelines, aircraft, and recreational boating. This section briefly discusses these risks and how they could impact the WADE-GRP planning area.

**Oil Types:** Both refined petroleum products and crude oil are transported in bulk within this planning area.

Crude oil and refined products contain a mix of hydrocarbons with varying properties; different types of crude oil and refined products will behave differently when spilled. Recent changes in oil production have led to an increase in the movement of Bakken light crude and diluted bitumen from Canada transported through the planning area via rail.

Crude oil from the Bakken fields in North Dakota has properties similar to gasoline or diesel, and poses a higher risk of fire because much of it will evaporate quickly into flammable vapors. Unlike gasoline, the heavier hydrocarbons in the crude will persist in the environment after the light ends evaporate or burn. Bitumen from the oil sands in Alberta, Canada, is heavy, almost asphalt-like, until it is mixed with lighter oil products known as diluents to create diluted bitumen. Once mixed, the diluted bitumen will initially float on water after being spilled. Environmental conditions, such as the density of the receiving waters and sediment load of the receiving waters, will affect how long diluted bitumen floats. As the light diluents evaporate, the remaining heavy constituents may sink into the water column. There are specific response actions recommended for non-floating oils, detailed in the Non-Floating Oil Spill Response Tool in the Northwest Area Contingency Plan (NWACP), Section 9412.

**Road Systems:** Vehicle traffic on roadways pose an oil spill risk in areas where they run adjacent to the shorelines, or cross over lakes, rivers, creeks, and ditches, that drain into the Puyallup-White Rivers and their tributaries. Major highways, including Interstate 5, Highways 161, 162, 167, 410, and 512 border or crisscross the area. Many of the highways and railroads run parallel to and cross the major rivers throughout the planning area. I-5 borders the planning area to the northwest and crosses the Puyallup River on the NW boarder of the planning area. I-5 carries West Coast traffic between Canada and Mexico and poses the most significant risk of highway spills, due to the frequency of large tank trucks carrying a number of fuel types.

There are several smaller highways with bridges or causeways where vehicles cross the White, the Puyallup, and/or their tributaries. A vehicle spill onto one of these bridges or roadways can cause fuel or oil to flow from hardened surfaces into a river or its tributaries. Commercial trucks can contain hundreds to thousands of gallons of fuel and oil, especially fully loaded tank trucks, and may carry almost any kind of cargo, including hazardous waste or other materials that might injure sensitive resources if spilled. Smaller vehicle accidents pose a risk as well, a risk commensurate to the volume of fuel and oil they carry.

**Rail Transportation and Facilities:** Rail companies transport oil via both unit trains and manifest trains in this area. Unit trains include: up to four locomotives, buffer cars, and 118 loaded tank cars transporting oil in 714-barrel (29,998 gallon) capacity
USDOT-approved tank cars. Manifest trains include: up to four locomotives, a mix of non-oil merchandise cars, and one or more 714-barrel (29,998 gallon) capacity USDOT-approved tank cars carrying refined oil products, such as diesel, lubrication oil, or gasoline. These trains may include emptied tank cars, each with residual quantities of up to 1,800 gallons of crude oil or petroleum products. Every train locomotive typically holds a few hundred gallons of engine lubrication oil, plus saddle tanks that each have an approximate capacity of 5,000 gallons of diesel fuel. Manifest trains may also transport biological oils and non-petroleum chemicals.

Unit trains carrying crude currently operate on specific routes. Unit trains carrying crude from the Bakken Formation in North Dakota enter Washington State near Spokane, continue along the Columbia River to Vancouver, and then head north along I-5. This main rail line, used by both BNSF and Union Pacific, enters the PWR-GRP planning area from the northwest at the City of Tacoma, parallels the Puyallup River until reaching Sumner, and then traverses alongside the White River until exiting the planning area to the North near Auburn. These rail lines cross the Puyallup River, the White River, or both of the rivers, as well as several tributaries within the planning area.

Trains from both BNSF and Union Pacific, the major carriers in the area, generally contain mixed cargo loads, and may include the transport of hazardous materials, including dilbit and Bakken crude oil. Tacoma Rail (a division of Tacoma Public Utilities) is a municipally owned and operated Class III short line railroad that serves the Port of Tacoma and industrial customers by transporting oil and other cargo from Tacoma south to the Frederickson area, and provides switching services for BNSF and Union Pacific railroads. Tacoma Rail crosses Clover Creek, the North Fork of Clover Creek, and a few of their tributaries within the planning area. The main spill risk in the PWR-GRP planning area is from the movement of refined petroleum products (i.e. gasoline, diesel fuel) and other chemicals. More than 39 miles of BNSF rail track, 28 miles of Union Pacific track, and 15.8 miles of Tacoma Railroad track are present in the PWR-GRP planning area.

**Oil Pipelines:** Two petroleum pipelines pass through the area: almost 16 miles of Olympic Pipeline and 7.3 miles of McChord Pipeline carrying refined products to southern Washington and Oregon. The BP Olympic Pipeline travels 400 miles from the Cherry Point refinery to Portland, Oregon, with additional input lines from the refineries at Phillips 66 Ferndale, Tesoro Anacortes, and Shell Anacortes. It delivers to the terminals at Harbor Island in Seattle, jet fuel to SeaTac airport, and facilities in Tacoma before exporting 1.3 billion gallons per year across the Columbia River to Oregon. The McChord Pipeline transports jet fuel from the U.S. Oil & Refining Company in Tacoma, just outside the planning area to the northwest, to the McChord Airforce Base located just outside the planning area to the southwest.

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13 Tacoma Rail Oil Spill Contingency Plan (2017).
Aircraft: Pierce County Thun Field Airport is the only airport within the planning area. Managed by Pierce County and the Washington State Department of Transportation (WSDOT), it is a public use, general aviation airport. There are currently no airlines providing scheduled passenger service to this airport. Several other small private landing fields are also in the planning area. Just outside the planning area are numerous small, and several major airports, including McChord Airforce Base to the west, and Settle Tacoma International Airport, located less than 10 miles to the north. Since all of these airports are relatively close to the planning area, the potential exists for aircraft failures during inbound or outbound flights that could result in a spill by releasing aviation fuel into the Puyallup-White Rivers or a tributary stream.

Recreational Boating: Accidents involving recreational watercraft on the Puyallup-White Rivers have the potential to result in spills of a few gallons of gasoline up to hundreds of gallons of diesel fuel. Examples of such accidents might include vessel collisions, allisions, groundings, fires, sinking, or explosions. Bilge discharges and mishaps during boat refueling operations are generally the most common types of oil spills to occur from recreational boating.

Other Spill Risks: Other potential oil spill risks in the area include, dam turbine mechanical failures, fuel storage areas (including waste oil storage), industrial accidents, road run-off during rain events, on-shore or near shore activities where heavy equipment is being operated or stored, and the migration of spilled oil through soil on lands adjacent to the river or its tributary streams.

2.7 REFERENCES


http://www.usclimatedata.com/climate/tacoma/washington/united-states/uswa0441


https://weatherspark.com/y/924/Average-Weather-in-Tacoma-Washington-United-States
CHAPTER 3
Response Options and Considerations
(Reserved)
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CHAPTER 4
Response Strategies and Priorities

JUNE 2017
Before you print this document

This chapter and its appendices, as well as the appendix at the end of Chapter 6, are provided in “landscape” page orientation. The detailed 2-page information sheets for response strategies, notification strategies, staging areas, and boat launch locations in appendices 4A though 4D (pages 65–126) have been designed for duplex printing (front and back side of paper), “open to top” configuration.
4.1 CHAPTER INTRODUCTION

This chapter provides information on GRP response strategies and the order they should be implemented, based on Potential Oil Spill Origin Points (POSOPs) and the proximity and relative priority of sensitive resources near those point locations. Area maps, sector maps, and information on staging areas and boat launch locations are also provided in this chapter. During a spill incident, GRP response strategies should be implemented as soon as possible. Unless circumstances unique to a particular spill situation dictate otherwise, the priority tables in Section 4.3 should be used to decide the order that GRP strategies are deployed. The downstream movement of oil and the time it takes to mobilize response resources to deploy GRP strategies must always be considered when setting implementation priorities. Information on resources at risk, sensitive areas, and flight restrictions can be found in Chapter 6 of this plan. Information on shoreline countermeasures can be found in the Northwest Area Shoreline Countermeasures Manual (NWACP Section 9420). The Northwest Area Contingency Plan (NWACP) is available online at http://www.rrt10nwac.com/NWACP/Default.aspx.

The GRP strategies provided in this chapter have been created to reduce spilled oil’s impact on sensitive resources. They are not everything that should or could be done during a response to lessen the chance of injury to natural, cultural, and economic resources at risk from oil spills. Control and containment of an oil spill is always a higher priority than the implementation of GRP response strategies. Although designed to be implemented during the initial phase of an oil spill, GRP strategies may continue to be used throughout a response at the discretion of the Incident Commander, Unified Command, or the Environmental Unit.

4.1.1 On-site Considerations

Before Deploying a GRP Strategy (Questions to Ask)

- Are conditions safe? Response managers and responders must first determine if efforts to implement a response strategy would pose an undue risk to worker safety or the public, based on conditions present during the time of the emergency. No strategy should be implemented if doing so would threaten public safety or present an unreasonable risk to the safety of responders.

- Has initial control and containment been sufficiently achieved? Control and containment of the spill at or near the source are always higher priorities than the deployment of GRP response strategies, especially when concurrent response activities are not possible.

- How far downstream or out into the river, lake, or marine environment is the spilled oil likely to travel before response personnel will be ready and able to deploy GRP response strategies?
• Are permits required? Consult the Northwest Area Contingency Plan Permit Summary Table (NWACP Section 9401) for information specific to your location and circumstance.

• Will equipment or vehicles need to be staged on or near a roadway? If so, traffic control may be required. Contact the Washington State Patrol, or local, county, municipality, or tribal police for assistance. At minimum, Washington Department of Transportation (WSDOT) guidelines for work zone traffic control should be followed when working on or near a roadway.
  - Pierce County Sherriff (253) 798-3278
  - King County Sherriff (206) 477-2200
  - Washington State Patrol District #1 (253) 538-3240

**During Strategy Implementation (Things to Remember)**

- On-scene conditions (weather, currents, tides, waves, river speed, and debris) may require that strategies be modified in order to be effective. There is a significant chance that weather and conditions experienced at a particular strategy location during an actual spill event will be different from when data was gathered during field visits. Response managers and responders may modify the strategies provided in this chapter as needed to meet the challenges experienced during an actual response.
- Certain strategies may call for access points or staging areas that are not easily reached at all times of the year or in all conditions.
- The GRP response strategies provided in this chapter were designed for use with persistent heavy oils that float on water and may not be suitable for other petroleum products or hazardous substances.

**After Strategy Implementation (Things to Understand)**

- Oil containment boom should be maintained and periodically monitored to ensure its effectiveness. Changes in river or current speed will likely require modifications to boom deflection angles (see Table 4.1). Depending on conditions, some booming strategies may require around-the-clock tending.
**Water Speed and Boom Deflection Angle**

Measure the speed that water is moving by anchoring a line with two floating markers/buoys attached that are spaced 100 feet apart. Time the movement of floating debris between the two buoys, and then use Table 4.1 to estimate the water speed based on the travel time of the debris between the two buoys. You can also measure 100 feet along a straight portion of river bank or shoreline, and time the movement of debris between those points, but this method is generally less accurate than using the buoys. The maximum boom deflection angle is also provided in the table, based on the water speed measurements.

**Table 4.1: Water Speed Drift Measurement Table**

<table>
<thead>
<tr>
<th>Time to Drift 100 Feet (seconds)</th>
<th>Velocity (ft/sec)</th>
<th>Velocity (m/sec)</th>
<th>Velocity (knots)</th>
<th>Max Boom Deflection Angle (degrees)</th>
<th>Boom required for 100-foot Profile to Current (feet)</th>
<th>Anchors needed if Placed Every 50 feet (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>16.7</td>
<td>5.1</td>
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<td>4.0</td>
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<tr>
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<td>1,071</td>
<td>22</td>
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<td>12</td>
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<td>2.5</td>
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<td>15</td>
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<tr>
<td>14</td>
<td>7.1</td>
<td>2.2</td>
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<td>13</td>
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<td>17</td>
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<td>11</td>
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<td>1.5</td>
<td>3.00</td>
<td>13.5</td>
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<td>4.2</td>
<td>1.3</td>
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<td>16.3</td>
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</tr>
<tr>
<td>30</td>
<td>3.3</td>
<td>1.0</td>
<td>2.00</td>
<td>20.5</td>
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<td>7</td>
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<td>40</td>
<td>2.5</td>
<td>0.8</td>
<td>1.50</td>
<td>27.8</td>
<td>214</td>
<td>5</td>
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<td>1.7</td>
<td>0.5</td>
<td>1.00</td>
<td>44.4</td>
<td>143</td>
<td>4</td>
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<tr>
<td>&gt;60</td>
<td>≤1.2</td>
<td>≤0.35</td>
<td>≤0.70</td>
<td>90.0</td>
<td>100</td>
<td>3</td>
</tr>
</tbody>
</table>

*Source: Oil Spill Response in Fast Currents. A Field Guide. U.S. Coast Guard Research and Development Center. October, 2001*
4.1.2 Historical River Flow Ranges

Streamflow data from U.S. Geological Survey (USGS) was used to determine the mean monthly discharge for rivers and streams in the planning area. Stream discharge is recorded in cubic feet per second (cfs); velocities in miles per hour (mph) or nautical miles per hour (knots) are not available. Table 4.1 provides information that can be used to calculate local river velocities on-site, based on the time it takes a floating object to drift 100 feet downstream from any given point in a river or creek. Additional information for USGS gage stations in the planning area are provided below (Table 4.2), and may include real-time or near real-time streamflow data. The USGS National Water System Mapper is useful for locating gage stations of interest, and is available online at https://maps.waterdata.usgs.gov/mapper/index.html

Table 4.2: Historical River Streamflow Ranges

<table>
<thead>
<tr>
<th>2006-2016 Monthly Average Outflow in Cubic Feet per Second (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Month</strong></td>
</tr>
<tr>
<td>Jan</td>
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<tr>
<td>Apr</td>
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<tr>
<td>May</td>
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<tr>
<td>Jun</td>
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<tr>
<td>Jul</td>
</tr>
<tr>
<td>Aug</td>
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<td>Sep</td>
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<tr>
<td>Oct</td>
</tr>
<tr>
<td>Nov</td>
</tr>
<tr>
<td>Dec</td>
</tr>
</tbody>
</table>
Figure 4-1: Mean Monthly Outflow for the Puyallup River and the White River
4.2 AREA OVERVIEW MAPS

The following maps provide a geographic overview of the Puyallup-White Rivers planning area. Sector maps in Section 4.4 of this chapter provide more detail on the location of response strategies, notification strategies, staging areas, boat launch locations, and Potential Oil Spill Origin Points (POSOPs). Detailed information for each location can be found in the matrices of Section 4.5 or in the chapter appendices. Priority tables for potential oil spill origin points can be found in Section 4.3.2.

The following area maps are provided for reference:

- Response Strategy Locations
- Notification Strategy Locations
- Staging Areas
- Boat Launch Locations
- Potential Oil Spill Origin Points
Figure 4-2: Response Strategy Locations
Figure 4-3: Notification Strategy Locations
Figure 4-4: Staging Area Locations
Figure 4-5: Boat Launch Locations
Figure 4-6: Potential Oil Spill Origin Points in Area
4.3 STRATEGY AND RESPONSE PRIORITIES

4.3.1 General Response Priorities

The following list provides the order of response priorities after an oil spill in the planning area occurs.

- **Safety is always the number one priority.** Do not implement GRP strategies or take actions that will unduly jeopardize public, worker, or personal safety.

- Notify local public health and safety personnel.

- Control and contain the source of the spill; mobilize resources to the spill location. Source control and containment are always a higher priority than the implementation of GRP strategies.

- Determine the priority or order GRP strategies should be implemented based on the location of the spill or affected area. Priorities based on POSOPs are included in this chapter and should be used unless the situation or circumstances dictate otherwise (see Section 4.3.2).

- As response resources become available, implement the GRP Strategies in order of priority or as necessary based on the scenario, trajectory, or conditions of the day.

- Permits may be required. Consult the Northwest Area Contingency Plan Permit Summary Table (NWACP Section 9401) for information.

4.3.2 Strategy Priorities based on Potential Oil Spill Origin Points

Potential Oil Spill Origin Points (POSOPs) are geographic locations that have a defined list of response strategy implementation priorities provided in a table within Section 4.3. The placement of each POSOP is often based on spill risks in the area. Occasionally POSOPs are generalized to ensure implementation priorities are developed throughout an entire planning area.

These points are displayed on area overview and sector maps as red boxes. In establishing priorities during a response, or selecting an appropriate POSOP, the downstream and/or tidal movement of spilled oil and the time it takes to mobilize and deploy response resources must be considered. Generally, on streams, creeks, and rivers, GRP strategies should first be implemented downstream, well beyond the furthest extent of the spill, with deployments continuing upstream towards the spill source and in some cases slightly beyond. POSOPs are alphabetically designated.
The following tables provide the strategy implementation order for Potential Oil Spill Origin Points in the PWR-GRP; points PWR-A through PWR-D. The priority tables provided in this section were developed using a combination of variables, including: notification time, travel time for responders and equipment, average and seasonal flow rates, average winds, deployment time, proximity to the spill source, trustee input, the relative priority of the resources at risk, and other considerations.

*Source control and containment are a higher priority than GRP strategy implementation*
Table 4.3: PWR-A (White River Diversion Dam and upstream risks)

<table>
<thead>
<tr>
<th>Implementation Priority</th>
<th>Strategy Number</th>
<th>Sector Map</th>
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<tr>
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<td>46</td>
<td>55</td>
<td>76</td>
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<td>CWF-7.15</td>
<td>46</td>
<td>55</td>
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<td>WHTR-23.3</td>
<td>46</td>
<td>60</td>
<td>106</td>
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### Table 4.4: PWR-B (A-Street Bridge and BNSF Crossing the White River)

<table>
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<th>Strategy Matrix</th>
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</thead>
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<tr>
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<td>84</td>
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<tr>
<td>2</td>
<td>PYLPR-5.7</td>
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<td>3</td>
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<td>57</td>
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</tr>
<tr>
<td>5</td>
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<td>92</td>
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Table 4.5: PWR-C (Confluence of the White and Puyallup Rivers, UP & BNSF Upstream)

<table>
<thead>
<tr>
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<th>Strategy Number</th>
<th>Sector Map</th>
<th>Strategy Matrix</th>
<th>Strategy Details</th>
</tr>
</thead>
<tbody>
<tr>
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<td>56</td>
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<tr>
<td>2</td>
<td>PYLPR-5.7</td>
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<td>PYLPR-9.1</td>
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</tr>
<tr>
<td>6</td>
<td>WHTR-0.2</td>
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Table 4.6: PWR-D (Tacoma RR and BP Pipeline Crossing Clover Creek)

<table>
<thead>
<tr>
<th>Implementation Priority</th>
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<th>Strategy Matrix</th>
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<td>CLVC-10.7</td>
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<td>55</td>
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</table>
4.4 SECTOR MAPS (STRATEGY LOCATIONS)

Figure 4-7: Sector Map PWR-1
Figure 4-8: Sector Map PWR-2
Figure 4-9: Sector Map PWR-3

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCan, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri Staging Area and Boat Launch symbols are offset to prevent overlapping.
Figure 4-10: Sector Map PWR-4
Figure 4.10: Sector Map PWR5
Figure 4.10: Sector Map PWR-6

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri Staging Area and Boat Launch symbols are offset to prevent overlapping.
Figure 4-11: Sector Map PWR-7
4.5  MATRICES

4.5.1  Naming Conventions (Short Names)

Each strategy, staging area, and boat launch location in this document has been given a unique “Short Name” which includes one to six letters denoting the associated waterbody. Following the letters are numbers that specify the location. On rivers or other linear waterbodies, the location is named by river mile: the distance from the mouth of the river or creek upstream to the site location. Some short names indicate whether the site is located on river right, river left, or mid-river by an “R”, “L” or “M” after the river mile. On lakes, the numbers indicate the location by shoreline mile, typically starting at the northernmost point and increasing clockwise around the lake. In marine areas, the numbers do not have a geographic meaning. Notification strategies are indicated by an “-N” at the end of the name. Staging Areas and Boat Launches are indicated by the prefix “SA” or “BL”.

BL-PWR-33.5L

Boat Launch  Waterbody  River Mile  River Left

CLERC = Clear Creek  CWT = Cascade Water Tailrace  SMNC = Salmon Creek
CLRKSC = Clarks Creek  NFCLC = North Fork Clover Creek  SWANC = Swan Creek
CLVC = Clover Creek  PWR = Puyallup/White Rivers  WAPC = Wapato Creek
CWF = Cascade Water Flume  PYLPR = Puyallup River  WHTR = White River
### 4.5.2 Response Strategy Matrices

<table>
<thead>
<tr>
<th>Strategy Name</th>
<th>Location</th>
<th>Strategy Type</th>
<th>Boom Length</th>
<th>Boat Req?</th>
<th>Staging Area</th>
<th>Resources At Risk</th>
<th>Comments</th>
<th>Sector Map (Page #)</th>
<th>Strategy Details (Page#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLERC-0.6</td>
<td>31st Avenue Court East Crossing Clear Creek 47.23177 -122.38687</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage onsite, on the shoulder of the road.</td>
<td>Sensitive Nesting Species, Sensitive Resources Nearby, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Parking available on the side of the road next to the bridge; follow WSDOT guidelines for work zone traffic control. Bank of creek has a ~25 degree slope with blackberry bushes.</td>
<td>50</td>
<td>67</td>
</tr>
<tr>
<td>CLRKSC-0.7</td>
<td>56th Street Crossing Clarks Creek 47.20625 -122.34028</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage onsite on the NW side of the street, room for a vac truck</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Quiet neighborhood, no access issues. Follow WSDOT guidelines for work zone traffic control.</td>
<td>50</td>
<td>69</td>
</tr>
<tr>
<td>CLVC-8.5</td>
<td>Clover Creek at 25th Ave E (BP 141-3) 47.12776 -122.39634</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage along side road, close one lane if necessary</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Area was flooded beyond banks during fieldwork. Adjust strategy to extend boom to furthest reach instead of using a Z formation if this is the case during deployment. Follow WSDOT guidelines for work zone traffic control.</td>
<td>52</td>
<td>71</td>
</tr>
<tr>
<td>CLVC-9.5</td>
<td>Clover Creek at 152nd Street E (BP 141-2) 47.11850 -122.38145</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage on site, on the side of the road.</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Busy road, use extreme caution when working on bridge, close one lane if necessary. Follow WSDOT guidelines for work zone traffic control.</td>
<td>52</td>
<td>73</td>
</tr>
<tr>
<td>Strategy Name</td>
<td>Location</td>
<td>Strategy Type</td>
<td>Boom Length</td>
<td>Boat Req?</td>
<td>Staging Area</td>
<td>Resources At Risk</td>
<td>Comments</td>
<td>Sector Map (Page #)</td>
<td>Strategy Details (Page#)</td>
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</tr>
<tr>
<td>CLVC-10.7</td>
<td>Clover Creek at Military Road (BP 141-1) 47.10427 -122.37666</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Busy road, use caution when working on bridge, close one lane if needed. Follow WSDOT guidelines for work zone traffic control.</td>
<td>52</td>
<td>75</td>
</tr>
<tr>
<td>CWF-5.05</td>
<td>Sumner Buckley Highway Bridge over Flume 47.17213 -122.05742</td>
<td>Collection</td>
<td>Boom 500ft, Sorbent 500ft</td>
<td>Yes</td>
<td>Onsite Stage on gravel parking lot at boat ramp on canal right</td>
<td>Economic Resource, Public Health and Safety, Sensitive Nesting Species, T/E Species, Water Intakes, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Launch at primitive boat ramp on canal right. Coordinate with Cascade Water Alliance contractor, Veolia Water at 253-590-3035, for access.</td>
<td>46</td>
<td>77</td>
</tr>
<tr>
<td>CWF-7.15</td>
<td>Wolslegal Bain Bridge over Flume 47.17138 -122.02532</td>
<td>Collection</td>
<td>Boom 200ft, Sorbent 200ft</td>
<td>Yes</td>
<td>Onsite Stage in gravel area by primitive boat ramp</td>
<td>Economic Resource, Public Health and Safety, Sensitive Nesting Species, Sensitive Nesting Species, T/E Species, Water Intakes, Waterfowl and Salmonid Concentrations and Habitat, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Hand launch on site at primitive boat ramp. Coordinate with Cascade Water Alliance contractor, Veolia Water at 253-590-3035, for access.</td>
<td>46</td>
<td>79</td>
</tr>
<tr>
<td>Strategy Name</td>
<td>Location</td>
<td>Strategy Type</td>
<td>Boom Length</td>
<td>Boat Req?</td>
<td>Staging Area</td>
<td>Resources At Risk</td>
<td>Comments</td>
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<tr>
<td>CWT-0.1</td>
<td>148th Ave Bridge Crossing Cascade Water Tailrace 47.23822 -122.23162</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage beside bridge, vac truck will be able to access river from either side</td>
<td>Lake Habitat, Raptors, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Tailrace has low flow but heavy blackberry bushes on all sides. Park on either side and deploy boom from bridge, anchoring to bridge.</td>
<td>49</td>
<td>81</td>
</tr>
<tr>
<td>NFCLC-0.9</td>
<td>North Fork Clover Creek at 14th Ave E 47.13422 -122.41034</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage on fire station property</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Parking available at Central Pierce County fire station next to strategy location. Follow WSDOT guidelines for work zone traffic control.</td>
<td>52</td>
<td>83</td>
</tr>
<tr>
<td>PYLPR-2.85</td>
<td>Puyallup River below Swan Creek 47.23625 -122.39201</td>
<td>Collection</td>
<td>Boom 500ft</td>
<td>Yes</td>
<td>Onsite Stage off gravel road next to anchor point B</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Launch at BL-PYLPR-0.7, 24 Stewart Street, Tacoma (47.26073, -122.418). Coordinate with Pierce County Flood Control 253-798-2725 for access</td>
<td>50</td>
<td>85</td>
</tr>
<tr>
<td>PYLPR-5.7</td>
<td>66th Avenue East Bridge downstream of Clarks Creek 47.21427 -122.34173</td>
<td>Collection</td>
<td>Boom 300ft</td>
<td>Yes</td>
<td>Onsite Stage onsite, vac truck can be parked along N Levee Rd E, not on the sand trail. Bring a booster pump for vac truck</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Hand launch onsite, coordinate with Pierce County Surface Water 253-798-2725 for access. Vac truck should bring a booster pump to reach the river from beside N Levee Rd E</td>
<td>50</td>
<td>87</td>
</tr>
<tr>
<td>Strategy Name</td>
<td>Location</td>
<td>Strategy Type</td>
<td>Boom Length</td>
<td>Boat Req?</td>
<td>Staging Area</td>
<td>Resources At Risk</td>
<td>Comments</td>
<td>Sector Map (Page #)</td>
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<tr>
<td>PYLPR-8.3</td>
<td>North Levee Road at 167 Bridge 47.20270 -122.29321</td>
<td>Collection</td>
<td>Boom 400ft</td>
<td>Yes</td>
<td>Onsite Stage inside area gated by Pierce County. Vac truck should be able to pull off the road under the bridge.</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Hand Launch onsite either under the bridge or off bank in gated staging area. Contact Pierce County to coordinate access. Puyallup River has extreme variability in seasonal flow.</td>
<td>50</td>
<td>89</td>
</tr>
<tr>
<td>PYLPR-9.1</td>
<td>2nd Avenue NE at 512 Bridge 47.19328 -122.28223</td>
<td>Collection</td>
<td>Boom 300ft</td>
<td>Yes</td>
<td>Onsite Stage onsite, additional parking available to the SE</td>
<td>City Park, Recreational Shoreline Area, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Hand launch onsite. Cobbles at bank with 30 degree slope. Coordinate with the City of Puyallup Parks and Rec for access after dark.</td>
<td>50</td>
<td>91</td>
</tr>
<tr>
<td>PYLPR-10.2</td>
<td>Puyallup River Near Houston Road (BNSF 29.5) 47.19929 -122.26199</td>
<td>Collection</td>
<td>Boom 400ft</td>
<td>Yes</td>
<td>Onsite Stage on site on the levy trail. Locked gate, coordinate with Pierce Co for access.</td>
<td>Cutthroat Trout, Recreational Shoreline Area, Sensitive Nesting Species, Steelhead, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Hand launch onsite. Coordinate with Pierce County for access. Puyallup River has extreme variability in seasonal flow and this strategy may be impossible to deploy in flood state high water conditions.</td>
<td>49</td>
<td>93</td>
</tr>
<tr>
<td>Strategy Name</td>
<td>Location</td>
<td>Strategy Type</td>
<td>Boom</td>
<td>Boat Req?</td>
<td>Staging Area</td>
<td>Resources At Risk</td>
<td>Comments</td>
<td>Sector Map (Page #)</td>
<td>Strategy Details (Page #)</td>
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<tr>
<td>PYLPR-16.2</td>
<td>116th Street East (WDFW water access site) 47.15189 - 122.22077</td>
<td>Collection</td>
<td>Boom 600ft</td>
<td>Yes</td>
<td>Onsite</td>
<td>Habitat Restoration and Mitigation Site, Recreational Shoreline Area, Sensitive Nesting Species, State Protected Area/Lands, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Hand launch onsite. Coordinate with WDFW Region 6 for access.</td>
<td>51</td>
<td>95</td>
</tr>
<tr>
<td>SMNC-0.25</td>
<td>Bridge crossing Salmon Creek to the NE of REI Bldg 47.21758 - 122.22841</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Access through business parking lot</td>
<td>49</td>
<td>97</td>
</tr>
<tr>
<td>SWANC-0.1</td>
<td>River Road East at Swan Creek (McChord CCP S-3A) 47.23580 - 122.39298</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Debris in water adjacent to culvert during site visit, may have to boom around it if it is still there</td>
<td>50</td>
<td>99</td>
</tr>
<tr>
<td>Strategy Name</td>
<td>Location</td>
<td>Strategy Type</td>
<td>Boom Length</td>
<td>Boat Req?</td>
<td>Staging Area</td>
<td>Resources At Risk</td>
<td>Comments</td>
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<tr>
<td><strong>WAPC-2.8</strong></td>
<td>20th Street East Crossing Wapato Creek 47.23911 -122.37304</td>
<td>Collection</td>
<td>Boom 100ft, Sorbent 100ft</td>
<td>No</td>
<td>Onsite Stage onsite on Goldau Rd adjacent to strategy location. Additional parking at Costco across the street.</td>
<td>Salmonid Concentrations and Habitat, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Culvert under road. Follow WSDOT guidelines for work zone traffic control.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WHTR-0.2</strong></td>
<td>Houston Road East under the 410 Bridge 47.20064 -122.25398</td>
<td>Collection</td>
<td>Boom 300ft</td>
<td>Yes</td>
<td>Onsite Stage onsite underneath the 410 Bridge, parking on both sides of the road.</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td>Hand launch off Houston Road under the 410 Bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WHTR-4.7</strong></td>
<td>Manke Lumber, 13702 Steward Rd 47.24920 -122.24399</td>
<td>Collection</td>
<td>Boom 300ft</td>
<td>Yes</td>
<td>Onsite Stage onsite at Manke Lumber Co parking lot</td>
<td>Economic Resource, Raptors, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Will need to hand launch work boat over man made berm. Coordinate access with Manke Lumber Co. White River has extreme variability is seasonal flow.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy Name</td>
<td>Location</td>
<td>Strategy Type</td>
<td>Boom Length</td>
<td>Boat Req?</td>
<td>Staging Area</td>
<td>Resources At Risk</td>
<td>Comments</td>
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<tr>
<td>WHTR-23.3</td>
<td>Foothills Trail off N River Ave 47.17451 - 122.01985</td>
<td>Collection</td>
<td>Boom 400ft</td>
<td>Yes</td>
<td>Onsite</td>
<td>Riparian Area, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat</td>
<td>Water pipeline crosses river just west of point B. Do not move strategy further west or park heavy vehicles west of anchor point B. Hand launch on site. If oil is not coming downstream on Boise Creek you can move anchor point A to the East side of the creek mouth. The White River has extreme variability in seasonal flow, high flow conditions during flood stage may make this strategy impossible to deploy.</td>
<td>46</td>
<td>107</td>
</tr>
</tbody>
</table>
### 4.5.3 Notification Strategy Matrices

<table>
<thead>
<tr>
<th>Notification Strategy Name</th>
<th>Location</th>
<th>Strategy Type</th>
<th>Resources at Risk</th>
<th>Implementation</th>
<th>Comments</th>
<th>Sector Map (Page #)</th>
<th>Strategy Details (Page #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWF-3.65-N</td>
<td>Cascade Water Alliance Water Intake 47.17609 -122.08536</td>
<td>Notification</td>
<td>Power Generation, Water Intakes</td>
<td>Notify Cascade Water Alliance by calling Veolia Water at 253-590-3035</td>
<td>Notify the Cascade Water Alliance about the spill so they can take action to protect the resources under their control</td>
<td>46</td>
<td>111</td>
</tr>
<tr>
<td>WHTR-23.85-N</td>
<td>Muckleshoot Tribe Fish Hatchery (just upstream) 36 47.17061 -122.00445</td>
<td>Notification</td>
<td>Fish Hatchery</td>
<td>Notify the Muckleshoot Tribe by calling 360-825-4575</td>
<td>Notify the Muckleshoot Tribe Fish Hatchery about spill so they can take action to protect the resources under their control</td>
<td>46</td>
<td>113</td>
</tr>
</tbody>
</table>
### 4.5.4 Staging Area Matrices

<table>
<thead>
<tr>
<th>Staging Area Name</th>
<th>Location</th>
<th>Position</th>
<th>Nearest Address</th>
<th>Contact</th>
<th>Strategies Served</th>
<th>Comments</th>
<th>Sector Map (Page #)</th>
<th>Strategy Details (Page #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA-PYLPR-16.2</td>
<td>Weiss WDFW Primitive Boat Launch</td>
<td>47.15165 -122.22099</td>
<td>15608 116th St E Puyallup, WA 98374</td>
<td>Washington Department of Fish and Wildlife Region 6 Montesano, WA 98563 360-249-4628</td>
<td>PYLPR-16.2</td>
<td>WDFW fishing access site, call to get gate unlocked</td>
<td>51</td>
<td>119</td>
</tr>
</tbody>
</table>
### 4.5.5 Boat Launch Matrices

<table>
<thead>
<tr>
<th>Boat Launch Name</th>
<th>Name</th>
<th>Position</th>
<th>Nearest Address</th>
<th>Contact</th>
<th>Strategies Served</th>
<th>Comments</th>
<th>Sector Map (Page #)</th>
<th>Strategy Details (Page#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-PLYR-16.2</td>
<td>Weiss WDFW Primitive Boat Launch</td>
<td>47.15165-122.22099</td>
<td>15608 116th St E Puyallup, WA 98374</td>
<td>Washington Department of Fish and Wildlife Region 6 Montesano, WA 98563 360-249-4628</td>
<td>PYLPR-16.2</td>
<td>Undeveloped beach launch, call WDFW for access (locked gate)</td>
<td>51</td>
<td>125</td>
</tr>
</tbody>
</table>
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APPENDIX 4A

Response Strategy 2-Pagers
## RESPONSE STRATEGIES LIST

<table>
<thead>
<tr>
<th>CLERC-0.6</th>
<th>CLRKSC-0.7</th>
<th>CLVC-8.5</th>
<th>CLVC-9.5</th>
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<tr>
<td>CLVC-10.7</td>
<td>CWF-5.05</td>
<td>CWF-7.15</td>
<td>CWT-01</td>
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<td>NFCLC-0.9</td>
<td>PYLPR-2.85</td>
<td>PYLPR-5.7</td>
<td>PYLPR-8.3</td>
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<tr>
<td>PYLPR-9.1</td>
<td>PYLPR-10.2</td>
<td>PYLPR-16.2</td>
<td>SMNC-0.25</td>
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<tr>
<td>SWANC-0.1</td>
<td>WAPC-2.8</td>
<td>WHTR-0.2</td>
<td>WHTR-4.7</td>
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<tr>
<td>WHTR-23.3</td>
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</tbody>
</table>
31st Avenue Court East Crossing Clear Creek

**Position - Location:** 47° 13.906', -122° 23.212'  47° 13' 54.4", -122° 23' 12.7"  47.23177, -122.38687  Tacoma

**Strategy Objective:** Collection : Collect oil moving downstream on Clear Creek

**Implementation:** Secure end of 100ft boom to bank on river right, near the base of the bridge, at/near Point A (47.23167, -122.386661). Using line, extend boom downstream, across Clear Creek, securing it to opposite bank at/near Point B (47.231748, -122.386597). Extend remaining boom back and forth across the creek, inside of Points A & B. Back hard boom with sorbent. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent's capacity, use vac t

**Staging Area:** Onsite : Stage onsite, on the shoulder of the road.

**Site Safety:** Slips, Trips, Falls; Water Hazard, Heavy Vegetation (blackberry bushes)

**Field Notes:** Parking available on the side of the road next to the bridge; follow WSDOT guidelines for work zone traffic control. Bank of creek has a ~25 degree slope with blackberry bushes.

**Watercourse:** Creek - Clear Creek

**Resources at Risk:** Sensitive Nesting Species, Sensitive Resources Nearby, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

**Recommended Equipment**

- 4 Each Anchoring System(s)- Shoreside
- 100 Feet Boom - B3 (River Boom) or equivalent
- 100 Feet Boom - Sorbent
- 1 Each Heaving Line(s)
- 1 Each Machete(s) - (or other vegetation cutting tool)
- 1 Each Vac Truck or Skimmer and Storage

**Recommended Personnel**

- 2 Laborer
- 1 Supervisor
31st Avenue Court East Crossing Clear Creek

CLERC-0.6 Photo: View of Clear Creek at anchor point B for CLERC 0.6

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
253-405-5339

Nearest Address

2711 31st Ave Ct E
Tacoma, WA 98443

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 135 take ramp on the right toward Puyallup (WA-167 N) / Portland Ave (0.22 miles)
3. Make sharp left on E Bay St toward WA-167 N / Puyallup / Bay St (0.07 miles)
4. Continue on E 28th St (0.48 miles)
5. Continue on Pioneer Way E (WA-167) (0.1 miles)
6. Continue on River Rd E (WA-167) (0.59 miles)
7. Turn right on 31st Ave Ct E (31st Avenue Ct E) (0.09 miles)
8. Finish at the bridge just past 2711 31st Ave Ct E, 98443
56th Street Crossing Clarks Creek

**Position - Location:** 47° 12.375', -122° 20.417' to 47° 12' 22.5", -122° 20' 25.0" 47.20625, -122.34028

**Strategy Objective:** Collection: Collect oil moving downstream on Clarks Creek

**Implementation:** Secure 100 ft of boom on the downstream side of the bridge on creek right, at/near Point A (47.20622, -122.34021). Walk boom across the bridge and downstream, securing it at/near Point B (47.20624, -122.34034). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection.

**Staging Area:** Onsite: Stage onsite on the NW side of the street, room for a vac truck here

**Site Safety:** Slips, Trips, Falls; Water Hazard

**Field Notes:** Quiet neighborhood, no access issues. Follow WSDOT guidelines for work zone traffic control.

**Watercourse:** Creek - Clarks Creek

**Resources at Risk:** Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

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**Recommended Equipment**

- 4 Each Anchoring System(s)- Shoreside
- 100 Feet Boom - B3 (River Boom) or equivalent
- 100 Feet Boom - Sorbent
- 1 Each Vac Truck or Skimmer and Storage

**Recommended Personnel**

- 2 Laborer
- 1 Supervisor
**56th Street Crossing Clarks Creek**

CLRKSC-0.7 Photo: View of the collection point for Clarks Creek taken from the NE side of the bridge

**Site Contact**

**Puyallup Tribe of Indians Natural Resources**
Tribal Contact: Natural Resources Manager

Tacoma, WA 98404
253-405-5339

**Nearest Address**

6706 56th St E
Puyallup, WA 98371

**Driving Directions**

1. Head south from Seattle on I-5 South
2. At exit 137 take ramp on the right toward Fife (WA 99 N) / Milton (0.27 miles)
3. Turn left on 54th Ave E (0.22 miles)
4. Turn right on 20th St E (0.49 miles)
5. Turn left on Frank Albert Rd E (0.29 miles)
6. At fork keep left on Frank Albert Rd E (0.52 miles)
7. Turn left on N Levee Rd E (1.54 miles)
8. Turn right on 66th Ave E (0.58 miles)
9. Turn left on 56th St E (0.1 miles)
10. Finish at the bridge just before 6706 56th St E, 98371, on the right
Clover Creek at 25th Ave E (BP 141-3)

**Position - Location:** 47° 7.666', -122° 23.780'  
47° 7' 39.9", -122° 23' 46.8"  
47.12776, -122.39634  
Tacoma

**Strategy Objective:** Collection: Collect oil moving downstream on Clover Creek

**Implementation:** Secure 100 ft of boom on the downstream side of the bridge on creek right, at/near Point A (47.1278, -122.39656). Walk boom across the bridge and downstream, securing it at/near Point B (47.1277, -122.3964). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection.

**Staging Area:** Onsite: Stage along side road, close one lane if necessary

**Site Safety:** Slips, Trips, Falls; Water Hazard

**Field Notes:** Area was flooded beyond banks during fieldwork. Adjust strategy to extend boom to furthest reach instead of using a Z formation if this is the case during deployment. Follow WSDOT guidelines for work zone traffic control.

**Watercourse:** Creek - Clover Creek

**Resources at Risk:** Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

**Recommended Equipment**

<table>
<thead>
<tr>
<th>4 Each</th>
<th>Anchoring System(s)- Shoreside</th>
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</thead>
<tbody>
<tr>
<td>100 Feet</td>
<td>Boom - B3 (River Boom) or equivalent</td>
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<tr>
<td>100 Feet</td>
<td>Boom - Sorbent</td>
</tr>
<tr>
<td>1 Each</td>
<td>Heaving Line(s)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Vac Truck or Skimmer and Storage</td>
</tr>
</tbody>
</table>

**Recommended Personnel**

| 2 Laborer |
| 1 Supervisor |
CLVC-8.5 Photo: View of from river right of Clover Creek at mile 8.5, downstream of the bridge

**Site Contact**

**Puyallup Tribe of Indians Natural Resources**
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

**Nearest Address**

14202 25th Ave E
Tacoma, WA 98445

**Driving Directions**

1. Head south from Seattle on I-5 South
2. At exit 127 bear right onto ramp to WA-512 E toward Puyallup / S Tacoma Way (0.23 miles)
3. At fork keep left on WA-512 E toward Puyallup (2.16 miles)
4. Take ramp on the right to WA-7 / Pacific Ave. toward Parkland / Spanaway / Paradise (0.29 miles)
5. Turn right on Pacific Ave S (WA-7) (1.27 miles)
6. Turn left on Tule Lake Rd S (0.13 miles)
7. Turn right on A ST S (0.07 miles)
8. Turn left on 131st St E (0.37 miles)
9. Continue on Brookdale Rd E (1.49 miles)
10. Turn right on 25th Ave E (0.11 miles)
11. Finish at the bridge just before 14202 25th Ave E, 98445, on the right
### Clover Creek at 152nd Street E (BP 141-2)  CLVC-9.5

| Position - Location: | 47° 7.110', -122° 22.887' | 47° 7'.6.6", -122° 22' 53.2" | 47.11850, -122.38145 | Tacoma |

#### Strategy Objective:
Collection: Collect oil moving downstream on Clover Creek

#### Implementation:
Secure 100 ft of boom on the downstream side of the bridge on creek right, at/near Point A (47.118465, -122.381385). Walk boom across the bridge and downstream, securing it at/near Point B (47.1185, -122.3815). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection.

#### Staging Area:
Onsite: Stage on site, on the side of the road.

#### Site Safety:
Slips, Trips, Falls; Water Hazard; Busy Road; Heavy Vegetation

#### Field Notes:
Busy road, use extreme caution when working on bridge, close one lane if necessary. Follow WSDOT guidelines for work zone traffic control.

#### Watercourse:
Creek - Clover Creek

#### Resources at Risk:
Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat

#### Recommended Equipment

<table>
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<th>Item</th>
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<tr>
<td>4 Each</td>
<td>Anchoring System(s)- Shoreside</td>
</tr>
<tr>
<td>100 Feet</td>
<td>Boom - B3 (River Boom) or equivalent</td>
</tr>
<tr>
<td>1 Each</td>
<td>Heaving Line(s)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Machete(s) - (or other vegetation cutting tool)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Vac Truck or Skimmer and Storage</td>
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#### Recommended Personnel

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<tr>
<td>1</td>
<td>Supervisor</td>
</tr>
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![Map of Clover Creek at 152nd Street E (BP 141-2)](map.png)
Clover Creek at 152nd Street E (BP 141-2)

CLVC-9.5 Photo: View of the collection strategy location on at river mile 9.5 on Clover Creek

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

Nearest Address

3516 152nd St E
Tacoma, WA 98446

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (19.97 miles)
5. Take ramp on the right and go on WA-512 W / WA-161 S toward Puyallup / Olympia (6.42 miles)
6. Take ramp on the right to Canyon Rd. toward Summit (0.26 miles)
7. Turn left on Canyon Rd E (3.31 miles)
8. Turn right on Brookdale Rd E (1 miles)
9. At fork keep left on 152nd St E (0.31 miles)
10. Finish at the culvert just before 3516 152nd St E, 98446, on the left
Clove Creek at Military Road (BP 141-1)  

**Position - Location:** 47° 6.256', -122° 22.600'  
47° 6' 15.4", -122° 22' 36.0"  
47.10427, -122.37666  
Tacoma

**Strategy Objective:** Collection: Collect oil moving downstream on Clover Creek

**Implementation:** Secure 100 ft of boom on river right downstream of bridge, at/near Point A (47.1043, -122.37666). Walk boom across the bridge and downstream, securing it at/near Point B (47.10423, -122.3767). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer storage to collect.

**Staging Area:** Onsite: Stage on site, parking available 100 yards north of culvert.

**Site Safety:** Slips, Trips, Falls; Water Hazard; Busy Road, Heavy Vegetation

**Field Notes:** Busy road, use caution when working on bridge, close one lane if needed. Follow WSDOT guidelines for work zone traffic control.

**Watercourse:** Creek - Clover Creek

**Resources at Risk:** Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

**Recommended Equipment**

- 4 Each Anchoring System(s)- Shoreside
- 100 Feet Boom - B3 (River Boom) or equivalent
- 100 Feet Boom - Sorbent
- 1 Each Heaving Line(s)
- 1 Each Machete(s) - (or other vegetation cutting tool)
- 1 Each Vac Truck or Skimmer and Storage

**Recommended Personnel**

- 2 Laborer
- 1 Supervisor
Clover Creek at Military Road (BP 141-1)

Clover Creek at Military Road (BP 141-1) Photo: View of the collection point on Clover Creek looking south from the NW side of the bridge.

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

Nearest Address

3929 Military Rd E
Tacoma, WA 98446

Driving Directions

1. Head south from Seattle on I-5
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (19.97 miles)
5. Take ramp on the right and go on WA-512 W / WA-161 S toward Puyallup / Olympia (6.42 miles)
6. Take ramp on the right to Canyon Rd, toward Summit (0.26 miles)
7. Turn left on Canyon Rd E (8.69 miles)
8. Turn right on Military Rd E (0.92 miles)
9. Finish at the bridge just past 3929 Military Rd E, 98446, on the right
## Sumner Buckley Highway Bridge over Flume

**Position - Location:** 47° 10.328', -122° 3.445'  
47° 10' 19.7", -122° 3' 26.7"  
47.17213, -122.05742  

**Strategy Objective:** Collection: Collect oil moving downstream on Cascade Water Flume

### Implementation:
Using hand launch workboat, secure 200 ft of boom to bank on canal left, on the upstream side of the log boom, at/near Point A (47.171553, -122.056774). Tow boom downstream and across to canal right, secure end to bank at/near Point B (47.172454, -122.05829) at the primitive boat ramp. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow conditions. Back hard boom with sorbent. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection at anchor point B.

### Staging Area:
Onsite: Stage on gravel parking lot at boat ramp on canal right

### Site Safety:
Slips, Trips, Falls; Water Hazard

### Field Notes:
Launch at primitive boat ramp on canal right. Coordinate with Cascade Water Alliance contractor, Veolia Water at 253-590-3035, for access.

### Watercourse:
Canal - Cascade Water Flume

### Resources at Risk:

### Recommended Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Anchoring System(s) - (anchor, lines, floats)</td>
<td>6 Each</td>
</tr>
<tr>
<td>Anchoring System(s)- Shoreside</td>
<td>2 Each</td>
</tr>
<tr>
<td>Bolt Cutters</td>
<td>1 Each</td>
</tr>
<tr>
<td>Boom - B3 (River Boom) or equivalent</td>
<td>500 Feet</td>
</tr>
<tr>
<td>Boom - Sorbent</td>
<td>500 Feet</td>
</tr>
<tr>
<td>Bridle(s) - Towing (appropriately sized for boom)</td>
<td>1 Each</td>
</tr>
<tr>
<td>Heaving Line(s)</td>
<td>1 Each</td>
</tr>
<tr>
<td>Vac Truck or Skimmer and Storage</td>
<td>1 Each</td>
</tr>
<tr>
<td>Workboat(s) - of adequate size for type and amount of boom</td>
<td>1 Each</td>
</tr>
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</table>

### Recommended Personnel

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Boat Operator</td>
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<tr>
<td>Laborer</td>
<td>3</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
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</tbody>
</table>
CWF-5.05 Photo: View of the upstream anchor point, with the log boom and concrete anchoring block in view, taken from the collection point at the primitive boat launch

**Site Contact**

**Cascade Water Alliance**  
Land/Property Contact: Contractor, Veolia Water  
253-590-3035

**Puyallup Tribe of Indians Natural Resources**  
Tribal Contact: Natural Resources Manager  
253-405-5339

**Nearest Address**  
27730 Sumner-Buckley Hwy E  
Buckley, WA 98321

**Driving Directions**

1. Head south from Seattle on I-5 South  
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)  
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)  
4. At fork keep right on WA-167 S toward Kent / Auburn (19.34 miles)  
5. Take ramp on the right and go on WA410 E toward Sumner / Yakima (11.27 miles)  
6. Turn left on Mundy Loss Rd E (0.78 miles)  
7. Continue on Sumner-Buckley Hwy E (0.03 miles)  
8. Cross the bridge just past at 27730 Sumner-Buckley Hwy E, 98321, and take the first right on the north side of the flume. The strategy is on your immediate right.
Wolslegal Bain Bridge over Flume

Position - Location: 47° 10.283', -122° 1.519'  47° 10' 17.0", -122° 1' 31.2"  47.17138, -122.02532  Buckley

Strategy Objective: Collection: Collect oil moving downstream on Cascade Water Flume

Implementation: Using hand launch workboat, secure 200 ft of boom to bank on canal left, upstream of the bridge, at/near Point A (47.171333, -122.024462). Tow boom downstream and across to canal right, secure end to bank at/near Point B (47.171359, -122.025266) on the downstream side of the boat ramp. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow conditions. Back hard boom with sorbent. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection at anchor point B

Staging Area: Onsite: Stage in gravel area by primitive boat ramp

Site Safety: Slips, Trips, Falls; Water Hazard

Field Notes: Hand launch on site at primitive boat ramp. Coordinate with Cascade Water Alliance contractor, Viola Water at 253-590-3035, for access.

Watercourse: Canal - Cascade Water Flume

Resources at Risk: Economic Resource, Public Health and Safety, Sensitive Nesting Species, Sensitive Nesting Species, T/E Species, Water Intakes, Waterfowl and Salmonid Concentrations and Habitat, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat

Recommended Equipment

- 2 Each Anchoring System(s) - (anchor, lines, floats)
- 2 Each Anchoring System(s) - Shoreside
- 1 Each Bolt Cutters
- 200 Feet Boom - B3 (River Boom) or equivalent
- 200 Feet Boom - Sorbent
- 1 Each Bridle(s) - Towing (appropriately sized for boom)
- 1 Each Heaving Line(s)
- 1 Each Vac Truck or Skimmer and Storage
- 1 Each Workboat(s) - (hand-launch)

Recommended Personnel

- 1 Boat Operator
- 2 Laborer
- 1 Supervisor
Wolslegal Bain Bridge over Flume

CWF-7.15 Photo: View looking upstream toward anchor point A taken from the collection site at the primitive boat launch

Site Contact

Cascade Water Alliance
Land/Property Contact: Contractor, Veolia Water
253-590-3035

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
253-405-5339

Nearest Address

451 Cemetery Road
Buckley, WA 98321

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (4.4 miles)
3. Take ramp on the right to WA-164 / Auburn Wy toward Enumclaw (0.18 miles)
4. At fork keep left on WA-164 E toward Enumclaw / Muckleshoot Reservation (0.03 miles)
5. Make sharp left on Auburn Way S (WA-164) (0.06 miles)
6. Turn right at 7th St SE to stay on Auburn Way S (WA-164 N) (4.27 miles)
7. Continue on Auburn Enumclaw Rd SE (WA-164) (5.54 miles)
8. Continue on SE 436th St (WA-164) (2.62 miles)
9. Continue on SE 436th Way (WA-164) (0.43 miles)
10. Turn right on 244th Ave SE (2 miles)
11. Turn right on WA-410 (Enumclaw Buckley Rd SE) (0.95 miles)
12. Turn right on the service road just before the Woslegal Bain Bridge the strategy location is on your immediate left.
# 148th Ave Bridge Crossing Cascade Water Tailrace

## Position - Location:

| 47° 14.293', -122° 13.897' | 47° 14' 17.6", -122° 13' 53.8" | 47.23822, -122.23162 | Sumner |

## Strategy Objective:
Collect oil moving downstream on Cascade Water Tailrace

## Implementation:
Secure 100 ft of boom to the upstream end of the bridge on river right, at/near Point A (47.23837, -122.231717), using shoreside anchor systems, or existing features. Then walk boom across bridge and anchor to the edge of the bridge on river left, at/near Point B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection.

## Staging Area:
Onsite: Stage beside bridge, vac truck will be able to access river from either side

## Site Safety:
Slips, Trips, Falls; Water Hazard; Heavy Vegetation

## Field Notes:
Tailrace has low flow but heavy blackberry bushes on all sides. Park on either side and deploy boom from bridge, anchoring to bridge.

## Watercourse:
Canal - Cascade Water Tailrace

## Resources at Risk:
Lake Habitat, Raptors, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat

## Recommended Equipment

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
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<tbody>
<tr>
<td>1 Each</td>
<td>Anchor - Danforth (or other appropriate type)</td>
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<tr>
<td>2 Each</td>
<td>Anchoring System(s)- Shoreside</td>
</tr>
<tr>
<td>100 Feet</td>
<td>Boom - B3 (River Boom) or equivalent</td>
</tr>
<tr>
<td>100 Feet</td>
<td>Boom - Sorbent</td>
</tr>
<tr>
<td>1 Each</td>
<td>Heaving Line(s)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Machete(s) - (or other vegetation cutting tool)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Vac Truck or Skimmer and Storage</td>
</tr>
</tbody>
</table>

## Recommended Personnel

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<tr>
<th>Quantity</th>
<th>Role</th>
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<tr>
<td>2</td>
<td>Laborer</td>
</tr>
<tr>
<td>1</td>
<td>Supervisor</td>
</tr>
</tbody>
</table>
148th Ave Bridge Crossing Cascade Water Tailrace

CWT-0.1 Photo: View of the up river end of the bridge taken from canal left

**Site Contact**

**Cascade Water Alliance**  
Land/Property Contact: Contractor, Veolia Water  
253-590-3035

**Puyallup Tribe of Indians Natural Resources**  
Tribal Contact: Natural Resources Manager  
253-405-5339

**Nearest Address**

2306 E Valley Hwy E  
Sumner, WA 98390

**Driving Directions**

1. Head south from Seattle on I-5 South  
2. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (3.86 miles)  
3. Take ramp on the right to C St. S.W. (0.31 miles)  
4. Turn right on C St SW (2.13 miles)  
5. At fork keep left on C St SW (0.03 miles)  
6. Turn left on Ellingson Rd (0.08 miles)  
7. Turn right on A St SE (0.26 miles)  
8. Continue on E Valley Hwy E (A St SE) (2.25 miles)  
9. Turn right on 24th St E, cross over the RR and continue to the next street (0.3 miles)  
10. Take the next right on 148th Ave E, continue to the bridge over the tailrace
### North Fork Clover Creek at 14th Ave E

**Position - Location:**
- North Fork Clover Creek at 14th Ave E
  - NFCLC-0.9
  - 47° 8.053', -122° 24.620'
  - 47° 3.2", -122° 24' 37.2"
  - 47.13422, -122.41034
  - Tacoma

**Strategy Objective:**
- Collection: Collect oil moving downstream on North Fork Clover Creek

**Implementation:**
- Secure 100 ft of boom to bank on river left, above bridge at/near Point A (47.1341, -122.410326). Using line, extend boom downstream, across creek, securing it to opposite bank at/near Point B (47.1342, -122.41038). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity use vac truck or skimmer/storage to collect.

**Staging Area:**
- Onsite: Stage on fire station property

**Site Safety:**
- Slips, Trips, Falls; Water Hazard; Busy Road

**Field Notes:**
- Parking available at Central Pierce County fire station next to strategy location. Follow WSDOT guidelines for work zone traffic control.

**Watercourse:**
- Creek - North Fork Clover Creek

**Resources at Risk:**
- Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

### Recommended Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity/Type</th>
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<tbody>
<tr>
<td>Anchoring System(s)- Shoreside</td>
<td>4 Each</td>
</tr>
<tr>
<td>Boom - B3 (River Boom) or equivalent</td>
<td>100 Feet</td>
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<tr>
<td>Boom - Sorbent</td>
<td>1 Each</td>
</tr>
<tr>
<td>Heaving Line(s)</td>
<td>1 Each</td>
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<tr>
<td>Vac Truck or Skimmer and Storage</td>
<td>1 Each</td>
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### Recommended Personnel

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<th>Role</th>
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<tr>
<td>Laborer</td>
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<tr>
<td>Supervisor</td>
<td>1</td>
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</table>
Appendix 4A

North Fork Clover Creek at 14th Ave E

NFCLC-0.9 Photo: View of North Fork Clover Creek at the bridge beside Central Pierce Co fire station, location to deploy NFCLC-0.9

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

Nearest Address

1318 Brookdale Rd E
Tacoma, WA 98445

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 127 bear right onto ramp to WA-512 E toward Puyallup / S Tacoma Way (0.23 miles)
3. At fork keep left on WA-512 E toward Puyallup (2.16 miles)
4. Take ramp on the right to WA-7 / Pacific Ave. toward Parkland / Spanaway / Paradise (0.29 miles)
5. Turn right on Pacific Ave S (WA-7) (0.71 miles)
6. Turn left on 121st St S (0.89 miles)
7. Turn right on Golden Given Rd E (0.9 miles)
8. Turn left on Brookdale Rd E (0.18 miles)
9. Turn right on 14th Ave E and your destination is at the bridge or culvert crossing the North Fork of Clover Creek (160 feet).
## Puyallup River below Swan Creek

**Position - Location:** 47° 14.175', -122° 23.521'  
47° 14' 10.5", -122° 23' 31.2"  
47.23625, -122.39201  
Tacoma

**Strategy Objective:** Collection: Collect oil moving downstream on Puyallup River

**Implementation:** Using workboat, secure 500 ft of boom to bank on river right, at/near Point A (47.236035, -122.390943). Tow boom downstream, securing to shore on river left at/near anchor point B (47.202932, -122.2938). Use shoreside anchoring systems or existing features to secure boom to banks. Use additional anchoring systems to keep boom secure in water. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage for collection at Point B.

**Staging Area:** Onsite: Stage off gravel road next to anchor point B

**Site Safety:** Slips, Trips, Falls; Water Hazard; Heavy Vegetation

**Field Notes:** Launch at BL-PYLPR-0.7, 24 Stewart Street, Tacoma (47.26073, -122.418). Coordinate with Pierce County Flood Control 253-798-2725 for access

**Watercourse:** River - Puyallup River

**Resources at Risk:** Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

### Recommended Equipment

- 6 Each Anchoring System(s) - (anchor, lines, floats)
- 2 Each Anchoring System(s) - Shoreside
- 1 Each Bolt Cutters
- 500 Feet Boom - B3 (River Boom) or equivalent
- 1 Each Bridle(s) - Towing (appropriately sized for boom)
- 1 Each Heaving Line(s)
- 1 Each Machete(s) - (or other vegetation cutting tool)
- 1 Each Vac Truck or Skimmer and Storage
- 1 Each Workboat(s) - (hand-launch)

### Recommended Personnel

- 1 Boat Operator
- 3 Laborer
- 1 Supervisor
Puyallup River below Swan Creek

PYLPR-2.85 Photo: View looking upstream at anchor point B and staging area for PYLPR-2.85 off River Road E

Site Contact

Pierce County Public Works
Land/Property Contact : Surface Water Management
253-798-2725

Puyallup Tribe of Indians Natural Resources
Tribal Contact : Natural Resources Manager
253-405-5339

Nearest Address

52 River Road E
Tacoma, WA 98443

Driving Directions

1. Head south on I-5
2. At exit 135 take ramp on the right toward Puyallup (WA-167 N) / Portland Ave (0.22 miles)
3. Make sharp left on E Bay St toward WA-167 N / Puyallup / Bay St (0.07 miles)
4. Continue on E 28th St (0.48 miles)
5. Continue on Pioneer Way E (WA-167) (0.1 miles)
6. Continue on River Rd E (WA-167) (1 mile)
7. Turn left onto Pierce County Flood Control access road before crossing Swan Creek (about 0.25 miles before reaching 52 River Road E, 98443)
8. Gated gravel drive to staging area will be on your immediate right
### 66th Avenue East Bridge downstream of Clarks Creek

#### Position - Location:
47° 12' 856", -122° 20' 504"
47° 12' 51.4", -122° 20' 30.2"
47.21427, -122.34173

#### Strategy Objective:
Collection: Collect oil moving downstream on Puyallup River

#### Implementation:
Using hand launch workboat, secure 300 ft of boom to bank on river left, at/near Point A (47.21371, -122.341635) below Clarks Creek. Tow boom downstream, securing it mid-river at/near Point B (47.2139, -122.34155). Then anchor to shore downstream on river right at/near Point C (47.2145, -122.34167). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage for collection at Point C (vac truck must park beside N Levee Rd E).

#### Staging Area:
Onsite: Stage onsite, vac truck can be parked along N Levee Rd E, not on the sand trail. Bring a booster pump for vac truck

#### Site Safety:
Slips, Trips, Falls; Water Hazard; Heavy Vegetation

#### Field Notes:
Hand launch onsite, coordinate with Pierce County Surface Water 253-798-2725 for access. Vac truck should bring a booster pump to reach the river from beside N Levee Rd E

#### Watercourse:
River - Puyallup River

#### Resources at Risk:
Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

#### Recommended Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Each Anchoring System(s) - (anchor, lines, floats)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Each Anchoring System(s) - Shoreside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Each Bolt Cutters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 Feet Boom - B3 (River Boom) or equivalent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Each Bridle(s) - Towing (appropriately sized for boom)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Each Heaving Line(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Each Machete(s) - (or other vegetation cutting tool)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Each Vac Truck or Skimmer and Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Each Workboat(s) - (hand-launch)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Recommended Personnel

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Operator</td>
<td>1</td>
</tr>
<tr>
<td>Laborer</td>
<td>2</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
</tr>
</tbody>
</table>
66th Avenue East Bridge downstream of Clarks Creek

PYLPR-5.7 Photo: View from collection point C looking upstream at the Hwy 66 Bridge along proposed boom angle

**Site Contact**

**Pierce County Public Works**
Land/Property Contact: Surface Water Management 253-798-2725

**Puyallup Tribe of Indians Natural Resources**
Tribal Contact: Natural Resources Manager 253-405-5339

**Nearest Address**
6520 River Rd E  Puyallup, WA 98371

**Driving Directions**

1. Head south from Seattle on I-5 South
2. At exit 137 take ramp on the right toward Fife (WA 99 N) / Milton (0.27 miles)
3. Turn left on 54th Ave E (0.22 miles)
4. Turn right on 20th St E (0.49 miles)
5. Turn left on Frank Albert Rd E (0.29 miles)
6. At fork keep left on Frank Albert Rd E (0.52 miles)
7. Turn left on N Levee Rd E (1.54 miles)
8. Turn right at the pull-off on the shoulder just before the bridge, strategy is at 47.21452, -122.34167
# North Levee Road at 167 Bridge

<table>
<thead>
<tr>
<th>Position - Location:</th>
<th>Collection: Collect oil moving downstream on Puyallup River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Safety:</td>
<td>Slips, Trips, Falls; Water Hazard; Heavy Vegetation</td>
</tr>
<tr>
<td>Staging Area:</td>
<td>Onsite: Stage inside area gated by Pierce County. Vac truck should be able to pull off the road under the bridge</td>
</tr>
<tr>
<td>Field Notes:</td>
<td>Hand Launch onsite either under the bridge or off bank in gated staging area. Contact Pierce County to coordinate access. Puyallup River has extreme variability in seasonal flow.</td>
</tr>
<tr>
<td>Watercourse:</td>
<td>River - Puyallup River</td>
</tr>
<tr>
<td>Resources at Risk:</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
</tr>
</tbody>
</table>

![Diagram of the river and staging areas with labels A, B, C, and anchor points with coordinates and labels for each system and equipment needed for the operation.]

**Recommended Equipment**

- 5 Each Anchoring System(s) - (anchor, lines, floats)
- 2 Each Anchoring System(s) - Shoreside
- 1 Each Bolt Cutters
- 1 Each Bridle(s) - Towing (appropriately sized for boom)
- 1 Each Heaving Line(s)
- 1 Each Machete(s) - (or other vegetation cutting tool)
- 1 Each Vac Truck or Skimmer and Storage
- 1 Each Workboat(s) - (hand-launch)

**Recommended Personnel**

- 1 Boat Operator
- 2 Laborer
- 1 Supervisor
North Levee Road at 167 Bridge

PYLPR-8.3 Photo: View from bridge looking upriver toward anchor point A

Site Contact

**Pierce County Public Works**
Land/Property Contact: Surface Water Management
253-798-2725

**Puyallup Tribe of Indians Natural Resources**
Tribal Contact: Natural Resources Manager
253-405-5339

Nearest Address

219 N Levee Road
Puyallup, WA 98371

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (21.18 miles)
5. Turn right on N Levee Rd (0.05 miles)
6. Take the first left onto E Levee Rd, cross under the bridges
7. Take the first driveway on the right (may be gated) and proceed to the strategy location, downstream of the bridges at 47.20283, -122.29319.
### 2nd Avenue NE at 512 Bridge

| Position / Location | 47° 11.597', -122° 16.934' | 47° 11' 35.8", -122° 16' 56.0" | 47.19328, -122.28223 | Puyallup |

| Strategy Objective | Collection : Collect oil moving downstream on Puyallup River |

| Implementation | Using hand launch workboat, secure 300 ft of boom to bank on river right, upstream of the bridge, at/near Point A (47.193583, -122.281512). Tow boom downstream, across river, securing it to opposite bank at/near Point B (47.193226, -122.2826178) upstream of the culvert (unless oil is coming from culvert). Use shoreside anchoring systems or existing features to secure boom to bank. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage to collect oil. |

| Staging Area | Onsite : Stage onsite, additional parking available to the SE |

| Site Safety | Slips, Trips, Falls; Water Hazard; Homeless Population |

| Field Notes | Hand launch onsite. Cobbles at bank with 30 degree slope. Coordinate with the City of Puyallup Parks and Rec for access after dark. |

| Watercourse | River - Puyallup River |

| Resources at Risk | City Park, Recreational Shoreline Area, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat |

### Recommended Equipment

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Each</td>
<td>Anchoring System(s) - (anchor, lines, floats)</td>
</tr>
<tr>
<td>2 Each</td>
<td>Anchoring System(s)- Shoreside</td>
</tr>
<tr>
<td>1 Each</td>
<td>Bolt Cutters</td>
</tr>
<tr>
<td>1 Each</td>
<td>Bridle(s) - Towing (appropriately sized for boom)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Heaving Line(s)</td>
</tr>
<tr>
<td>1 Each</td>
<td>Vac Truck or Skimmer and Storage</td>
</tr>
<tr>
<td>1 Each</td>
<td>Workboat(s) - (hand-launch)</td>
</tr>
</tbody>
</table>

### Recommended Personnel

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boat Operator</td>
</tr>
<tr>
<td>2</td>
<td>Laborer</td>
</tr>
<tr>
<td>1</td>
<td>Supervisor</td>
</tr>
</tbody>
</table>
2nd Avenue NE at 512 Bridge

PYLPR-9.1 Photo: View upstream from underneath the hwy bridge next to Riverwalk Park

<table>
<thead>
<tr>
<th>Site Contact</th>
</tr>
</thead>
</table>
| **City of Puyallup Parks and Recreation**  
Land/Property Contact: Manage Parks and the Riverwalk Trail  
253-841-5561 |
| **Puyallup Tribe of Indians Natural Resources**  
Tribal Contact: Natural Resources Manager  
253-405-5339 |

<table>
<thead>
<tr>
<th>Nearest Address</th>
</tr>
</thead>
</table>
| 821 2nd Ave NE  
Puyallup, WA 98372 |

<table>
<thead>
<tr>
<th>Driving Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Head south from Seattle on I-5 South</td>
</tr>
<tr>
<td>2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)</td>
</tr>
<tr>
<td>3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)</td>
</tr>
<tr>
<td>4. At fork keep right on WA-167 S toward Kent / Auburn (19.97 miles)</td>
</tr>
<tr>
<td>5. Take ramp on the right and go on WA-152 W / WA-161 S toward Puyallup / Olympia (1.36 miles)</td>
</tr>
<tr>
<td>6. Take ramp on the right to Pioneer Ave (0.29 miles)</td>
</tr>
<tr>
<td>7. Turn left on E Pioneer Ave toward Puyallup / Meeker Mansion (0.19 miles)</td>
</tr>
<tr>
<td>8. Turn right on 5th St SE (0.11 miles)</td>
</tr>
<tr>
<td>9. Turn right on E Main Ave (0.22 miles)</td>
</tr>
<tr>
<td>10. Turn left on 9th St NE (0.05 miles)</td>
</tr>
<tr>
<td>11. Turn right on 2nd Ave NE into the parking lot by the trail. The strategy is located onshore under the bridge at 47.19318, -122.28263</td>
</tr>
</tbody>
</table>
Puyallup River Near Houston Road (BNSF 29.5)  

**Position - Location:** 47° 11.957', -122° 15.719'  
**47° 11' 57.4", -122° 15' 43.2"**  
47.19929, -122.26199  

**Strategy Objective:** Collect oil moving downstream on the Puyallup River

**Implementation:** Using hand launch workboat, secure 400 ft of boom to bank on river left, adjacent to the Puyallup River Trail, at/near Point A (47.199342, -122.260325). Tow boom downstream, across river, securing it to opposite bank at/near Point B (47.199265, -122.261919) at the staging area on river right, just down river from an unspecified stream. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage to collect oil at anchor point B.

**Staging Area:** Onsite: Stage on site on the levy trail. Locked gate, coordinate with Pierce Co for access.

**Site Safety:** Slips, Trips, Falls; Water Hazard; Heavy Vegetation

**Field Notes:** Hand launch onsite. Coordinate with Pierce County for access. Puyallup River has extreme variability in seasonal flow and this strategy may be impossible to deploy in flood state high water conditions.

**Watercourse:** River - Puyallup River

**Resources at Risk:** Cutthroat Trout, Recreational Shoreline Area, Sensitive Nesting Species, Steelhead, T/E Species, Waterfowl and Salmonid

**Recommended Equipment**

- 2 Each Anchoring System(s)- Shoreside
- 4 Each Anchoring System(s)- Shoreside
- 1 Each Bolt Cutters
- 400 Feet Boom - B3 (River Boom) or equivalent
- 1 Each Bridle(s) - Towing (appropriately sized for boom)
- 1 Each Heaving Line(s)
- 1 Each Machete(s) - (or other vegetation cutting tool)
- 1 Each Vac Truck or Skimmer and Storage
- 1 Each Workboat(s) - (hand-launch)

**Recommended Personnel**

- 1 Boat Operator
- 2 Laborer
- 1 Supervisor
Puyallup River Near Houston Road (BNSF 29.5)

PYLPR-10.2 Photo: View of anchor point B location beside the Levy Trail on the Puyallup River looking upstream toward anchor point A

<table>
<thead>
<tr>
<th>Site Contact</th>
</tr>
</thead>
</table>
| **Pierce County Public Works**  
Land/Property Contact : Surface Water Management  
253-798-2725 |
| **Puyallup Tribe of Indians Natural Resources**  
Tribal Contact : Natural Resources Manager  
253-405-5339 |

<table>
<thead>
<tr>
<th>Nearest Address</th>
</tr>
</thead>
</table>
| 12721 Houston Rd E  
Puyallup, WA 98372 |

**Driving Directions**

1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (16.84 miles)
5. Take ramp on the right to W Valley Hwy toward 24th St E (0.28 miles)
6. Turn left on W Valley Hwy E (2.09 miles)
7. Turn left on Sumner Heights Dr E (0.04 miles)
8. Turn right on Valley Ave E (0.08 miles)
9. Bear left on Houston Rd E (0.94 miles)
10. Go past 12721 Houston Rd E, 98372, on the left, and take the first access road on the right (may be gated). If you reach 123rd Ave E you have gone too far
11. Follow the access road to the site at 47.19930, -122.26197.
### 116th Street East (WDFW water access site)

<table>
<thead>
<tr>
<th>Position - Location:</th>
<th>Collection:</th>
<th>Strategy Objective:</th>
<th>Implementation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>47° 9.113', -122° 13.246'</td>
<td>Collect oil moving downstream on Puyallup River</td>
<td></td>
<td>Using workboat, secure 200 ft of boom to right bank, downstream of Canyonfalls Creek, at/near Point A (47.1512, -122.22023). Tow boom downstream, securing it mid-river at/near Point B (47.15169, -122.20648). Anchor 400 ft of boom to right bank at/near point C (47.15185, -122.2203). Tow boom downstream and anchor to left bank at/near Point D (47.15255, -122.2212). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle, quantity/placement of anchors, based on stream flow and environmental conditions. Use vac truck or skimmer/storage to collect at Point D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staging Area:</th>
<th>Onsite:</th>
<th>Field Safety:</th>
<th>Site Safety:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage in parking area at the end of the street and along gravel drive on WDFW land.</td>
<td></td>
<td>Slips, Trips, Falls; Water Hazard</td>
<td></td>
</tr>
</tbody>
</table>

#### Resources at Risk:
Habitat Restoration Site, Recreational Shoreline Area, Sensitive Nesting Species, State Protected Area/Lands, T/E Species

#### Watercourse:
River - Puyallup River

#### Recommended Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchoring System(s) - (anchor, lines, floats)</td>
<td>8 Each</td>
<td></td>
</tr>
<tr>
<td>Anchoring System(s)- Shoreside</td>
<td>3 Each</td>
<td></td>
</tr>
<tr>
<td>Bolt Cutters</td>
<td>1 Each</td>
<td></td>
</tr>
<tr>
<td>Boom - B3 (River Boom) or equivalent</td>
<td>600 Feet</td>
<td></td>
</tr>
<tr>
<td>Bridle(s) - Towing (appropriately sized for boom)</td>
<td>1 Each</td>
<td></td>
</tr>
<tr>
<td>Heaving Line(s)</td>
<td>1 Each</td>
<td></td>
</tr>
<tr>
<td>Vac Truck or Skimmer and Storage</td>
<td>1 Each</td>
<td></td>
</tr>
<tr>
<td>Workboat(s) - (hand-launch)</td>
<td>1 Each</td>
<td></td>
</tr>
</tbody>
</table>

#### Recommended Personnel

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Boat Operator</td>
<td>1</td>
</tr>
<tr>
<td>Laborer</td>
<td>3</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
</tr>
</tbody>
</table>
**116th Street East (WDFW water access site)**

PYLPR-16.2 Photo: View from anchor point B looking upstream toward anchor point A on the Puyallup River

<table>
<thead>
<tr>
<th>Site Contact</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Washington Department of Fish and Wildlife</strong></td>
<td></td>
</tr>
<tr>
<td>Land/Property Contact: Region 6</td>
<td></td>
</tr>
<tr>
<td>360-249-4628</td>
<td></td>
</tr>
<tr>
<td><strong>Puyallup Tribe of Indians Natural Resources</strong></td>
<td></td>
</tr>
<tr>
<td>Tribal Contact: Natural Resources Manager</td>
<td></td>
</tr>
<tr>
<td>253-405-5339</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nearest Address</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15608 116th St E</td>
<td></td>
</tr>
<tr>
<td>Puyallup, WA 98374</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driving Directions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Head south from Seattle on I-5 South</td>
<td></td>
</tr>
<tr>
<td>2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)</td>
<td></td>
</tr>
<tr>
<td>3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)</td>
<td></td>
</tr>
<tr>
<td>4. At fork keep right on WA-167 S toward Kent / Auburn (19.34 miles)</td>
<td></td>
</tr>
<tr>
<td>5. Take ramp on the right and go on WA410 E toward Sumner / Yakima (1.86 miles)</td>
<td></td>
</tr>
<tr>
<td>6. Take ramp on the right to WA-162 E / Valley Ave. toward Orting (0.17 miles)</td>
<td></td>
</tr>
<tr>
<td>7. Turn right on WA-162 (Valley Ave E) (2.76 miles)</td>
<td></td>
</tr>
<tr>
<td>8. Make sharp left on 115th St E (0.14 miles)</td>
<td></td>
</tr>
<tr>
<td>9. Turn right on 150th Ave E (0.05 miles)</td>
<td></td>
</tr>
<tr>
<td>10. Turn left on 116th St E (0.35 miles)</td>
<td></td>
</tr>
<tr>
<td>11. Turn left into the WDFW fishing access area on the left at the end of the road. Strategy is located at 47.15185, -122.22096</td>
<td></td>
</tr>
</tbody>
</table>
# Bridge crossing Salmon Creek to the NE of REI Bldg

**Position - Location:** 47° 13.055', -122° 13.705'  |  47° 13' 3.3", -122° 13' 42.3"  |  47.21758, -122.22841  |  Sumner

**Strategy Objective:** Collection of oil moving downstream on Salmon Creek

**Implementation:** Secure 100 ft of boom on the downstream side of the bridge on creek right, at/near Point A (47.21763, -122.22843). Walk boom across the bridge and downstream, securing it at/near Point B (47.21757, -122.22856). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection.

**Staging Area:** Onsite: Stage onsite in large parking lot beside LTE Logistics

**Site Safety:** Slips, Trips, Falls; Water Hazard; Heavy Vegetation

**Field Notes:** Access through business parking lot

**Watercourse:** Creek - Salmon Creek

**Resources at Risk:** Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat

**Recommended Equipment**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchoring System(s)- Shoreside</td>
<td>4 Each</td>
</tr>
<tr>
<td>Boom - B3 (River Boom) or equivalent</td>
<td>100 Feet</td>
</tr>
<tr>
<td>Boom - Sorbent</td>
<td>1 Each</td>
</tr>
<tr>
<td>Heaving Line(s)</td>
<td>1 Each</td>
</tr>
<tr>
<td>Machete(s) - (or other vegetation cutting tool)</td>
<td>1 Each</td>
</tr>
<tr>
<td>Vac Truck or Skimmer and Storage</td>
<td>2 Laborer</td>
</tr>
</tbody>
</table>

**Recommended Personnel**

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laborer</td>
<td>2</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
</tr>
</tbody>
</table>
Bridge crossing Salmon Creek to the NE of REI Bldg

SMNC-0.25 Photo: View of the downstream side of the culvert on Salmon Creek and location of SMNC-0.25

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

Nearest Address

4201 150th Avenue Ct E
Sumner, WA 98390

Driving Directions

1. Head south on I-5 from Seattle, WA
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (16.84 miles)
5. Take ramp on the right to W Valley Hwy toward 24th St E (0.28 miles)
6. Turn right on W Valley Hwy E (0.22 miles)
7. Turn right on 24th St E (0.65 miles)
8. Bear right on 142nd Ave E (1.26 miles)
9. Bear left on Tacoma Ave (0.15 miles)
10. Turn left on 45th St E (0.2 miles)
11. Turn left on 150th Avenue Ct E (0.3 miles)
12. Go past 4201 150th Avenue Ct E, 98390, on the left and take the next right into the business complex parking lot. Follow the lot around to the SE to the bridge across Salmon Creek.
River Road East at Swan Creek (McChord CCP S-3A)  

<table>
<thead>
<tr>
<th>Position - Location:</th>
<th>47° 14.148', -122° 23.579'</th>
<th>47° 14' 8.9&quot;, -122° 23' 34.7&quot;</th>
<th>47.23580, -122.39298</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy Objective:</td>
<td>Collection</td>
<td>Collect oil moving downstream on Swan Creek</td>
<td></td>
</tr>
<tr>
<td>Implementation:</td>
<td>Secure 100 ft of boom on the downstream side of the bridge on creek right, at/near Point A (47.23574, -122.39297). Walk boom across the bridge and downstream, securing it at/near Point B (47.2358, -122.393). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A &amp; B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity, use vac truck or skimmer/storage for collection.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staging Area:</td>
<td>Onsite</td>
<td>Stage onsite, in the grass along the road beside Ill-Eagle Fireworks</td>
<td></td>
</tr>
<tr>
<td>Site Safety:</td>
<td>Slips, Trips, Falls; Water Hazard; Heavy Vegetation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Notes:</td>
<td>Debris in water adjacent to culvert during site visit, may have to boom around it if it is still there</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watercourse:</td>
<td>Creek</td>
<td>Swan Creek</td>
<td></td>
</tr>
<tr>
<td>Resources at Risk:</td>
<td>Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recommended Equipment**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Anchoring System(s)- Shoreside</td>
<td>4 Each</td>
</tr>
<tr>
<td>Boom - B3 (River Boom) or equivalent</td>
<td>100 Feet</td>
</tr>
<tr>
<td>Boom - Sorbent</td>
<td>1 Each</td>
</tr>
<tr>
<td>Heaving Line(s)</td>
<td>1 Each</td>
</tr>
<tr>
<td>Machete(s) - (or other vegetation cutting tool)</td>
<td>1 Each</td>
</tr>
<tr>
<td>Vac Truck or Skimmer and Storage</td>
<td>1 Each</td>
</tr>
</tbody>
</table>

**Recommended Personnel**

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laborer</td>
<td>2</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
</tr>
</tbody>
</table>

Appendix 4A
River Road East at Swan Creek (McChord CCP S-3A)

**SWANC-0.1 Photo:** View of the strategy location for Swan Creek at mile 0.1 looking toward the culvert under River Road

### Site Contact

**Puyallup Tribe of Indians Natural Resources**  
Tribal Contact: Natural Resources Manager  
Tacoma, WA 98404  
253-405-5339

### Nearest Address

2411 28th Ave E  
Tacoma, WA 98404

### Driving Directions

1. Head south from Seattle on I-5 South  
2. At exit 135 take ramp on the right toward Puyallup (WA-167 N) / Portland Ave (0.22 miles)  
3. Make sharp left on E Bay St toward WA-167 N / Puyallup / Bay St (0.07 miles)  
4. Continue on E 28th St (0.48 miles)  
5. Continue on Pioneer Way E (WA-167) (0.1 miles)  
6. Continue on River Rd E (WA-167) (0.25 miles)  
7. Turn right on 28th Ave E (0.03 miles) and park along the road on the right  
8. Finish at 2411 28th Ave E, 98404
20th Street East Crossing Wapato Creek

**Position - Location:** 47° 14.347', -122° 22.382'  |  47° 14' 20.8", -122° 22' 22.9"  |  47.23911, -122.37304

**Strategy Objective:** Collection : Collect oil moving downstream on Wapato Creek

**Implementation:** Secure 100 ft of boom to bank on river right, downstream of the culvert, at/near Point A (47.239110, -122.373011). Using line, extend boom downstream, across creek, securing it to opposite bank at/near Point B (47.239076, -122.373138). Use shoreside anchoring systems or existing features to secure boom to banks. Extend remaining boom back and forth across creek, inside of Points A & B. Back hard boom with sorbent. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. If oil collecting beyond sorbent’s capacity use vac truck to collect.

**Staging Area:** Onsite : Stage onsite on Goldau Rd adjacent to strategy location. Additional parking at Costco across the street.

**Site Safety:** Slips, Trips, Falls; Water Hazard, Heavy Traffic, 40 Degree Slope on Bank of Culvert

**Field Notes:** Culvert under road. Follow WSDOT guidelines for work zone traffic control.

**Watercourse:** Creek - Wapato Creek

**Resources at Risk:** Salmonid Concentrations and Habitat, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

**Recommended Equipment**

- 4 Each Anchoring System(s)- Shoreside
- 100 Feet Boom - B3 (River Boom) or equivalent
- 100 Feet Boom - Sorbent
- 1 Each Heaving Line(s)
- 100 Feet Line - 1/2" poly line
- 1 Each Vac Truck or Skimmer and Storage

**Recommended Personnel**

- 2 Laborer
- 1 Supervisor
20th Street East Crossing Wapato Creek

WAPC-2.8 Photo: View of Wapato Creek as it comes through a culvert at 20th St E.

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

Nearest Address

1902 Goldau Rd E
Fife, WA 98424

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 137 take ramp on the right toward Fife (WA 99 N) / Milton (0.27 miles)
3. Turn left on 54th Ave E (0.22 miles)
4. Turn right on 20th St E (0.74 miles)
5. Turn right on Alexander Ave E (Goldau Rd E) (0.02 miles)
6. Finish at 1902 Goldau Rd E, 98424, on the left
Houston Road East under the 410 Bridge

Position - Location: 47° 12.038', -122° 15.239'  |  47° 12' 2.3", -122° 15' 14.3"  |  47.20064, -122.25398  |  Sumner

Strategy Objective: Collection: Collect oil moving downstream on the White River

Implementation: Using hand launch workboat, secure 300 ft of boom to bank on river left, downstream of the bridge a/near Point A (47.200582, -122.254547). Tow boom downstream, securing it mid-river at/near Point B (47.200773, -122.253375). Use shoreside anchoring systems or existing features to secure boom to banks. Use additional anchoring systems to keep boom secure in water. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage for collection at Point B.

Staging Area: Onsite: Stage onsite underneath the 410 Bridge, parking on both sides of the road.

Site Safety: Slips, Trips, Falls; Water Hazard

Field Notes: Hand launch off Houston Road under the 410 Bridge

Watercourse: River - White River

Resources at Risk: Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat

Recommended Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Anchoring System(s)</td>
<td>3 Each</td>
<td>(anchor, lines, floats)</td>
</tr>
<tr>
<td>Anchoring System(s) - Shoreside</td>
<td>2 Each</td>
<td></td>
</tr>
<tr>
<td>Boom - B3 (River Boom) or equivalent</td>
<td>300 Feet</td>
<td></td>
</tr>
<tr>
<td>Bridle(s) - Towing</td>
<td>1 Each</td>
<td>(appropriately sized for boom)</td>
</tr>
<tr>
<td>Heaving Line(s)</td>
<td>1 Each</td>
<td></td>
</tr>
<tr>
<td>Vac Truck or Skimmer and Storage</td>
<td>1 Each</td>
<td></td>
</tr>
<tr>
<td>Workboat(s) - (hand-launch)</td>
<td>1 Each</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Personnel

<table>
<thead>
<tr>
<th>Role</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Operator</td>
<td>1</td>
</tr>
<tr>
<td>Laborer</td>
<td>2</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
</tr>
</tbody>
</table>
Houston Road East under the 410 Bridge

WHTR-0.2 Photo: View from under the 410 Bridge on the looking upstream toward anchor point A

Site Contact

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
Tacoma, WA 98404
253-405-5339

Nearest Address

326 State Street
Sumner, WA 98390

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (19.34 miles)
5. Take ramp on the right and go on WA410 E toward Sumner / Yakima (0.74 miles)
6. Take ramp on the right to E. Main / Traffic Ave (0.23 miles)
7. Turn left on Traffic Ave (E Main Ave) (0.27 miles)
8. Make sharp left on State St (0.3 miles)
9. Finish underneath the 410 Bridge just past 326 State Street, 98390, on the left
Site Safety: Slips, Trips, Falls; Water Hazard; Heavy Vegetation; Man-made Berm; Vehicles and Heavy Equipment in Parking Lot

Staging Area: Onsite: Stage onsite at Manke Lumber Co parking lot

Site Safety: Slips, Trips, Falls; Water Hazard; Heavy Vegetation; Man-made Berm; Vehicles and Heavy Equipment in Parking Lot

Field Notes: Will need to hand launch work boat over man made berm. Coordinate access with Manke Lumber Co. White River has extreme variability is seasonal flow.

Watercourse: River - White River

Resources at Risk: Economic Resource, Raptors, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetlands

Implementation: Using hand launch workboat, secure 300 ft of boom to bank on river left, downstream of the bridge a/near Point A (47.249688, -122.243712). Tow boom downstream, securing it mid-river at/near Point B (47.249332, -122.243956). Then anchor to shore downstream on river right at/near anchor point C (47.249, -122.24439). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage to collect oil at anchor point C.

Recommended Equipment

3 Each Anchoring System(s) - (anchor, lines, floats)
2 Each Anchoring System(s)- Shoreside
1 Each Bolt Cutters
300 Feet Boom - B3 (River Boom) or equivalent
1 Each Bridle(s) - Towing (appropriately sized for boom)
2 Each Heaving Line(s)
1 Each Machete(s) - (or other vegetation cutting tool)
1 Each Vac Truck or Skimmer and Storage
1 Each Workboat(s) - (hand-launch)

Recommended Personnel

1 Boat Operator
2 Laborer
1 Supervisor
Manke Lumber, 13702 Steward Rd

WHTR-4.7 Photo: View from Manke Lumber parking lot of anchor point C and boom angle going upstream

Site Contact

Manke Lumber Company
Land/Property Owner: General Manager
253-863-4495

Puyallup Tribe of Indians Natural Resources
Tribal Contact: Natural Resources Manager
253-405-5339

Nearest Address

13702 Stewart Rd
Sumner, WA 98390

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (15.46 miles)
5. Take ramp on the right to 8th St E toward Stewart Rd / Pacific / Milton (0.25 miles)
6. Turn left on 8th St E (Jovita Blvd E) toward Pacific / Milton (0.14 miles)
7. Continue on Stewart Rd (8th St E) (0.47 miles)
8. Finish at Manke Lumber Co. 13702 Stewart Rd, 98390, on the right
Foothills Trail off N River Ave  

**Position - Location:** 47° 10.471', -122° 1.191'  
47° 10' 28.2", -122° 1' 11.5"  
47.17451, -122.01985  

**Strategy Objective:** Collect oil moving downstream on the White River

**Implementation:** Using hand launch workboat, secure 400 ft of boom to bank on river right, downstream of Boise Creek, at/near Point A (47.17478, -122.019233). Tow boom downstream, across river, securing it to opposite bank at/near Point B (47.175, -122.020437) at the staging area on river left. Use shoreside anchoring systems or existing features to secure boom to banks. Use anchoring systems to keep boom secure in water. Adjust boom angle and quantity/placement of anchors as needed, based on stream flow and environmental conditions. Use vac truck or skimmer/storage to collect oil at anchor point B.

**Staging Area:** Onsite: Stage onsite at the end of Foothills Trail near anchor point B. Bring bolt cutters in case drive is chained off.

**Site Safety:** Slips, Trips, Falls; Water Hazard

**Field Notes:** Water pipeline crosses river just west of point B. Do not move strategy further west or park heavy vehicles west of anchor point B. Hand launch on site. If oil is not coming downstream on Boise Creek you can move anchor point A to the East side of the creek mouth.

**Watercourse:** River - White River

**Resources at Risk:** Riparian Area, Sensitive Nesting Species, T/E Species, Waterfowl and Salmonid Concentrations and Habitat, Wetland Habitat

**Recommended Equipment**

- 4 Each Anchoring System(s) - (anchor, lines, floats)
- 2 Each Anchoring System(s) - Shoreside
- 1 Each Bolt Cutters
- 400 Feet Boom - B3 (River Boom) or equivalent
- 1 Each Bridle(s) - Towing (appropriately sized for boom)
- 2 Each Heaving Line(s)
- 1 Each Vac Truck or Skimmer and Storage
- 1 Each Workboat(s) - (hand-launch)

**Recommended Personnel**

- 1 Boat Operator
- 2 Laborer
- 1 Supervisor
Foothills Trail off N River Ave

WHTR-23.3 Photo: View of collection point on the left bank of the White River during high flow (3.14.17)

Site Contact

Muckleshoot Indian Tribe Fisheries Department
Tribal Contact: 253-931-0652

Nearest Address

646 N River Ave
Buckley, WA 98321

Driving Directions

1. Head south on at I-5 from Seattle, WA
2. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (4.4 miles)
3. Take ramp on the right to WA-164 / Auburn Wy toward Enumclaw (0.18 miles)
4. At fork keep left on WA-164 E toward Enumclaw / Muckleshoot Reservation (0.03 miles)
5. Make sharp left on Auburn Way S (0.06 miles)
6. Turn right at 7th St SE to stay on Auburn Way S (WA-164 N) (4.27 miles)
7. Continue on Auburn Enumclaw Rd SE (5.54 miles)
8. Continue on SE 436th St (WA-164) (3.05 miles)
9. Turn right on 244th Ave SE (2 miles)
10. Turn right on WA-410 (Enumclaw Buckley Rd SE) (1.07 miles)
11. Make sharp left on Park Ave (0.06 miles)
12. Turn left on N River Ave (0.47 miles)
13. Go past 646 N River Ave, 98321, on the right, and drive straight at the curve to get onto the Foothills Trail, follow to the river (0.25 miles)
APPENDIX 4B

Notification Strategy 2-Pagers
NOTIFICATION STRATEGIES – LIST

CWF-3.65-N     WHTR-23.85-N
### Cascade Water Alliance Water Intake

<table>
<thead>
<tr>
<th><strong>Position - Location:</strong></th>
<th>47° 10.565', -122° 5.122'</th>
<th>47° 10' 33.9&quot;, -122° 5' 7.3&quot;</th>
<th>47.17609, -122.08536</th>
<th>Buckley</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy Objective:</strong></td>
<td>Notification</td>
<td>Notify the Cascade Water Alliance about the spill so they can take action to protect the resources under their control</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation:</strong></td>
<td>Notify Cascade Water Alliance by calling Veolia Water at 253-590-3035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Field Notes:</strong></td>
<td>Notification strategy includes both the water intake on the upstream side of the CWA canal, Lake Tapps, and the tailrace on the downstream side of the Powerhouse.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Watercourse:</strong></td>
<td>Canal - Cascade Water Alliance Flume</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resources at Risk:</strong></td>
<td>Power Generation, Water Intakes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Communication Process and Action:

Call the Cascade Water Alliance contractor, Veolia Water, at 253-590-3035 and inform them of any significant oil spill or potential spill that impacts, or threatens to impact: the White River upstream of the Buckley Diversion Dam, the Cascade Water Alliance Canal flume or tailrace, or Lake Tapps. Cascade Water Alliance will determine and take whatever actions they deem necessary and appropriate to protect the resources under their control, including the protection of their water intake and powerhouse. Alternate contact is CWA Operations Manager 206-930-0211
Cascade Water Alliance Water Intake

CWF-3.65-N Photo: Cascade Water Alliance canal

Site Contact

Cascade Water Alliance
Primary Contact: Contractor, Veolia Water
Buckley, WA 98321
253-590-3035

Nearest Address

25813 Sumner-Buckley Hwy E
Buckley, WA 98321

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (19.34 miles)
5. Take ramp on the right and go on WA-410 E toward Sumner / Yakima (5.02 miles)
6. Turn left on Veterans Memorial Dr E (Old Buckley Hwy) (1.26 miles)
7. At fork keep left on Sumner-Buckley Hwy E (Old Buckley Hwy) (4.07 miles)
9. Turn right on 258th Ave (0.37 miles)
10. Turn left and finish at the pull out for the Cascade Water Alliance pump station, 8722 258th Ave E, 98321 on the left
<table>
<thead>
<tr>
<th><strong>Position - Location:</strong></th>
<th>47° 10.237', -122° .267'</th>
<th>47° 10.42&quot;, -122° 0' 16.0&quot;</th>
<th>47.17061, -122.00445</th>
<th>Enumclaw</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy Objective:</strong></td>
<td>Notification: Notify the Muckleshoot Tribe Fish Hatchery about spill so they can take action to protect the resources under their control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation:</strong></td>
<td>Notify the Muckleshoot Tribe by calling 360-825-4575</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Field Notes:</strong></td>
<td>Hatchery is located on the White River upstream of the Buckley Diversion Dam. Fish are generally released in the spring but notify regardless of the time of year.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Watercourse:</strong></td>
<td>River - Above a Dam - White River, 100 feet above the Buckley Diversion Dam</td>
<td></td>
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<tr>
<td><strong>Resources at Risk:</strong></td>
<td>Fish Hatchery</td>
<td></td>
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<td></td>
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</tbody>
</table>

**Communication Process and Action:**

Contact the Muckleshoot Fish Hatchery at 360-825-4575, if no answer leave a message. Hatchery personnel will determine which actions to take to protect their resources which may include preventing the release of fish from the hatchery.
Muckleshoot Tribe Fish Hatchery (just upstream) 36

WHTR-23.85-N

Site Contact

Muckleshoot Fish Hatchery
Primary Contact: Fish Hatchery
Enumclaw, WA 98002
360-825-4575

Nearest Address

25315 SE Mud Mountain Road
Enumclaw, WA 98022

Driving Directions

1. Head south from Seattle on I-5 South
2. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (4.4 miles)
3. Take ramp on the right to WA-164 / Auburn Wy toward Enumclaw (0.18 miles)
4. At fork keep left on Auburn Way S (WA-164) (0.06 miles)
5. Make sharp left on Auburn Way S (WA-164 N) (4.27 miles)
6. Turn right at 7th St SE to stay on Auburn Way S (WA-164 N) (5.54 miles)
7. Continue on Auburn Enumclaw Rd SE (WA-164) (2.62 miles)
8. Continue on SE 436th Way (WA-164) (0.43 miles)
9. Turn right on 244th Ave SE (2 miles)
10. Turn right on WA-410 (Enumclaw Buckley Rd SE) (0.21 miles)
11. Make sharp left on SE Mud Mountain Rd (SE 473rd St) (0.85 miles)
12. Turn right into the driveway for the Muckleshoot Tribal Fish Hatchery, 25315 SE Mud Mountain Road, 98022 (which is outside the planning area)
APPENDIX 4C

Staging Area 2-Pagers
STAGING AREAS - LIST

SA-PYLPR-0.7**    SA-PYLPR-16.2

**Staging Area from Central Puget Sound (CPS) GRP that is included in this Appendix
11th Street Boat Ramp (Puyallup River) SA-PYLPR-0.7

Staging Area

| Position - Location: | 47° 15.632', -122° 25.066' | 47° 15' 37.9", -122° 25' 4.0" | 47.26054, -122.41777 | Tacoma |

Comments: Single lane concrete ramp under the E 11th Street Bridge. Gravel parking area can be used to temporarily stage equipment. Notify the Puyallup Tribe of Indians before use; call 253-405-7508, 253-680-5671, or 253-680-5568. Also inform U.S. Army Corps of Engineers; call 206-764-6910.

Location Information

<table>
<thead>
<tr>
<th>Asset</th>
<th>Type/Status</th>
<th>Amount/Number</th>
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<tbody>
<tr>
<td>Boat Dock(s)</td>
<td>No</td>
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</tr>
<tr>
<td>Boat Ramp(s)</td>
<td>Concrete, Solid</td>
<td>1</td>
</tr>
<tr>
<td>Cell Phone Coverage</td>
<td>Yes</td>
<td>Verizon 2 bars/4G</td>
</tr>
<tr>
<td>Estimated Lot Size</td>
<td>6000 SqFt</td>
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</tr>
<tr>
<td>Lot Cover (Primary)</td>
<td>Dirt/Gravel</td>
<td>90%</td>
</tr>
<tr>
<td>Parking - Car</td>
<td>Not Marked</td>
<td>5 Spaces</td>
</tr>
<tr>
<td>Parking - Trailer</td>
<td>Not Marked</td>
<td>2 Spaces</td>
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<tr>
<td>Power</td>
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<tr>
<td>Restroom</td>
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<tr>
<td>User Fee</td>
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<tr>
<td>Water (potable)</td>
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</table>

GRP Response Strategies Served:

PYLPR-2.85
11th Street Boat Ramp (Puyallup River)

SA-PYLPR-0.7 Photo: On river right of Puyallup River at boat ramp, looking downstream (NNW) towards river left and Commencement Bay beyond.

Site Contact

Puyallup Tribe of Indians Emergency Management
Land/Property Contact: Emergency Management
253-405-7508

Nearest Address

1702 Stewart Street
Tacoma, WA 98421

Driving Directions

TO STAGING AREA & BOAT LAUNCH (SA-PYLPR0.7 & BL-PYLPR-0.7)

1. Head south on I-5 S towards Tacoma
2. At exit 135 take ramp on the right toward Puyallup (WA-167 N) / Portland Ave
3. After 0.2mi, keep right at fork (towards Portland Ave) and continue on E 27th St.
4. After 0.2mi, turn right on Portland Ave
5. After 0.1mi, keep left to stay on Portland Ave
6. After 0.1mi, keep left again to stay on Portland Ave
7. After 0.5mi, turn right on Lincoln Ave
8. After 0.2mi, turn left on Stewart St
9. After 0.25mi, turn left at E 18th St to stay on Stewart St
10. After 0.5mi, parking area & boat ramp will be on your left, under the 11th Street Bridge.
**Weiss WDFW Primitive Boat Launch**  
SA-PYLPR-16.2

<table>
<thead>
<tr>
<th>Staging Area</th>
</tr>
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<tbody>
<tr>
<td><strong>Position - Location:</strong></td>
</tr>
<tr>
<td><strong>Comments:</strong></td>
</tr>
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</table>

**Location Information**

<table>
<thead>
<tr>
<th>Asset</th>
<th>Type/Status</th>
<th>Amount/Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Dock(s)</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Boat Ramp(s)</td>
<td>Other</td>
<td>1 Cobble beach</td>
</tr>
<tr>
<td>Cell Phone Coverage</td>
<td>Yes</td>
<td>3-G</td>
</tr>
<tr>
<td>Covered Spaces</td>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Fuel</td>
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<td>Dirt/Gravel</td>
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</tr>
<tr>
<td>Parking - Car</td>
<td>Gravel</td>
<td>4</td>
</tr>
<tr>
<td>Parking - Trailer</td>
<td>Gravel</td>
<td>2</td>
</tr>
<tr>
<td>Power</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Restroom</td>
<td>Restroom - None</td>
<td></td>
</tr>
<tr>
<td>User Fee</td>
<td>Yes</td>
<td>Discover Pass required</td>
</tr>
<tr>
<td>Waste Disposal</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Water (potable)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**GRP Response Strategies Served:**

PYLPR-16.2
SA-PYLPR-16.2 Photo: View of the beach launch site at Weiss Road WDFW access area

**Site Contact**

**Washington Department of Fish and Wildlife**  
Land/Property Contact : Region 6

Montesano, WA  98563  
360-249-4628

**Nearest Address**

15608 116th St E  
Puyallup, WA  98374

**Driving Directions**

1. Head south from Seattle on I-5 South  
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)  
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)  
4. At fork keep right on WA-167 S toward Kent / Auburn (19.34 miles)  
5. Take ramp on the right and go on WA-410 E toward Sumner / Yakima (1.86 miles)  
6. Take ramp on the right to WA-162 E / Valley Ave. toward Orting (0.17 miles)  
7. Turn right on WA-162 (Valley Ave E) (2.76 miles)  
8. Make sharp left on 115th St E (0.14 miles)  
9. Turn right on 150th Ave E (0.05 miles)  
10. Turn left on 116th St E (0.35 miles)  
11. Turn left into the WDFW fishing access area on the left at the end of the road.
APPENDIX 4D

Boat Launch 2-Pagers
BOAT LAUNCHES – LIST

BL-PYLPR-0.7**    BL-PLYR-16.2

**Boat Launch from Central Puget Sound (CPS) GRP that is included in this Appendix
11th Street Boat Ramp (Puyallup River)  

**Boat Launch Location**

<table>
<thead>
<tr>
<th>Position - Location:</th>
<th>47° 15.632', -122° 25.066'</th>
<th>47° 15' 37.9&quot;, -122° 25' 4.0&quot;</th>
<th>47.26054, -122.41777</th>
</tr>
</thead>
</table>

**Comments:** Single lane concrete ramp under the E 11th Street Bridge. Gravel parking area can be used to temporarily stage equipment. Notify the Puyallup Tribe of Indians before use; call 253-405-7508, 253-680-5671, or 253-680-5568. Also inform U.S. Army Corps of Engineers; call 206-764-6910.

**Location Information**

<table>
<thead>
<tr>
<th>Asset</th>
<th>Type/Status</th>
<th>Amount/Number</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>Boat Ramp(s)</td>
<td>Concrete, Solid</td>
<td>1</td>
</tr>
<tr>
<td>Cell Phone Coverage</td>
<td>Yes</td>
<td>Verizon 2 bars/4G</td>
</tr>
<tr>
<td>Estimated Lot Size</td>
<td></td>
<td>6000 SqFt</td>
</tr>
<tr>
<td>Lot Cover (Primary)</td>
<td>Dirt/Gravel</td>
<td>90%</td>
</tr>
<tr>
<td>Parking - Car</td>
<td>Not Marked</td>
<td>5 Spaces</td>
</tr>
<tr>
<td>Parking - Trailer</td>
<td>Not Marked</td>
<td>2 Spaces</td>
</tr>
<tr>
<td>Power</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Restroom</td>
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<tr>
<td>User Fee</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Water (potable)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**GRP Response Strategies Served:**

PYLPR-2.85
11th Street Boat Ramp (Puyallup River)

SA-PYLPR-0.7 Photo: On river right of Puyallup River at boat ramp, looking downstream (NNW) towards river left and Commencement Bay beyond.

**Site Contact**

Puyallup Tribe of Indians Emergency Management
Land/Property Contact : Emergency Management
253-405-7508

**Nearest Address**

1702 Stewart Street
Tacoma, WA  98421

**Driving Directions**

**TO STAGING AREA & BOAT LAUNCH (SA-PYLPR0.7 & BL-PYLPR-0.7)**

1. Head south on I-5 S towards Tacoma
2. At exit 135 take ramp on the right toward Puyallup (WA-167 N) / Portland Ave
3. After 0.2mi, keep right at fork (towards Portland Ave) and continue on E 27th St.
4. After 0.2mi, turn right on Portland Ave
5. After 0.1mi, keep left to stay on Portland Ave
6. After 0.1mi, keep left again to stay on Portland Ave
7. After 0.5mi, turn right on Lincoln Ave
8. After 0.2mi, turn left on Stewart St
9. After 0.25mi, turn left at E 18th St to stay on Stewart St
10. After 0.5mi, parking area & boat ramp will be on your left, under the 11th Street Bridge.
**Weiss WDFW Primitive Boat Launch**

**BL-PYLPR-16.2**

### Boat Launch Location

**Position - Location:** 47° 9.099', -122° 13.259'  
47° 9' 5.9", -122° 13' 15.6"  
47.15165, -122.22099  
Puyallup

**Comments:** Undeveloped beach launch, call WDFW for access (locked gate)

### Location Information

<table>
<thead>
<tr>
<th>Asset</th>
<th>Type/Status</th>
<th>Amount/Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Dock(s)</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Boat Ramp(s)</td>
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<td>Cell Phone Coverage</td>
<td>Yes</td>
<td>3-G</td>
</tr>
<tr>
<td>Covered Spaces</td>
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<tr>
<td>Estimated Lot Size</td>
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<tr>
<td>Fuel</td>
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<tr>
<td>Lot Cover (Primary)</td>
<td>Dirt/Gravel</td>
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<tr>
<td>Parking - Car</td>
<td>Gravel</td>
<td>4</td>
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<tr>
<td>Parking - Trailer</td>
<td>Gravel</td>
<td>2</td>
</tr>
<tr>
<td>Power</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Restroom</td>
<td>Restroom - None</td>
<td></td>
</tr>
<tr>
<td>User Fee</td>
<td>Yes</td>
<td>Discover Pass required</td>
</tr>
<tr>
<td>Waste Disposal</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Water (potable)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**GRP Response Strategies Served:**

PYLPR-16.2
Weiss WDFW Primitive Boat Launch

SA-PYLPR-16.2 Photo: View of the beach launch site at Weiss Road WDFW access area

Site Contact
Washington Department of Fish and Wildlife
Land/Property Contact : Region 6
Montesano, WA 98563
360-249-4628

Nearest Address
15608 116th St E
Puyallup, WA 98374

Driving Directions
1. Head south from Seattle on I-5 South
2. At exit 154A bear left onto ramp and go on I-405 N toward Renton (1.96 miles)
3. At exit 2 take ramp on the right to WA-167 toward Renton / Auburn (0.29 miles)
4. At fork keep right on WA-167 S toward Kent / Auburn (19.34 miles)
5. Take ramp on the right and go on WA410 E toward Sumner / Yakima (1.86 miles)
6. Take ramp on the right to WA162 E / Valley Ave. toward Orting (0.17 miles)
7. Turn right on WA162 (Valley Ave E) (2.76 miles)
8. Make sharp left on 115th St E (0.14 miles)
9. Turn right on 150th Ave E (0.05 miles)
10. Turn left on 116th St E (0.35 miles)
11. Turn left into the WDFW fishing access area on the left at the end of the road.
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CHAPTER 6
Resources at Risk

6.1 CHAPTER INTRODUCTION

This chapter provides a summary of natural, cultural, and economic resources at risk in the planning area. It provides general information on habitat, fish, and wildlife resources, and locations in the area where sensitive natural resource concerns exist. It offers a summary of cultural resources that include fundamental procedures for the discovery of cultural artifacts and human skeletal remains. General information about flight restrictions, wildlife deterrence, and oiled wildlife can be found near the end of this chapter. A list of economic resources in the area is provided in the chapter's appendix.

This chapter is purposely broad in scope and should not be considered comprehensive. Some of the sensitive resources described in this chapter cannot be addressed in Chapter 4 (Response Strategies and Priorities) because it is not possible to conduct effective response activities in these locations. Additional information from private organizations or federal, state, tribal, and local government agencies should also be sought during spills.

This material is presented with enough detail to give general information about the area during the first phase of a spill response. During an actual incident, more information about resources at risk will be available from the Environmental Unit within the Planning Section.

The information provided in this chapter can be used in:

- Assisting the Environmental Unit (EU) and Operations Sections in developing additional response strategies beyond those found in Chapter 4.
- Providing resource-at-risk “context” to responders, clean-up workers, and others during the initial phase of a spill response in the GRP area.
- Briefing responders and incident command staff that may be unfamiliar with sensitive resource concerns in the GRP area.
- Providing background information for personnel involved in media presentations and public outreach during a spill incident.

6.2 NATURAL RESOURCES AT RISK - SUMMARY

Most biological communities are susceptible to the effects of oil spills. Plant communities on land, aquatic plants; microscopic plants and animals; and larger animals, such as fish, amphibians and reptiles, birds, mammals, and a wide variety of invertebrates, are all potentially at risk from
smothering, acute toxicity, and/or the chronic long-term effects that may result from being exposed to spilled oil..

This area contains a wide variety of aquatic, riparian, and upland habitats. These habitats support many of Washington’s anadromous salmonid species as well as a complex diversity of other wildlife including mammals, birds, and amphibians. Due to their life histories and/or behaviors, some of these species are unlikely to be directly oiled during a spill incident but may be disturbed by other operations such as cleanup, reconnaissance, or fire suppression activities. Some of the bird species are resident throughout the year, but many others seasonally migrate outside the basin. A number of the species found in this area are classified as threatened or endangered under the Federal Endangered Species Act or Washington State guidelines.

Classification types are listed below, with the abbreviation of each type provided in the brackets (to the right of the classification):

- Federal Endangered (FE)
- Federal Threatened (FT)
- State Endangered (SE)
- State Threatened (ST)
- State Sensitive (SS)

Federal and State Threatened and Endangered species that may occur within this area, at some time of year, include:

**Birds:**

- Common loon [SS]
- Marbled murrelet [FT/SE]
- Streaked horned lark [FT/SE]*
- Yellow-billed cuckoo [FT]*

**Mammals:**

- Gray Wolf [FE/SE]*

**Fish:**

- Bull trout [FT]
- Chinook salmon [FT]
- Steelhead [FT],
Amphibian:

- Oregon spotted Frog [FT/SE]
- Western pond turtle [SE]

Plants:

- Golden paintbrush [FT]
- Water howellia [FT]

* Unlikely to be directly oiled during a spill incident.

6.2.1 General Resource Concerns

6.2.1a – Habitats:

- Many **rivers and streams** throughout this region provide spawning and rearing habitat for a number of salmonid species including Chinook, chum, Coho, pink, and sockeye salmon, as well as cutthroat (resident and coastal), Dolly Varden, rainbow, and steelhead trout. Passerine birds commonly nest in riparian habitat during the spring and summer.

- **Wetlands** in this region range from freshwater emergent, freshwater forested, freshwater ponds and lakes. All wetland types support a diverse array of bird, insect and fish and wildlife species.

- **Restoration sites** where significant efforts have been expended to restore natural functions in a degraded habitat.

6.2.1b – Fish:

- **Salmonid** species are present throughout this region, with spawning occurring throughout the area’s rivers and streams. Juvenile salmonids use these streams for feeding, rearing, and as migration corridors.

6.2.1c – Wildlife:

- **Waterfowl concentrations** of various species may be found throughout the region in wetlands and agricultural fields near rivers and creeks. Concentrations especially prevalent from fall through spring.

- **Sensitive nesting** species in the region include bald eagles, passerine birds, ducks (including cavity-nesting), and great blue herons.

6.2.2 Specific Geographic Areas of Concern

1. **Lake Geneva.** Wetland and lake habitat. Waterfowl concentration area including ducks, grebes, cormorants, loons, and Canada geese.
2. **Pacific City Park and wetlands** extending to south. Wetland and off-channel river habitat. Salmonid presence (including Chinook, Coho, bull trout and steelhead). Waterfowl concentration area.

3. **Swan Creek Park/greenspace.** Wetland complex. Waterfowl concentration area and great blue heron rookery (lower reach). Salmonid presence (including Chinook, Coho, and steelhead).

4. **Lake Chalet** (Edgewood). Wetland and lake habitats. Waterfowl concentration area (including wood ducks).

5. **Wetland complex adjacent to West Valley Hwy.** Wetland habitat and biodiversity corridor. Salmonids (including Chinook, Coho, and steelhead), raptors, waterfowl concentrations.

6. **Lake Tapps.** Wetland and lake habitats. Salmonid presence (including Chinook, Coho, bull trout and steelhead). Concentration/breeding area for raptors and waterfowl.

7. **White River wetland complex, east of Lake Tapp.** Wetland and off-channel river habitats. Salmonid presence (including Chinook, Coho, bull trout, and steelhead). Raptors, great blue heron breeding areas. Waterfowl concentration area. Western toad presence.

8. **96th St./Sportsman Club oxbow restoration sites.** Wetland and off-channel river habitat. Waterfowl concentration area. Salmonid presence (including Chinook, Coho, bull trout, and steelhead). Riparian restoration sites.

9. **Lower Boise Creek.** Wetland and off-channel river habitat. Salmonid presence (including Chinook, Coho, bull trout, and steelhead). Riparian restoration site.
Figure 6-1: Specific Geographic Areas of Concern
6.3 CULTURAL RESOURCES AT RISK - SUMMARY

Culturally significant resources are present within the planning area. Information regarding the type and location of cultural resources is maintained by the Washington Department of Archeology and Historic Preservation (WDAHP). This sensitive information is made available to the Washington Department of Ecology for oil spill preparedness and response planning. The Tribal Historic Preservation Offices (THPOs) or Cultural Resource Departments of local tribes (Table 6.1) may also be able to provide information on cultural resources at risk in the area and should be contacted, along with WDAHP, through normal trustee notification processes when significant oil spills, or smaller spills above reportable thresholds, occur in the area.

Table 6.1 PWR-GRP Cultural Resource Contacts

<table>
<thead>
<tr>
<th>Contact</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington Department of Archaeology and Historic Preservation</td>
<td>360-586-3080</td>
<td><a href="mailto:Rob.Whitlam@dahp.wa.gov">Rob.Whitlam@dahp.wa.gov</a></td>
</tr>
<tr>
<td>Muckleshoot Tribe</td>
<td>253-876-3272</td>
<td><a href="mailto:laura.murphy@muckleshoot.nsn.us">laura.murphy@muckleshoot.nsn.us</a></td>
</tr>
<tr>
<td>The Puyallup Tribe of Indians</td>
<td>253-573-7986</td>
<td><a href="mailto:brandon.reynon@puyalluptribe.com">brandon.reynon@puyalluptribe.com</a></td>
</tr>
<tr>
<td>Lummi Nation, THPO</td>
<td>360-312-2257/961-7752</td>
<td><a href="mailto:lenat@lummi-nsn.gov">lenat@lummi-nsn.gov</a></td>
</tr>
<tr>
<td>Nisqually Tribe, THPO</td>
<td>360-456-5221/961-7752</td>
<td><a href="mailto:wall.jackie@nisqually-nsn.gov">wall.jackie@nisqually-nsn.gov</a></td>
</tr>
<tr>
<td>Nooksack Indian Tribe, THPO</td>
<td>360-592-5176/305-9126</td>
<td><a href="mailto:gswanasetjr@nooksack-nsn.gov">gswanasetjr@nooksack-nsn.gov</a></td>
</tr>
<tr>
<td>Sauk-Suiattle Indian Tribe</td>
<td>360-436-0347</td>
<td><a href="mailto:njoseph@sauk-suiattle.com">njoseph@sauk-suiattle.com</a></td>
</tr>
<tr>
<td>Snoqualmie Tribe</td>
<td>425-888-6551</td>
<td><a href="mailto:Steve@snoqualmietribe.us">Steve@snoqualmietribe.us</a></td>
</tr>
<tr>
<td>Squaxin Island Tribe</td>
<td>360-394-8529</td>
<td><a href="mailto:dlewarch@suquamish.nsn.us">dlewarch@suquamish.nsn.us</a></td>
</tr>
<tr>
<td>Stillaguamish Tribe of Indians</td>
<td>360-652-3687/961-7752</td>
<td><a href="mailto:KLyste@stillaguamish.com">KLyste@stillaguamish.com</a></td>
</tr>
<tr>
<td>The Suquamish Tribe, THPO</td>
<td>360-394-8529</td>
<td><a href="mailto:dlewarch@suquamish.nsn.us">dlewarch@suquamish.nsn.us</a></td>
</tr>
<tr>
<td>Swinomish Indian Tribal Community, THPO</td>
<td>360-466-7352</td>
<td><a href="mailto:lcampbell@swinomish.nsn.us">lcampbell@swinomish.nsn.us</a></td>
</tr>
<tr>
<td>Tulalip Tribes</td>
<td>425-239-0182</td>
<td><a href="mailto:ryoung@tulaliptribes-nsn.gov">ryoung@tulaliptribes-nsn.gov</a></td>
</tr>
<tr>
<td>Upper Skagit Tribe</td>
<td>360-854-7009</td>
<td><a href="mailto:sschuyler@upperskagit.com">sschuyler@upperskagit.com</a></td>
</tr>
<tr>
<td>Confederated Tribes and Bands of the Yakama Nation</td>
<td>509-985-7596/865-5121/961-7752</td>
<td><a href="mailto:kate@yakama.com">kate@yakama.com</a></td>
</tr>
</tbody>
</table>
During a spill response, after the Unified Command is established, information related to specific archeological concerns will be coordinated through the Environmental Unit. In order to ensure that tactical response strategies do not inadvertently harm culturally sensitive sites, WDAHP should be consulted before disturbing any soil or sediment during a response action. WDAHP and/or the Tribal governments may assign a person, or provide a list of professional archeologists that can be contracted, to monitor response activities and cleanup operations for the protection of cultural resources. Due to the sensitive nature of such information, details regarding the location and type of cultural resources present are not included in this document.

6.3.1 Discovery of Human Skeletal Remains

Any human remains, burial sites, or burial-related materials that are discovered during a spill response must be treated with respect at all times (photographing human remains is prohibited to all except the appropriate authorities). Refer to Section 9403 of the Northwest Area Contingency Plan for National Historic Preservation Act Compliance Guidelines during an emergency response.

6.3.2 Procedures for the Discovery of Cultural Resources

If any person monitoring work activities or involved in spill response believes that they have encountered cultural resources, all work must be stopped immediately and the Incident Commander and Cultural Resource Specialist notified. The area of work stoppage must be adequate to provide for the security, protection, and integrity of the material or artifact(s) discovered.

Prehistoric cultural resources: (May include, but are not limited to, any of the following items)

- Lithic debitage (stone chips and other tool-making byproducts)
- Flaked or ground stone tools
- Exotic rock, minerals, or quarries
- Concentrations of organically stained sediments, charcoal, or ash
- Fire-modified rock
- Rock alignments or rock structures
- Bone (burned, modified, or in association with other bone, artifacts, or features)
- Shell or shell fragments
- Petroglyphs and pictographs
- Fish weirs, fish traps, and prehistoric water craft
- Culturally modified trees
- Physical locations or features (traditional cultural properties)

Historic cultural material: (May include any of the following items over 50 years old)

- Bottles, or other glass
- Cans
- Ceramics
- Milled wood, brick, concrete, metal, or other building material
- Trash dumps
- Homesteads, building remains
- Logging, mining, or railroad features
- Piers, wharves, docks, bridges, dams, or shipwrecks

6.4 ECONOMIC RESOURCES AT RISK SUMMARY

Socio-economic sensitive resources are facilities or locations that rely on a body of water to be economically viable. Because of their location, they could be severely impacted if an oil spill were to occur. Economically sensitive resources are separated into three categories: critical infrastructure, water dependent commercial areas, and water dependent recreation areas. Appendix 6A of this chapter provides a list of economic resources for this planning area.

6.5 GENERAL INFORMATION

6.5.1 Flight restriction zones

Flight restriction zones may be recommended by the Environmental Unit (Planning Section) for the purpose of reducing disturbances that could result in injury to wildlife during an oil spill. By keeping a safe distance or altitude from identified sensitive areas, pilots can lessen the risk of aircraft/bird collisions, prevent the accidental hazing of wildlife into oiled areas, and avoid causing the abandonment of nests.

Implementation of Flight Restriction Zones will take place within the Air Operations Branch (Operations Section) after a Unified Command is formed. The Planning Section’s Environmental Unit will work with the Air Ops Branch Director to resolve any potential conflicts with flight activities that are essential to the spill response effort. Typically, the area within a 1,500-foot radius and below 1,000 feet in altitude is restricted to flying in areas that have been identified as sensitive; however, some areas have more restrictive zones. In addition to restrictions associated with wildlife, Tribal authorities may also request notification when overflights are likely to affect culturally sensitive areas within reservations. See Section 9301.3.2 and Section 9301.3.3 of the Northwest Area Contingency Plan for more information on the use of aircraft and helicopters in open water and shoreline responses.

6.5.2 Wildlife Deterrence

After a Unified Command is formed, the Wildlife Branch (Operations Section), in consultation with the appropriate trustee agencies and the Environmental Unit, will evaluate wildlife deterrent options for the purpose of keeping un-oiled birds and mammals away from oil during a spill. The "Bird Deterrence Unit" and "Marine Mammal Deterrence Unit" in the Wildlife Branch would
participate in operations. Deterrence options might include the use of acoustic or visual deterrent devices, boats, aircraft or other situation-appropriate tools. For more information see the Northwest Wildlife Response Plan (NWACP Section 9310) and Northwest Area Wildlife Deterrence Resources (NWACP Section 9311).

6.5.3 Oiled Wildlife

Attempting to capture oiled wildlife can be hazardous to both the animal and the person attempting the capture. Response personnel should not approach or attempt to recover oiled wildlife. Responders should report their observations of oiled wildlife to the Wildlife Branch so appropriate action can be taken. Information provided should include the location, date, and time of the sighting, and the estimated number and kind of animals observed. Early on in the response, before a Unified Command is established, oiled wildlife sightings should be reported to Washington Emergency Management Division. For more information see the Northwest Wildlife Response Plan (NWACP Section 9310).
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APPENDIX 6A

List of Economic Resources

(Reserved)