



GREEN RIVER/DUWAMISH

Geographic Response Plan

(GRD GRP)



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GREEN RIVER/DUWAMISH
Geographic Response Plan
(GRD GRP)

October 2015

Spill Response Contact Sheet

Required Notifications for Oil Spills and Hazardous Substance Releases

| | |
|--|------------------------|
| Federal Notification - National Response Center | (800) 424-8802* |
| State Notification - Washington Emergency Management Division | (800) 258-5990* |

- Other Contact Numbers -

| U.S. Environmental Protection | |
|-----------------------------------|------------------------|
| Region 10 - Spill Response | (206) 553-1263* |
| - Washington Ops Office | (360) 753-9437 |
| - RCRA/CERCLA Hotline | (800) 424-9346 |
| - Public Affairs | (206) 553-1203 |

| U.S. Coast Guard | |
|--|------------------------|
| Sector Puget Sound | |
| - Emergency | (206) 217-6001* |
| - Watchstander | (206) 217-6002* |
| - Incident Management Division | (206) 217-6214 |
| - Port and Waterways Safety | (206) 217-6042 |
| 13th Coast Guard District | (800) 982-8813 |
| National Strike Force Coord. Center | (252) 331-6000 |
| - Pacific Strike Team | (415) 883-3311 |

| National Oceanic Atmospheric Administration | |
|---|----------------|
| Scientific Support Coordinator | (206) 526-6829 |
| Weather | (206) 526-6087 |

| Other Federal Agencies | |
|---|------------------------|
| U.S. Army Corps of Engineers | (206) 764-3406 |
| - Reservoir Control Center | (206) 764-6702 |
| U.S. Fish & Wildlife Service (pager) | (360) 534-9313* |
| U.S. Department of Interior | (503) 326-2489 |
| U.S. Navy Region Northwest | (360) 315-5410 |

| Pipeline Companies and Railroads | |
|----------------------------------|------------------------|
| BNSF Railway | (800) 832-5452* |
| BP Olympic Pipeline | (888) 271-8880* |
| Union Pacific Railroad | (888) 877-7267* |

| Response Contractors | |
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| NRC Environmental Services / NRC | (800) 337-7455* |
| Marine Spill Response Corporation | (425) 252-1300* |
| Global Diving and Salvage | (206) 623-0621* |

| Washington State | |
|--|----------------------------------|
| Dept of Ecology | |
| - Headquarters (Lacey) | (360) 407-6000 |
| - NW Regional Office (Bellevue) | (425) 649-7000 |
| - SW Regional Office (Lacey) | (360) 407-6300 |
| Dept of Fish and Wildlife | |
| - Emergency HPA Assistance | (360) 902-2200 |
| - Oil Spill Team | (360) 902-2537* |
| Dept of Health (Drinking Water) | |
| - After normal business hours | (800) 521-0323 (877) 481-4901 |
| Dept Archaeology & Historic Pres. | |
| | (360) 586-3065 |
| Dept of Transportation | |
| | (360) 705-7000 |
| Washington Parks & Recreation | |
| | (360) 902-8544 |
| Washington State Patrol - District 2 | |
| | (425) 401-7788 |

| Tribal Contacts | |
|---------------------------------|----------------|
| Muckleshoot Indian Tribe | (360) 586-3080 |
| Puyallup Tribe | (253) 841-0376 |
| Snoqualmie Tribe | (425) 888-6551 |
| Squaxin Island Tribe | (360) 432-3809 |
| Tulalip Tribes | (360) 651-4000 |

| Local Government | |
|------------------------------------|------------------------|
| City of Auburn | (253) 931-3000 |
| City of Black Diamond | (360) 886-5700 |
| City of Kent | (253) 856-5200 |
| City of Renton | (425) 430-6400 |
| City of Tukwila | (206) 433-1800 |
| King County Emergency Mgmt. | (206) 296-3830 |
| King County Metro | (206) 553-3000 |
| King County Parks | (206) 477-4527 |
| King County Roads | (206) 296-8100* |
| King County Sheriff | (206) 296-4155 |
| King County Wastewater | (206) 263-1760* |
| Tacoma Water | (253) 502-8346* |

* Contact Numbers staffed 24-hours/day

Before you print this document

Chapter 4 with appendices (pages [27-170](#)) and Appendix 6A (pages [183-191](#)) of this document are provided in “landscape” page orientation; all other chapters and appendices are oriented in “portrait.” The appendices in Chapter 4 (pages [69-170](#)) 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: from the time a spill occurs until a Unified Command is established. Its main focus is sensitive resource protection. The plan prioritizes tactical response strategies based on locations where spills might occur and the proximity of those locations to natural, cultural, and economic resources at risk of injury. By using this document it's hoped that immediate and proper action can be taken to reduce spilled oil's impact on sensitive resources within the planning area.

After a spill occurs, control and containment at or near the spill source are top priorities. Beyond those efforts, the tactical response strategies provided in this plan should be implemented using the priority tables in Chapter 4, unless overflight observations, spill trajectory models, or unique circumstances dictate otherwise.

This plan also provides specific information about the type and location of natural and economic resources in the area. Specific information about the location of cultural sites were taken into consideration in the development of this plan but such information cannot be provided in this document due to the confidential nature of the resources.

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CHAPTER 1

Introduction

This plan focuses on sensitive resource protection after an oil spill occurs. It serves as the federal and state on-scene-coordinators' orders during the initial phase of an oil spill response in the Duwamish/Green River area. It has been approved by Regional Response Team 10 and the Chairs and Co-Chairs of the Northwest Area Committee. Changes to this document are expected as more testing is conducted through drills, site visits, and actual use in spill situations. 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 forms and information provided in Appendix 1A of this document.

The bulk of this plan is contained in Chapter 4. It provides information on tactical response strategies and the order they should be implemented, based on potential spill origin points and their proximity to sensitive resources. Area and sector maps and information on staging areas and boat launch locations are also provided in that chapter.

The Green River/Duwamish GRP covers the river from North Wind's Weir in Tukwila to the base of the Howard Hanson Dam. The Green River/Duwamish watershed has three (3) distinct geographic areas: the Duwamish River and Waterway, the lower Green River, and the middle Green River. The cities of Tukwila, Renton, Kent, Auburn, Black Diamond, Ravensdale and Palmer are included in this area.

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 of an oil spill 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. It's important to note that 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 or Unified Command.

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 hazardous substance spills, refer to the [Northwest Area Contingency Plan \(NWACP\)](#), Chapter 7000.

Information meant to support initial Environmental Unit functions can be found in Chapter 6 (Resources at Risk). That chapter and its appendix provide specific information about the type and location of natural and economic resources in the area. Specific information about the location of cultural sites in the GRP area were taken into consideration in the development of this plan but such information cannot be provided in this document due to the confidential nature of the resources.

1.1 GRP CHAPTERS AND APPENDICES

| | |
|-----------------------------|-------------------------------------|
| CHAPTER 1 | Introduction |
| APPENDIX 1A | GRP Comment Form |
| CHAPTER 2 | Site Description |
| CHAPTER 3 | Response Options and Considerations |
| CHAPTER 4 | Response Strategies and Priorities |
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1.2 GEOGRAPHIC RESPONSE PLAN DEVELOPMENT PROCESS

GRPs are considered part of the [NWACP](#), although revised and distributed separately. They've been developed for the marine and inland waters of Washington, Oregon, and Idaho. The plans are prepared through the efforts of, and in cooperation with, Washington Department of Ecology, Oregon Department of Environmental Quality, Idaho State Emergency Response Commission, U.S. Coast Guard, U.S. Environmental Protection Agency, as well as other state and federal agencies, tribal and local governments, response organizations, emergency responders, and communities. GRPs are developed through workshops and meetings with representatives of these organizations as well as local oil spill emergency response experts, industry, environmental and conservation organizations, ports, and pilots, among others. Participants identify resources that may be at risk of

injury from spills and attempt 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 determine 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 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 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.

APPENDIX 1A

Comments, Corrections, or Suggestions

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>.

CHAPTER 2

Site Description

2.1 INTRODUCTION

This chapter provides a description of the area’s physical features, hydrology, climate and winds, and includes an overview of oil spill risks in the Green River/Duwamish area. The planning area includes the Green River from the base of the Howard A. Hanson Dam through its transition into the Duwamish River to river mile 6.5 (Cecil Moses Memorial Park/North Wind’s Weir). The remainder of the Duwamish River/Waterway, from the weir to the mouth at Elliott Bay in Seattle, is included in the Central Puget Sound GRP. Upstream to downstream in the GRP planning area, the Duwamish/Green passes by or through the towns and cities of Covington, Maple Valley, Black Diamond, Enumclaw, Algona, Federal Way, Auburn, Kent, SeaTac, Tukwila, and Renton. The planning area is fully within the limits of King County. It is completely encompassed by Water Resource Inventory Area 9 (WRIA-9 Duwamish-Green), of which the Green River/Duwamish is the integral riparian habitat.

2.2 PHYSICAL FEATURES

The upstream boundary of the GRP planning area is the base of the Howard A. Hanson Dam, located 21 miles east of Auburn. The area known as the Middle Green River Subwatershed “extends from Howard Hanson Dam (river mile 64.5) to river mile 32 just east of Auburn. It has two major tributaries – Soos Creek and Newaukum Creek – and numerous smaller tributary streams.”¹ These upstream Green River sections are characterized by suburban development and rural land. In the Middle Green River Subwatershed, “the major land uses...are residential (50%), forestry (27%) and agriculture (12%).”² In this location, there are several important environmental and cultural resources, such as the Green River Gorge and Flaming Geyser State Park.

The Lower Green River Subwatershed “begins at river mile 32 near Auburn and extends 21 miles to river mile 11 in Tukwila.” The three major tributaries of this section are Springbrook Creek, Mullen Slough and Mill Creek. Beginning in this area and continuing downstream to the mouth, “approximately 80% of the Lower Green River Subwatershed has a levee or revetment on at least one bank in response to periodic flooding.” This area is significantly more developed than the upper watershed, with residential property making up half of the area and commercial a quarter.³

¹ *Salmon Habitat Plan 7-27* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch7-MiddleGreen.pdf>

² *Salmon Habitat Plan 3-8* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch3-History.pdf>

³ *Salmon Habitat Plan 3-9* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch3-History.pdf>

From river mile 11 to its mouth in Elliott Bay, the Green River is known as the Duwamish River (also classified as the Duwamish Estuary Subwatershed). In addition to the primary flow of the Green River, Hamm Creek and Riverton Creek feed into Duwamish Estuary Subwatershed.⁴

The Duwamish Estuary is further subdivided at river mile 5.5. Upstream of this point, commercial development is still mixed with urban residential (42% and 29% respectively).⁵ Although the upper part of the Duwamish is not a manmade channel, it retains the levees and revetments which stemmed the threat of flooding before the Howard A. Hanson dam was built.

The lower Duwamish has been dredged and filled to support navigation and water-dependent businesses. This industrialized area is also known as the Duwamish Waterway. The Green River/Duwamish GRP boundary ends at river mile 6.5, just upriver of this area. Strategies for the lower Duwamish Waterway are included in the Central Puget Sound GRP.

2.2.1 History

Despite seemingly contiguous sections, the reason for Green River/Duwamish having two separate names is due to its pre-industrialized past. Prior to 1906, the Duwamish River was created by the confluence of the Green, White and Black Rivers. The Green and White Rivers met upstream and their combined discharge met the Black River in what is now Tukwila. It was at this confluence that the three rivers' output created the separately defined entity of the Duwamish River. The name "Duwamish" is derived from the Native American Lushootseed language, meaning "People of the Inside." This was a reference to the Duwamish tribe's settlements along the rivers inland. The settlement surrounding the confluence of the Black and Green Rivers was called "Inside Place," from which the Duwamish peoples' name originated.

In 1906, a debris jam from a flood redirected the White River away from the Green and into the Puyallup River, which subsequently flowed out to Commencement Bay in Tacoma. Prior to the construction of the Hanson Dam, the Green River was subject to frequent flooding. It was built for the express purpose of flood control and to provide a water supply source for Tacoma. The debris jam was replaced with a permanent diversion wall in an early attempt to control flooding, ensuring the river's altered course permanently remained.⁶ Ten years later, the opening of the Lake Washington Ship Canal dropped the level of Lake Washington (the source of the Black River) by 8.8 feet.⁷ The Black river subsequently dried up and its remaining stream bed/marshland now carries drainage and runoff. As a result, the confluence of rivers that once made up the Duwamish disappeared, melding it as a singular river with the Green.

The naming designations, however, did not change. The Duwamish and the Green are now divided based upon the site of the historical confluence with the Black, despite their contemporary physical

⁴ *Salmon Habitat Plan 3-10* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch3-History.pdf>

⁵ *Salmon Habitat Plan 3-10* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch3-History.pdf>

⁶ <http://www.kingcounty.gov/environment/watersheds/white-river/facts.aspx>

⁷ http://kcts9.org/sites/default/files/unit7_reading_blackriverdisappears.pdf

congruence. In addition to the upstream changes, manmade intervention significantly altered the area around the mouth of the Duwamish. Starting in 1913, “the Duwamish was transformed from a nine-mile, shallow and meandering river to a five mile engineered waterway.”⁸ This also resulted in the creation of Harbor Island, which remains as the dominant feature of the Duwamish Waterway mouth and the epicenter for the Port of Seattle’s maritime shipping operations. These manmade modifications and the resulting large reduction in river flow further shaped the lower parts of the river. Prior to these changes, the Duwamish Estuary had around 4,000 acres of tidal marshes and intertidal mudflats. This habitat has since disappeared and “97% of the estuarine mudflats, marshes, and forested riparian swamps have been filled.”⁹ Most of this was replaced by the heavily commercialized area located just north of the planning area.

2.3 HYDROLOGY

As previously mentioned, Howard A. Hanson Dam is instrumental in controlling the hydrology of the watershed. It manages the flow of water down to sea level from an elevation of 1,206 feet with a reservoir capacity of 106,000 acre/ft.¹⁰ As a flood control dam, it stemmed the once large flood occurrences that would annually inundate farmland along the river. Three miles downstream of the dam is the Tacoma Headworks diversion dam (RM 61), which was installed to divert water from the river into a treatment facility to supply the city of Tacoma’s drinking water. Since the installation of these fixtures, salmon have been unable to spawn past this point. As a result, “the majority of existing Chinook salmon spawning in WRIA 9 occurs in the Middle Green River Subwatershed.”¹¹ Projects are being studied (as of publication) to create fish passages that will allow spawning salmon to reach the Upper Green River. Currently, adult fish are gathered at the base of the Tacoma Headworks diversion dam and then trucked to area hatcheries. There have also been attempts to create a juvenile fish passage at the dam but as of publication, these have not been successful.

Another major impact of the dams on the hydrology of the Green River/Duwamish is the blockage of sediment transport by water flow in the riparian habitat. According to Ecology’s Green/Duwamish and Central Puget Sound Watershed Salmon Habitat Plan:

“Howard Hanson Dam completely blocks large woody debris and sediment (gravel) from the Upper Green from reaching the Middle Green and beyond. As a result, there is a gravel deficit because winter flows flush sediments downstream of Howard Hanson Dam with no replenishment from the Upper Green. This has resulted in channel incision (downcutting) and subsequent armoring (removal of

⁸ <http://www.boeing.com/boeing/aboutus/environment/duwamish/history.page>

⁹ *Salmon Habitat Plan 3-10* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch3-History.pdf>

¹⁰ [http://www.nws.usace.army.mil/Portals/27/docs/civilworks/locks_dams/howardhanson/HAHD%20Fact%20Sheet%20June%202014%20\(2\).pdf](http://www.nws.usace.army.mil/Portals/27/docs/civilworks/locks_dams/howardhanson/HAHD%20Fact%20Sheet%20June%202014%20(2).pdf)

¹¹ *Salmon Habitat Plan 7-27* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch7-MiddleGreen.pdf>

smaller sediments leaving bare rock or large boulders). Lack of sediment has a significant effect on spawning in the river downstream.”¹²

2.3.1 Water Resource Inventory Area (WRIA)

WRIA 9 completely encompasses the planning area. Most of the precipitation arrives during the winter months when water demands are the lowest, and only a fraction becomes available for human and economic uses. During the summer, the snowpack is gone; there is little rain so low stream flows are dependent on groundwater inflow. This means that groundwater and surface water are least available when water demands are the highest.

2.4 CLIMATE AND WINDS

The Green River/Duwamish GRP planning area falls within the Central Puget Sound region of Washington State. According to Ecology’s Water Resources Program, “average precipitation ranges from 30-35 inches per year in the coastal areas to 70 inches in the mountains.¹³ The average high temperatures in the summer reach the mid to upper 70s with the average low being the mid 50s. In the winter, the average high is in the upper 40s and the low is in the mid to upper 30s in the Kent/Auburn area. Temperatures drop and snowfall increases in the upper watershed near Kanaskat-Palmer and the Howard Hanson Dam.

Prevailing winds in the area are generally from the north in July through September, and south in October through June.¹⁴ Average wind speed at SeaTac is 6.8 mph. The lightest winds are usually experienced in September, with the lowest monthly average of 5.4 mph at Boeing Field. Winds are typically strongest in March, with the highest monthly average of 8.5 mph at SeaTac.¹⁵

2.5 TIDES AND CURRENTS

Depending on the location, some of the waters within the Green River/Duwamish GRP planning area are impacted by tides. From the mouth of the Duwamish waterway, the tidal push from Elliott Bay will impact the inland water level along the banks of the river. At high tide during low (summer) flows, the water can reverse course and head upstream.¹⁶ The tidal zone is generally considered to end at river mile 11, with the USGS gage at river mile 10.4 showing a tidal height variance of four feet. However, a USGS gage six miles further upriver is “tidally influenced” and shows a smaller (~1 foot) difference between low and high tide.

The overall river current is controlled by the natural slope of the river from the foothills and input from both tributary creeks (especially during heavy instances of precipitation) and the dam flood

¹² *Salmon Habitat Plan 3-8* <http://your.kingcounty.gov/dnrp/library/2005/kcr1876/CHAPTERS/Ch3-History.pdf>

¹³ <https://fortress.wa.gov/ecy/publications/publications/1111014.pdf>

¹⁴ <http://www.wrcc.dri.edu/htmlfiles/westwinddir.html>.

¹⁵ <http://www.wrcc.dri.edu/climatedata/climtables/westwind>.

¹⁶ <http://www.seattleweekly.com/home/956392-129/king-tide-shows-what-climate-change>

gates. Water volumes of 1200 cubic feet per second (cfs) are considered average, with usual summer flows dropping below 300 cfs and winter flows near 2500 cfs at the Auburn gage. Flood stage for the same gage is 9000 cfs.¹⁷ Tidal influences will significantly affect the velocity near the mouth, with changes of 1.2 knots or more near river mile 11. High tide can slow the river here to a near-standstill, even with high winter flows.

2.6 RISK ASSESSMENT

The Green River/Duwamish area is 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, recreational boating, and other oil spill risks. This section briefly discusses these risks and how they could impact the Green River/Duwamish GRP planning area.

Road Transportation

Vehicle traffic on roadways pose an oil spill risk in the area. Commercial trucks can contain hundreds to thousands of gallons of fuel and oil, and almost any kind of hazardous waste or material. An accident involving a fully loaded tank truck on the various roads and highways that border the river and its tributary creeks could result in a substantial oil spill. Smaller vehicle accidents pose a similar risk, commensurate to the volume of fuel and oil they carry. Spills from vehicles onto roadways could cause fuel or oil to flow from ditches or hardened surfaces into streams, creeks, wasteways, or storm water systems ultimately impacting the Duwamish/Green Rivers or other streams in the area. Highway bridges pose the greatest risk of road spills due to the quantity of vehicles and speed of travel, but accidents are also common on the smaller roads in the upper watershed, particularly during winter weather.

Rail Transportation

The BNSF Railroad operates a rail line that runs parallel to the Green River over the Cascade Mountain Range. Formerly the Northern Pacific Railway, this line goes from Auburn through Stampede Pass to Yakima. Train locomotives pose the greatest spill risk in this area, as they typically hold several thousand gallons of diesel fuel plus large quantities of lube and motor oils. Due to the steep grade of the pass, most of the train cars using this route are empty. However, each tanker car can contain residual oils in the tens or hundreds of gallons. Therefore empty unit trains, which consist of 100 or more oil tanker cars, can present a risk to the upper watershed of 10,000 gallons of diesel in external "saddle" tanks on the locomotives, plus 10,000 or more gallons of residual crude oil. As traffic of fully loaded oil and coal trains along the relatively flat Columbia River rails has increased, use of the Stampede Pass route has also increased in order to return empty cars to eastern Washington and beyond.

¹⁷ http://waterdata.usgs.gov/wa/nwis/uv/?site_no=12113000&PARAMeter_cd=00060,00065

The Lower Green River watershed, by contrast, is at risk from fully loaded oil trains. The area between Auburn and Tukwila is part of a major rail transportation corridor, which stretches between Canada to the north and Oregon to the south, generally alongside Interstate 5.

Trains loaded with crude from the Bakken Formation in South Dakota or the Alberta oil sands in Canada travel west from Spokane, along the Columbia River to Vancouver at the Oregon border before heading north along I-5 to refineries in Anacortes and Blaine. Trains carrying Albertan oils also cross the Canadian border in Blaine and travel south to Tacoma or beyond. Each loaded tanker car typically contains 29,000 gallons of crude oil or other petroleum products. Unit trains carry 100 or more of these tanker cars of crude, plus a buffer car of sand and the locomotives. Each full unit train poses a spill risk of nearly 3 million gallons of crude oil plus 10,000 gallons of diesel fuel. Tanker cars of crude can also be transported in smaller numbers, mixed alongside boxcars and tankers of other products. In September 2014 BNSF reported 8-12 trains carrying one million gallons or more of Bakken crude traversing King County each week.¹⁸

Just outside the planning area, BNSF operates a rail yard in southern Auburn south of Highway 18 and east of Highway 167. The yard is located on the historic bed of the White River, which now is located further south and empties into the Puyallup. Although the surface water has relocated, there is still an underground flow between the subterranean aquifers of the White and Green Rivers estimated at 30 to 60 cfs (approximately 1-10% of the total river volume, depending on season)¹⁹. Therefore, even though it is located in a different watershed, oil spilled at this rail yard could eventually appear on the Green River.

Commuter trains using diesel locomotives run on BNSF tracks between Tacoma and Seattle, including Amtrak and the Sounder. The Link Light Rail line between SeaTac airport and Seattle is electric and therefore not a potential spill source.

Oil Pipelines

The Olympic Pipeline crosses the Green River in Tukwila and Kent. It also crosses several tributaries, including Mill Creek in Kent, Mill Creek in Renton, and Springbrook Creek in Renton. This pipeline transports refined petroleum products; mainly diesel, gasoline, and jet fuel. If the pipeline were to leak or rupture, impact to sensitive resources in the area could be significant due to the volume of product. Control points previously identified by the Olympic Pipeline Company were visited during the creation of the plan, and many of those sites were selected to be included in this GRP.

Aircraft

Seattle-Tacoma International Airport is located west of the Green River, while Renton Municipal Airport is located east of the upper Duwamish. Auburn Municipal Airport located at 400 23rd Street NE, Auburn, WA, is located approximately 3,000 feet west of the Green River. Boeing Field is also

¹⁸ <http://mil.wa.gov/uploads/pdf/seismic/bnsf-9-30-2014.pdf>

¹⁹ <http://your.kingcounty.gov/dnrp/library/2005/KCR1847/Final%20Report%20September%202005.pdf>
(p. 5-4)

just north of the furthest downstream section of the planning area. There is always a potential for aircraft failures during inbound and outbound flights that could result in fuel releases to water.

Recreational Boating

Accidents involving recreational watercraft on the Green/Duwamish could result in spills between a few gallons to several dozen gallons of fuel oil. Accidents could include a vessel grounding, fire, sinking, or explosion. Bilge discharges and refueling operations could also occur (and are likely most common) and also have the potential to impact sensitive resources on the river. The majority of motorized boat traffic ends downstream of the planning area, but the Green River is considered a navigable waterway up to the Highway 516 bridge in Kent.²⁰ Recreational vessels in the remainder of the watershed tend to be hand-launched rafts, canoes, or kayaks.

Other Spill Risks

Other potential oil spill risks in the area include road run-off during rain events, on-shore or near shore construction activities where heavy equipment is being operated, and the migration of spilled oil through soil on lands adjacent to the river or along creek/stream banks.

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²⁰ https://www.uscg.mil/d13/docs/CG_Navigable_Waterways.pdf

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CHAPTER 3
GREEN RIVER/DUWAMISH
Spill Response Options and
Considerations

Location

| | | | | | | | |
|-----------------|----------------|-------------|---------------|---------------|--------------|------------------------|--------------------------|
| Duwamish | Tukwila | Kent | Auburn | Valley | Gorge | Kanaskat-Palmer | Howard Hanson Dam |
|-----------------|----------------|-------------|---------------|---------------|--------------|------------------------|--------------------------|

| | |
|------------------|--------------------------------------|
| Waterbody | Rivers |
| | Creeks |
| | Lakes |
| | Pool Area formed by Dam |
| | Tidally Influenced Areas |
| | Wetland Area(s) |
| | Intermittent Streams (Seasonal Flow) |

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|-----------------------------------|---|
| Potential Response Options | Source Control and Containment Activities |
| | Aerial / Vessel Surveillance Activities |
| | Wildlife Rescue and Rehabilitation Activities |
| | Air Boat Use (Areas Recommended) |
| | Collection for Skimming Operations (Note:1) |
| | Vessel Based Skimming Operations (Note:2) |
| | Shore Based Skimming Operations (Note:3) |
| | Shoreside Protection Booming (Note:4) |
| | Shoreside Cleanup Activities (Note: 5) |
| | In-Situ Burning |
| | Dispersant Use |

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| Considerations | Shoreside Access can be Limited by Geography |
| | Shoreside Access can be Limited by Private Property |
| | State or National Wildlife Refuge / Recreation Area |
| | Habitat Restoration Site(s) in Area |
| | Public or Commercial Marina(s) in Area |
| | Commercial Vessel Movement / Port Area |
| | Recreational Boat Traffic |
| | Tribal Lands or U and A Interests (Note: 6) |
| | Historic / Cultural District(s) in Area |
| | Dam(s) in Area |
| | Interstate Highway Corridor |
| | Oil Movement by Rail in Area |
| | Oil Pipeline(s) in Area |

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Note 1: Collection for Skimming Operations response options should include use of enhanced skimming using a U-boom, V – boom, or J – boom configuration in waters large enough for boats to maneuver (e.g., lake, large river).

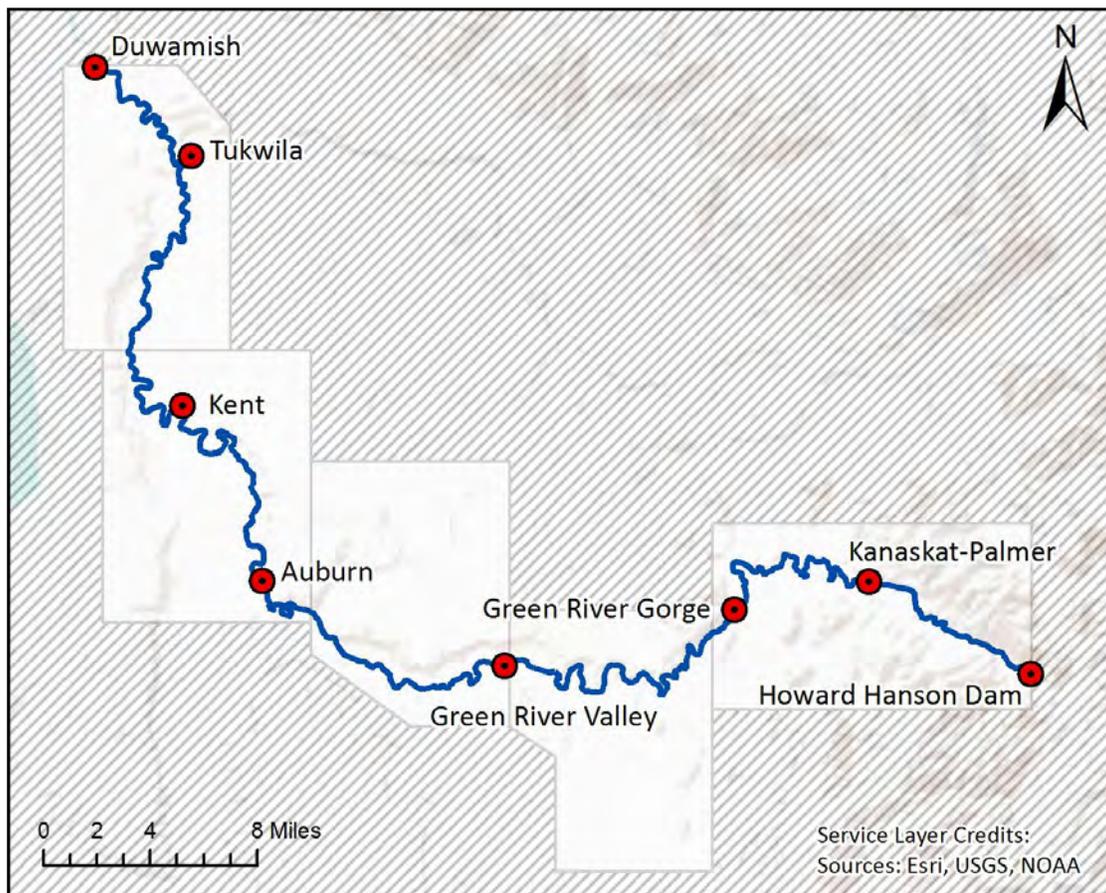
Note 2: Vessel Based Skimming Operations response options should include use of advancing skimmers: weir, belt, brush, drum, or other skimmer types.

Note 3: Shore Based Skimming Operations response options should include use of fixed skimmers: weir, belt, brush, drum, or other skimmer types.

Note 4: Shoreline Protection should include the deployment of response strategies (boom) to divert and collect oil off of the water before shoreline areas are impacted, or deflect and exclude oil away from shoreline areas. These strategies include those published in this document (GRP response strategies), those provided in other plans (e.g., facility contingency plans), and “ad-hoc” strategies developed during the spill itself. A culvert block or underflow dam might be installed to aid in the recovery of spilled oil in small streams or those with intermittent flow.

Note 5: Shoreside Cleanup options depend on safe and efficient access to locations and the type of river, creek, or stream bank present. Potential activities could include flooding, flushing, manual removal, vacuum, mechanical removal, sorbents, vegetation cutting, mechanical tilling/aeration, and/or sediment reworking/surf washing.

Note 6: This sheet doesn’t represent all locations where Tribes and Tribal Nations have lands or areas of specific interest (including lands established by treaty or rights to Usual and Accustom areas). Early coordination with tribal governments is highly recommended during a response, regardless of the spill location or potential impact areas.



GREEN RIVER/DUWAMISH
GEOGRAPHIC RESPONSE PLAN
(GRD GRP)

CHAPTER 4
Response Strategies and Priorities

October 2015

4.1 CHAPTER INTRODUCTION

This chapter provides information on GRP response strategies and the order (priority) they should be implemented, based on Potential Oil Spill Origin Points (POSOP) and their proximity to sensitive resources. 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 after priority consideration of, and attention to, source containment options. 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. Response equipment type and location information can be found on the Western Response Resource List (WRRL). The WRRL is available online at <http://www.wrml.us>. Information on resources at risk, sensitive areas, and flight restrictions can be found in Chapter 6 of this plan. Information on protection techniques can be found in Appendix A. 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.rtt10nwac.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. 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 or Unified Command.

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? Source control and containment of the spill at or near the source of a spill 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 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 \(WADOT\) guidelines](#) for work zone traffic control should be followed when working on or near a roadway.
 - Auburn Police (253) 288-2121
 - Black Diamond Police (253) 631-1012
 - Kent Police (253) 856-5800
 - King County Roads (206) 296-8100
 - King County Sherriff (206) 296-4155
 - Renton Police (425) 235-2121
 - Tukwila Police (206) 433-1808
 - Washington State Patrol (District 2) (425) 401-7788

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 that when data was gathered during field visits. Response managers and responders must remain flexible and 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.
- Oil containment boom must be free of twists, gaps, and debris in order to remain effective.
- 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.
- Although designed for implementation during the initial phase of an oil spill, GRP strategies may continue to be deployed and implemented throughout the entire lifespan of a response, as determined appropriate and necessary by the Incident Commander or Unified Command.

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

| Time to Drift 100 Feet (seconds) | Velocity (ft/sec) | Velocity (m/sec) | Velocity (knots) | Max Boom Deflection Angle (degrees) | Boom required for 100-foot Profile to Current (feet) | Anchors needed if Placed Every 50 feet (number) |
|---|------------------------------|-----------------------------|-----------------------------|--|---|--|
| 6 | 16.7 | 5.1 | 10.00 | 4.0 | 1,429 | 30 |
| 8 | 12.5 | 3.8 | 7.50 | 5.4 | 1,071 | 22 |
| 10 | 10.0 | 3.1 | 6.00 | 6.7 | 857 | 18 |
| 12 | 8.3 | 2.5 | 5.00 | 8.0 | 714 | 15 |
| 14 | 7.1 | 2.2 | 4.29 | 9.4 | 612 | 13 |
| 17 | 5.9 | 1.8 | 3.53 | 11.4 | 504 | 11 |
| 20 | 5.0 | 1.5 | 3.00 | 13.5 | 429 | 10 |
| 24 | 4.2 | 1.3 | 2.50 | 16.3 | 357 | 8 |
| 30 | 3.3 | 1.0 | 2.00 | 20.5 | 286 | 7 |
| 40 | 2.5 | 0.8 | 1.50 | 27.8 | 214 | 5 |
| 60 | 1.7 | 0.5 | 1.00 | 44.4 | 143 | 4 |
| >86 | ≤1.2 | ≤0.35 | ≤0.70 | 90.0 | 100 | 3 |

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 Streamflow Ranges

Gage/stream-flow data from U.S. Geological Survey (USGS) was used to determine the mean monthly river discharge for the Green River/Duwamish. River 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 river velocities 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 on calculating river velocities can be found in the [Northwest Area Contingency Plan](#), Section 9302. Information on USGS river gage readings can be found online at <http://maps.waterdata.usgs.gov/mapper/index.html>.

Table 4-2: Historic streamflow for Green River/Duwamish

| <i>Monthly average flow in Cubic Feet per Second (cfs)</i> | | |
|--|---|--|
| | Green River at Howard Hanson USGS 12105900 <i>(data from 1960 to 2013)</i> | Green River at Auburn USGS 12113000 <i>(data from 1961 to 2013)</i> |
| January | 1,580 | 2,370 |
| February | 1,470 | 2,050 |
| March | 1,150 | 1,690 |
| April | 1,340 | 1,820 |
| May | 1,270 | 1,650 |
| June | 755 | 1,060 |
| July | 407 | 536 |
| August | 262 | 311 |
| September | 329 | 386 |
| October | 538 | 652 |
| November | 1,260 | 1,630 |
| December | 1,500 | 2,040 |

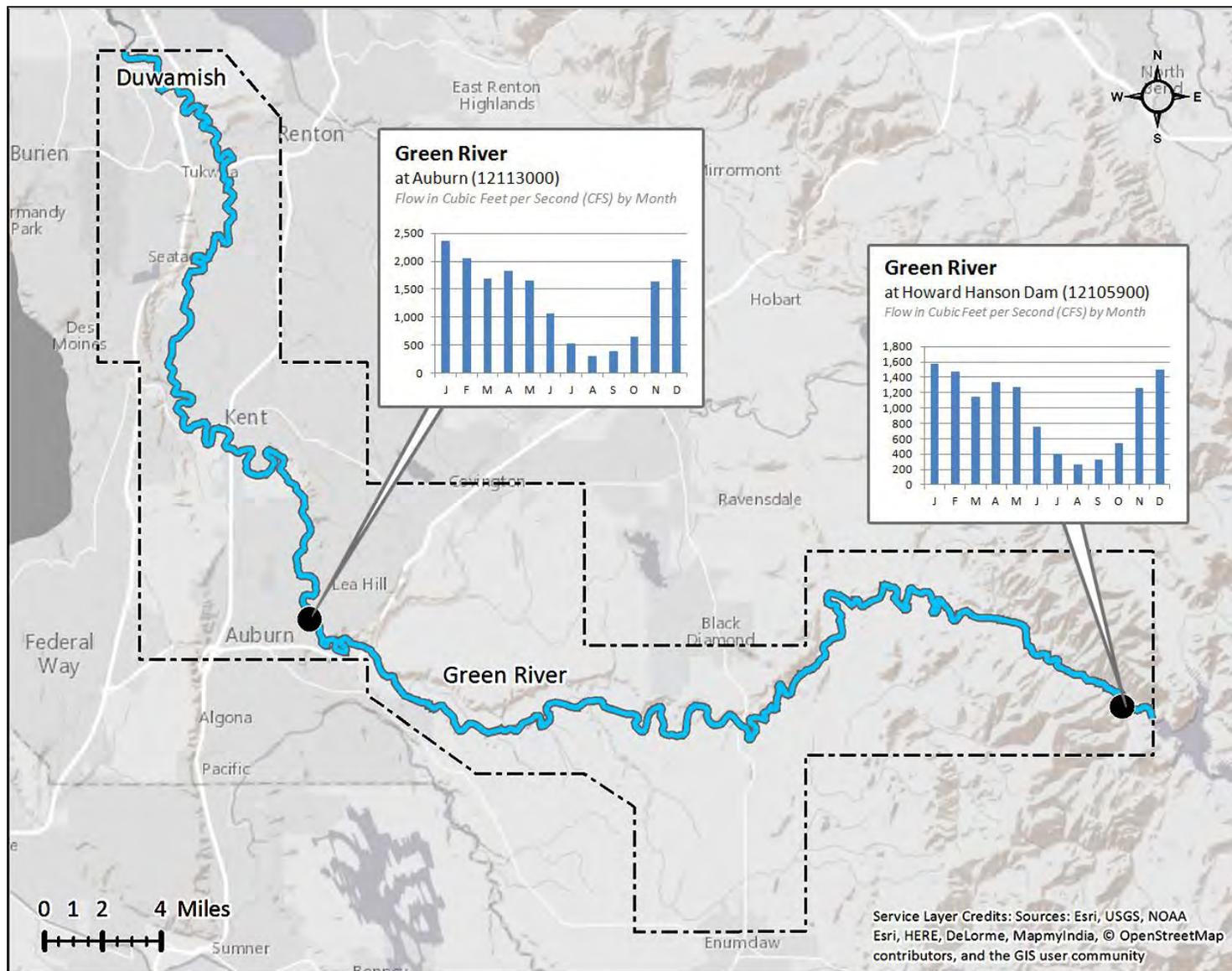


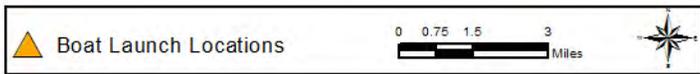
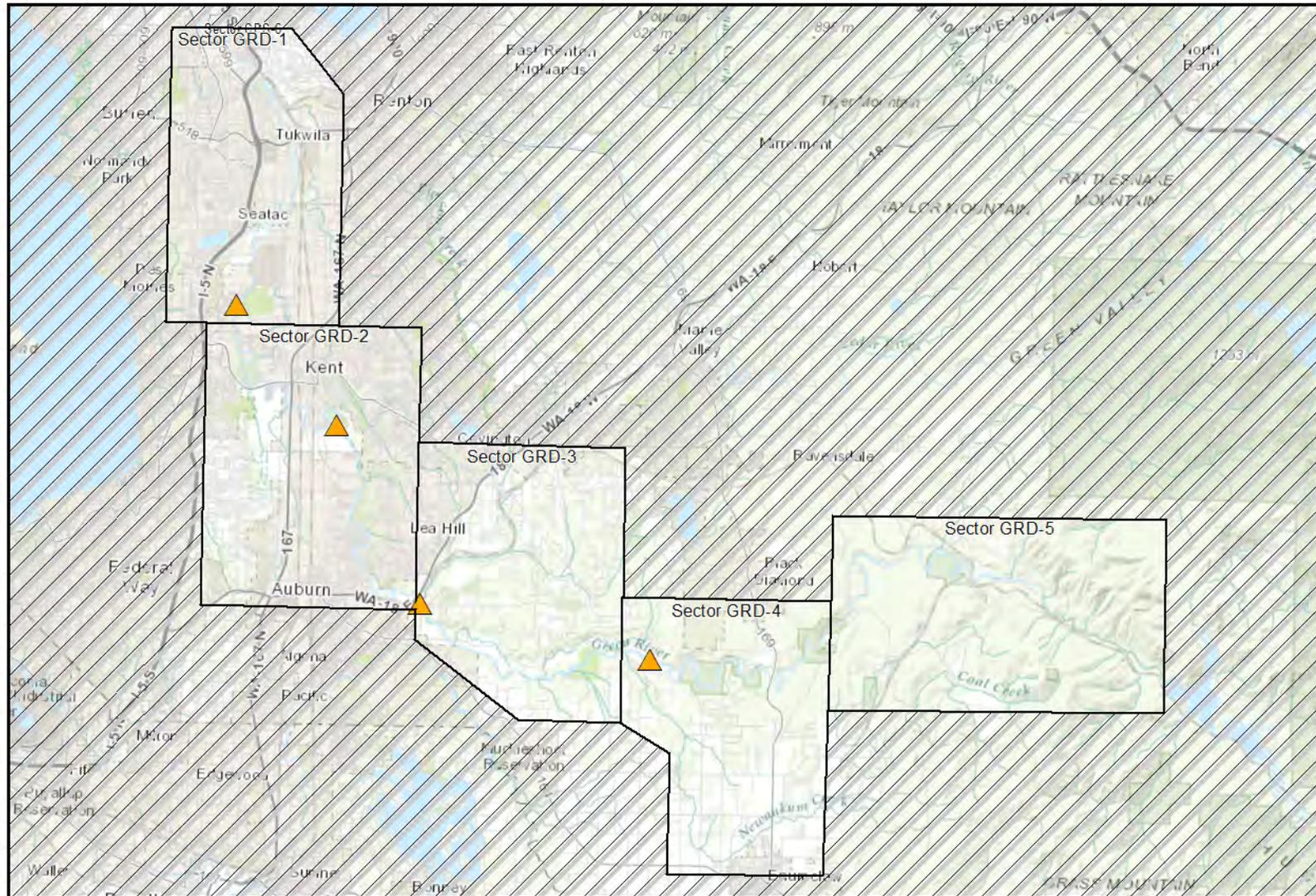
Figure 4-1: USGS Mean Monthly Discharge Measurements for Green River/Duwamish

4.2 AREA OVERVIEW MAPS

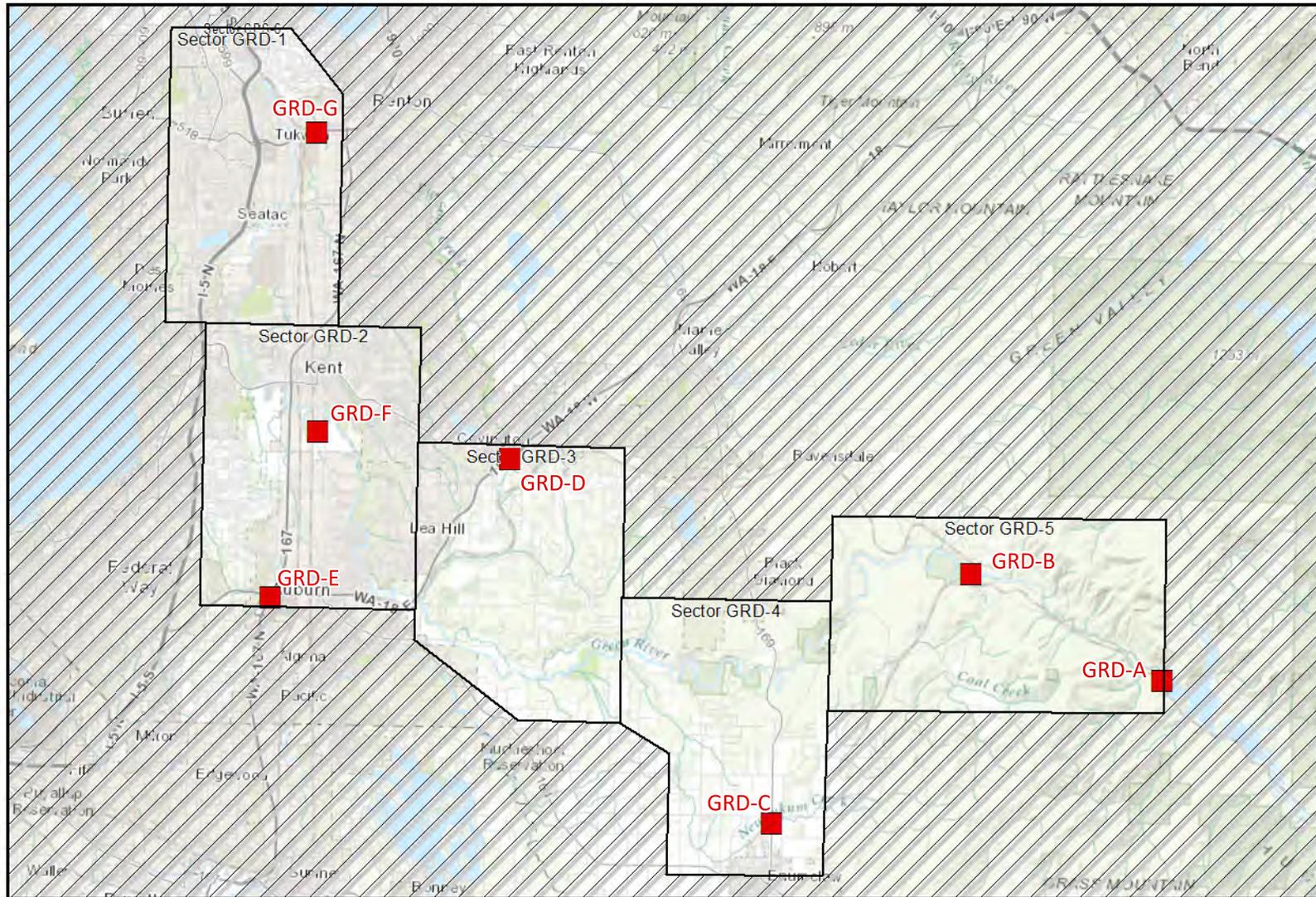
The following maps provide a geographic overview of the Green River/Duwamish GRP area. Sector maps in Section 4.4 of this chapter provide more detail on the location of response strategies, notification strategies, staging areas, boat launch locations, and potential oil spill origin points. Detailed 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



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,

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 Green/Duwamish area.

- 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 a higher priority than the implementation of GRP strategies.**
- Determine the priority or order in which GRP strategies should be implemented based on the location of the spill or affected area. Priorities based on Potential Oil Spill Origin Points 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.
- In Washington State, if strategy implementation reduces, interrupts, or diverts the flow of water in streams, including the installation of a culvert block or underflow dam, an Emergency HPA must be obtained from WDFW (24-hour pager: (360) 534-8233).

4.3.2 Strategy Priorities based on Potential Spill Origin Points

POSOPs are geographic locations that have a defined list of response strategy implementation priorities listed in a matching table of Section 4.3. The placement of each POSOP is often based on spill risks in the area, including oil pipelines, railways, highways/roadways, tributaries, and vessel movements. Intersections of two or more of these risk locations typically represent a higher spill risk than any one individually, increasing the probability of an oil spill. 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 response priorities during a response, or selecting an appropriate POSOP, the downstream and tidal movement of spilled oil and the time it takes to mobilize and deploy response resources must be considered. Generally, 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 Green River/Duwamish area: points GRD-A, GRD-B, GRD-C, GRD-D, GRD-E, GRD-F, GRD-G and GRD-H. These priority tables were determined using a combination of variables, including: notification time, travel time for responders and equipment, average and seasonal flow rates, average winds, tides or currents, deployment time, proximity to the spill source, and other considerations.

Source control and containment are a higher priority than GRP strategy implementation

Table 4-3: Priority Table GRD-A (Howard Hanson Dam GRD-64.6)

| GRD-A (Howard Hanson Dam GRD-64.6) | | | | |
|---|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-57.0 | 54 | 62 | 121 |
| 2 | GRD-59.1 | 54 | 63 | 123 |
| 3 | GRD-61.0 | 54 | 63 | 125 |
| 4 | GRD-44.3 | 53 | 62 | 119 |
| 5 | GRD-41.5 | 53 | 62 | 117 |
| 6 | GRD-41.4 | 53 | 62 | 115 |
| 7 | GRD-34.4 | 52 | 61 | 113 |

Table 4-4: Priority Table GRD-B (Kanaskat-Palmer Rail Bridge GRD-57.9)

| GRD-B (Kanaskat-Palmer Rail Bridge GRD-57.9) | | | | |
|---|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-44.3 | 53 | 62 | 119 |
| 2 | GRD-41.5 | 53 | 62 | 117 |
| 3 | GRD-41.4 | 53 | 62 | 115 |
| 4 | GRD-57.0 | 54 | 62 | 121 |
| 5 | GRD-33.5 | 52 | 61 | 111 |
| 6 | GRD-34.4 | 52 | 61 | 113 |

Table 4-5: Priority Table GRD-C (Newaukum Creek NWKC-9.4/GRD-40.7)

| GRD-C (Newaukum Creek NWKC-9.4/GRD-40.7) | | | | |
|---|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-29.8 | 51 | 60 | 103 |
| 2 | GRD-30.5 | 51 | 60 | 105 |
| 3 | GRD-30.6 | 51 | 60 | 107 |
| 4 | GRD-32.2 | 51 | 61 | 109 |
| 5 | GRD-33.5 | 51 | 61 | 111 |
| 6 | GRD-34.4 | 52 | 61 | 113 |
| 7 | NWKC-6.4 | 53 | 64 | 131 |
| 8 | NWKC-7.9 | 53 | 64 | 133 |

Table 4-6: Priority Table GRD-D (Big Soos Creek BS00-6.0/GRD-33.7)

| GRD-D (Big Soos Creek BS00-6.0/GRD-33.7) | | | | |
|---|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-23.9 | 51 | 59 | 101 |
| 2 | GRD-29.8 | 51 | 60 | 103 |
| 3 | GRD-30.5 | 51 | 60 | 105 |
| 4 | GRD-30.6 | 51 | 60 | 107 |
| 5 | GRD-32.2 | 51 | 61 | 109 |
| 6 | GRD-33.5 | 51 | 61 | 111 |
| 7 | BS00-1.3 | 52 | 56 | 73 |
| 8 | BS00-5.3 | 52 | 56 | 75 |

Table 4-7: Priority Table GRD-E (Mill Creek at WA-18 and WA-167 MILL-6.0/GRD-21.7)

| GRD- E (Mill Creek at WA-18 and WA-167 MILL-6.0/GRD-21.7) | | | | |
|--|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-13.2 | 50 | 58 | 89 |
| 2 | GRD-15.0 | 50 | 58 | 91 |
| 3 | GRD-17.1 | 50 | 58 | 93 |
| 4 | GRD-19.4 | 51 | 59 | 95 |
| 5 | GRD-20.5 | 51 | 59 | 97 |
| 6 | GRD-21.7 | 51 | 59 | 99 |
| 7 | MILL-1.6 | 51 | 63 | 127 |
| 8 | MILL-3.4 | 51 | 63 | 129 |

Table 4-8: Priority Table GRD-F (East Valley Highway Bridge GRD-25.4)

| GRD-F (East Valley Highway Bridge GRD-25.4) | | | | |
|--|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-9.6 | 50 | 57 | 85 |
| 2 | GRD-10.4 | 50 | 58 | 87 |
| 3 | GRD-13.2 | 50 | 58 | 89 |
| 4 | GRD-15.0 | 50 | 58 | 91 |
| 5 | GRD-17.1 | 50 | 58 | 93 |
| 6 | GRD-19.4 | 51 | 59 | 95 |
| 7 | GRD-20.5 | 51 | 59 | 97 |
| 8 | GRD-21.7 | 51 | 59 | 99 |

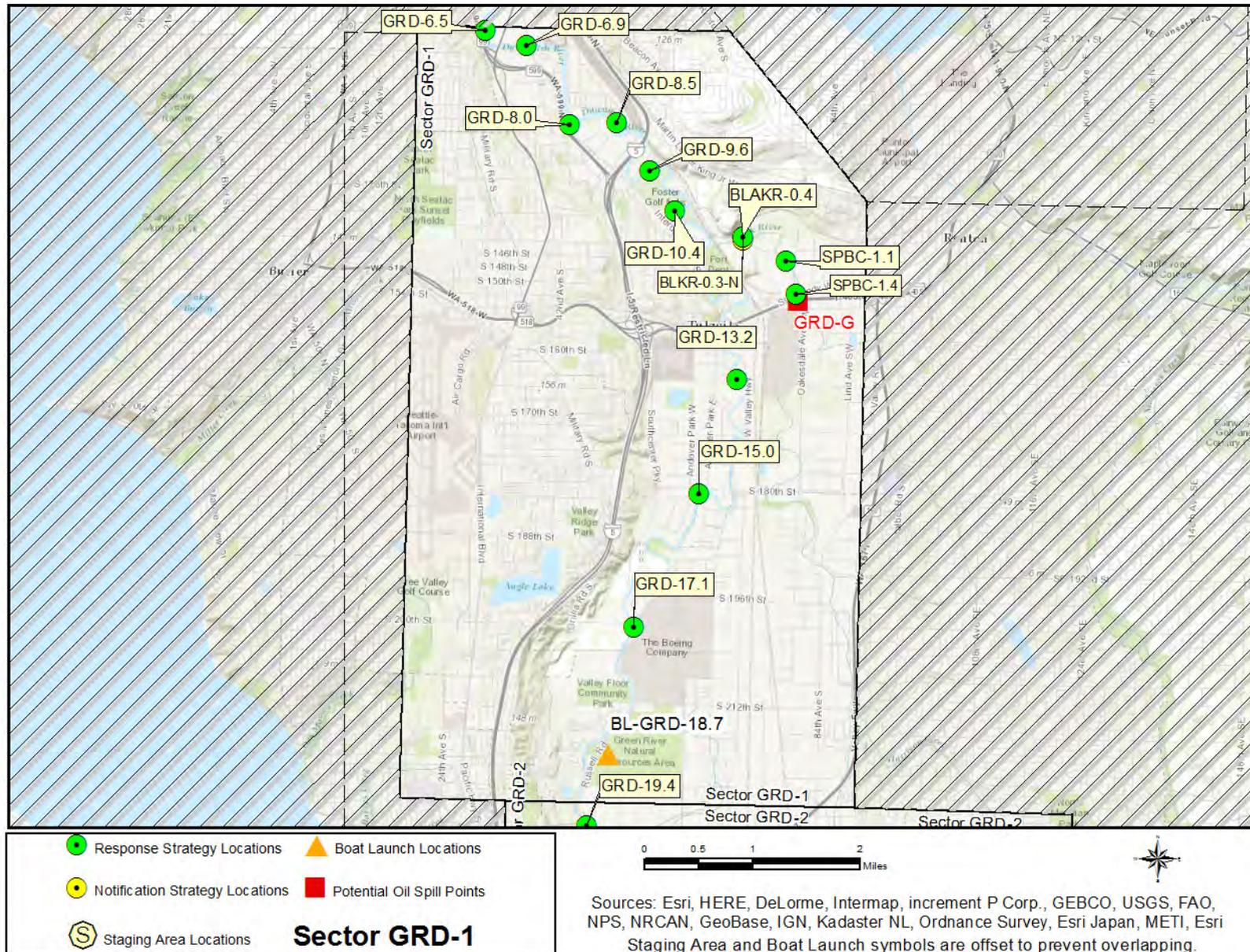
Table 4-9: Priority Table GRD-G (Springbrook Creek at I-405 BLAKR-1.4/GRD-11.0)

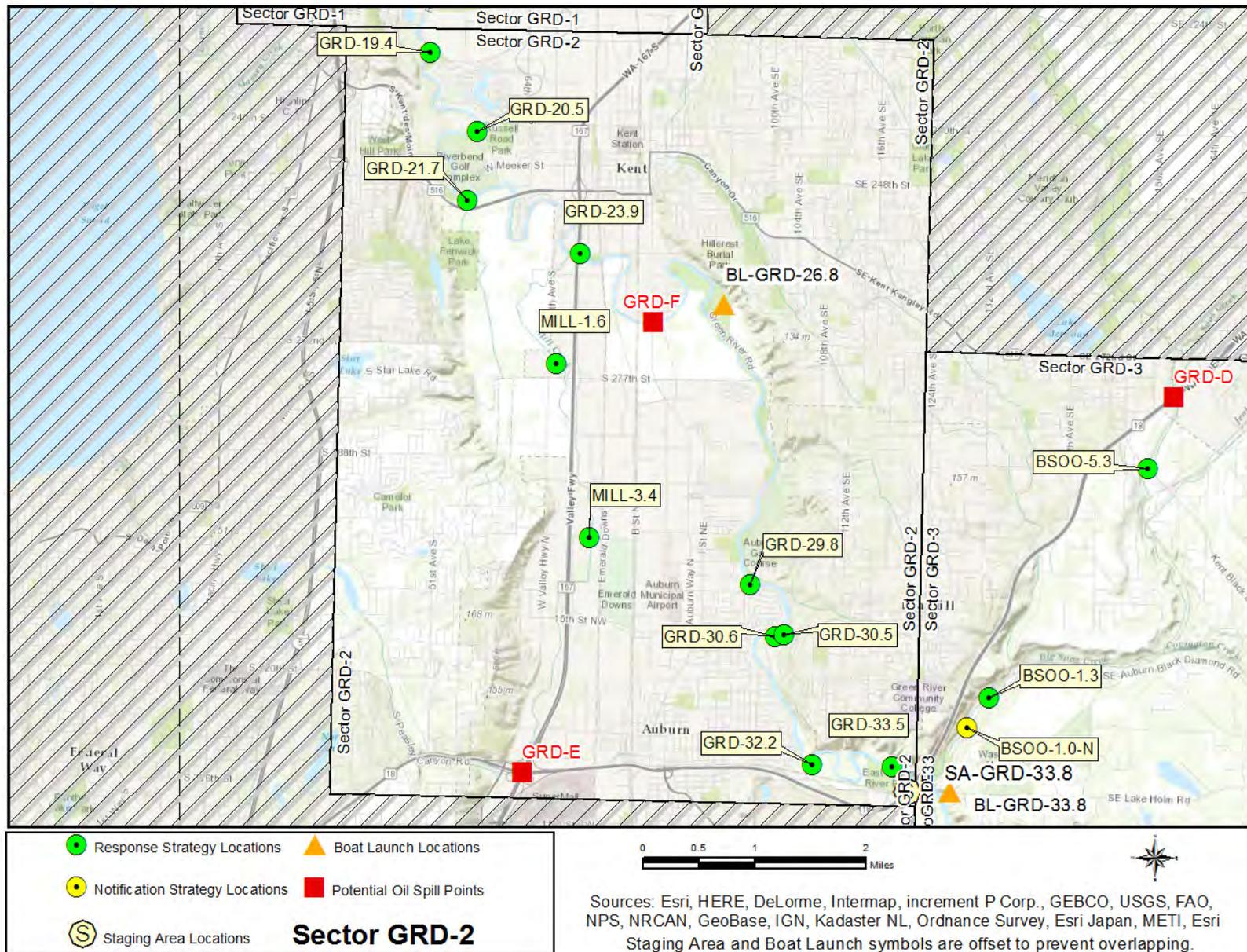
| GRD-G (Springbrook Creek at I-405 BLAKR-1.4/GRD-11.0) | | | | |
|--|------------------------|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | GRD-6.5 | 50 | 56 | 77 |
| 2 | GRD-6.9 | 50 | 57 | 79 |
| 3 | GRD-8.0 | 50 | 57 | 81 |
| 4 | GRD-8.5 | 50 | 57 | 83 |
| 5 | GRD-9.6 | 50 | 57 | 85 |
| 6 | GRD-10.4 | 50 | 58 | 87 |
| 7 | BLAKR-0.4 | 50 | 56 | 71 |
| 8 | SPBC-1.4 | 50 | 64 | 137 |
| 9 | SPBC-1.1 | 50 | 64 | 135 |

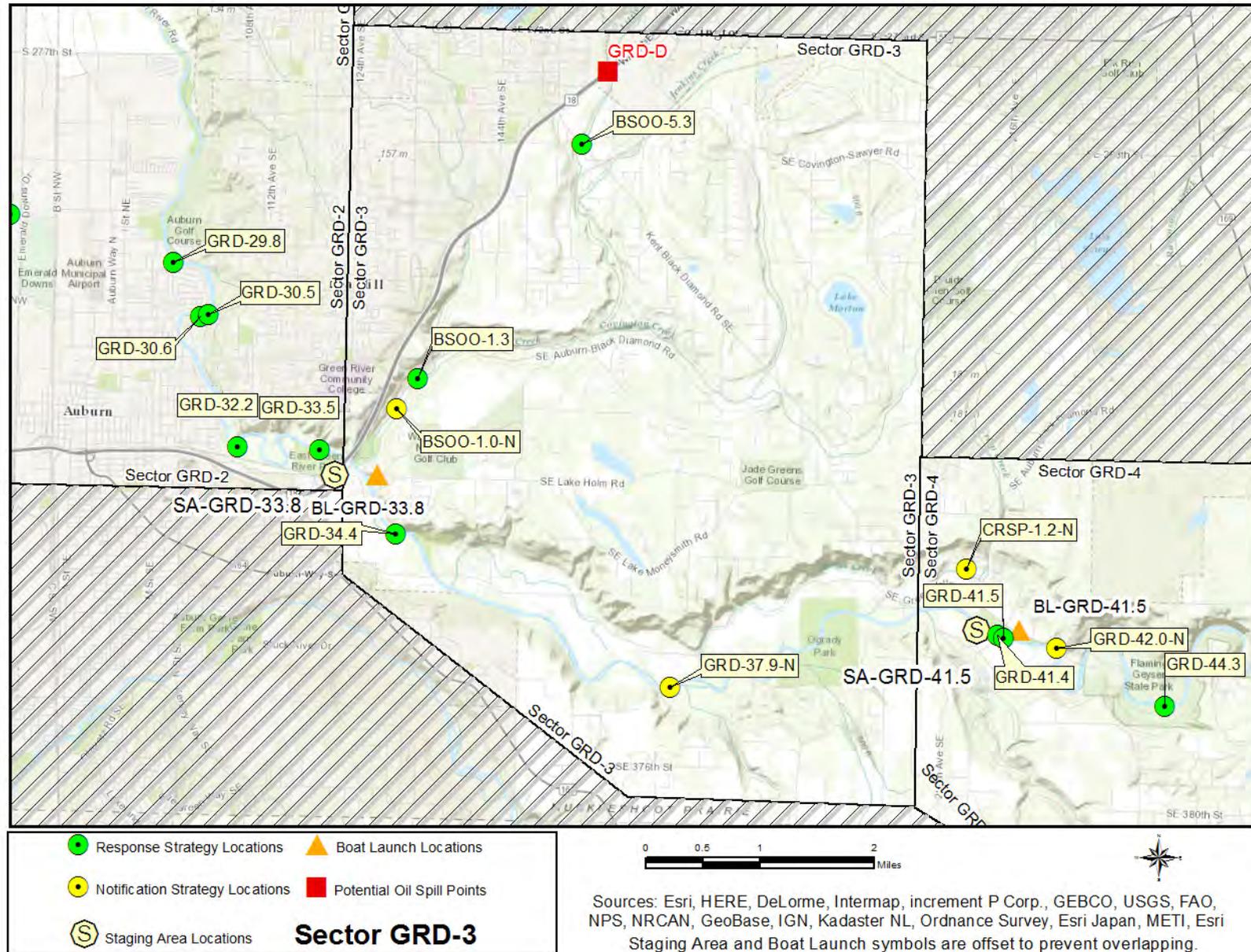
Table 4-10: Priority Table GRD-H (I-5 Bridge GRD-8.9)

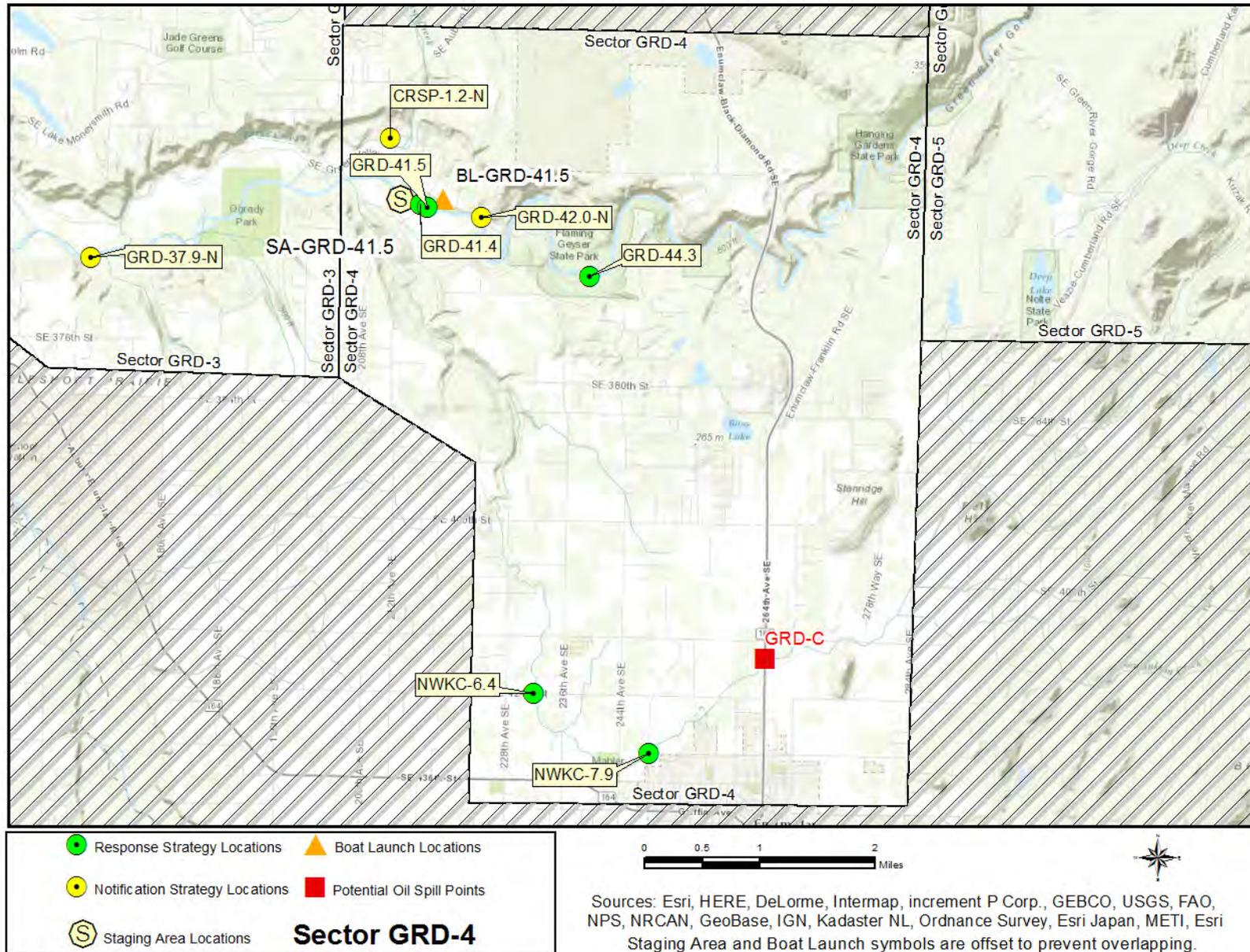
| GRD-H (I-5 Bridge GRD-8.9) | | | | |
|-----------------------------------|---|----------------------------|---------------------------------|----------------------------------|
| Implementation Priority | Strategy Number | Sector Map (Page #) | Strategy Matrix (Page #) | Strategy Details (Page #) |
| 1 | See Central Puget Sound GRP for more strategies on the Duwamish | | | |
| 2 | GRD-6.5 | 50 | 56 | 77 |
| 3 | GRD-6.9 | 50 | 57 | 79 |
| 4 | GRD-8.0 | 50 | 57 | 81 |
| 5 | GRD-8.5 | 50 | 57 | 83 |

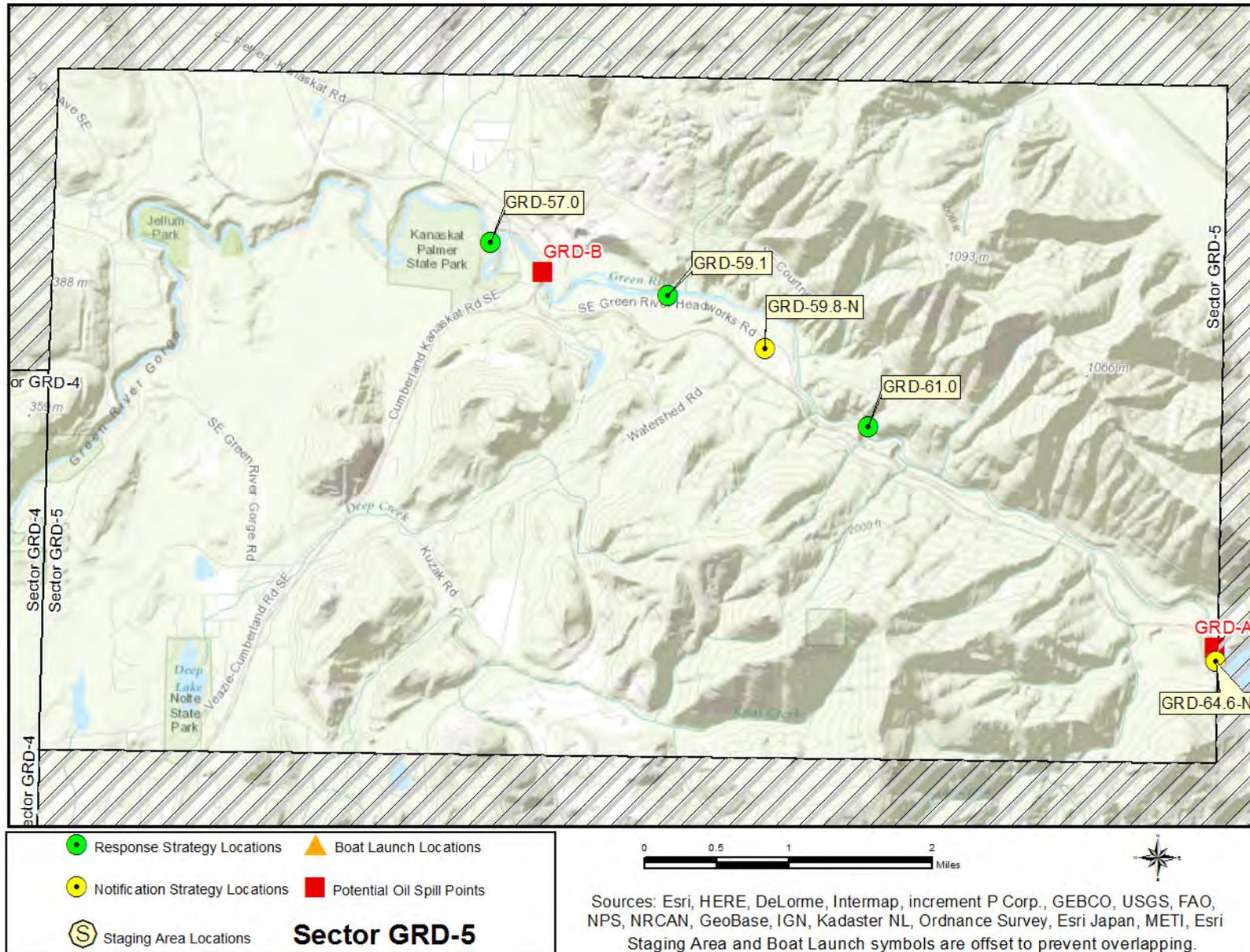
4.4 SECTOR MAPS (STRATEGY LOCATIONS)











4.5.2 Response Strategy Matrices

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|---------------------------|---|------------------------|---------------------------|-----------|--|--|---|--------------------|--------------------------|
| BLAKR-0.4 | Black River Pump Station 47.47543 -122.24518 | Collection, Exclusion | Boom 300ft | No | Onsite Use parking lot on south bank off Monster Rd and private access road to north bank. | Estuary Resources, Fish Ladder(s), Pump Station | Sensitive wetland and nesting area. | 50 | 71 |
| BSOO-1.3 | Big Soos Creek 47.31339 -122.16405 | Collection | Boom 200ft, Sorbent 200ft | No | Onsite Facilities and parking just downriver at Soos Creek Hatchery. Small driveway area at site. | Fish Hatchery, Salmon (Coho, Chinook and Chum), Water Intakes | Single-lane driveway bridge crossing the creek. Low banks. | 52 | 73 |
| BSOO-5.3 | Big Soos Creek at Kent Black Diamond Rd 47.34364 -122.13440 | Collection | Boom 100ft, Sorbent 100ft | No | Onsite Gravel turnaround 100ft SE of site. | Downstream Resources, Fish Hatchery, Habitat Restoration Site/Project, Salmonids, Sensitive Resources Nearby, Wetlands | Fast road. 100' vegetated path from driveway to bank. Some access from property N upstream. | 52 | 75 |
| GRD-6.5 | Cecil B. Moses Park 47.50248 -122.29731 | Collection, Deflection | Boom 400ft | No | Onsite Parking area in Cecil B Moses Park and dead end of S 112th St | Estuary Resources, Habitat Restoration and Mitigation Site, Sensitive Resources | Use caution in park areas at night/weekend | 50 | 77 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|----------------|--|------------------------|---------------------------|-----------|--|--|--|--------------------|--------------------------|
| GRD-6.9 | Duwamish Garden 47.50056 -122.28900 | Collection, Deflection | Boom 900ft | Yes | Onsite Parking area next to Green River Trail. Can hand-launch boat from trail edge at Point A. | Estuary Resources, Habitat Restoration and Mitigation Site, Sensitive Resources Nearby | Contact King County DPNR to see if bollards can be removed to get equipment on trail | 50 | 79 |
| GRD-8.0 | Allentown Bridge 47.49011 -122.28006 | Collection | Boom 300ft | No | Onsite Stage at Tukwila Community Center. Can also cut bollards to Green River Trail to drop equipment. | Estuary Resources, Salmon Habitat | Bank more accessible in low water. Be aware of sloughing. | 50 | 81 |
| GRD-8.5 | Codiga Park 47.49045 -122.27079 | Exclusion | Boom 100ft, Sorbent 100ft | Yes | Onsite Facilities and parking. Move small log to drive hand-launch boat down trail to water's edge. Very shallow. | City Park, Habitat Restoration and Mitigation Site, Salmon Habitat | Some tidal influence (~2 ft). Use waders/plywood in low water. Trail can get muddy. | 50 | 83 |
| GRD-9.6 | 57th Ave S Mini Park 47.48407 -122.26391 | Collection | Boom 700ft | Yes | Onsite Can drive trailered hand-launch boat to water's edge through grass. 4' wide gap between log and blackberry. | Estuary Resources, Salmon Habitat | River left has small park with easy grassy slope and mud banks. River right is Foster Golf Links. Vac truck access on both sides, bring hose extension when muddy. | 50 | 85 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|---------------|-------------|-----------|---|---|---|--------------------|--------------------------|
| GRD-10.4 | Foster Golf Links Bridge 47.47871 -122.25887 | Collection | Boom 200ft | No | Onsite Parking and facilities of golf course. Use paved trails to move equipment/vac trucks. | Downstream Resources, Estuary Resources, Salmon Habitat | Popular public golf course with busy golf cart trails. | 50 | 87 |
| GRD-13.2 | Strander Bridge at Bicentennial Park 47.45627 -122.24576 | Collection | Boom 200ft | Yes | Onsite Trail access from Bicentennial Park. Facilities and small parking area. | Downstream Resources | High waters can reach bridge bottom. Bridge height 7' from trail. | 50 | 89 |
| GRD-15.0 | S 180th at Andover Park 47.44074 -122.25282 | Collection | Boom 300ft | Yes | Onsite Stage in parking lot. Hand-launch boat from Van Doren's Landing (3.7 mi upstream) | Downstream Resources, Salmon Habitat | BNSF tracks between strategy and parking lot, use caution. Parking lot belongs to Continental Mills (800) 426-0955, inform them of situation during work hours. Can also use alternate trail access 800 ft east on S 180th St for wider vehicles. | 50 | 91 |
| GRD-17.1 | Three Friends Fishing Hole 47.42264 -122.26512 | Collection | Boom 300ft | Yes | Onsite Public flush restrooms and parking on-site. Hand-launch ramp at Van Doren's Landing 1.6 mi upstream. | Downstream Habitat, Downstream Resources | Path is paved but narrow clearance, use ATV. Heavy vegetation on banks. Levee setback planned in area, adjust location as appropriate. | 50 | 93 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|--------------------------|---|-----------------------|---------------------------|-----------|---|--|---|--------------------|--------------------------|
| GRD-19.4 | Russell Woods Park 47.39569 -122.27358 | Collection | Boom 1000ft | No | Onsite Small parking lot 500 ft S of bridge. Hand-launch boat ramp at Van Doren's Landing 0.7 mi downstream. | Downstream Resources, Salmonid Concentrations and Habitat, Waterfowl Concentrations, Wetland Habitat | Can use hand-launch boat instead of line gun if water is high enough, watch for woody debris in channel. | 51 | 95 |
| GRD-20.5 | Riverbend Golf Course 47.38557 -122.26428 | Collection | Boom 600ft | Yes | Onsite Boat launch 1.8 mi downstream at Van Doren's Landing. Stage boom onsite river right or use golf course. | Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat, Waterfowl, Wetlands | Do not deploy in low water. Western bank thick vegetation/blackberries. In-river woody debris will prevent boat use in low water. | 51 | 97 |
| GRD-21.7 | Mullen Slough Mouth 47.37655 -122.26581 | Collection, Exclusion | Boom 400ft, Sorbent 100ft | Yes | Onsite Hand-launch ramp at Van Doren's Park is 3 mi downstream. Use trail/golf course to stage boom. | Downstream Resources, Slough and Marsh Habitat | During rainy season use workboat. In dry season use plywood across slough and line gun. High flow from slough during rainy season. | 51 | 99 |
| GRD-23.9 | Hwy 167 Bridge at Foster Park 47.36995 -122.24406 | Collection | Boom 400ft | No | Onsite Use Foster Park and Green River/Interurban Trail for staging. Horsehead Bend Boat Launch 2.9 mi upstream. | City Park, Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat | Use workboat if water level allows. Lots of blackberry on south bank. Anchor high on trail initially, then cut path to lower the anchor point if time allows. | 51 | 101 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|---------------|-------------|-----------|--|---|--|--------------------|--------------------------|
| GRD-29.8 | Dykstra Park 47.32748 -122.21017 | Collection | Boom 200ft | No | Onsite Dykstra public park has paved trails to bridge, cut bollards to access. N section of park has small paved area. | City Park, Downstream Resources, Habitat Restoration Site/Project, Pump Station, Salmonids | Ped bridge connecting 2 parks. Easy access to water on N bank. Steep climb + vegetation on S bank. | 51 | 103 |
| GRD-30.5 | North Green River Park Roadside 47.32102 -122.20346 | Collection | Boom 400ft | Yes | Onsite Stage boom at north bank. Launch boat in park. Collect from 102nd Ave. | Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Waterfowl Concentrations, Wetlands | North bank trail access from Pike St NE at Riverview Dr NE (47.3206, -122.2097). Popular spot with fishermen and campers. | 51 | 105 |
| GRD-30.6 | North Green River Park 47.32076 -122.20507 | Collection | Boom 1100ft | Yes | Onsite Cut bollards at Garden/102 Ave SE dead-end to access beach. North bank trail access at Pike St NE at Riverview Dr. | Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Salmon Habitat, Waterfowl Concentrations, Wetland Habitat | Be aware of fishermen on banks and homeless camping in park. To access north bank: 1. After Harvey Rd becomes 15th St NW, turn left at the first light on I St NE. (0.1 mi) 2. Take the next right on 14th St NE (243 ft) 3. In 0.4 mi the road will curve left, just past Pike St NE. Trail access is on the right, marked "Fishing Access Only". 4. Cut gate and drive to trail. 5. Take a left and follow trail 0.3 mi to stairs behind 1610 Riverview Dr NE. | 51 | 107 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|--------------------------|--|---------------|----------------|-----------|---|---|---|--------------------|--------------------------|
| GRD-32.2 | Fenster Natural Area 47.30423 -122.19751 | Collection | Boom 1000ft | Yes | Onsite 10K lb limit on steel plate on access rd close to site. Can trailer hand-launch boat to bank. | Bird Habitat, Downstream Resources, Habitat Restoration and Mitigation Site, Riparian Vegetation, Waterfowl Concentrations, Wetland Habitat | Beach can disappear in high water. Be aware of fishermen on banks and homeless camping in park. | 51 | 109 |
| GRD-33.5 | Auburn Narrows Park 47.30413 -122.18219 | Collection | Boom 1200ft | Yes | Remote Rail crossing to access site. WDFW Soos Creek Boat Launch 0.3 mi upstream. Could hand-launch at bank in low water. | Downstream Resources, Habitat Restoration Site/Project, Waterfowl Concentrations, Wetlands | Alert BNSF that staff and equipment will be crossing at trail entrance. Watch for trains when entering/leaving site. Bank may disappear in high water. Be aware of fishermen on banks and homeless camping in park. | 51 | 111 |
| GRD-34.4 | Mosby Farms 47.29368 -122.16772 | Collection | Boom 1200ft | Yes | Onsite Small dirt/grass area at end of dirt road. WDFW fish counting station/boat stored onsite. | Downstream Resources, Salmon Habitat, Waterfowl Concentrations, Wetlands | Road owned by Mosby Farm but WDFW keeps seasonal screw trap on site. Hand-launch from bank. Large sandbar across on river right often has central channel. Adjust boom and anchors as needed. | 52 | 113 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|--------------------------|---|---------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| GRD-41.4 | Whitney Bridge High Water 47.28233 -122.05498 | Collection | Boom 500ft | Yes | Onsite Stage in parking lot on NW side of road; use boat launch across street | Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Salmon Habitat, Wetlands | Collection is only feasible if water is above average. Large cobbles bankside in low water. Pilings on river left may be hidden in high water. | 53 | 115 |
| GRD-41.5 | Whitney Bridge 47.28201 -122.05377 | Collection | Boom 500ft | Yes | Onsite Parking area on NW side of road has portable restroom and parking. Keta Creek Hatchery nearby for other facilities. | Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Salmon Habitat, Wetlands | In low water, motorized boat may not be an option. Large cobbles bankside in low water. Pilings on river left may be hidden in high water. | 53 | 117 |
| GRD-44.3 | Flaming Geyser State Park 47.27367 -122.02347 | Collection | Boom 2100ft | Yes | Onsite Flush restrooms, covered pavilions, water and power. Coordinate with rangers. | Downstream Resources, Salmon Habitat, Sensitive Resources, State Park | Can hand launch in 5 spots. Can load boom on boat in high water but use winch and line to deploy boom in summer. Popular with kayakers, rafters and floaters. Boaters in Gorge may need to exit here. | 53 | 119 |
| GRD-57.0 | Kanaskat-Palmer State Park Group Camp 47.31844 -121.89650 | Collection | Boom 600ft | Yes | Onsite Group camp has parking, flush toilets, water. Hand-carry or ATV 250 ft trail to site with logs/stairs. | Downstream Resources, Fish Hatchery, Harlequin Ducks, Riparian Area, Salmon Habitat, State Park, Water Intakes, Wetlands | Fast shallow water and rapids. Hand-launch kayak at site. 250 ft unpaved trail from staging area. | 54 | 121 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|--------------------------|--|---------------------------|---------------------------|-----------|--|--|---|--------------------|--------------------------|
| GRD-59.1 | Sandy Beach 47.31337 -121.87008 | Collection | Boom 200ft | Yes | Onsite Area is only used by recreation and Tacoma Power. Stage at Powerline Rd or parking at Tacoma entrance. | Downstream Resources, Fish Hatchery, Salmon Habitat, Waterfowl, Wetlands | Hand-launch from bank. Short footpath from road. Potential emergency access to north bank from private property at end of SE Hudson Rd. | 54 | 123 |
| GRD-61.0 | Tacoma Water Diversion Dam 47.30049 -121.84010 | Collection | Boom 450ft, Sorbent 450ft | No | Onsite Roadside pull-off at bridge and paved parking at collection site. | Downstream Resources, Economic Resource, Habitat Restoration Site/Project, Public Health and Safety, Salmon Habitat, Water Intakes | Calm pool with swirling eddies above Tacoma Water diversion dam. Use caution near dam spillway. | 54 | 125 |
| MILL-1.6 | Mill Creek Carpinito Brothers Corn Maze 47.35564 -122.24820 | Collection, Underflow Dam | Boom 100ft, Sorbent 200ft | No | Onsite Large parking area immediately adjacent. Some facilities across street at offices. | Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat | Large parking lot leads to footbridge. Vegetation cleared seasonally. | 51 | 127 |
| MILL-3.4 | Mill Creek by Emerald Downs 47.33312 -122.24103 | Underflow Dam | Boom 100ft, Sorbent 100ft | No | Onsite Best access from M St NW off 15th. 29th St is closed, use road for staging. | Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat | Empty lot/abandoned farm. Low flowing drainage under closed road. Wetland-like mud and vegetation off road. | 51 | 129 |

| Strategy Name | Location | Strategy Type | Boom Length | Boat Req? | Staging Area | Resources At Risk | Comments | Sector Map (Page#) | Strategy Details (Page#) |
|--------------------------|--|------------------------|---------------------------|-----------|--|--|---|--------------------|--------------------------|
| NWKC-6.4 | Newaukum Creek at 424th 47.22113 -122.03235 | Collection | Boom 100ft | No | Onsite Small space to pull off road; use nearby driveways/fields. | Downstream Resources, Habitat Restoration Site/Project, Salmonids, Waterfowl, Wetlands | Upstream field has irrigation ditches and deep mud; downstream is front yard but easy slope past vegetation. | 53 | 131 |
| NWKC-7.9 | Newaukum Creek at 248th 47.21386 -122.01092 | Sorbent, Underflow Dam | Sorbent 100ft | No | Onsite Driveways/yards next to site. Partial shoulder. Quiet road. | City Park, Downstream Resources, Habitat Restoration Site/Project, Salmonids, Waterfowl, Wetlands | Well maintained yards with low banks on roadside | 53 | 133 |
| SPBC-1.1 | Springbrook Creek at SW 7th St 47.47237 -122.23640 | Collection | Boom 200ft | Yes | Onsite Alert King County South Plant Main Control Center before arrival, use parking lot to stage. | Bald Eagle Nesting, Estuary Resources, Great Blue Heron Rookeries, Pump Station, Salmon Habitat, Wetland Habitat | Alert King County South Plant Main Control Center before arrival to prevent security alert. Hand-launch small boat/raft from trail. | 50 | 135 |
| SPBC-1.4 | Springbrook Creek at Grady Way 47.46798 -122.23425 | Collection | Boom 100ft, Sorbent 100ft | No | Onsite Fire access road is not used. Can stage on road or in parking area or cut bollards to trail. | Bald Eagle Nesting, Estuary Resources, Freshwater Wetlands, Great Blue Heron Rookeries, Salmon Habitat | Notify King County South Main Control Center to avoid security alert. | 50 | 137 |

4.5.3 Notification Strategy Matrices

| Strategy Name | Location | Strategy Type | Resources at Risk | Implementation | Comments | Sector Map (Page #) | Strategy Details (Page#) |
|----------------------------|---|---------------|--|---|---|---------------------|--------------------------|
| BLKR-0.3-N | Black River Pump Station 47.47499 -122.24520 | Notification | Bald Eagle Nests, Estuary Resources, Habitat Restoration Site/Project, Heron Rookeries, Pump Station, Waterfowl Use Area | Call King County South Plant Control Center at (206) 263-1760. Inform them of the situation and request that flow at the Black River Pump Station be adjusted or stopped. | Stop flow of water to/from Black River and Springbrook Creek | 50 | 141 |
| BSOO-1.0-N | WDFW Soos Creek Hatchery 47.30947 -122.16799 | Notification | Fish Hatchery, Resident Fish, Salmon - Chinook, Salmon - Coho, Steelhead | Call Soos Creek Hatchery at (253) 931-3950 and explain the situation regarding the spill. | Prevent fish from being released during a spill or protect salmon at hatchery | 52 | 143 |
| CRSP-1.2-N | Keta Creek Hatchery 47.29061 -122.06089 | Notification | Fish Hatchery, Salmon (Coho, Chinook and Chum), Tribal Lands/Resources, Water Intakes | Call the Fisheries department at (206) 931-0652 and inform them of the situation. Ask them to notify Keta Creek and Palmer Ponds. | Notify Palmer Ponds to shut intakes. Delay salmon release from Palmer and Keta Creek. | 53 | 145 |
| GRD-37.9-N | Muckleshoot Tribe Fishermen/Boaters 47.27491 -122.11585 | Notification | Public Health and Safety, Tribal Lands/Resources | Call Muckleshoot Fisheries at (206) 931-0652 and explain the situation regarding the spill. | Alert fisheries to get biologists off river. Also alert Police to activate phone tree and get tribal fishermen off river. | 52 | 147 |
| GRD-42.0-N | King County Parks 47.28083 -122.04379 | Notification | County Park, Public Health and Safety | Call King County Roads Emergency Line at (206) 296-8100 and request a callback from the Parks Duty Officer. | Notify King County Parks to close parks along river and evacuate visitors from the water and banks | 53 | 149 |

| Strategy Name | Location | Strategy Type | Resources at Risk | Implementation | Comments | Sector Map (Page #) | Strategy Details (Page#) |
|----------------------------|--|---------------|---|--|---|---------------------|--------------------------|
| GRD-59.8-N | Green River Filtration Plant 47.30815 -121.85552 | Notification | Fish Ladder(s), Public Health and Safety, Water Intakes | Call (253) 502-8346 for Tacoma Water 24hr Emergency Line. Explain situation regarding the spill and advise they protect their intakes. | Protect City of Tacoma water supply | 54 | 151 |
| GRD-64.6-N | Howard Hanson Dam 47.27761 -121.78755 | Notification | USACE Management Area | Call the Reservoir Control Center at (206) 764-6702 and inform them of the spill and response taking place. | Notify dam of spill and potentially reduce flow | 54 | 153 |

4.5.4 Staging Area Matrices

| Strategy Name | Location | Position | Nearest Address | Contact | Strategies Served | Comments | Sector Map (Page #) | Strategy Details (Page#) |
|-----------------------------|-----------------------------|------------------------|--|---|--|---------------------------------|---------------------|--------------------------|
| SA-GRD-33.8 | WDFW Soos Creek Boat Launch | 47.30103 -122.17510 | 12334 SE Green Valley Rd Auburn, WA 98092 | WDFW Soos Creek Hatchery (253) 931-3950 Washington Department of Fish and Wildlife Region 4 (425) 775-1311 | GRD-33.5 | Small gravel lot, no facilities | 51 | 157 |
| SA-GRD-41.5 | Whitney Bridge Boat Launch | 47.283 -122.05464 | 21907 SE Green Valley Rd Auburn, WA 98092 | King County Parks and Recreation 201 S. Jackson Street, # 700 Seattle, WA 98104 (206) 296-8100 | GRD-41.4 , GRD-41.5 | Paved lot, minimal facilities. | 52 | 159 |

4.5.5 Boat Launch Matrices

| Strategy Name | Name | Position | Nearest Address | Contact | Strategies Served | Comments | Sector Map (Page #) | Strategy Details (Page#) |
|-----------------------------|--|------------------------|--|--|--|--|---------------------|--------------------------|
| BL-GRD-18-7 | Van Doren's Landing Park | 47.40528 -122.27377 | 21901 Russell Rd Kent, WA 98032 | City of Kent Parks, Recreation and Community Services (253) 856-5000 | GRD-21.7 , GRD-15.0 , GRD-17.1 , GRD-19.4 , GRD-20.5 | Hand launch only. Can drive partway down ramp but last 20' have narrow sides and mud bottom. | 50 | 163 |
| BL-GRD-26.8 | King County Emergency Rescue boat launch | 47.36364 -122.22034 | 26427 Green River Rd Kent, WA 98030 | King County Parks and Recreation 201 S. Jackson Street, # 700 Seattle, WA 98104 (206) 296-8100 | GRD-23.9 | Natural gravel and mud launch used for emergency rescues. | 51 | 165 |
| BL-GRD-33.8 | WDFW Soos Creek Boat Launch | 47.30103 -122.17510 | 12334 SE Green Valley Rd Auburn, WA 98092 | WDFW Soos Creek Hatchery (253) 931-3950 Washington Department of Fish and Wildlife Region 4 (425) 775-1311 | GRD-33.5 | Hand-launch only, sandbar mid-channel, upstream of log jam | 52 | 167 |
| BL-GRD-41.5 | Whitney Bridge Boat Launch | 47.28300 -122.05464 | 21907 SE Green Valley Rd Auburn, WA 98092 | King County Parks and Recreation 201 S. Jackson Street, # 700 Seattle, WA 98104 (206) 296-8100 | GRD-41.4 , GRD-41.5 | Gravel launch. Very shallow water in summer. Alternate hand launch on other side of bridge. | 53 | 169 |

APPENDIX 4A
Response Strategy 2-Pagers

RESPONSE STRATEGIES – LIST

| | | | | |
|------------------|-----------------|-----------------|-----------------|-----------------|
| BLAKR-0.4 | BSOO-1.3 | BSOO-5.3 | GRD-6.5 | GRD-6.9 |
| GRD-8.0 | GRD-8.5 | GRD-9.6 | GRD-10.4 | GRD-13.2 |
| GRD-15.0 | GRD-17.1 | GRD-19.4 | GRD-20.5 | GRD-21.7 |
| GRD-23.9 | GRD-29.8 | GRD-30.5 | GRD-30.6 | GRD-32.2 |
| GRD-33.5 | GRD-34.4 | GRD-41.4 | GRD-41.5 | GRD-44.3 |
| GRD-57.0 | GRD-59.1 | GRD-61.0 | MILL-1.6 | MILL-3.4 |
| NWKC-6.4 | NWKC-7.9 | SPBC-1.1 | SPBC-1.4 | |

Black River Pump Station BLAKR-0.4

Position - Location: 47° 28.526', -122° 14.711' 47° 28' 31.6", -122° 14' 42.7" 47.47543, -122.24518 Renton

Strategy Objective: Collection, Exclusion : Reduce impact to pump station and collect oil from wetland

Implementation: Anchor 300 ft length of line near A (47.4757, -122.245), west of debris boom. Walk line across pump station to south bank, toss over fence and anchor near B (47.475, -122.2446), also west of debris boom. Use power winch to deploy 300 ft section of B2 boom. Line boom with sorbent. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

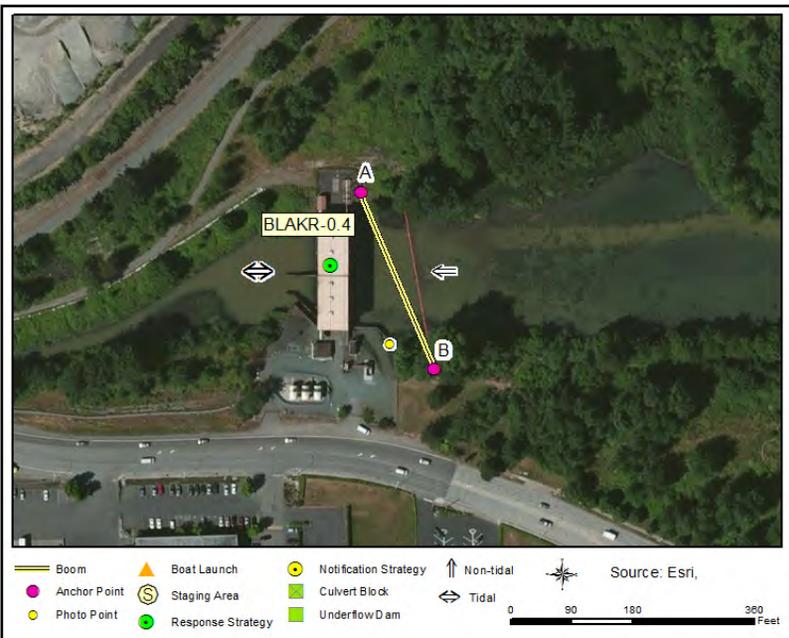
Staging Area: Onsite: Use parking lot on south bank off Monster Rd and private access road to north bank.

Site Safety: Steep bank, vegetation on south bank

Field Notes: Sensitive wetland and nesting area. Consult with WDFW when possible.

Watercourse: Freshwater Wetland - Can control flow using pump station. Coordinate with King County Wastewater Control Center.

Resources at Risk: Estuary Resources, Fish Ladder(s), Pump Station



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 300 | Feet | Boom - B2 (18" to 42") |
| 1 | Each | Bridle(s) - Hand (appropriately sized for boom) |
| 300 | Feet | Line - 3/8" poly line |
| 1 | Each | Machete(s) - (or other vegetation cutting tool) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

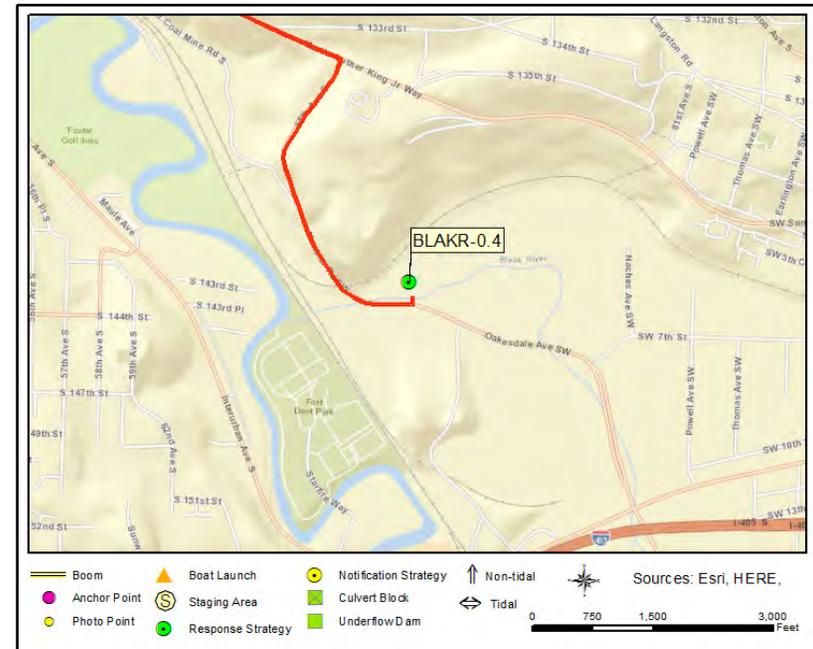
| | |
|---|------------|
| 1 | Laborer |
| 1 | Supervisor |

Black River Pump Station

BLAKR-0.4



BLAKR-0.4 Photo: King County Black River Pump Station, from south bank looking north, upstream of pump station. Black River Riparian forest to the right on the photo.



Site Contact

WDFW Region 4
 Primary Contact :
 425-775-1311

King County Wastewater South Plant Main Control Center
 Land/Property Owner : Emergency contact
 206-263-1760

Nearest Address

550 Monster Rd SW
 Renton, WA 98057

Driving Directions

1. Start at I 5 Seattle
2. Go southeast on I-5 toward exit 157
3. At exit 157 take ramp on the right to WA-900 E/M L King Way (0.2 miles)
4. Continue on WA-900 (Martin Luther King Jr Way S) (1.81 miles)
5. Turn right on 68th Ave S (0.39 miles)
6. Continue on Monster Rd SW (0.2 miles)
7. Finish at 550 Monster Rd SW, 98057, on the left

Big Soos Creek

BSOO-1.3

Position - Location: 47° 18.803', -122° 9.843' 47° 18' 48.2", -122° 9' 50.6" 47.31339, -122.16405 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Big Soos Creek

Implementation: Anchor 100-ft section of boom near A (47.3134, -122.1639) and extend across upstream edge of bridge and anchor near B (47.3135, -122.1641). Repeat with second 100-ft section of boom between C and D, across downstream edge of bridge. Line boom with sorbent. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Facilities & parking just downriver at Soos Creek Hatchery. Small driveway area at site.

Site Safety: Road traffic. Slips, trips and falls. Bridge not rated for heavy loads. Vegetation on bank.

Field Notes: Single-lane driveway bridge crossing the creek. Low banks.

Watercourse: Creek - Creek height low of 2.6' in summer to 4' in Jan. Flows between 33 and 256 cfs.

Resources at Risk: Fish Hatchery, Salmon (Coho, Chinook and Chum), Water Intakes



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 200 | Feet | Boom - B3 (River Boom) or equivalent |
| 200 | Feet | Boom - Sorbent |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

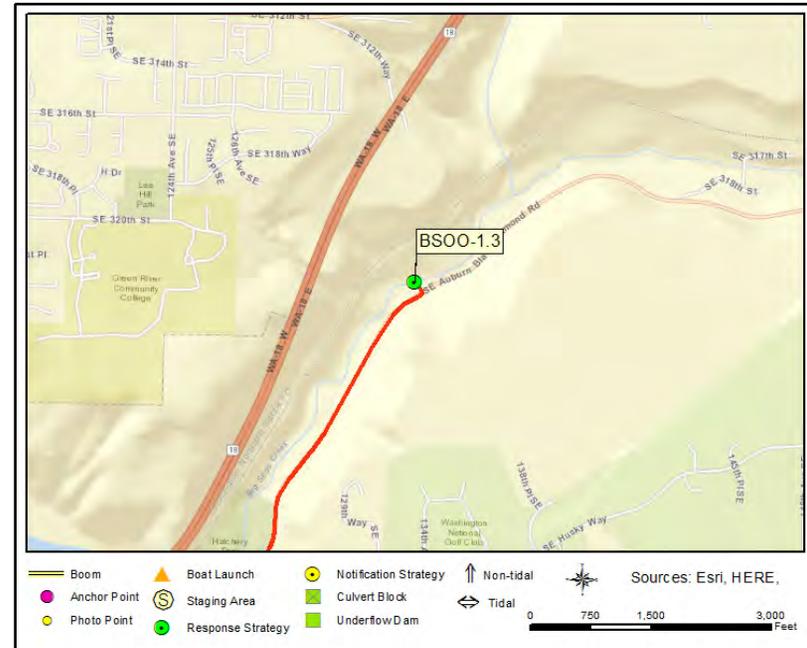
| | |
|---|------------|
| 1 | Laborer |
| 1 | Supervisor |

Big Soos Creek

BSOO-1.3



BSOO-1.3 Photo: On Big Soos Creek right, looking east upstream at driveway bridge.



Site Contact

No Information

Private Owner :

WDFW Soos Creek Hatchery

Secondary Contact :
253-931-3950

Nearest Address

13404 SE Auburn-Black Diamond Rd
Auburn, WA 98092

Driving Directions

1. From I-5 in Seattle, head S towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.91 miles)
4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
5. Take ramp on the right to 15th St Nw (0.28 miles)
6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
7. Continue on Harvey Rd (0.53 miles)
8. Continue on M St NE (0.69 miles)
9. Turn left on 3rd St SE (0.25 miles)
10. Turn right on R St SE (0.06 miles)
11. Bear left on SE Auburn Black Diamond Rd (1.5 miles)
12. At fork keep left on SE Auburn Black Diamond Rd (1.06 miles)
13. Shortly after WDFW Soos Creek Hatchery, driveway for 13404 SE Auburn-Black Diamond Rd is on the left.

Big Soos Creek at Kent Black Diamond Rd BSOO-5.3

Position - Location: 47° 20.619', -122° 8.064' 47° 20' 37.1", -122° 8' 3.8" 47.34364, -122.13440 Kent

Strategy Objective: Collection : Collect oil moving downstream on Big Soos Creek

Implementation: Anchor 100-ft section of boom on south/left bank near A (47.3436, -122.1343). Throw heaving line across stream/bridge (CAUTION) and extend boom NW across creek to anchor near B (47.3437, -122.1345). In low water, use sorbent instead of B3 boom. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore.

Staging Area: Onsite: Gravel turnaround 100ft SE of site.

Site Safety: Road traffic; water hazard; overgrown vegetation; slips, trips, falls

Field Notes: Fast road. 100' vegetated path from driveway to bank. Some access from property N upstream.

Watercourse: Creek - Big Soos Creek - USGS 12112600

Resources at Risk: Downstream Resources, Fish Hatchery, Habitat Restoration Site/Project, Salmonids, Sensitive Resources Nearby, Wetlands



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Kit | 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

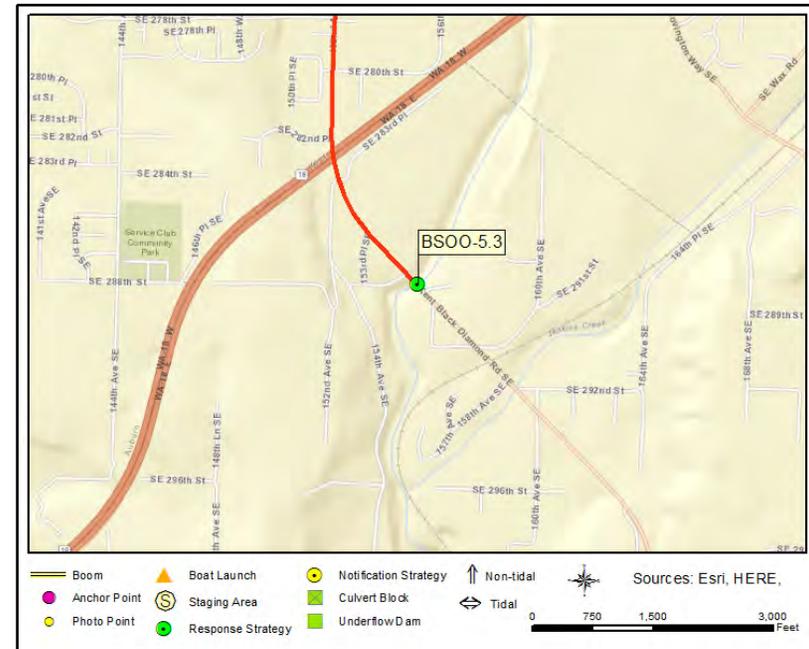
| | |
|---|------------|
| 2 | Laborer |
| 1 | Supervisor |

Big Soos Creek at Kent Black Diamond Rd

BSOO-5.3



BSOO-5.3 Photo: Looking NW from Big Soos Creek left on upstream side of Kent-Black Diamond Rd SE. Taken early May, 88 cfs at Big Soos Creek gage.



Site Contact

No Information
Private Owner :

Nearest Address

28852 Kent Black Diamond Rd SE
Kent, WA 98042

Driving Directions

1. From I-5 in Seattle, head south to exit 154A.
2. At exit 154A take ramp on the left and go on I-405 N toward Renton (1.95 miles)
3. At exit 2 take ramp on the right to WA-167 N toward Renton/Auburn (0.23 miles)
4. Take ramp to WA-167 S toward Kent/Auburn (0.34 miles)
5. Go on WA-167 (Valley Fwy) (4.4 miles)
6. Take ramp on the right to 84th Ave S toward N Central Ave (0.25 miles)
7. Turn left on 84th Ave S (E Valley Hwy) (0.14 miles)
8. Continue on Central Ave N (E Valley Hwy) (1.01 miles)
9. Turn left on WA-516 (E Smith St) (4.93 miles)
10. Turn right on 152nd Ave SE (0.76 miles)
11. Continue on Kent Black Diamond Rd SE (0.32 miles)
12. Finish at 28852 Kent Black Diamond Rd SE, 98042, on the left (gravel turnaround).

Cecil B. Moses Park

GRD-6.5

Position - Location: 47° 30.149', -122° 17.839' 47° 30' 8.9", -122° 17' 50.3" 47.50248, -122.29731 Tukwila

Strategy Objective: Collection, Deflection : Deflect oil away from sensitive resources located river right and center. Collect if possible.

Implementation: From Boeing parking area, cross Green River Trail and set anchor post near A (47.5022, -122.2969). Tie off line and walk to bridge, keeping tall vegetation on right. Carry line across bridge and tie off on river left, near B (47.5029, -122.2887). Use come-along winch to haul boom across river and anchor with posts. If oil collects, attempt removal with vac truck and in-line pump from western edge of bridge.

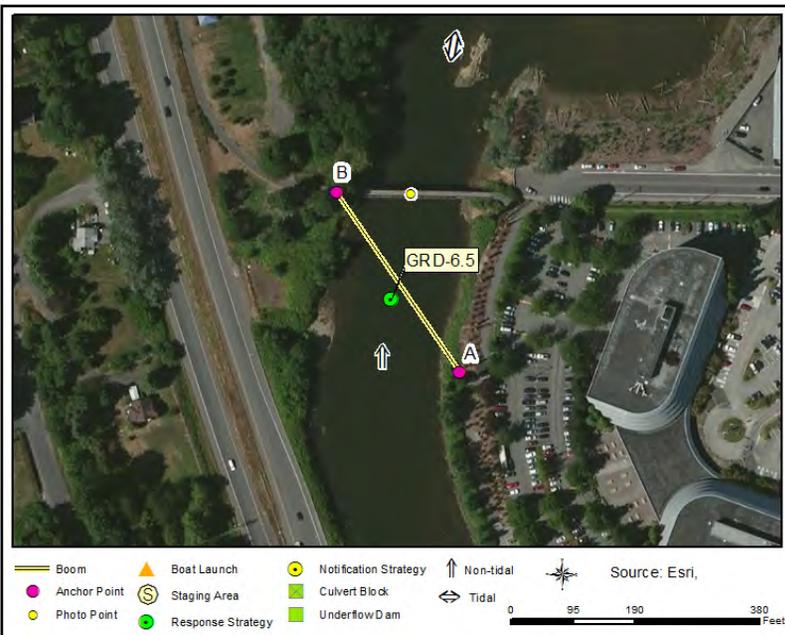
Staging Area: Onsite: Parking area in Cecil B Moses Park and dead end of S 112th St

Site Safety: Slips, trips falls. Blackberry and other thick vegetation on banks.

Field Notes: Use caution in park areas at night/weekend

Watercourse: River - With Tidal Influence - Low flow July - Sept. Tidal influence.

Resources at Risk: Estuary Resources, Habitat Restoration and Mitigation Site, Sensitive Resources



Recommended Equipment

| | | |
|-----|------|--|
| 2 | Each | Anchoring System(s)- Shoreside |
| 400 | Feet | Boom - B3 (River Boom) or equivalent |
| 400 | Feet | Line - 3/8" poly line |
| 1 | Each | Pump(s) |
| 1 | Each | Vac Truck or Skimmer and Storage (if collection) |
| 1 | Each | Winch - Power Winch |

Recommended Personnel

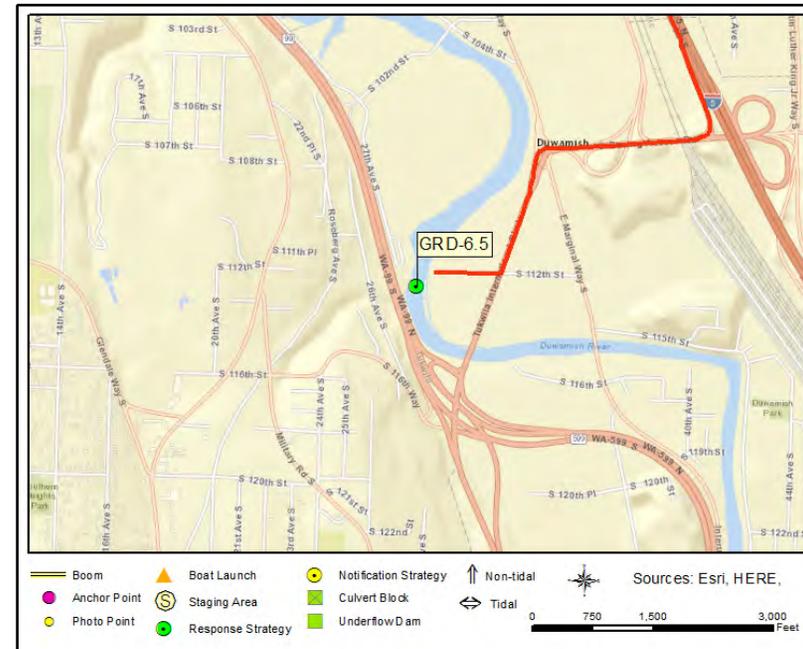
| | |
|---|------------|
| 1 | Laborer |
| 1 | Supervisor |

Cecil B. Moses Park

GRD-6.5



GRD-6.5 Photo: View from pedestrian bridge looking SE at Green River Trail and point A.



Site Contact

King County Parks and Recreation
 Land/Property Owner :
 201 S. Jackson Street, # 700
 Seattle, WA 98104
 206-296-8100

Nearest Address

2917 S 112th St
 Tukwila, WA 98168

Driving Directions

1. From I-5 in Seattle, head south to exit 158.
 2. At exit 158 bear right onto ramp to Boeing Access Rd toward E Marginal Way (0.21 miles)
 3. At fork keep right (0.06 miles)
 4. Continue on S Boeing Access Rd (0.39 miles)
 5. Bear left on Pacific Hwy S (Tukwila International Blvd) (0.28 miles)
 6. Turn right on S 112th St (0.11 miles)
 7. Use dead-end area of 112th or Boeing parking for some equipment.
- Directions to Cecil B. Moses Park (larger staging and vac truck):
1. From S Boeing Access Rd, continue straight (0.5 mi)
 2. Take the Washington99 ramp (0.2 mi)
 3. Merge onto WA-99 N (0.4 mi)
 4. Take the exit toward W Marginal Pl South (0.1 mi)
 5. Turn right onto 27th Ave S.
 6. Cecil Moses Memorial Park is 0.4 mi down at the end of the road.

Duwamish Garden **GRD-6.9**

Position - Location: 47° 30.033', -122° 17.340' 47° 30' 2.0", -122° 17' 20.4" 47.50056, -122.28900 Tukwila

Strategy Objective: Collection, Deflection : Deflect oil away from Duwamish Garden restoration site and collect oil on river left.

Implementation: Set anchor posts as far down bank as possible near A (47.5010, -122.2885) between Link Light Rail and E Marginal Way S Bridge. Tie line to anchor and carry south across bridge until over Green River Trail. Drop line to trail and carry south to B (47.5002, -122.2898) and attach to shoreside anchor. Use power winch to deploy boom. If boat is available, hand-launch from Green River Trail at B and set additional anchor on shoreside near C (47.5009, -122.2882) and anchor at D (47.5002, -122.2893). Adjust angles as needed to account for flow. Be extremely cautious around Light Rail electrical lines.

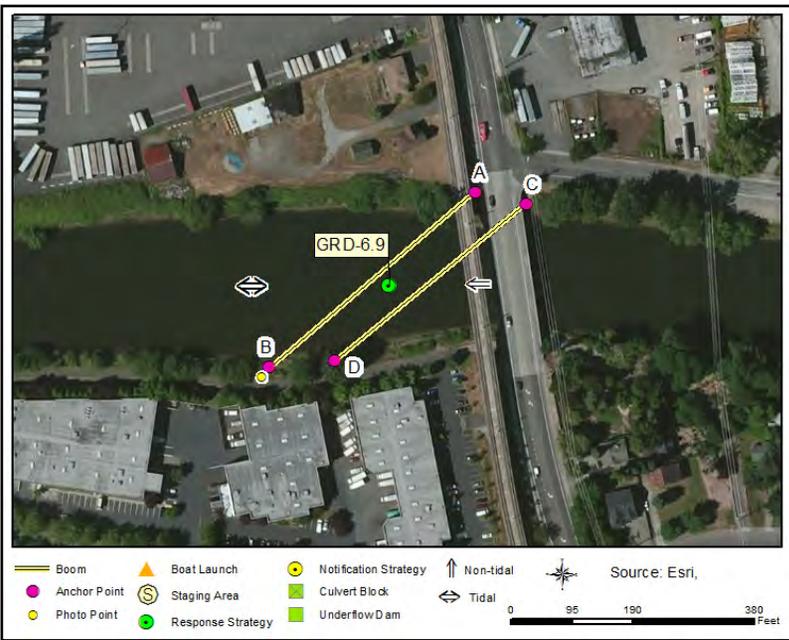
Staging Area: Onsite: Parking area next to Green River Trail. Can hand-launch boat from trail edge at Point A.

Site Safety: Car traffic. Light rail traffic and electrical lines. Slips, trips falls. Vegetation and blackberry brambles on bank.

Field Notes: Contact King County DPNR to see if bollards can be removed to get equipment on trail

Watercourse: River - With Tidal Influence - Low flow July - Sept

Resources at Risk: Estuary Resources, Habitat Restoration and Mitigation Site, Sensitive Resources Nearby



Recommended Equipment

| | | |
|------|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 900 | Feet | Boom - B3 (River Boom) or equivalent |
| 1000 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

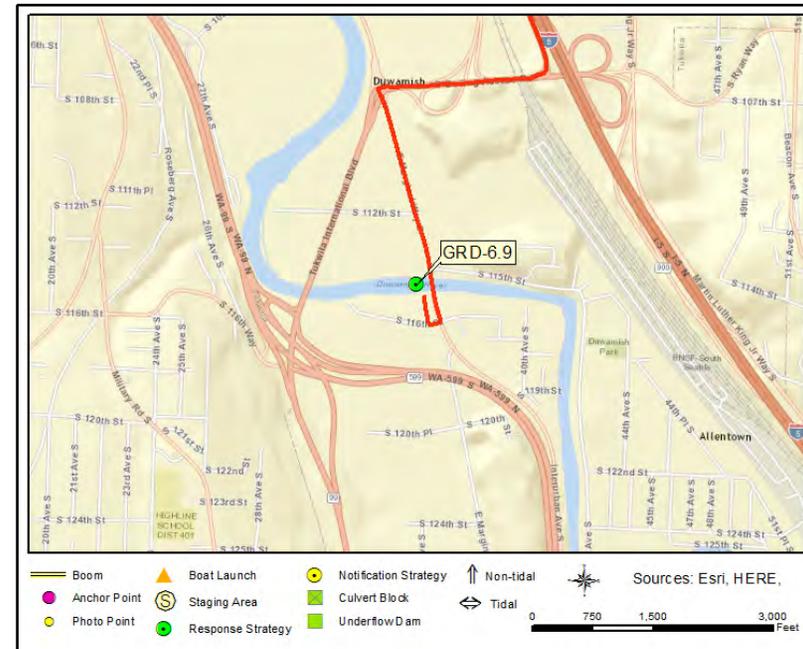
| | |
|---|--------------------------|
| 1 | Boat Operator/Supervisor |
| 2 | Laborer |

Duwamish Garden

GRD-6.9



GRD-6.9 Photo: From Green River Trail on river left looking NE at Duwamish Gardens site and light rail bridge.



Site Contact

King County Parks and Recreation
 Land/Property Contact :
 201 S. Jackson Street, # 700
 Seattle, WA 98104
 206-296-8100

Nearest Address

3460 S 116th St
 Tukwila, WA 98168

Driving Directions

1. From I-5 in Seattle, head south to exit 158.
2. At exit 158 bear right onto ramp to Boeing Access Rd toward E Marginal Way (0.21 miles)
3. At fork keep right (0.06 miles)
4. Continue on S Boeing Access Rd (0.36 miles)
5. Turn left on E Marginal Way S (0.57 miles)
6. Turn right on S 116th St (0.08 miles)
7. Take an immediate right into the parking area. Wooden bollards to the Green River Trail are at the end of the lane.

Allentown Bridge **GRD-8.0**

Position - Location: 47° 29.407', -122° 16.804' 47° 29' 24.4", -122° 16' 48.2" 47.49011, -122.28006 Tukwila

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: From Tukwila Community Center Trail (47.4905,-122.2798) climb down bank and set anchor post or tie to tree as close to A (47.4902, -122.2794) as possible. Walk line south across bridge and drop line from bridge to Green River Trail. Secure to shore near B (47.4902, -122.2794). Use power winch to deploy boom. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

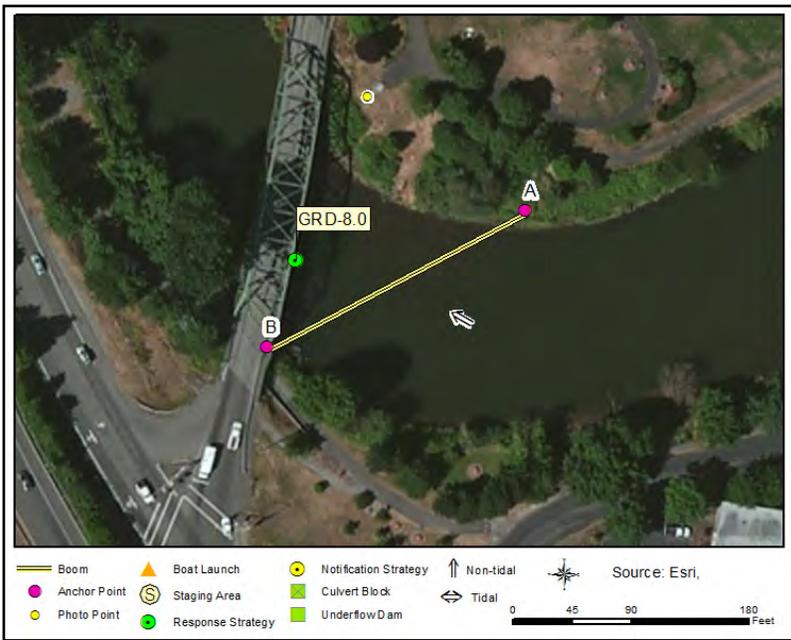
Staging Area: Onsite: Stage at Tukwila Community Center. Can also cut bollards to Green River Trail to drop equipment.

Site Safety: Slips, trips falls. Vegetation and blackberry brambles on bank. Car traffic.

Field Notes: Bank more accessible in low water. Be aware of sloughing.

Watercourse: River - With Tidal Influence - Low flow July - Sept

Resources at Risk: Estuary Resources, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 300 | Feet | Boom - B3 (River Boom) or equivalent |
| 600 | Feet | Line - 3/8" poly line |
| 1 | Each | Machete(s) - (or other vegetation cutting tool) |
| 1 | Each | Winch - Power Winch |

Recommended Personnel

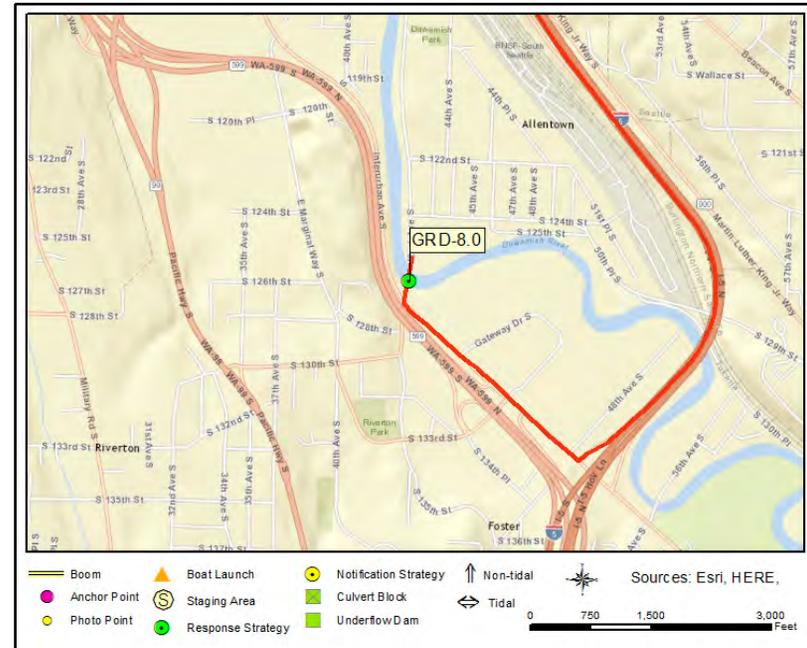
| | |
|---|------------|
| 1 | Laborer |
| 1 | Supervisor |

Allentown Bridge

GRD-8.0



GRD-8.0 Photo: From edge of Allentown Bridge on river right at Tukwila Community Center looking SW at Green River Trail and east bank access.



Site Contact

City of Tukwila Parks and Recreation Department
 Land/Property Owner :
 12424 42nd Avenue South
 Tukwila, WA 98168
 206 768-2822

Nearest Address

12424 42nd Avenue South
 Tukwila, WA 98168

Driving Directions

1. From I-5 in Seattle, go south to exit 156.
2. Take ramp on the right to Interurban Ave toward Tukwila (0.21 miles)
3. Turn right on Interurban Ave S (0.27 miles)
4. At fork keep right on Interurban Ave S (0.29 miles)
5. Turn right on 42nd Ave S (0.11 miles)
6. Finish at 12424 42nd Avenue South, 98168, on the right

Codiga Park **GRD-8.5**

Position - Location: 47° 29.427', -122° 16.247' 47° 29' 25.6", -122° 16' 14.8" 47.49045, -122.27079 Tukwila

Strategy Objective: Exclusion : Keep oil out of habitat restoration site.

Implementation: Access trail at NE edge of parking area (47.49,-122.2698) to deliver boat and equipment near A (47.4905,-122.2708). Hand-launch kayak/raft, or lay plywood walkway or use waders to secure 100ft section of boom near A. Extend boom ~70ft south and secure near B (47.4904,-122.2708). Line with sorbent boom to protect side channel.

Staging Area: Onsite: Facilities and parking. Move small log to drive hand-launch boat down trail to water's edge. Very shallow.

Site Safety: Deep mud. Slips, trips falls. Vegetation and blackberry brambles on bank.

Field Notes: Some tidal influence (~2 ft). Use waders/plywood in low water. Trail can get muddy.

Watercourse: River - With Tidal Influence - Low flow July - Sept.

Resources at Risk: City Park, Habitat Restoration and Mitigation Site, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 2 | Each | Anchoring System(s)- Shoreside |
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent |
| 8 | Each | Plywood sheets (4ft x 8ft) |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

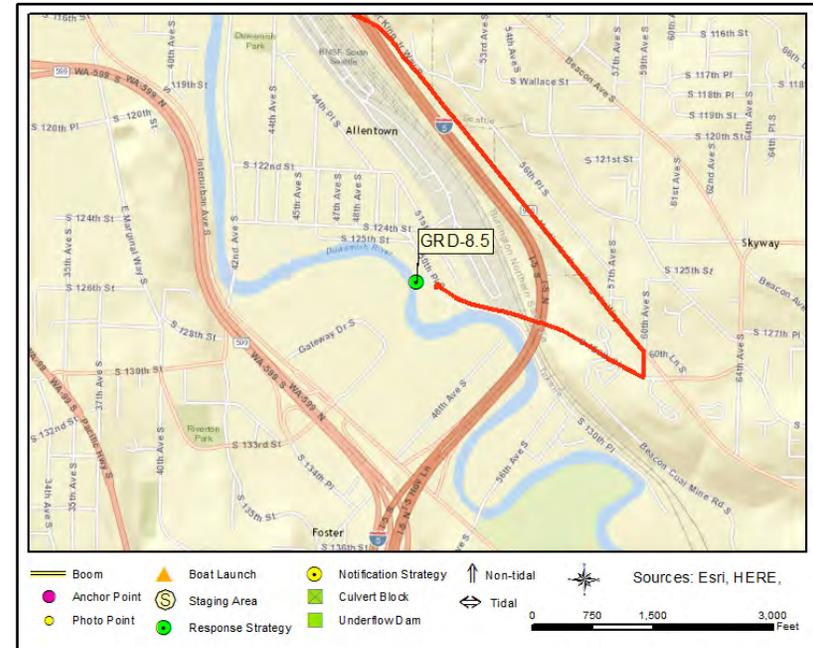
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Supervisor |

Codiga Park

GRD-8.5



GRD-8.5 Photo: Restoration site at Codiga Park on river right, from trail at waters edge, looking at side channel entrance. Near low tide, 3000 cfs.



Site Contact

City of Tukwila Parks and Recreation Department
 Land/Property Owner :
 12424 42nd Avenue South
 Tukwila, WA 98168
 206 768-2822

Nearest Address

12595 50th Pl S
 Tukwila, WA 98178

Driving Directions

1. Start at Location 1
2. Go southeast on I-5 toward 161 (4.05 miles)
3. At exit 157 take ramp on the right to WA-900 E/M L King Way (0.2 miles)
4. Continue on WA-900 (Martin Luther King Jr Way S) (1.19 miles)
5. Turn right on 60th Ave S (0.06 miles)
6. Turn right on S 129th St (0.47 miles)
7. Continue on 50th Pl S (0.02 miles)
8. Finish at 12595 50th Pl S, 98178, on the left

57th Ave S Mini Park

GRD-9.6

Position - Location: 47° 29.044', -122° 15.835' 47° 29' 2.7", -122° 15' 50.1" 47.48407, -122.26391 Tukwila

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish

Implementation: Using hand-launch workboat, secure 400 ft section of boom near A (47.4841,-122.2643). Extend boom ~325 ft to the east and secure to shore near B (47.4844, -122.2629). Set additional anchor system next to A and extend second 300 ft section of boom SW ~250 ft and secure to shore near D. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Can drive trailered hand-launch boat to water's edge through grass. 4' wide gap between log and blackberry.

Site Safety: Slips, trips falls. Vegetation and blackberry brambles on bank.

Field Notes: River left has small park with easy grassy slope and mud banks. River right is Foster Golf Links. Vac truck access on both sides, bring hose extension when muddy.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Estuary Resources, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 700 | Feet | Boom - B3 (River Boom) or equivalent |
| 2 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

57th Ave S Mini Park

GRD-9.6



GRD-9.6 Photo: River right at 57th Ave S Mini Park, looking SE across Green River at Foster Golf Links. Photo taken 12/10/14 Auburn Gage 1700cfs



Site Contact

City of Tukwila Parks and Recreation Department
 Land/Property Owner :
 12424 42nd Avenue South
 Tukwila, WA 98168
 206 768-2822

Nearest Address

13302 56th Avenue South
 Tukwila, WA 98178

Driving Directions

1. From I-5 in Seattle head south to exit 156.
2. At exit 156 take ramp on the right to Interurban Ave toward Tukwila (0.21 miles)
3. Make sharp left on Interurban Ave S (0.22 miles)
4. Turn left on 56th Ave S (0.22 miles)
5. Turn right on S133rd St then drive to dead-end. Park is straight ahead.

Foster Golf Links Bridge **GRD-10.4**

Position - Location: 47° 28.723', -122° 15.532' 47° 28' 43.4", -122° 15' 31.9" 47.47871, -122.25887 Tukwila

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish

Implementation: Set anchor near A (47.4789, -122.259) and tie line. Walk line across bridge and down opposite bank as far upstream as possible near B (47.4784, -122.2589). Use power winch to deploy 200ft section of boom. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

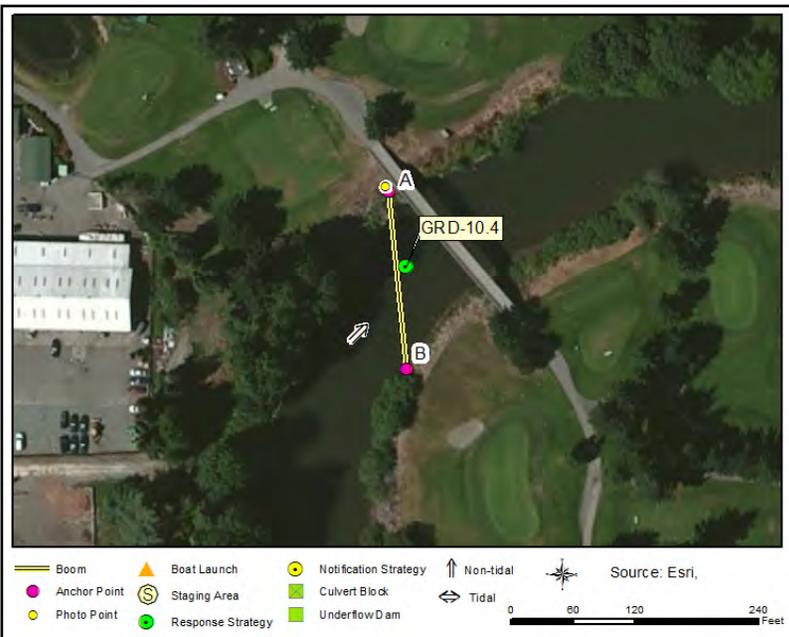
Staging Area: Onsite: Parking and facilities at golf course. Use paved trails to move equipment/vac trucks.

Site Safety: Slips, trips falls. Vegetation and blackberry brambles on bank.

Field Notes: Popular public golf course with busy golf cart trails.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Estuary Resources, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 2 | Each | Anchoring System(s)- Shoreside |
| 200 | Feet | Boom - B3 (River Boom) or equivalent |
| 400 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |

Recommended Personnel

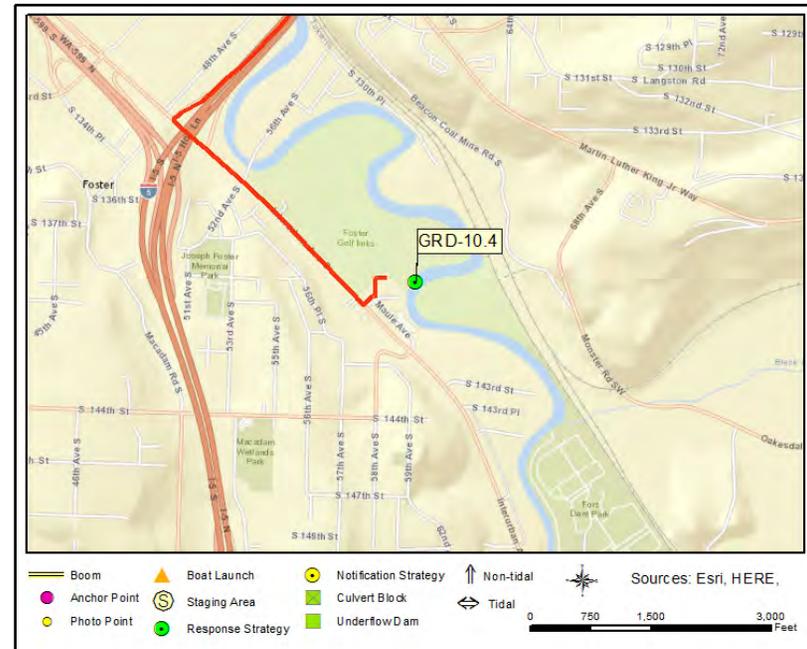
| | |
|---|------------|
| 1 | Laborer |
| 1 | Supervisor |

Foster Golf Links Bridge

GRD-10.4



GRD-10.4 Photo: North bank next to golf cart bridge on river left, looking SE across Green River at southern section of Foster Golf Links.



Site Contact

City of Tukwila Parks and Recreation Department
 Land/Property Owner :
 12424 42nd Avenue South
 Tukwila, WA 98168
 206 768-2822

Nearest Address

14000 Interurban Ave South
 Tukwila, WA 98168

Driving Directions

1. From I-5 in Seattle head south to exit 156.
2. At exit 156 take ramp on the right to Interurban Ave toward Tukwila (0.21 miles)
3. Make sharp left on Interurban Ave S (0.64 miles)
4. Turn left on S 140th St.

Strander Bridge at Bicentennial Park GRD-13.2

Position - Location: 47° 27.376', -122° 14.746' 47° 27' 22.6", -122° 14' 44.7" 47.45627, -122.24576 Tukwila

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using hand-launch workboat, secure end of line near A (47.4562, -122.2461). Extend line east ~150 ft to bank and secure near B (47.4563, -122.2455). Deploy 200 ft section of boom using line and power winch. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Trail access from Bicentennial Park. Facilities and small parking area.

Site Safety: Low bridge: use caution or avoid in high water. Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: High waters can reach bridge bottom. Bridge height 7' from trail.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 2 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 200 | Feet | Boom - B3 (River Boom) or equivalent |
| 300 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

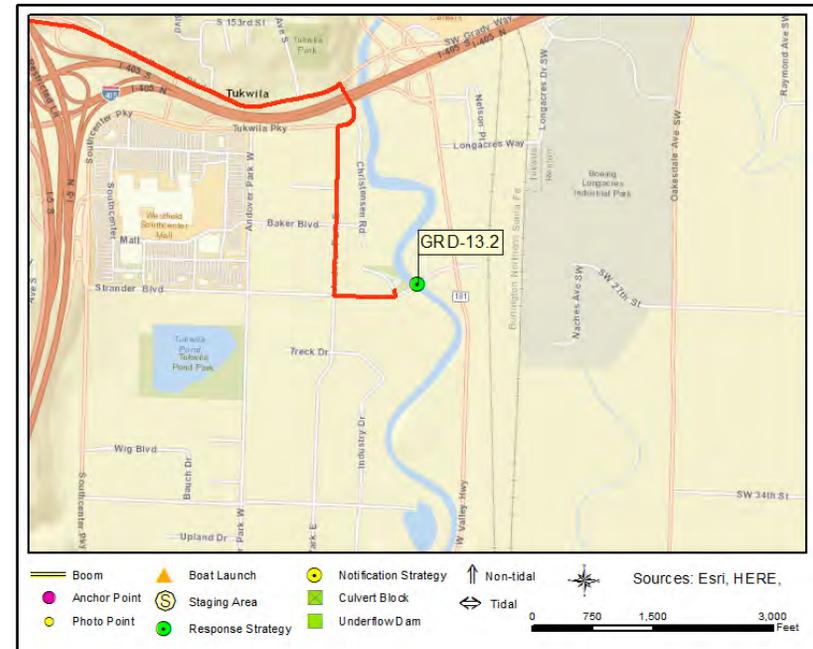
| | |
|---|--------------------------|
| 1 | Boat Operator/Supervisor |
| 1 | Laborer |

Strander Bridge at Bicentennial Park

GRD-13.2



GRD-13.2 Photo: From trail under Strander Blvd Bridge on river left, just upstream of Bicentennial Park.



Site Contact

City of Tukwila Parks and Recreation Department
 Land/Property Owner :
 12424 42nd Avenue South
 Tukwila, WA 98168
 206 768-2822

Nearest Address

630 Strander Blvd
 Tukwila, WA 98188

Driving Directions

1. From I-5 in Seattle head south to exit 154B.
2. Bear right onto ramp to WA-518 toward Burien/Sea-Tac Airport/Southcenter Blvd. & Mall (0.09 miles)
3. Take ramp toward Southcenter Blvd & Mall (0.28 miles)
4. Turn left on Southcenter Blvd (S 154th St) (0.89 miles)
5. Turn right on 66th Ave S (0.1 miles)
6. Continue on Tukwila Pky (0.04 miles)
7. Turn left on Andover Park E (0.4 miles)
8. Turn left on Strander Blvd (0.16 miles)
9. Turn left just before the bridge, into Bicentennial Park.

S 180th at Andover Park GRD-15.0

Position - Location: 47° 26.444', -122° 15.169' 47° 26' 26.7", -122° 15' 10.1" 47.44074, -122.25282 Tukwila

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Set shoreside anchor post close to water near A (47.441, -122.2529) and tie line. Using workboat, extend line south ~ 291 ft and anchor using shoreside post near B (47.4402, -122.2529). Deploy boom using power winch. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

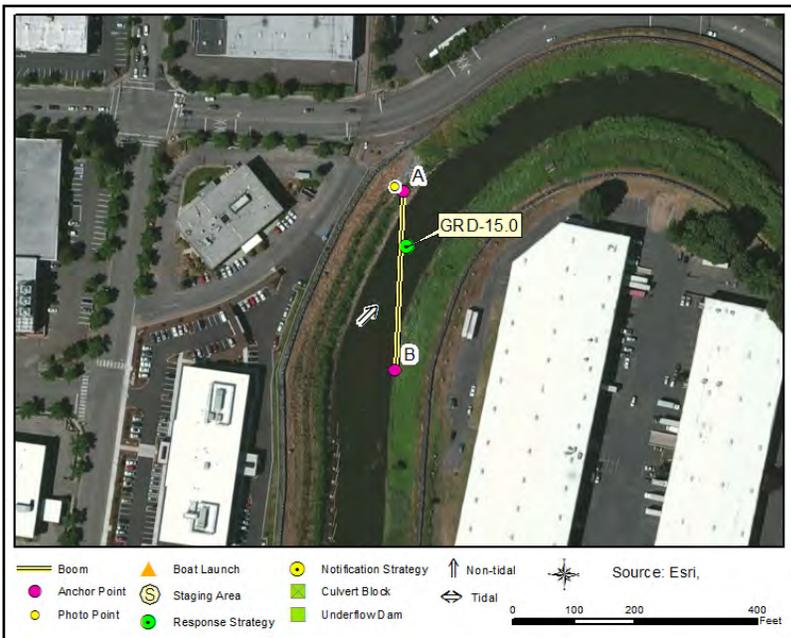
Staging Area: Onsite: Stage in parking lot. Hand-launch boat from Van Doren's Landing (3.7 mi upstream)

Site Safety: Train crossing nearby. Car traffic. Slips, trips falls. Vegetation and blackberry brambles on bank.

Field Notes: BNSF tracks between strategy and parking lot, use caution. Parking lot belongs to Continental Mills 800-426-0955, inform them of situation during work hours. Can also use alternate trail access 800 ft east on S 180th St for wider vehicles.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 300 | Feet | Boom - B3 (River Boom) or equivalent |
| 300 | Feet | Line - 3/8" poly line |
| 1 | Each | Machete(s) - (or other vegetation cutting tool) |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

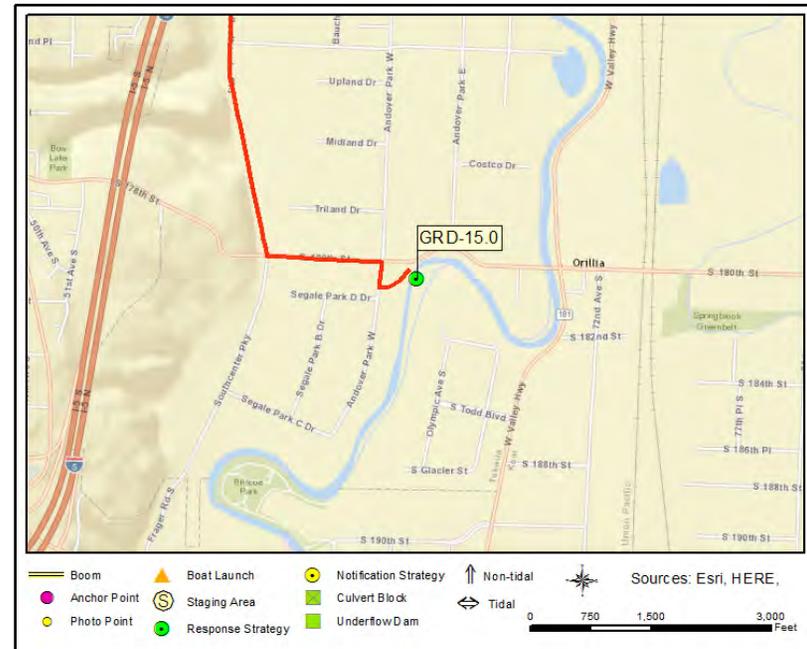
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

S 180th at Andover Park

GRD-15.0



GRD-15.0 Photo: View from setback levee access road, looking upstream on river left.



Site Contact

King County Parks and Recreation
 Land/Property Contact :
 201 S. Jackson Street, # 700
 Seattle, WA 98104
 206-296-8100

Nearest Address

18080 Andover Park W
 Tukwila, WA 98188

Driving Directions

1. From I-5 in Seattle, head south towards exit 154B.
2. At exit 154B bear right onto ramp to WA-518 toward Burien/Sea-Tac Airport/Southcenter Blvd. & Mall (0.09 miles)
3. Take ramp toward Southcenter Blvd & Mall (0.28 miles)
4. Turn left on Southcenter Blvd (S 154th St) (0.48 miles)
5. Turn right on 61st Ave S (0.11 miles)
6. Turn right on Southcenter Pky (1.57 miles)
7. Turn left on S 180th St (0.28 miles)
8. Turn right on Andover Park W (0.07 miles)
9. Take the next left into the parking lot (before the railroad tracks). Follow the tracks to the NE corner. The access to the levee/Green River Trail is along S 180th.

Three Friends Fishing Hole GRD-17.1

Position - Location: 47° 25.358', -122° 15.907' 47° 25' 21.5", -122° 15' 54.4" 47.42264, -122.26512 Kent

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Secure 600 ft length of line near A (47.4227, -122.265). Using hand-launch workboat, extend line SSE ~290 ft and loop around a tree near B (47.4222, -122.2653). Use line and power winch to deploy 300 ft section of boom from A. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

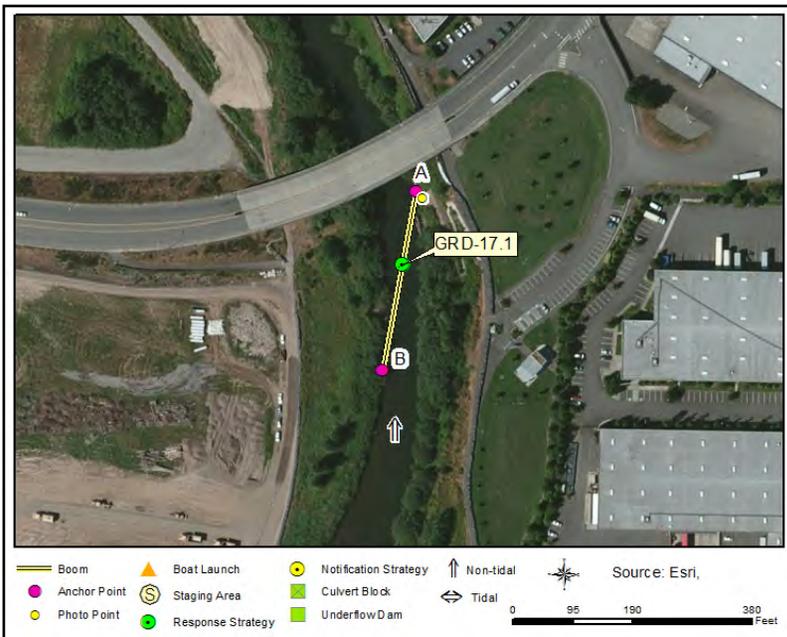
Staging Area: Onsite: Public flush restrooms and parking on-site. Hand-launch ramp at Van Doren's Landing 1.6 mi upstream.

Site Safety: Slippery mud buildup at rivers edge near 4' drop to water. Trips and falls. Vegetation and blackberry brambles on bank. In-water woody

Field Notes: Path is paved but narrow clearance, use ATV. Heavy vegetation on banks. Levee setback planned in area, adjust location as appropriate.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Habitat, Downstream Resources



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Each | Anchoring System(s)- Shoreside |
| 300 | Feet | Boom - B3 (River Boom) or equivalent |
| 300 | Feet | Line - 3/8" poly line |
| 1 | Each | Machete(s) - (or other vegetation cutting tool) |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

Russell Woods Park GRD-19.4

Position - Location: 47° 23.741', -122° 16.415' 47° 23' 44.5", -122° 16' 24.9" 47.39569, -122.27358 Kent

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Stage boom on Frager Rd on river left. Secure end of 400ft line near A (47.3951, -122.2744) as close to waterline as possible. Using line-throwing device or workboat, extend line east across to road on river right. Walk line NE ~385 ft to bridge and secure under bridge near B (47.3959, -122.2733). Use power winch to extend 400ft length of boom. Deploy second 500ft segment of boom between C and D in same manner, with ~30ft separation between boom segments. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Small parking lot 500 ft S of bridge. Hand-launch boat ramp at Van Doren's Landing 0.7 mi downstream.

Site Safety: Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: Can use hand-launch boat instead of line gun if water is high enough, watch for woody debris in channel.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Salmonid Concentrations and Habitat, Waterfowl Concentrations, Wetland Habitat



Recommended Equipment

| | | |
|------|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 1000 | Feet | Boom - B3 (River Boom) or equivalent |
| 600 | Feet | Line - 3/8" poly line |
| 1 | Each | Line throwing gun(s) or device(s) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

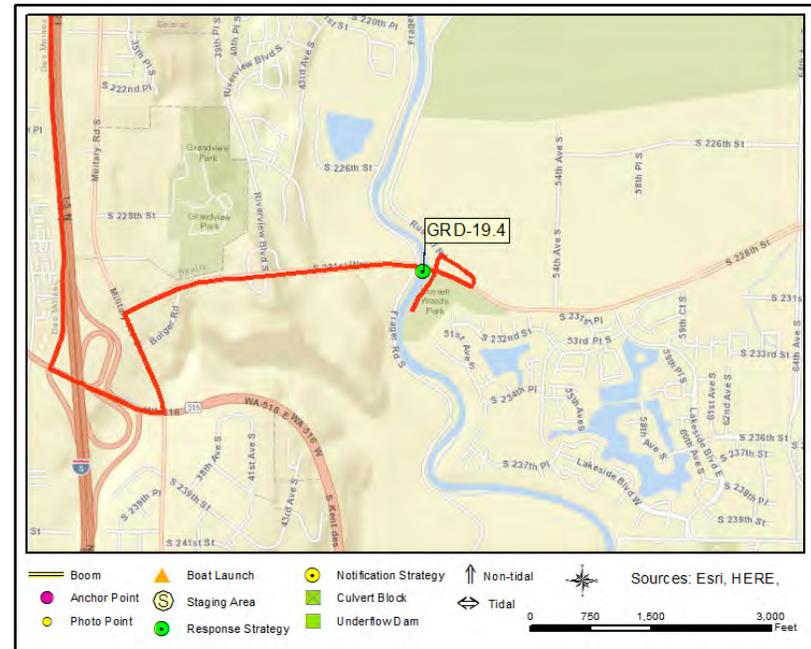
| | |
|---|------------|
| 2 | Laborer |
| 1 | Supervisor |

Russell Woods Park

GRD-19.4



GRD-19.4 Photo: Russell Woods Park. From Green River trail at Russell Road on river right, looking SW upriver towards A and C, N of Veterans Drive Bridge and B.



Site Contact

City of Kent Parks, Recreation and Community Services
 Land/Property Owner :
 220 Fourth Ave S
 Kent, WA 98032
 253-856-5000

Nearest Address

22711 Russell Rd
 Kent, WA 98032

Driving Directions

To access Russell Woods Park (east bank):

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149, bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (0.29 miles)
4. Turn left on Military Rd S (0.25 miles)
5. Turn right on S 231st Way (0.85 miles)
6. Turn left on Russell Rd (0.25 miles)
7. Make an immediate left onto Park Access gravel road and drive under the bridge to the parking lot.

To access Frager Rd (west bank):

1. Take I-5 S to exit 152.
2. Turn left at ramp then follow Orillia Rd S to the right. (0.6 mi)
3. Turn right onto Frager Rd S (2.1 mi)
4. Follow Frager Rd S for 1.5 miles to Veterans Drive Bridge.

Riverbend Golf Course GRD-20.5

Position - Location: 47° 23.134', -122° 15.857' 47° 23' 8.0", -122° 15' 51.4" 47.38557, -122.26428 Kent

Strategy Objective: Collection : Collect and recover product from Green River at northern end of Riverbend Golf Course

Implementation: Using hand-launch workboat, secure end of 300ft length of line around tree on river left near A (47.3852, -122.2653). Then extend line NE ~290ft securing it to bank on river right near B (47.3855, -122.2641). Deploy boom using power winch on river right. Deploy second 300ft segment of boom between Points C & D in same manner as Points A & B, with ~30ft separation between boom segments. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Boat launch 1.8 mi downstream at Van Dorens. Stage boom onsite river right or use golf course.

Site Safety: Low overhead powerlines. Slips, trips, falls. Vegetation and blackberry brambles on bank. In-river woody debris.

Field Notes: Do not deploy in low water. Western bank thick vegetation/blackberries. In-river woody debris will prevent boat use in low water.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat, Waterfowl, Wetlands



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 600 | Feet | Boom - B3 (River Boom) or equivalent |
| 600 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

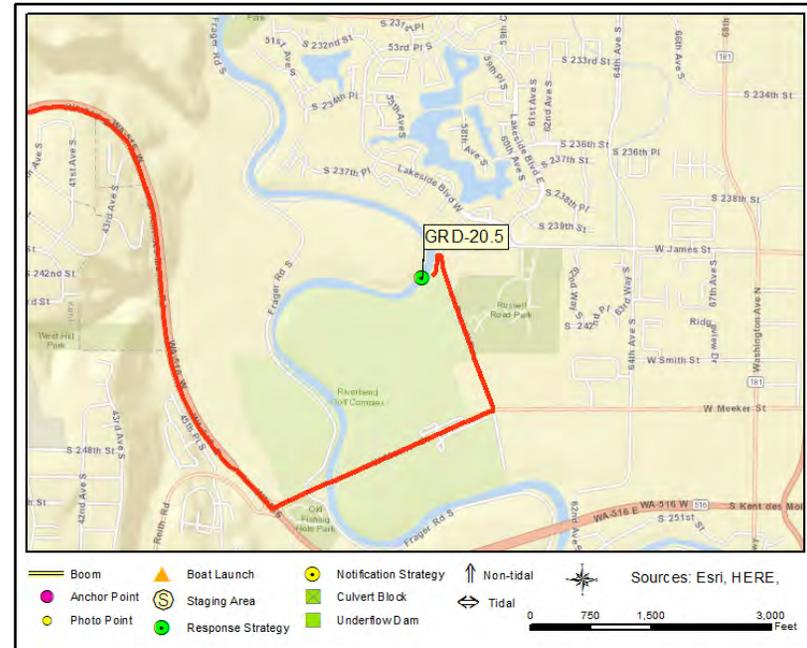
| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

Riverbend Golf Course

GRD-20.5



GRD-20.5 Photo: Riverbank on river right at southern end of levee access road. Only vegetation in photo needs to be cut for access.



Site Contact

City of Kent Parks, Recreation and Community Services
 Land/Property Owner :
 253-856-5000

King County Parks and Recreation
 Secondary Contact :
 206-296-8100

Nearest Address

5821 S 240th St
 Kent, WA 98032

Driving Directions

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (1.62 miles)
4. Turn left on W Meeker St (0.56 miles)
5. Turn left on Russell Rd (0.39 miles)
6. Bear right (0.03 miles)
7. Bear right on W James St (0.09 miles)
8. Just before James bends right, turn left onto sidewalk access to Green River Trail. Cut bollards and follow south 200ft to end of old levee access road.

Mullen Slough Mouth GRD-21.7

Position - Location: 47° 22.593', -122° 15.949' 47° 22' 35.6", -122° 15' 56.9" 47.37655, -122.26581 Kent

Strategy Objective: Collection, Exclusion : Remove oil from river; protect Mullen Slough

Implementation: Stage 300 ft of boom on north bank. Use plywood sheet to bridge slough on south bank. Secure end of 400' line near A (47.3769, -122.2652). Using line-throwing device or workboat, extend line ~215 ft SW and secure on river left near B (47.3764, -122.2657). Use winch and line to deploy boom from A to B. Secure end of 100ft boom at C (47.3764, -122.266) and extend boom to B. Line slough boom with 100 ft of sorbent. Stretch vac hose from C to B. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

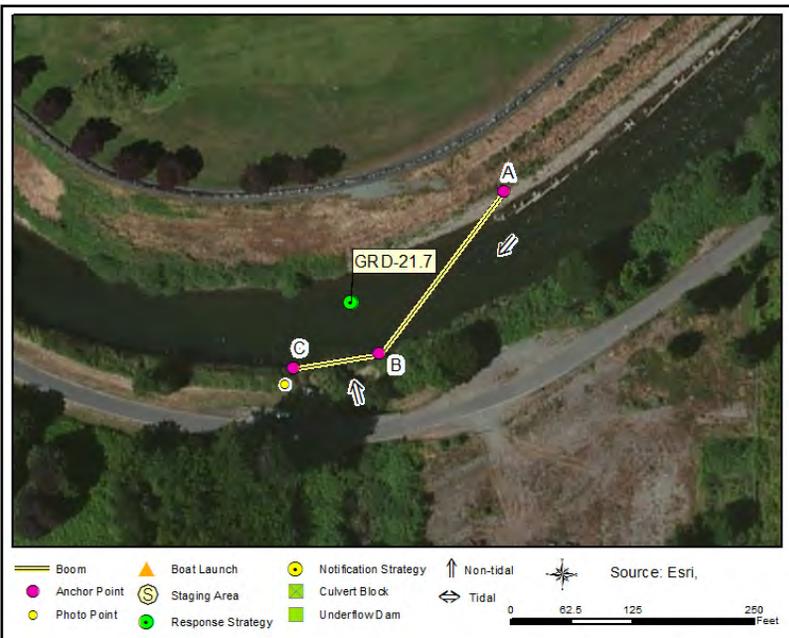
Staging Area: Onsite: Hand-launch ramp at Van Doren's Park is 3 mi downstream. Use trail/golf course to stage boom.

Site Safety: Road traffic. Slips, trips, falls. Vegetation and blackberry brambles on bank. Woody debris in channel.

Field Notes: During rainy season use workboat. In dry season use plywood across slough and line gun. High flow from slough during rainy season.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Slough and Marsh Habitat



Recommended Equipment

| | | |
|-----|------|---|
| 3 | Each | Anchoring System(s)- Shoreside |
| 400 | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent |
| 1 | Each | Line throwing gun(s) or device(s) |
| 1 | Each | Plywood sheets (4ft x 8ft) |
| 1 | Each | Skimmer (appropriately sized) with Portable Storage |

Recommended Personnel

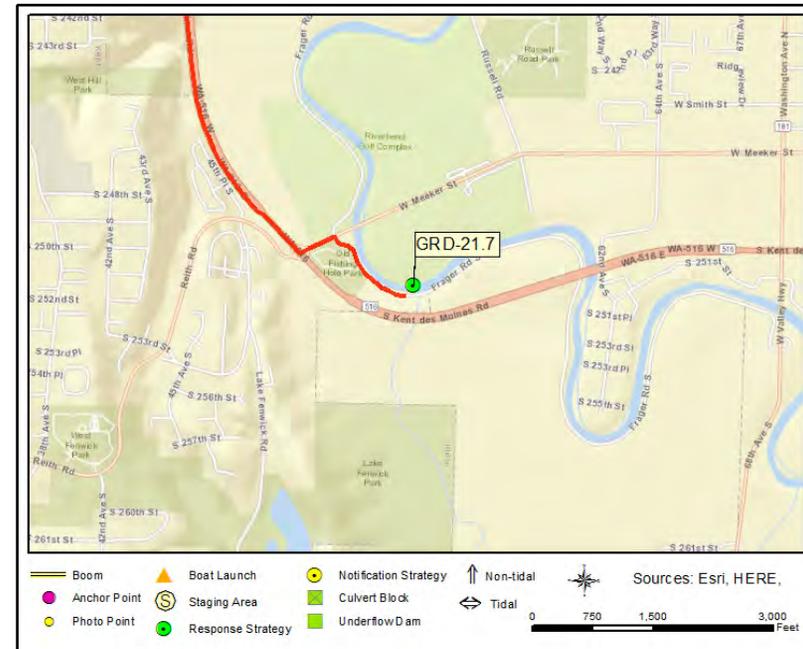
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

Mullen Slough Mouth

GRD-21.7



GRD-21.7 Photo: Looking NE from Frager Rd bridge over Mullen Slough mouth, on Green River left bank.



Site Contact

City of Kent Parks, Recreation and Community Services
 Land/Property Contact :
 220 Fourth Ave S
 Kent, WA 98032
 253-856-5000

Nearest Address

24906 Frager Rd S
 Kent, WA 98032

Driving Directions

To access Mullen Slough (south bank):

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149, bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (1.62 miles)
4. Turn left on W Meeker St (0.09 miles)
5. Turn right on Frager Rd S (0.33 miles)
6. Finish at 24906 Frager Rd S, 98032, on the left

To access Riverside Driving Range (north bank):

1. Instead of turning right on Frager Rd, continue on W Meeker to entrance at 2030 Meeker (0.3 mi)
2. Drive S past buildings to trail (0.2 mi)
3. Turn right and follow trail west for 0.2 miles

Hwy 167 Bridge at Foster Park GRD-23.9

Position - Location: 47° 22.197', -122° 14.644' 47° 22' 11.8", -122° 14' 38.6" 47.36995, -122.24406 Kent

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using line-throwing device or EXTREME CAUTION on bridge shoulder, extend 350 ft line from north to south bank. Anchor as close to the water's edge as possible near A (47.3695, -122.2438). Extend line ~275 ft NW and secure to bridge near B (47.3702, -122.2444). Use power winch to extend 300 ft section of boom. Use 100 ft boom to form pocket between B and C (47-3701, -122.2442). Extend 300 ft of boom between D and E using same process as A & B. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

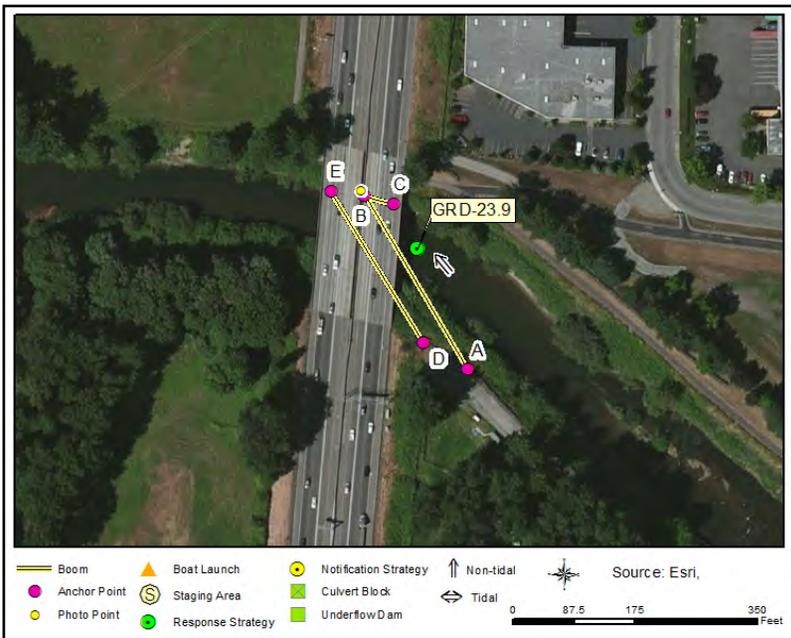
Staging Area: Onsite: Use Foster Park and Green River/Interurban Trail for staging. Horsehead Bend Boat Launch 2.9 mi upstream.

Site Safety: Traffic - USE EXTREME CAUTION ON BRIDGE. Slips, trips, falls. Blackberry brambles on bank. Debris and sandbars in water channel.

Field Notes: Use workboat if water level allows. Lots of blackberry on south bank. Anchor high on trail initially, then cut path to lower the anchor point if time allows.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: City Park, Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Each | Anchoring System(s)- Shoreside |
| 400 | Feet | Boom - B3 (River Boom) or equivalent |
| 500 | Feet | Line - 3/8" poly line |
| 1 | Each | Line throwing gun(s) or device(s) |
| 1 | Each | Machete(s) - (or other vegetation cutting tool) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

| | |
|---|------------|
| 2 | Laborer |
| 1 | Supervisor |

Hwy 167 Bridge at Foster Park

GRD-23.9



GRD-23.9 Photo: Under Highway 167 bridge from Green River Trail on river right, looking SE upriver.



Site Contact

City of Kent Parks, Recreation and Community Services
 Land/Property Owner :
 220 Fourth Ave S
 Kent, WA 98032
 253-856-5000

Nearest Address

25945 74th Ave S
 Kent, WA 98032

Driving Directions

1. From I-5 in Seattle, head south to exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (3.1 miles)
4. Turn right on 74th Ave S (0.55 miles)
5. Where the road bends left, turn right into small parking area for Foster Park/electric substation. Cut bollards and follow trail west under the bridge.

Dykstra Park GRD-29.8

Position - Location: 47° 19.649', -122° 12.610' 47° 19' 38.9", -122° 12' 36.6" 47.32748, -122.21017 Auburn

Strategy Objective: Collection : Collect oil moving downstream on the Green River.

Implementation: Anchor 200-ft section of boom on north/right bank near A (47.3276, -122.2099). Walk heaving line across bridge to anchor near B (47.3274, -122.2104). Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Dykstra public park has paved trails to bridge, cut bollards to access. N section of park has small paved area.

Site Safety: Water hazard; slips, trips, falls; overgrown vegetation; in-water recreation

Field Notes: Pedestrian bridge connecting two halves of a park. Easy access to water on N bank. Steep climb and vegetation on S bank.

Watercourse: River - Green River

Resources at Risk: City Park, Downstream Resources, Habitat Restoration Site/Project, Pump Station, Salmonids



Recommended Equipment

| | |
|----------|---|
| 3 Kit | Anchoring System(s) - (anchor, lines, floats) |
| 2 Kit | Anchoring System(s)- Shoreside |
| 1 Each | Bolt Cutters |
| 200 Feet | Boom - B3 (River Boom) or equivalent |
| 100 Feet | Heaving Line(s) |
| 1 Each | Machete(s) - (or other vegetation cutting tool) |
| 1 Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

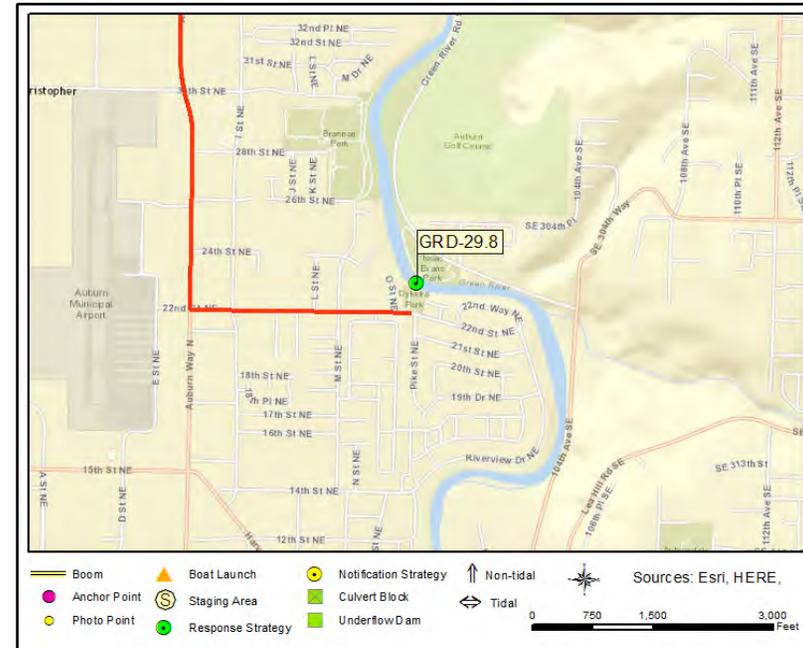
| | |
|---|------------|
| 2 | Laborer |
| 1 | Supervisor |

Dykstra Park

GRD-29.8



GRD-29.8 Photo: From Green River right, looking SW underneath pedestrian bridge. Taken early May, 600 cfs at Auburn gage.



Site Contact

City of Auburn Maintenance and Operations
 Municipality (County/City) : 24 hour contact
 910 9TH ST SE
 Auburn, WA 98002
 253-876-1985

Nearest Address

1471 22nd St NE
 Auburn, WA 98002

Driving Directions

1. From I-5 in Seattle head south to exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.91 miles)
4. Turn right onto ramp and go on WA-167 S toward Auburn (1.48 miles)
5. Take ramp on the right to S277th St (0.23 miles)
6. Turn left on S 277th St (0.81 miles)
7. Bear right on Auburn Way N (1.97 miles)
8. Turn left on 22nd St NE (0.52 miles)
9. Finish at Dykstra Park on the left.

North Green River Park Roadside GRD-30.5

Position - Location: 47° 19.261', -122° 12.208' 47° 19' 15.7", -122° 12' 12.5" 47.32102, -122.20346 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: On north bank, use stairs from trail to access shore. Secure line to shore near A (47.3209, -122.2047). Using workboat, extend line 400 ft east and secure near B (47.321, -122.2032). Use line and power winch to extend boom from A to B. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

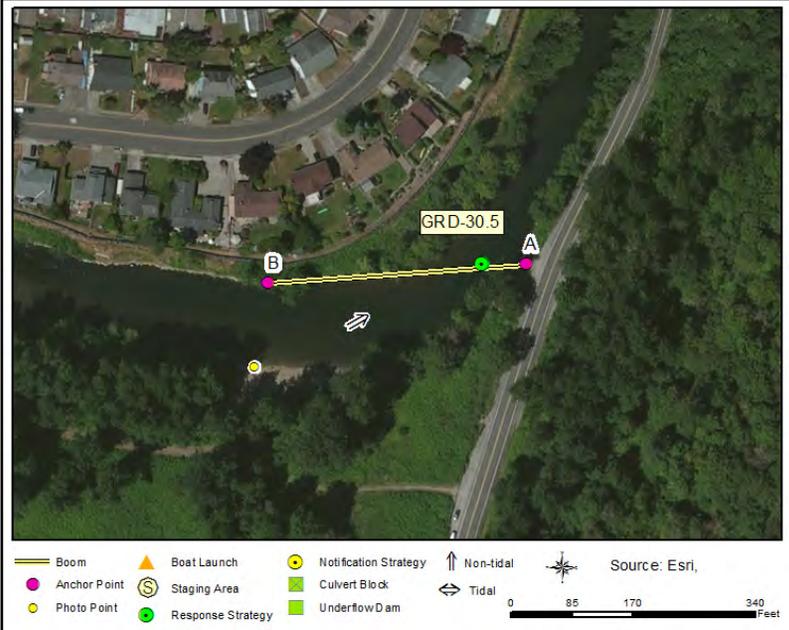
Staging Area: Onsite: Stage boom at north bank. Launch boat in park. Collect from 102nd Ave.

Site Safety: Road traffic. Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: North bank trail access from Pike St NE at Riverview Dr NE (47.3206, -122.2097). Popular spot with fishermen and campers.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Waterfowl Concentrations, Wetlands



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 2 | Each | Anchoring System(s)- Shoreside |
| 400 | Feet | Boom - B3 (River Boom) or equivalent |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

North Green River Park Roadside

GRD-30.5



GRD-30.5 Photo: View from upstream bank at car pull-off on side of 104th Ave SE on river right.



Site Contact

City of Auburn Parks, Arts and Recreation Department
 Land/Property Owner : Parks Administration
 253-931-3043

City of Auburn Maintenance and Operations
 After Hours and Weekends Contact : 24 hour contact
 253-876-1985

Nearest Address

31521 102nd Ave SE
 Auburn, WA 98092

Driving Directions

- To access Mullen Slough (south bank):
1. From I-5 in Seattle, head south towards exit 149.
 2. At exit 149, bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
 3. Turn left on WA-516 (S Kent Des Moines Rd) (2.91 miles)
 4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
 5. Take ramp on the right to 15th St Nw (0.28 miles)
 6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
 7. Continue on Harvey Rd (0.53 miles)
 8. Bear left on 8th St NE (0.41 miles)
 9. Turn left on 102nd Ave SE (0.26 miles)
 10. Cut bollards at dead end and follow dirt road to beach. Collection point is around the corner on the side of 104th Ave SE.

North Green River Park **GRD-30.6**

Position - Location: 47° 19.246', -122° 12.304' 47° 19' 14.7", -122° 12' 18.3" 47.32076, -122.20507 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Stage boom on north bank, then use stairs from trail to access shore. Secure end of 500 ft line near A (47.3210, -122.2057). Using workboat, extend line ~417 ft SE, securing it on river right near B (47.3206, -122.2042). Use power winch to deploy 500 ft section of boom. Deploy second 600 ft section of boom between points C and D in the same manner as A + B, keeping ~30ft separation between boom segments. Use shoreside anchoring posts or trees to secure boom to shore. Use anchoring systems to keep boom secure in water

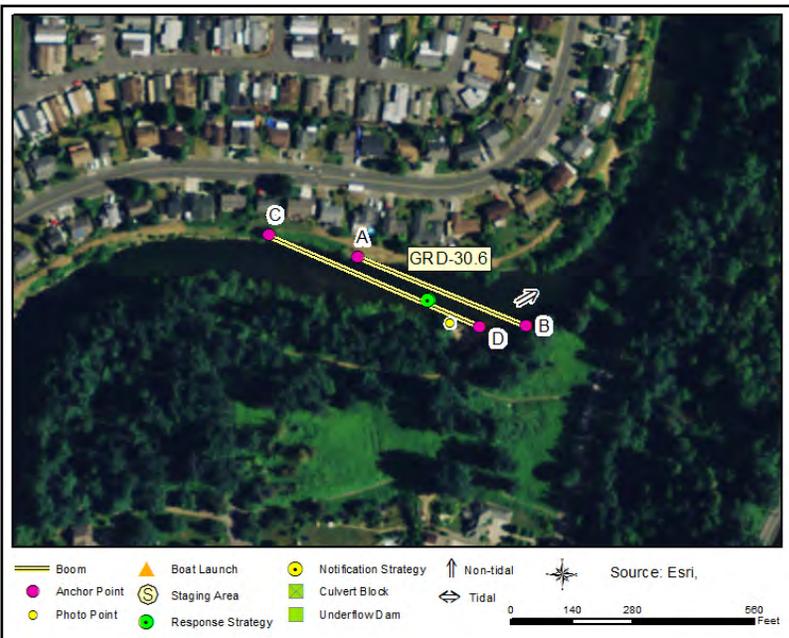
Staging Area: Onsite: Cut bollards at Garden/102 Ave SE dead-end to access beach. North bank trail access at Pike St NE at Riverview Dr.

Site Safety: Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: Be aware of fishermen on banks and homeless camping in park. To access north bank: 1. After Harvey Rd becomes 15th St NW, turn left at the first light on I St NE. (0.1 mi) 2. Take the next right on 14th St NE (243 ft) 3. In 0.4 mi the road will curve left, just past Pike St NE.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Salmon Habitat, Waterfowl Concentrations, Wetland Habitat



Recommended Equipment

| | | |
|------|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 1100 | Feet | Boom - B3 (River Boom) or equivalent |
| 1100 | Feet | Line - 3/8" poly line |
| 1 | Each | Line throwing gun(s) or device(s) |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

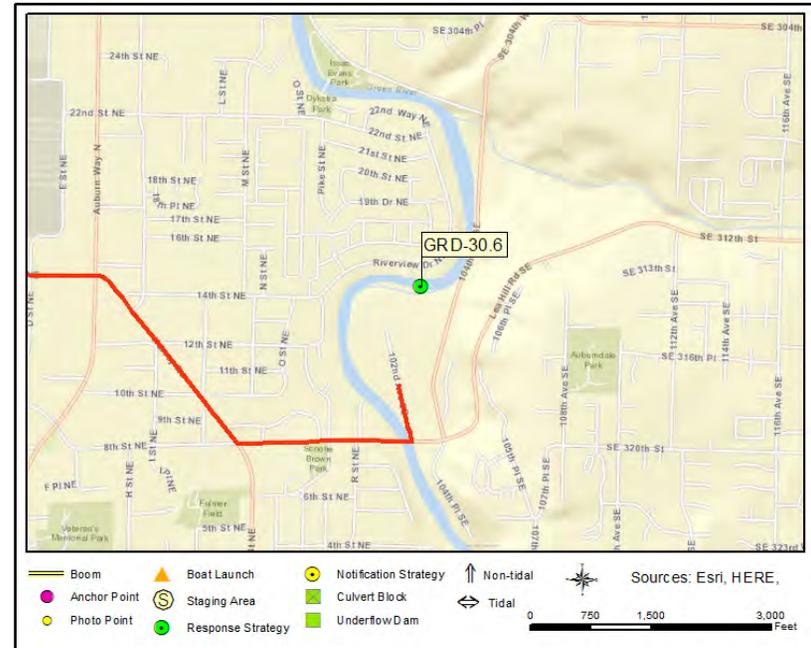
| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

North Green River Park

GRD-30.6



GRD-30.6 Photo: Looking NW from bank on river right at North Green River Park.



Site Contact

City of Auburn Parks, Arts and Recreation Department
 Land/Property Owner : Parks Administration
 253-931-3043

City of Auburn Maintenance and Operations
 After Hours and Weekends Contact : 24 hour contact
 253-876-1985

Nearest Address

6770 102 Ave SE
 Auburn, WA 98092

Driving Directions

- Directions to boat launch/collection (south bank):
1. From I-5 in Seattle head south towards exit 149.
 2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
 3. Turn left on WA-516 (S Kent Des Moines Rd) (2.91 miles)
 4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
 5. Take ramp on the right to 15th St Nw (0.28 miles)
 6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
 7. Continue on Harvey Rd (0.53 miles)
 8. Turn left on 8th St NE (0.41 miles)
 9. Turn left on 102nd Ave SE (0.14 miles)
 10. Cut bollards at dead-end and follow trail to beach.

Fenster Natural Area GRD-32.2

Position - Location: 47° 18.254', -122° 11.851' 47° 18' 15.2", -122° 11' 51.1" 47.30423, -122.19751 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using hand-launch workboat, secure end of 300ft length of boom to bank on river right near near A (47.3047, -122.1979). Then extend boom SE ~290 ft SE to beach, securing it on river left near B (47.304, -122.1974). Deploy second 300 ft segment of boom between points C & D, and third 300 ft segment between points E & F, in same manner as A & B, with ~30ft separation between boom segments. Use shoreside anchoring posts or trees to secure boom to shore. Use anchoring systems to keep boom secure in water.

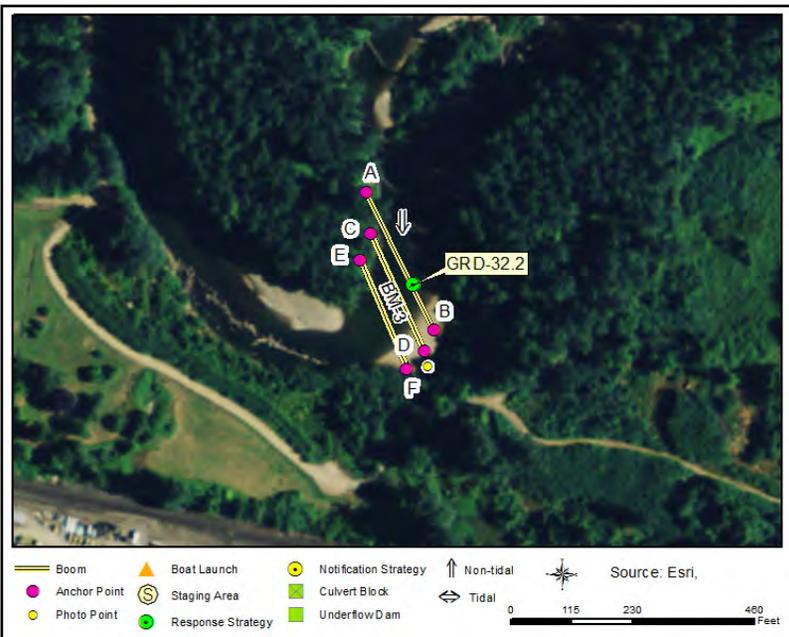
Staging Area: Onsite: 10K lb limit on steel plate on access rd close to site. Can trailer hand-launch boat to bank.

Site Safety: Site floods in high water. Max 10K lbs on access road - steel plate. Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: Beach can disappear in high water. Be aware of fishermen on banks and homeless camping in park.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Bird Habitat, Downstream Resources, Habitat Restoration and Mitigation Site, Riparian Vegetation, Waterfowl Concentrations, Wetland



Recommended Equipment

| | | |
|------|------|--------------------------------------|
| 6 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 1000 | Feet | Boom - B3 (River Boom) or equivalent |
| 1000 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

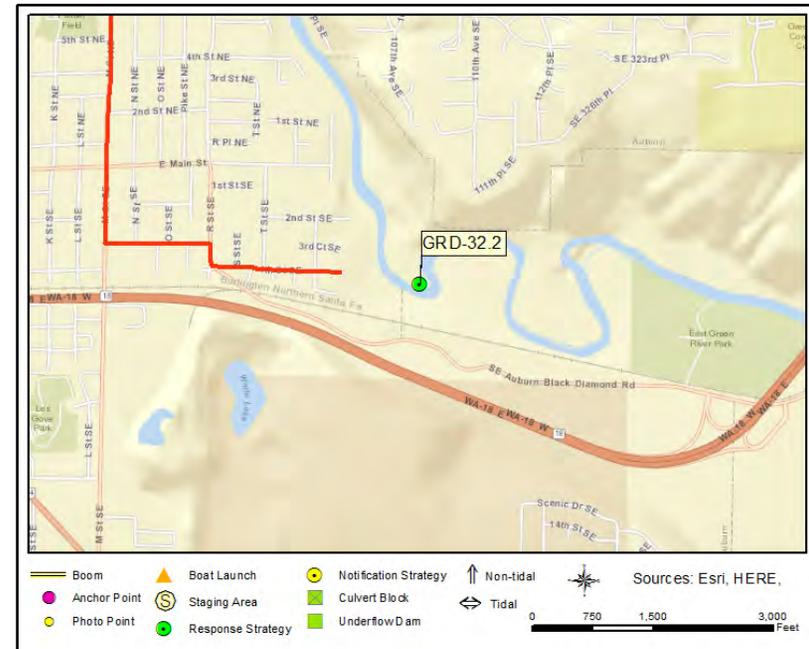
| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

Fenster Natural Area

GRD-32.2



GRD-32.2 Photo: Looking NE at beach and eddy on river left in Fenster Natural Area. Downstream gage 1000 cfs/54.5 ft.



Site Contact

King County Parks and Recreation
 Primary Contact :
 206-296-8100

City of Auburn Maintenance and Operations
 Secondary Contact : 24 hour contact
 253-876-1985

Nearest Address

2093 4th St SE
 Auburn, WA 98002

Driving Directions

1. From I-5 in Seattle head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.91 miles)
4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
5. Take ramp on the right to 15th St Nw (0.28 miles)
6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
7. Continue on Harvey Rd (0.53 miles)
8. Continue on M St NE (0.69 miles)
9. Turn left on 3rd St SE (0.25 miles)
10. Turn right on R St SE (0.06 miles)
11. Turn left on 4th St SE (0.31 miles)
12. Cut gate at turn-around and follow access Rd SE. At junction eddy is on the left.

Auburn Narrows Park GRD-33.5

Position - Location: 47° 18.248', -122° 10.931' 47° 18' 14.9", -122° 10' 55.9" 47.30413, -122.18219 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using hand-launch workboat, secure end of 400ft length of boom to bank on river right near A (47.3043, -122.1815). Then extend boom SE ~315ft securing it to bank on river left near B (47.304, -122.1826). Deploy second 400ft segment of boom between C & D, and third 400 ft segment between E & F, in same manner as Points A & B, with ~30ft separation between boom segments. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

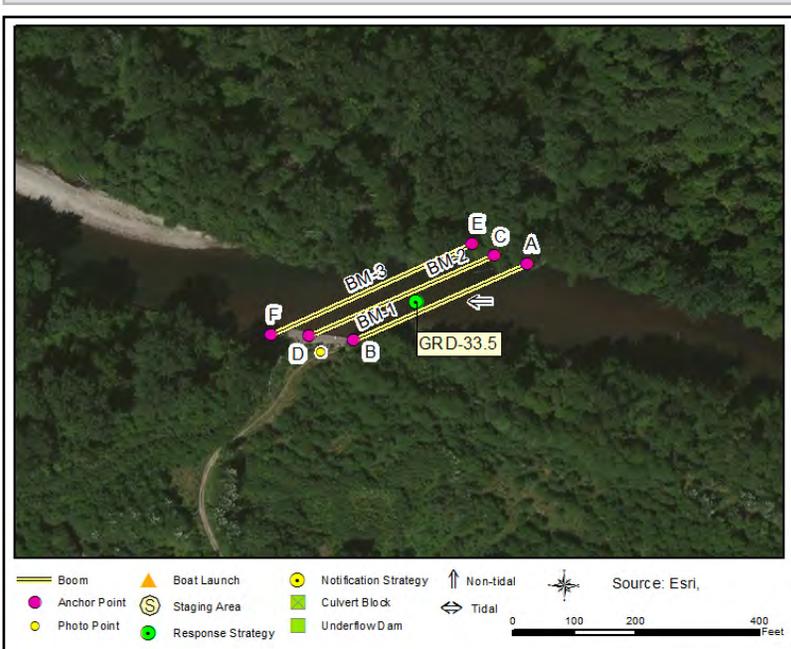
Staging Area: Remote: Rail crossing to access site. WDFW Soos Creek Boat Launch 0.3 mi upstream. Could hand-launch at bank in low water.

Site Safety: SHERIFF ESCORT REQUIRED. Violent crimes in area. Impassable log jam downstream 0.5 mi. Slips, trips, falls. Woody debris in channel.

Field Notes: Alert BNSF that staff & equipment will be crossing at trail entrance. Watch for trains when entering/leaving site. Bank may disappear in high water. Be aware of fishermen on banks and homeless camping in park.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Waterfowl Concentrations, Wetlands



Recommended Equipment

| | | |
|------|------|--------------------------------------|
| 6 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 1200 | Feet | Boom - B3 (River Boom) or equivalent |
| 400 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

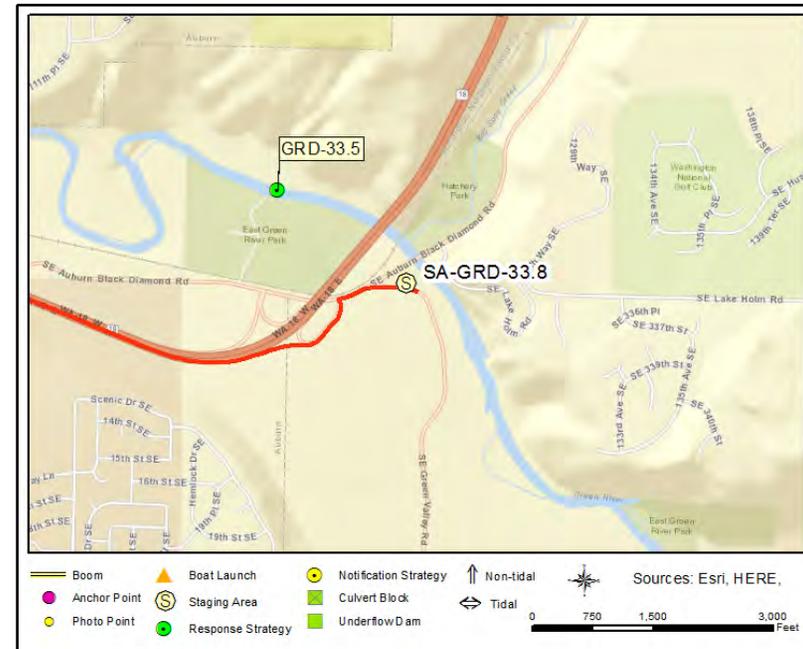
| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

Auburn Narrows Park

GRD-33.5



GRD-33.5 Photo: Looking upstream NE from bank on river left. Photo taken at 1000 cfs/54.5 ft (downstream gage)



Site Contact

Burlington Northern Santa Fe Railroad
 Pre-Notification Required :
 800-832-5452

King County Parks and Recreation
 Land/Property Contact :
 206-296-8100

Nearest Address

12334 SE Green Valley Rd
 Auburn, WA 98092

Driving Directions

Directions to WDFW Soos Creek boat launch/staging area:

1. From I-5, take exit 142A to merge onto WA-18 E toward Auburn.
2. Drive 6.2 miles to the Auburn-Black Diamond Rd exit.
3. Take ramp right toward Black Diamond.
4. Turn right onto SE Auburn Black Diamond Rd.
5. In 300 feet take the next right onto SE Green Valley Rd.
6. In 350 feet the boat launch is on your left.

From WDFW Soos Creek launch/staging area to site:

1. Turn right out of boat launch onto SE Green Valley Rd. (400 ft)
2. Turn left onto SE Auburn Black Diamond Rd (0.4 mi)
3. Turn right at private BNSF crossing across from Park & Ride entrance.
4. Cut gate (notify BNSF first), use caution while crossing active tracks and drive N 0.2 mi to river.

Mosby Farms GRD-34.4

Position - Location: 47° 17.621', -122° 10.063' 47° 17' 37.2", -122° 10' 3.8" 47.29368, -122.16772 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using hand-launch workboat, secure end of 400ft length of boom to bank on river right near A (47.2939, -122.1664). Extend boom SW ~335 ft, securing it to bank on river left near B (47.2935, -122.1676). Deploy second and third segments of 400 ft boom between C & D, and E & F, in same manner as A & B, with 30ft to 60ft separation between boom segments. Adjust as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Small dirt/grass area at end of dirt road. WDFW fish counting station/boat stored onsite.

Site Safety: Beehives in area. Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: Road owned by Mosby Farm but WDFW keeps seasonal screw trap on site. Hand-launch from bank. Large sandbar across on river right often has central channel. Adjust boom and anchors as needed.

Watercourse: River - Below a Dam - Low flow July - Sept. Sandbar and channel braiding will change with water level and time.

Resources at Risk: Downstream Resources, Salmon Habitat, Waterfowl Concentrations, Wetlands



Recommended Equipment

| | | |
|------|------|--------------------------------------|
| 6 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 1200 | Feet | Boom - B3 (River Boom) or equivalent |
| 1200 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

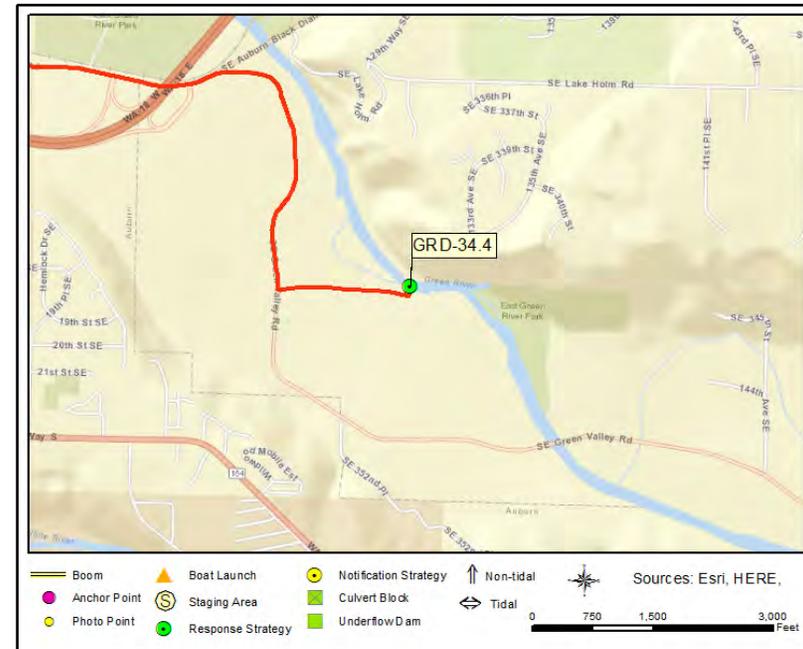
| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

Mosby Farms

GRD-34.4



GRD-34.4 Photo: Looking N from river left bank just downstream of WDFW counting station. Photo taken at 1000 cfs/54.5 height.



Site Contact

Mosby Farms
 Private Owner : Land owner
 253-939-7666

King County Parks and Recreation
 Emergency Contact :
 206-296-8100

Nearest Address

12586 SE Green Valley Rd
 Auburn, WA 98092

Driving Directions

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.91 miles)
4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
5. Take ramp on the right to 15th St Nw (0.28 miles)
6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
7. Continue on Harvey Rd (0.53 miles)
8. Continue on M St NE (0.69 miles)
9. Turn left on 3rd St SE (0.25 miles)
10. Turn right on R St SE (0.06 miles)
11. Bear left on SE Auburn Black Diamond Rd (1.5 miles)
12. Bear right (0.05 miles)
13. Continue on SE Green Valley Rd (0.51 miles)
14. Turn left and cut gate for access to Mosby Brothers Farms access road.
15. Follow farm road for 0.3 miles to WDFW equipment.

Whitney Bridge High Water GRD-41.4

Position - Location: 47° 16.940', -122° 3.299' 47° 16' 56.4", -122° 3' 17.9" 47.28233, -122.05498 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using workboat, secure end of 400 ft section of boom on river left near A (47.2819, -122.0543). Adjust anchor as required by sandbars or flow speed. Extend boom ~360 ft NW to upstream edge of boat launch on river right and secure near B (47.2826, -122.0552). Secure 100 ft section of boom at B and extend east along bank to create collection pocket. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Stage in parking lot on NW side of road; use boat launch across street

Site Safety: Car traffic between parking and launch. Popular boat launch. Very shallow in low water. Pilings on river left. Slips, trips, falls. Vegetation

Field Notes: Collection is only feasible if water is above average. Large cobbles bankside in low water. Pilings on river left may be hidden in high water.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Salmon Habitat, Wetlands



Recommended Equipment

| | | |
|-----|------|--|
| 3 | Each | Anchoring System(s)- Shoreside |
| 500 | Feet | Boom - B3 (River Boom) or equivalent |
| 500 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Workboat(s) - of adequate size for type and amount of boom |

Recommended Personnel

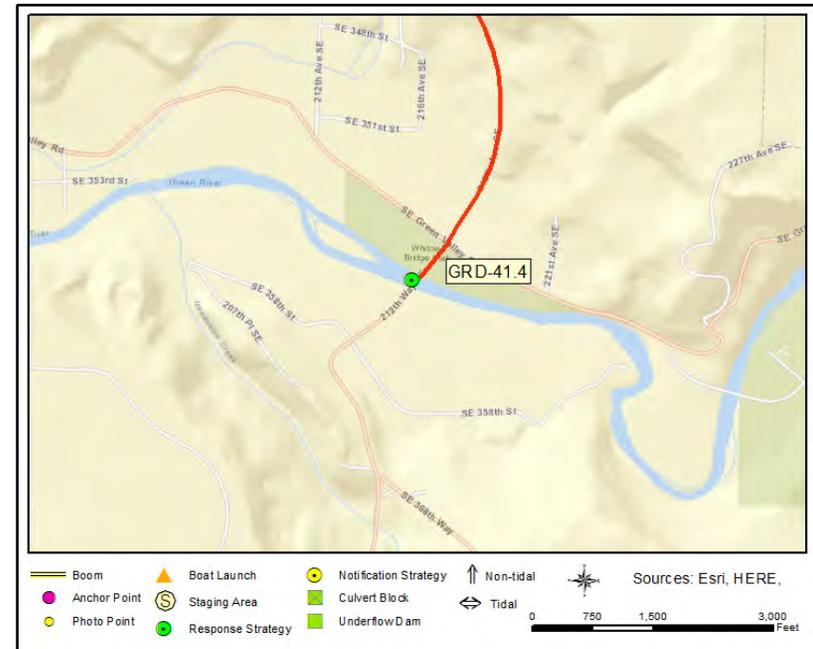
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

Whitney Bridge High Water

GRD-41.4



GRD-41.4 Photo: Upstream of Whitney Bridge on river right looking SE during low water in July (370 cfs/53.4 ft at Auburn gage).



Site Contact

King County Parks and Recreation
 Land/Property Owner :
 201 S. Jackson Street, # 700
 Seattle, WA 98104
 206-296-8100

Nearest Address

35628 212th Way SE
 Auburn, WA 98092

Driving Directions

1. From I-5 in Seattle head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (8.94 miles)
4. Turn right on 152nd Ave SE (0.76 miles)
5. Continue on Kent Black Diamond Rd SE (3.18 miles)
6. Continue on SE Auburn Black Diamond Rd (2.75 miles)
7. Turn right on 218th Ave SE (1.37 miles)
8. Bear right on 212th Way SE (0.11 miles)
9. Just past the intersection on SE Green Valley Rd, before the bridge, turn right for staging area or left for boat launch.

Whitney Bridge GRD-41.5

Position - Location: 47° 16.921', -122° 3.226' 47° 16' 55.2", -122° 3' 13.6" 47.28201, -122.05377 Auburn

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using workboat, secure end of 400 ft section of boom on river left near A (47.2817, -122.0534). Adjust anchor as required by sandbars or flow speed. Extend boom ~360 ft NW to upstream edge of boat launch on river right and secure near B (47.2824, -122.0544). Secure 100 ft section of boom at B and extend east along bank to create collection pocket. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Parking area on NW side of road has portable restroom and parking. Keta Creek Hatchery nearby for other facilities.

Site Safety: Car traffic. Popular boat launch. Very shallow in low water. Pilings on river left. Slips, trips, falls. Brambles on bank.

Field Notes: In low water, motorized boat may not be an option. Large cobbles bankside in low water. Pilings on river left may be hidden in high water.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Riparian Area, Salmon Habitat, Wetlands



Recommended Equipment

| | | |
|-----|------|--|
| 3 | Each | Anchoring System(s)- Shoreside |
| 500 | Feet | Boom - B3 (River Boom) or equivalent |
| 500 | Feet | Line - 3/8" poly line |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Workboat(s) - of adequate size for type and amount of boom |

Recommended Personnel

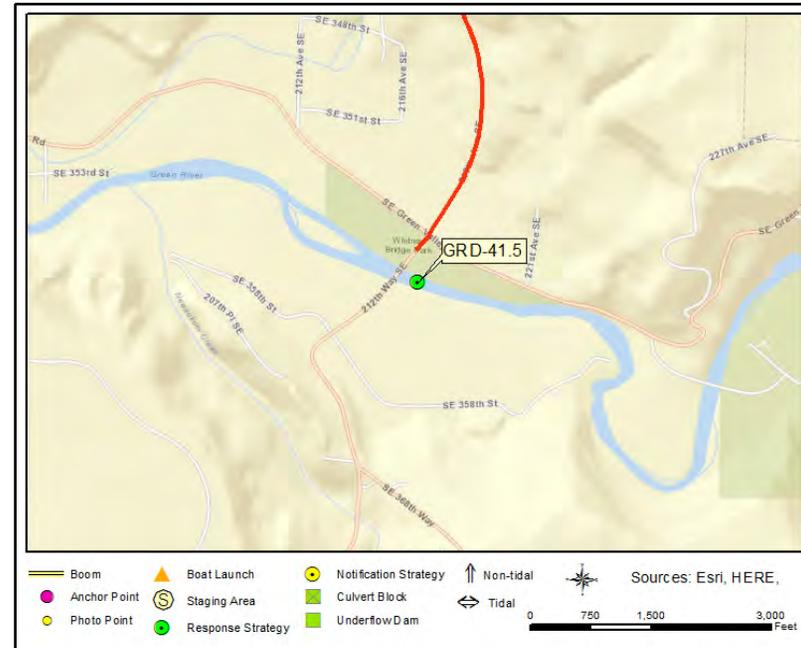
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

Whitney Bridge

GRD-41.5



GRD-41.5 Photo: From bottom of Whitney Bridge boat launch on river right looking S during low water in July (370 cfs/53.4 ft at Auburn gage).



Site Contact

King County Parks and Recreation
 Land/Property Owner :
 201 S. Jackson Street, # 700
 Seattle, WA 98104
 206-296-8100

Nearest Address

35628 212th Way SE
 Auburn, WA 98092

Driving Directions

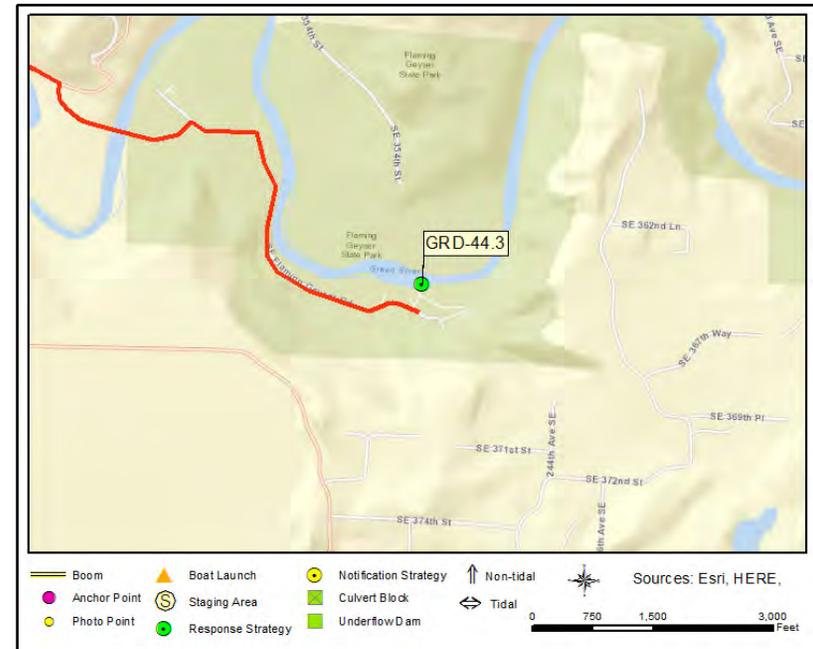
1. From I-5 in Seattle head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (8.94 miles)
4. Turn right on 152nd Ave SE (0.76 miles)
5. Continue on Kent Black Diamond Rd SE (3.18 miles)
6. Continue on SE Auburn Black Diamond Rd (2.75 miles)
7. Turn right on 218th Ave SE (1.37 miles)
8. Bear right on 212th Way SE (0.11 miles)
9. Just past the intersection on SE Green Valley Rd, before the bridge, turn right for staging area or left for boat launch.

Flaming Geyser State Park

GRD-44.3



GRD-44.3 Photo: Looking NE from C, eddy closest to geyser and furthest upstream on river left. 1000cfs at Auburn gage, 2.5 knots.



Site Contact

Washington State Parks and Recreation Commission
 Primary Contact : Tahoma Gateway
 23700 SE Flaming Geyser Rd
 Auburn, WA 98092
 360-902-8844

Nearest Address

23898 SE Flaming Geyser Rd
 Auburn, WA 98092

Driving Directions

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (8.94 miles)
4. Turn right on 152nd Ave SE (0.76 miles)
5. Continue on Kent Black Diamond Rd SE (3.18 miles)
6. Continue on SE Auburn Black Diamond Rd (2.75 miles)
7. Turn right on 218th Ave SE (1.37 miles)
8. Turn left on SE Green Valley Rd (0.59 miles)
9. Turn right on SE Flaming Geyser Rd (0.21 miles)
10. Follow road to office and parking area at end.

Kanaskat-Palmer State Park Group Camp

GRD-57.0

Position - Location: 47° 19.106', -121° 53.790' 47° 19' 6.4", -121° 53' 47.4" 47.31844, -121.89650 Ravensdale

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish

Implementation: Using hand-launch workboat, secure end of 300ft length of boom to bank on river right near A (47.3182, -121.8958). Extend boom W ~250 ft, securing it to bank on river left near B (47.3185, -121.8968). Deploy second and third segments of 300 ft boom between C & D, in same manner as A & B, adjusting anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Group camp has parking, flush toilets, water. Hand-carry or ATV 250 ft trail to site with logs/stairs.

Site Safety: Class IV and V rapids just downstream, then 5 miles of gorge. Unpaved trail. Slips, trips and falls.

Field Notes: Fast shallow water and rapids. Hand-launch kayak at site. 250 ft unpaved trail from staging area.

Watercourse: River - Below a Dam - Low flow July - Sept. Class II and IV rapids downstream.

Resources at Risk: Downstream Resources, Fish Hatchery, Harlequin Ducks, Riparian Area, Salmon Habitat, State Park, Water Intakes, Wetlands



Recommended Equipment

| | | |
|-----|------|---|
| 4 | Each | Anchoring System(s)- Shoreside |
| 600 | Feet | Boom - B3 (River Boom) or equivalent |
| 500 | Feet | Line - 3/8" poly line |
| 1 | Each | Skimmer (appropriately sized) with Portable Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

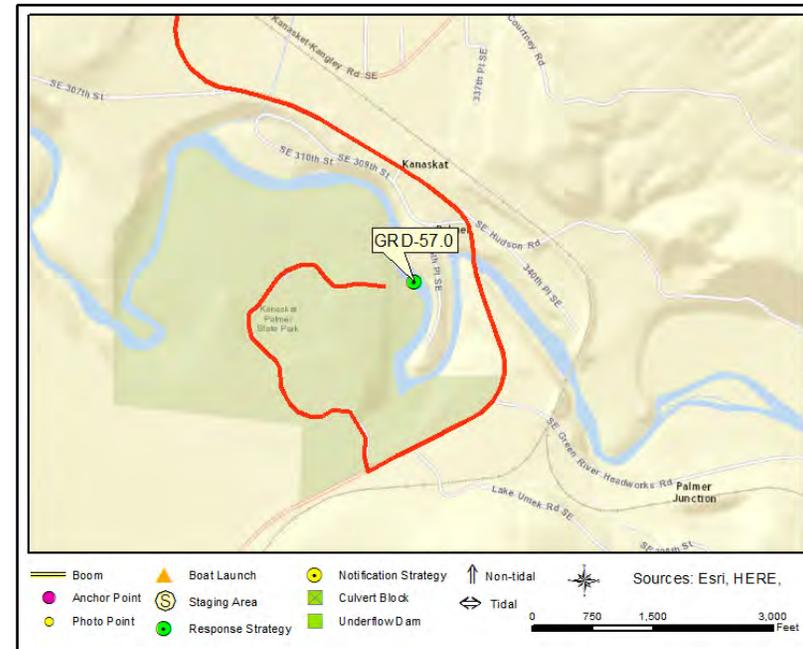
| | |
|---|---------------|
| 1 | Boat Operator |
| 2 | Laborer |
| 1 | Supervisor |

Kanaskat-Palmer State Park Group Camp

GRD-57.0



GRD-57.0 Photo: Looking NW downstream on river left at Kanaskat-Palmer group camp water access.



Site Contact

Washington State Parks and Recreation Commission
 Primary Contact : Tahoma Gateway
 23700 SE Flaming Geyser Rd
 Auburn, WA 98092
 360-902-8844

Nearest Address

32130 Cumberland Kanaskat Rd SE
 Ravensdale, WA 98051

Driving Directions

1. From I-5 in Seattle, head south towards exit 154A.
2. At exit 154A take ramp on the left and go on I-405 N toward Renton (3.8 miles)
3. At exit 4 take ramp on the right to WA-169 S toward Bronson Way/W/Maple Valley/Enumclaw (0.09 miles)
4. Take ramp to WA-169 S toward Maple Valley/Enumclaw (0.26 miles)
5. Bear right on WA-169 (Maple Valley Hwy) (13.72 miles)
6. Turn left on SE Kent Kangley Rd (3.42 miles)
7. Turn right on Retreat-Kanaskat Rd SE (Retreat Kanasket Rd SE) (1.11 miles)
8. Bear right (0.03 miles)
9. Bear right on Cumberland Kanaskat Rd SE (Cumberland Kanasket Rd SE) (1.76 miles)
10. Turn right into Kanaskat-Palmer State Park. (0.5 miles)
11. Take the first right towards Group Camp (0.5 miles).
12. Park and stage at group camp parking area.

Sandy Beach GRD-59.1

Position - Location: 47° 18.802', -121° 52.205' 47° 18' 48.1", -121° 52' 12.3" 47.31337, -121.87008 Ravensdale

Strategy Objective: Collection : Collect oil moving downstream on Green/Duwamish.

Implementation: Using kayak/canoe or line throwing device, secure end of 200ft length of line to north bank on river right near A (47.3135, -121.87), on downstream end of creek mouth. Extend line ~165 ft SW to river left and secure near B (47.3131, -121.8703). Use power winch to deploy boom. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Area is only used by recreation and Tacoma Power. Stage at Powerline Rd or parking at Tacoma entrance.

Site Safety: Fast shallow water. Downstream rapids. Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: Hand-launch from bank. Short footpath from road. Potential emergency access to north bank from private property at end of SE Hudson Rd.

Watercourse: River - Below a Dam - Low flow July - Sept. Rapids in area. Whitewater just upstream.

Resources at Risk: Downstream Resources, Fish Hatchery, Salmon Habitat, Waterfowl, Wetlands



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 2 | Each | Anchoring System(s)- Shoreside |
| 200 | Feet | Boom - B3 (River Boom) or equivalent |
| 1 | Each | Line throwing gun(s) or device(s) |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Winch - Power Winch |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

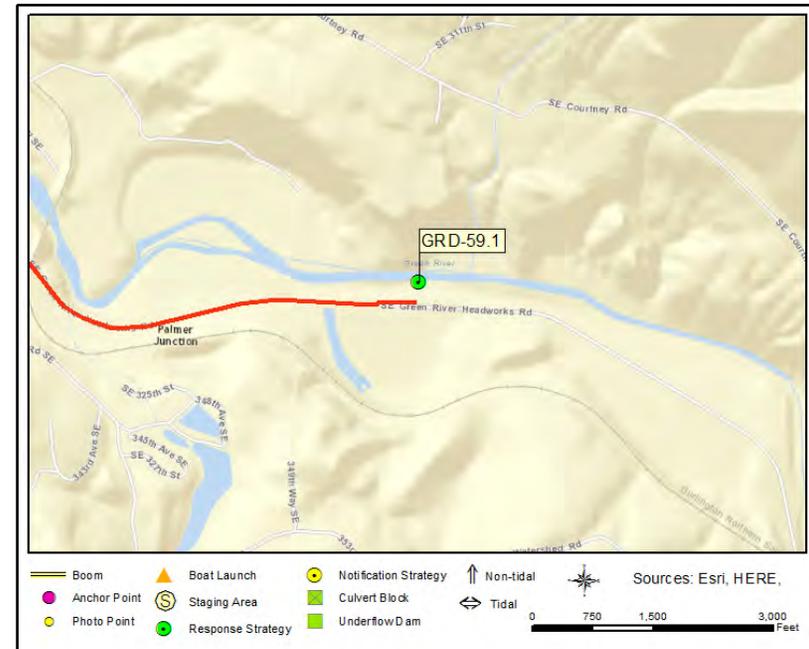
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

Sandy Beach

GRD-59.1



GRD-59.1 Photo: Looking NE upriver from river left at creek mouth.



Site Contact

Tacoma Water
 Emergency Contact : Green River Water Treatment Facility
 36932 SE Green River Headworks Rd
 Ravensdale, WA 98051
 253-502-8346

Nearest Address

34988 SE Green River Headworks Rd
 Ravensdale, WA 98051

Driving Directions

1. From I-5 in Seattle, head S to exit 142A.
2. At exit 142A, take ramp right for WA-18 East toward Auburn.
3. In 11.3 miles, take exit ramp right for WA-516 East toward Covington.
4. Turn right onto WA-516 E / SE 272nd St.
5. In 4.8 miles, turn right onto Retreat-Kanaskat Rd SE (sign for Kanaskat).
6. In 3.1 miles, turn right onto Cumberland Kanaskat Rd SE (sign for Kanaskat-Palmer State Park).
7. In 1.5 miles, turn left onto SE Green River Headworks Rd (sign for Tacoma Water).
8. The site is 1.1 miles down on the left. Stage on parallel dirt road or continue straight to parking and security at Tacoma Water Filtration Plant.

Tacoma Water Diversion Dam GRD-61.0

Position - Location: 47° 18.030', -121° 50.406' 47° 18' 1.8", -121° 50' 24.4" 47.30049, -121.84010 Ravensdale

Strategy Objective: Collection : Protect public water intake. Remove oil from river.

Implementation: On river left downstream of bridge, descend to bank and secure 250 ft of line near A (47.3003, -121.8405). Walk line across bridge and secure near B (47.3005, -121.8397). Use power winch to deploy boom. Deploy second 200 ft section of boom between C & D using same process. Use sorbent boom to line downstream side of BM-2 and water intake. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Roadside pull-off at bridge and paved parking at collection site.

Site Safety: Radio-controlled road, coordinate with Tacoma Water/Howard Hanson security. Slips, trips, falls. Vegetation and blackberry brambles or

Field Notes: Calm pool with swirling eddies above Tacoma Water diversion dam. Use caution near dam spillway.

Watercourse: River - Below a Dam - Low flow July - Sept. Banks may be difficult to access in high water. Tacoma Water may have boats & decon

Resources at Risk: Downstream Resources, Economic Resource, Habitat Restoration Site/Project, Public Health and Safety, Salmon Habitat, Water Intakes



Recommended Equipment

| | | |
|-----|------|---|
| 4 | Each | Anchoring System(s)- Shoreside |
| 450 | Feet | Boom - B3 (River Boom) or equivalent |
| 450 | Feet | Boom - Sorbent |
| 500 | Feet | Line - 3/8" poly line |
| 1 | Each | Machete(s) - (or other vegetation cutting tool) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

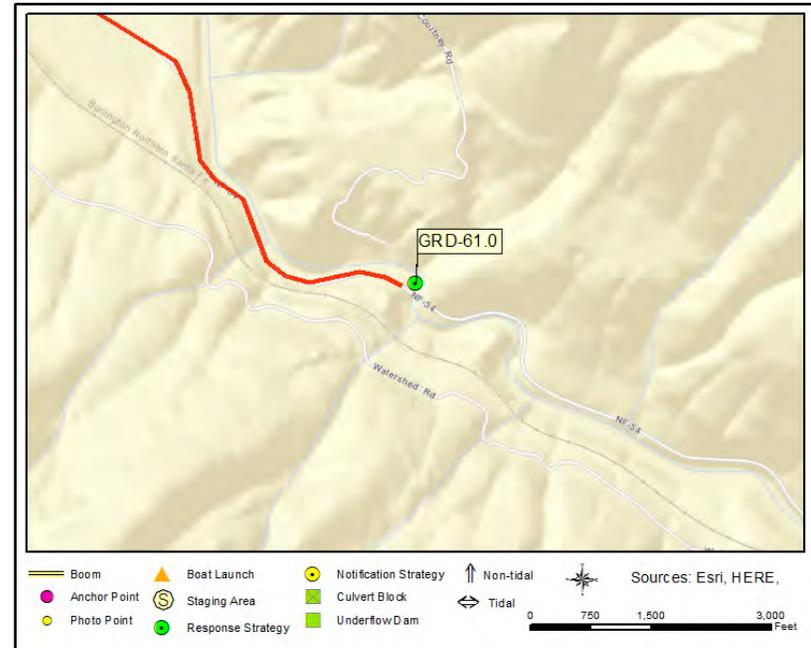
| | |
|---|------------|
| 2 | Laborer |
| 1 | Supervisor |

Tacoma Water Diversion Dam

GRD-61.0



GRD-61.0 Photo: Looking S upriver on river right from parking at Tacoma Water Diversion Dam.



Site Contact

Tacoma Water
 Emergency Contact : Green River Water Treatment Facility
 36932 SE Green River Headworks Rd
 Ravensdale, WA 98051
 253-502-8346

Nearest Address

36318 SE Green River Headworks Rd
 Ravensdale, WA 98051

Driving Directions

1. From I-5 in Seattle, head S to exit 142A.
2. At exit 142A, take ramp right for WA-18 East toward Auburn.
3. In 11.3 miles, take exit ramp right for WA-516 East toward Covington.
4. Turn right onto WA-516 E / SE 272nd St.
5. In 4.8 miles, turn right onto Retreat-Kanaskat Rd SE (sign for Kanaskat).
6. In 3.1 miles, turn right onto Cumberland Kanaskat Rd SE (sign for Kanaskat-Palmer State Park).
7. In 1.5 miles, turn left onto SE Green River Headworks Rd (sign for Tacoma Water).
8. Security checkpoint is 2 miles down. Remainder of road is radio-controlled. Coordinate access to site. Site is 1 mile past gate on left.

Mill Creek Carpinito Brothers Corn Maze MILL-1.6

Position - Location: 47° 21.339', -122° 14.892' 47° 21' 20.3", -122° 14' 53.5" 47.35564, -122.24820 Kent

Strategy Objective: Collection, Underflow Dam : Remove product from Mill Creek between Highway 167 and S 277th St

Implementation: DO NOT DEPLOY IN MID-SEPT TO OCT. Use boom and sorbent for initial containment. Use sandbags with PVC to create an underflow dam at this location. The creek is approximately 5' in width but will vary seasonally. Responders must receive Emergency Hydraulic Project Approval (HPA) permit from WDFW prior to using culvert blocks and underflow dams; call WDFW duty pager at 360-534-8233.

Staging Area: Onsite: Large parking area immediately adjacent. Some facilities across street at offices.

Site Safety: Road traffic, slips, trips and falls. Late Sept - Oct is children's event location.

Field Notes: Large parking lot leads to footbridge. Vegetation cleared seasonally.

Watercourse: Creek - Low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat



Recommended Equipment

| | | |
|-----|--------|--|
| 2 | Each | Anchoring System(s)- Shoreside |
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 200 | Feet | Boom - Sorbent |
| | Assort | Equipment (shovels, pickaxes, tamper bars, sledge hammers) |
| | Assort | Fill material (sand, earth, gravel, sandbags) |
| 10 | Each | Pipe(s), PVC (8 inch x 8ft) |
| 1 | Roll | Plastic Sheeting |
| 80 | Each | Sandbag(s) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

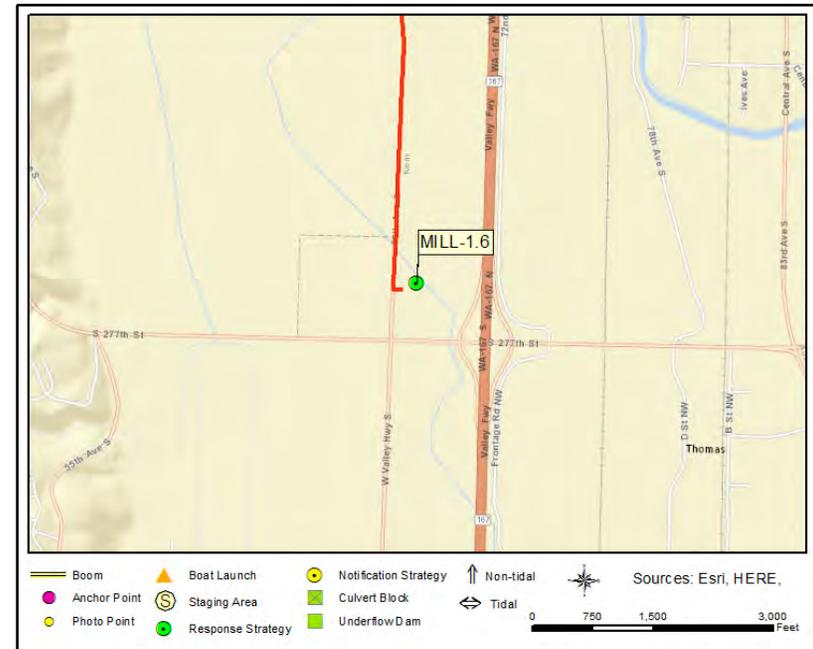
| | |
|---|------------|
| 3 | Laborer |
| 1 | Supervisor |

Mill Creek Carpinito Brothers Corn Maze

MILL-1.6



MILL-1.6 Photo: From parking lot, looking SE at footbridge over Mill Creek just downstream of Highway 167.



Site Contact

Carpinito Brothers, Inc.
 Private Owner : Owner
 1148 Central Ave N
 Kent, WA 98032
 253-854-5692

Nearest Address

27528 68th Ave S
 Kent, WA 98032

Driving Directions

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.84 miles)
4. Turn right on Washington Ave S (W Valley Hwy) (0.07 miles)
5. Continue on W Valley Hwy (68th Ave S) (1.5 miles)
6. Just before light at S 277th St, turn left into the event parking lot (may have to cut chains/ropes).
7. Stage in parking lot.

Mill Creek by Emerald Downs MILL-3.4

Position - Location: 47° 19.987', -122° 14.462' 47° 19' 59.2", -122° 14' 27.7" 47.33312, -122.24103 Auburn

Strategy Objective: Underflow Dam : Contain and recover product on Mill Creek upstream of 29th St NW bridge

Implementation: Use boom and sorbent for initial containment. Use sandbags with PVC to create an underflow dam on upstream end of crossing or as conditions dictate. The creek is approximately 4' in width but will vary seasonally. Responders must receive Emergency Hydraulic Project Approval (HPA) permit from WDFW prior to using culvert blocks and underflow dams; call WDFW duty pager at 360-534-8233.

Staging Area: Onsite: Best access from M St NW off 15th. 29th St is closed, use road for staging.

Site Safety: Rail crossing nearby. Slips, trips, falls. Vegetation and blackberry brambles on bank.

Field Notes: Empty lot/abandoned farm. Low flowing drainage under closed road. Wetland-like mud and vegetation off road.

Watercourse: Creek - Storm drainage; low flow July - Sept

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Salmon Habitat



Recommended Equipment

| | | |
|-----|--------|--|
| 2 | Each | Anchoring System(s)- Shoreside |
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent |
| | Assort | Equipment (shovels, pickaxes, tamper bars, sledge hammers) |
| | Assort | Fill material (sand, earth, gravel, sandbags) |
| 8 | Each | Pipe(s), PVC (8 inch x 8ft) |
| 1 | Roll | Plastic Sheeting |
| 60 | Each | Sandbag(s) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

| | |
|---|------------|
| 3 | Laborer |
| 1 | Supervisor |

Newaukum Creek at 424th

NWKC-6.4

Position - Location: 47° 13.268', -122° 1.941' 47° 13' 16.1", -122° 1' 56.5" 47.22113, -122.03235 Enumclaw

Strategy Objective: Collection : Collect oil moving downstream on Newaukum Creek

Implementation: Anchor 100-ft section of boom near A (47.2211, -122.0322). Throw heaving line across stream and extend boom NW across creek to anchor downstream near B (47.2212, -122.0325). Create collection pocket by angling boom a few feet upstream to C. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

Staging Area: Onsite: Small space to pull off road; use nearby driveways/fields.

Site Safety: Road traffic; overgrown vegetation; slips, trips, falls; livestock

Field Notes: Upstream field has irrigation ditches & deep mud; downstream is front yard but easy slope past vegetation.

Watercourse: Creek - Newaukum Creek

Resources at Risk: Downstream Resources, Habitat Restoration Site/Project, Salmonids, Waterfowl, Wetlands



Recommended Equipment

| | | |
|-----|------|---|
| 2 | Kit | Anchoring System(s) - (anchor, lines, floats) |
| 2 | Kit | Anchoring System(s)- Shoreside |
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 1 | Each | Heaving Line(s) |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

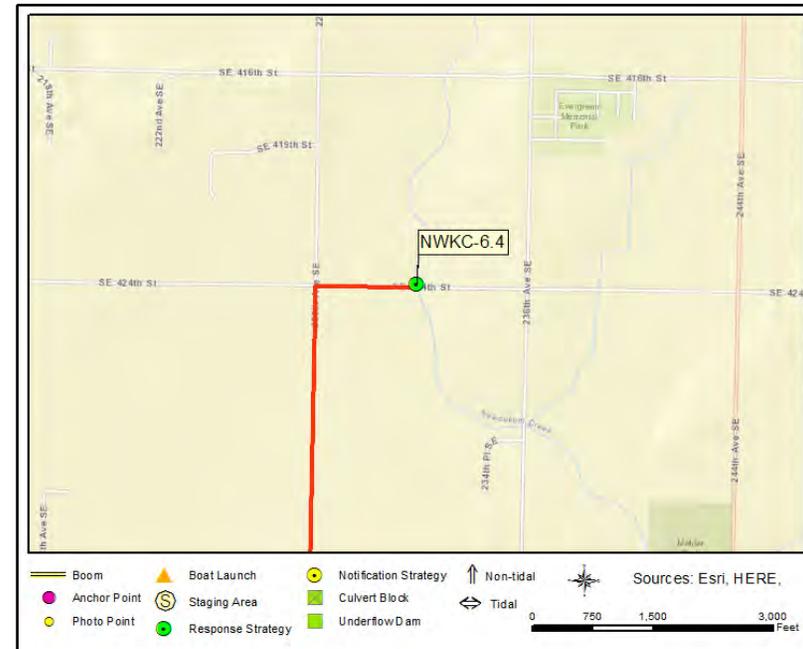
| | |
|---|------------|
| 2 | Laborer |
| 1 | Supervisor |

Newaukum Creek at 424th

NWKC-6.4



NWKC-6.4 Photo: From SE 424th St bridge, looking downstream at Newaukum Creek. Taken early May, 18 cfs at Newaukum gage.



Site Contact

No Information
Private Owner :

Nearest Address

23094 SE 424th St
Enumclaw, WA 98022

Driving Directions

1. From I-5 in Seattle, head south to exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.9 miles)
4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
5. Take ramp on the right to 15th St Nw (0.28 miles)
6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
7. Continue on Harvey Rd (0.53 miles)
8. Continue on M St NE (1.46 miles)
9. Turn left on WA-164 (Auburn Way S) (11.06 miles)
10. Turn left on 228th Ave SE (0.75 miles)
11. Turn right on SE 424th St (0.25 miles)
12. Finish at 23094 SE 424th St, 98022, on the left

Newaukum Creek at 248th

NWKC-7.9

Position - Location: 47° 12.832', -122° .655' 47° 12' 49.9", -122° 0' 39.3" 47.21386, -122.01092 Enumclaw

Strategy Objective: Sorbent, Underflow Dam : Collect oil moving downstream on Newaukum Creek

Implementation: Use sorbent for initial containment. If time allows, use sandbags with PVC to create an underflow dam at this location. Responders must receive Emergency Hydraulic Project Approval (HPA) permit from WDFW prior to using culvert blocks and underflow dams; call WDFW duty pager at 360-534-8233.

Staging Area: Onsite: Driveways/yards next to site. Partial shoulder. Quiet road.

Site Safety: Road hazard; slips, trips, falls; overgrown vegetation

Field Notes: Well maintained yards with low banks on roadside

Watercourse: Creek - Newaukum Creek

Resources at Risk: City Park, Downstream Resources, Habitat Restoration Site/Project, Salmonids, Waterfowl, Wetlands



Recommended Equipment

| | | |
|-----|---------|--|
| 2 | Kit | Anchoring System(s)- Shoreside |
| 100 | Feet | Boom - Sorbent |
| | Assort | Equipment (shovels, pickaxes, tamper bars, sledge hammers) |
| | Assort | Fill material (sand, earth, gravel, sandbags) |
| | Unknown | Pipe(s), PVC (8 inch x 8ft) |
| 1 | Each | Vac Truck or Skimmer and Storage (if collection) |

Recommended Personnel

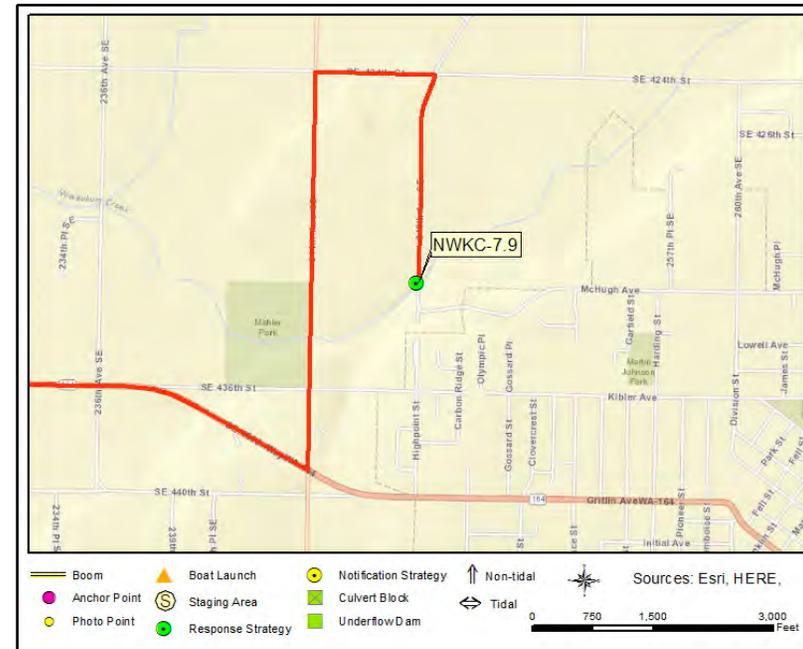
| | |
|---|------------|
| 4 | Laborer |
| 1 | Supervisor |

Newaukum Creek at 248th

NWKC-7.9



NWKC-7.9 Photo: From 248th Ave SE bridge looking SW upstream at Newaukum Creek. Taken early May, 18 cfs at Newaukum gage.



Site Contact

No Information

Private Owner :

Nearest Address

43109 248th Ave SE
Enumclaw, WA 98022

Driving Directions

1. From I-5 in Seattle, head south to exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (2.9 miles)
4. Turn right onto ramp and go on WA-167 S toward Auburn (3.59 miles)
5. Take ramp on the right to 15th St Nw (0.28 miles)
6. Turn left on 15th St NW toward Auburn Way (1.17 miles)
7. Continue on Harvey Rd (0.53 miles)
8. Continue on M St NE (1.46 miles)
9. Turn left on WA-164 (Auburn Way S) (12.1 miles)
10. Turn left on 244th Ave SE (0.95 miles)
11. Turn right on SE 424th St (0.28 miles)
12. Make sharp right on 252nd Way SE (0.09 miles)
13. Continue on 248th Ave SE (0.41 miles)
14. Finish at 43109 248th Ave SE, 98022, on the right

Springbrook Creek at SW 7th St SPBC-1.1

Position - Location: 47° 28.342', -122° 14.184' 47° 28' 20.5", -122° 14' 11.0" 47.47237, -122.23640 Renton

Strategy Objective: Collection : Remove product from Springbrook Creek.

Implementation: Using hand-launch workboat, secure one end of 100ft length of boom to shore near Point A (47.4722, -122.2362). Then extend boom ~100ft NE and secure remaining boom end to opposite shore at/near Point B (47.472498, -122.23615). Deploy second 100ft segment of boom between Points C & D in same manner as Points A & B, with ~30ft separation between boom segments. Adjust anchor points and angles as needed for conditions. Use anchoring systems to keep boom secure in water. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore.

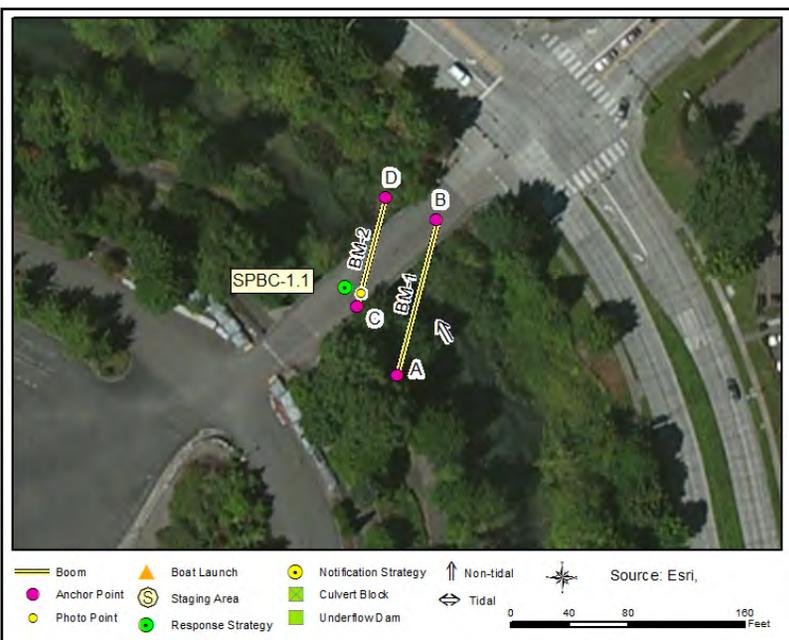
Staging Area: Onsite: Alert King County South Plant Main Control Center before arrival, use parking lot to stage.

Site Safety: Slips, trips falls. Vegetation and blackberry brambles on bank.

Field Notes: Alert King County South Plant Main Control Center before arrival to prevent security alert. Hand-launch small boat/raft from trail.

Watercourse: Creek - Low flow July - Sept

Resources at Risk: Bald Eagle Nesting, Estuary Resources, Great Blue Heron Rookeries, Pump Station, Salmon Habitat, Wetland Habitat



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 4 | Each | Anchoring System(s)- Shoreside |
| 200 | Feet | Boom - B3 (River Boom) or equivalent |
| 1 | Each | Vac Truck or Skimmer and Storage |
| 1 | Each | Workboat(s) - (hand-launch) |

Recommended Personnel

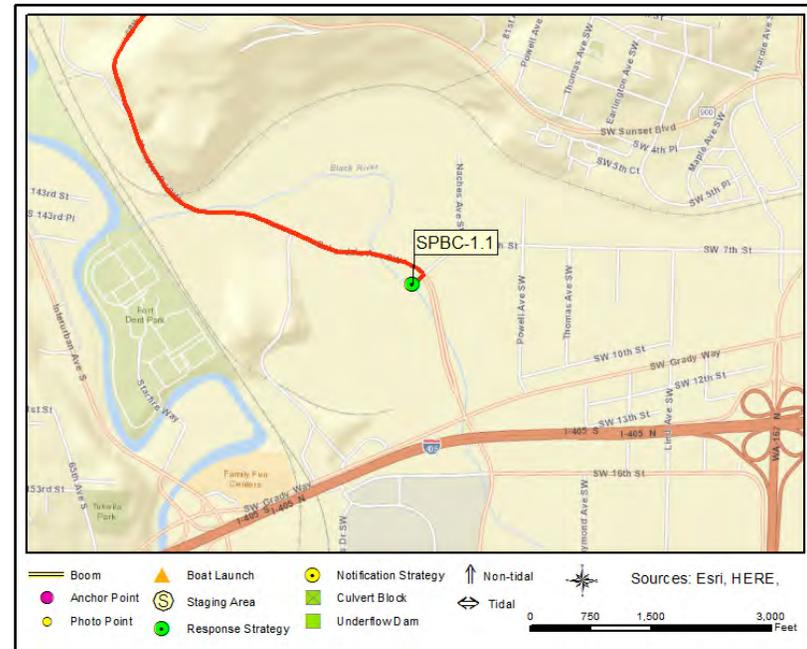
| | |
|---|---------------|
| 1 | Boat Operator |
| 1 | Laborer |
| 1 | Supervisor |

Springbrook Creek at SW 7th St

SPBC-1.1



SPBC-1.1 Photo: Looking NE from Springbrook trail under SW 7th St entrance to King County South Treatment Plant.



Site Contact

King County Wastewater South Plant Main Control Center
 Land/Property Owner : Emergency contact
 1200 Monster Road SW
 Renton, WA 98057
 206-263-1760

Nearest Address

699 Oakesdale Ave SW
 Renton, WA 98057

Driving Directions

1. Take I-5 S from Seattle
2. Go south on I-5 to exit 157
3. At exit 157 take ramp on the right to WA-900 E/M L King Way (0.2 miles)
4. Continue on WA-900 (Martin Luther King Jr Way S) (1.81 miles)
5. Turn right on 68th Ave S (0.39 miles)
6. Continue on Monster Rd SW (0.52 miles)
7. Continue on Oakesdale Ave SW (0.33 miles)
8. Turn right at the light at SW 7th St towards the King County South Treatment Plant

Springbrook Creek at Grady Way SPBC-1.4

Position - Location: 47° 28.079', -122° 14.055' 47° 28' 4.7", -122° 14' 3.3" 47.46798, -122.23425 Renton

Strategy Objective: Collection : Collect oil moving downstream on Springbrook Creek.

Implementation: Secure one end of 100ft length of boom to shore near Point A (47.468, -122.2345). Extend boom ~75ft NE and secure remaining boom end to opposite shore at/near Point B (47.4681, -122.2342). Deploy length of sorbent boom between B3 boom and culvert during high flow. Adjust anchor points and angles as needed for conditions. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Use anchoring systems to keep boom secure in water.

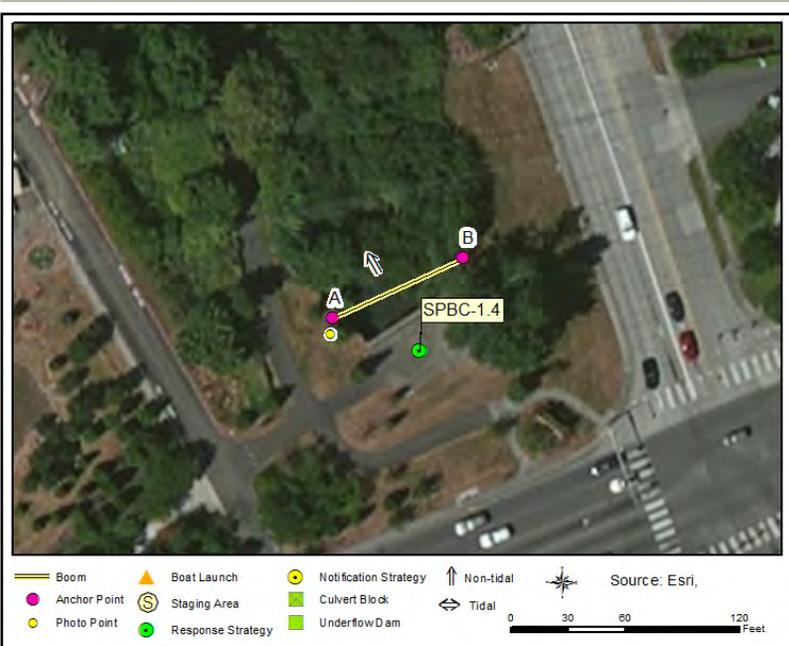
Staging Area: Onsite: Fire access road is not used. Can stage on road or in parking area or cut bollards to trail.

Site Safety: Slips, trips falls. Vegetation and large woody debris on bank and in channel.

Field Notes: Notify King County South Main Control Center to avoid security alert.

Watercourse: Creek - Low flow July - Sept

Resources at Risk: Bald Eagle Nesting, Estuary Resources, Freshwater Wetlands, Great Blue Heron Rookeries, Salmon Habitat



Recommended Equipment

| | | |
|-----|------|--------------------------------------|
| 2 | Each | Anchoring System(s)- Shoreside |
| 1 | Each | Bolt Cutters |
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent |
| 1 | Each | Vac Truck or Skimmer and Storage |

Recommended Personnel

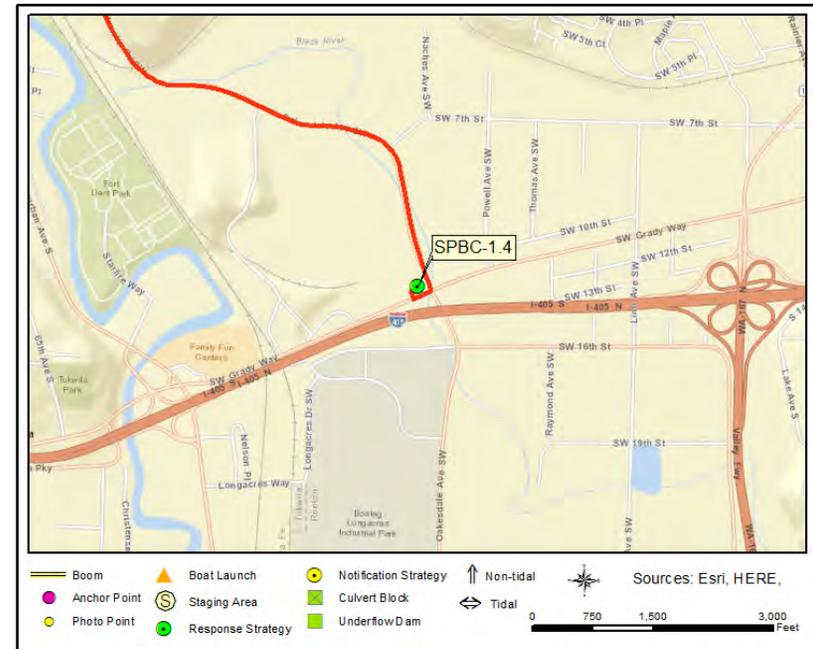
| | |
|---|------------|
| 1 | Laborer |
| 1 | Supervisor |

Springbrook Creek at Grady Way

SPBC-1.4



SPBC-1.4 Photo: Looking E at Springbrook Creek culvert entrance just downstream of SW Grady Way and I-405.



Site Contact

King County Wastewater South Plant Main Control Center
 Land/Property Owner : Emergency contact
 1200 Monster Road SW
 Renton, WA 98057
 206-263-1760

Nearest Address

1362 SW Grady Way
 Renton, WA 98057

Driving Directions

1. Take I-5 South from Seattle.
2. Go south on I-5 toward exit 157 in Renton
3. At exit 157 take ramp on the right to WA-900 E/M L King Way (0.2 miles)
4. Continue on WA-900 (Martin Luther King Jr Way S) (1.81 miles)
5. Turn right on 68th Ave S (0.39 miles)
6. Continue on Monster Rd SW (0.52 miles)
7. Continue on Oakesdale Ave SW (0.69 miles)
8. Turn right on SW Grady Way (0.07 miles)
9. Take the first right into the fire access road. Block road as needed, cut bollards to trail, or use parking turnaround.

APPENDIX 4B
Notification Strategy 2-Pagers

NOTIFICATION STRATEGIES – LIST

BLKR-0.3-N

BSOO-1.0-N

CRSP-1.2-N

GRD-37.9-N

GRD-42.0-N

GRD-59.8-N

GRD-64.6-N

Black River Pump Station **BLKR-0.3-N**

Position - Location: 47° 28.500', -122° 14.712' 47° 28' 30.0", -122° 14' 42.7" 47.47499, -122.24520 Renton

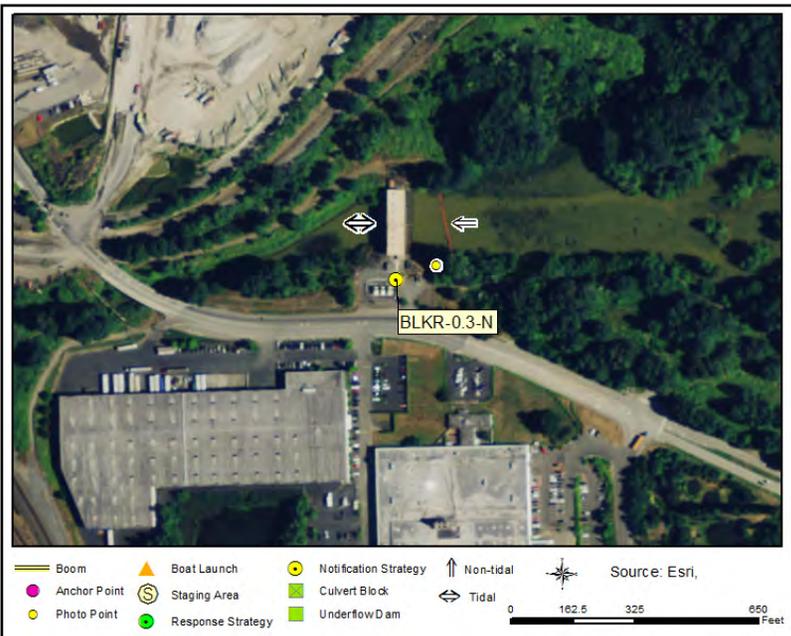
Strategy Objective: Notification : Stop flow of water to/from Black River and Springbrook Creek

Implementation: Call King County South Plant Control Center at 206-263-1760. Inform them of the situation and request that flow at the Black River Pump Station be adjusted or stopped.

Field Notes: Pump Station is unstaffed but control center is nearby and can send staff to site.

Watercourse: Freshwater Wetland - Riparian area with flow from Springbrook/Mill Creek

Resources at Risk: Bald Eagle Nests, Estuary Resources, Habitat Restoration Site/Project, Heron Rookeries, Pump Station, Waterfowl Use Area



Communication Process and Action:

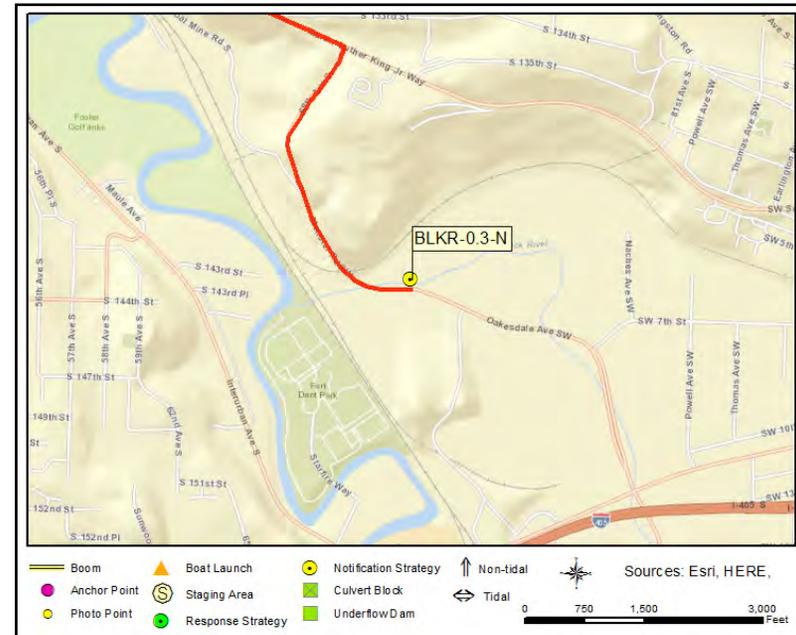
Call King County South Plant Control Center at 206-263-1760. Inform them of the situation and request that flow at the Black River Pump Station be adjusted or stopped.

Black River Pump Station

BLKR-0.3-N



BLKR-0.3-N Photo: King County Black River Pump Station, from south bank looking north, upstream of pump station. Black River Riparian forest to the right on the photo.



Site Contact

King County Wastewater South Plant Main Control Center
 Emergency Contact : Emergency contact
 1200 Monster Road SW
 Renton, WA 98057
 206-263-1760

Nearest Address

550 Monster Rd SW
 Renton, WA 98057

Driving Directions

1. Start at I 5 Seattle
2. Go southeast on I-5 toward exit 157
3. At exit 157 take ramp on the right to WA-900 E/M L King Way (0.2 miles)
4. Continue on WA-900 (Martin Luther King Jr Way S) (1.81 miles)
5. Turn right on 68th Ave S (0.39 miles)
6. Continue on Monster Rd SW (0.11 miles)
7. Finish at 550 Monster Rd SW, 98057, on the left

WDFW Soos Creek Hatchery

BSOO-1.0-N

Position - Location: 47° 18.568', -122° 10.079' 47° 18' 34.1", -122° 10' 4.8" 47.30947, -122.16799 Auburn

Strategy Objective: Notification : Prevent fish from being released during a spill or protect salmon at hatchery

Implementation: Call Soos Creek Hatchery at (253) 931-3950 and explain the situation regarding the spill.

Field Notes: Also release at Icy Creek and Cristy Creek ponds. Releases from March to May.

Watercourse: Creek -

Resources at Risk: Fish Hatchery, Resident Fish, Salmon - Chinook, Salmon - Coho, Steelhead



Communication Process and Action:

Call Soos Creek Hatchery at (253) 931-3950 and explain the situation regarding the spill.

If the spill is on a tributary of Big Soos Creek, advise they deploy spill response equipment. Otherwise, advise they consider delaying fish releases until the situation is resolved.

Soos Creek will also notify Icy Creek and Flaming Geyser staff. The Icy Creek (Pautzke) Ponds are located on a tributary near Green River RM 48.5. The Flaming Geyser (Dick Brice) Ponds are near Green River RM 45 on Cristy Creek.

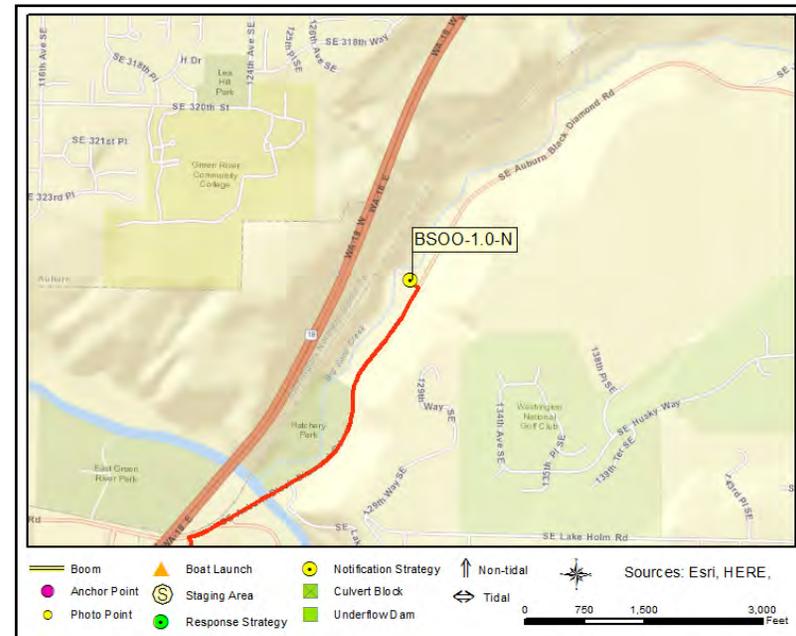
If nobody can be reached at above number, try (253) 931-3928

WDFW Soos Creek Hatchery

BSOO-1.0-N



BSOO-1.0-N Photo: Adult holding pond in Soos Creek, looking N from parking area on creek left.



Site Contact

WDFW Soos Creek Hatchery

Land/Property Owner :
253-931-3950

Washington Department of Fish and Wildlife

Alternate Contact : Region 4
425-775-1311

Nearest Address

13030 SE Auburn-Black Diamond Rd
Auburn, WA 98092

Driving Directions

1. Start at I 5 Federal Way
2. Go south on I-5 toward 142b (0.48 miles)
3. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (6.4 miles)
4. Take ramp on the right to Auburn-Black Diamond Rd (0.22 miles)
5. Take ramp toward Black Diamond (0.26 miles)
6. At fork keep left on SE Auburn Black Diamond Rd (0.74 miles)
7. Finish at 13030 SE Auburn-Black Diamond Rd, 98092, on the left

Keta Creek Hatchery **CRSP-1.2-N**

Position - Location: 47° 17.436', -122° 3.653' 47° 17' 26.2", -122° 3' 39.2" 47.29061, -122.06089 Auburn

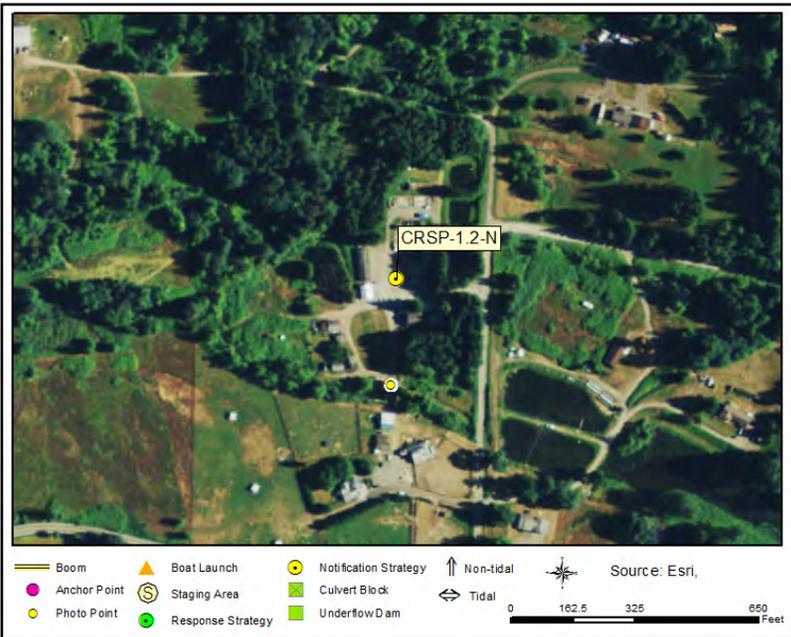
Strategy Objective: Notification : Notify Palmer Ponds to shut intakes. Delay salmon release from Palmer and Keta Creek.

Implementation: Call the Fisheries department at (206) 931-0652 and inform them of the situation. Ask them to notify Keta Creek and Palmer Ponds.

Field Notes: Keta Creek is fed by Crisp Creek and has no intakes on the green. Palmer Ponds has a water intake on the Green near RM 57

Watercourse: Creek - Spring fed, flows to Green River

Resources at Risk: Fish Hatchery, Salmon (Coho, Chinook and Chum), Tribal Lands/Resources, Water Intakes



Communication Process and Action:

Call the Fisheries department at (206) 931-0652 and inform them of the situation. Ask them to notify Keta Creek and Palmer Ponds.

Try the following numbers in order until someone at the hatchery is reached:

- Keta Creek Hatchery:
(253) 939-7738
- Keta Creek Manager:
253-709-1813 (cell)
253-876-3341 (office)
- Muckleshoot Indian Tribe:
(253) 939-3311
- Water Quality Manager:
(253) 876-3360
- Palmer Ponds:
253-350-4411

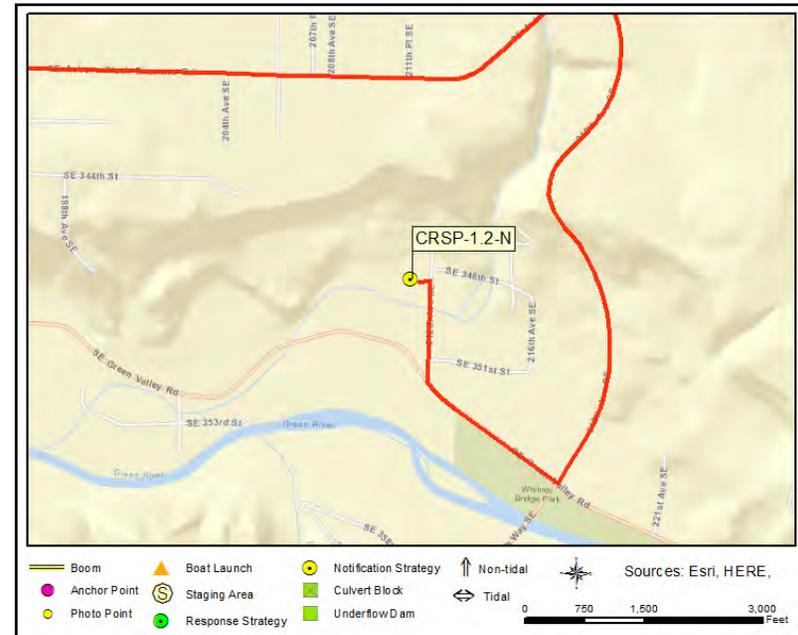
Note: The Muckleshoot Indian Tribe will determine whether or not they adjust their fish release schedules.

Keta Creek Hatchery

CRSP-1.2-N



CRSP-1.2-N Photo: Fish gates on Crisp Creek to block fish coming/going to Green River.



Site Contact

Muckleshoot Indian Tribe Fisheries Department
 Primary Contact :
 39015 172nd Ave SE
 Auburn, WA 98092
 253-931-0652

Nearest Address

34809 212th Ave SE
 Auburn, WA 98092

Driving Directions

1. From I-5 in Seattle head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (8.94 miles)
4. Turn right on 152nd Ave SE (0.76 miles)
5. Continue on Kent Black Diamond Rd SE (3.18 miles)
6. Continue on SE Auburn Black Diamond Rd (2.75 miles)
7. Turn right on 218th Ave SE (1.37 miles)
8. Turn right on SE Green Valley Rd (0.4 miles)
9. Turn right onto 212th Ave SE (0.2 miles)
10. Take the second left into the Keta Creek Hatchery parking lot.

Muckleshoot Tribe Fishermen/Boaters GRD-37.9-N

Position - Location: 47° 16.494', -122° 6.951' 47° 16' 29.7", -122° 6' 57.1" 47.27491, -122.11585 Auburn

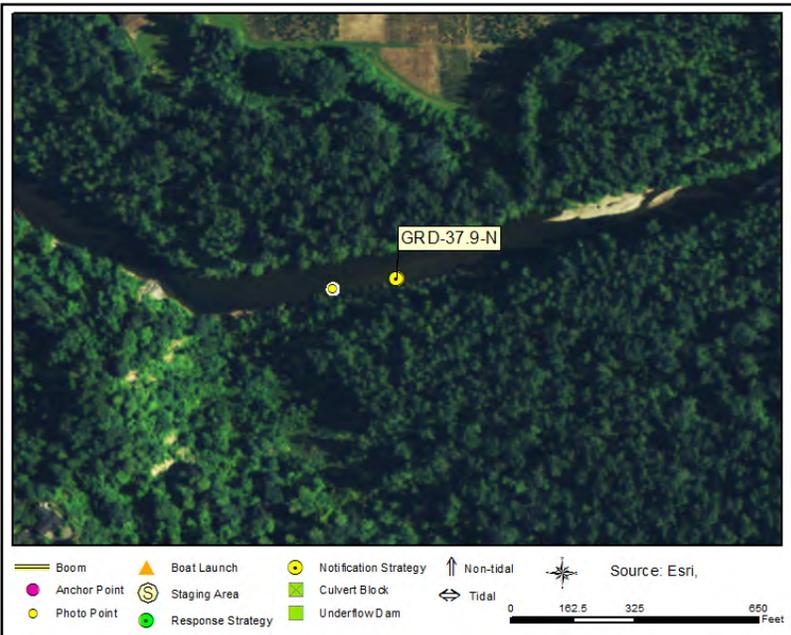
Strategy Objective: Notification : Alert fisheries to get biologists off river. Also alert Police to activate phone tree and get tribal fishermen off

Implementation: Call Muckleshoot Fisheries at (206) 931-0652 and explain the situation regarding the spill.

Field Notes: Inner-tubing and in-channel fishing from July through Sept. Otherwise fast water but fishermen on banks and in eddies.

Watercourse: River - Below a Dam -

Resources at Risk: Public Health and Safety, Tribal Lands/Resources



Communication Process and Action:

Call Muckleshoot Fisheries at (206) 931-0652 and explain the situation regarding the spill. Advise they update any biologists in the field and activate the phone tree to call back any tribal members that are out fishing.

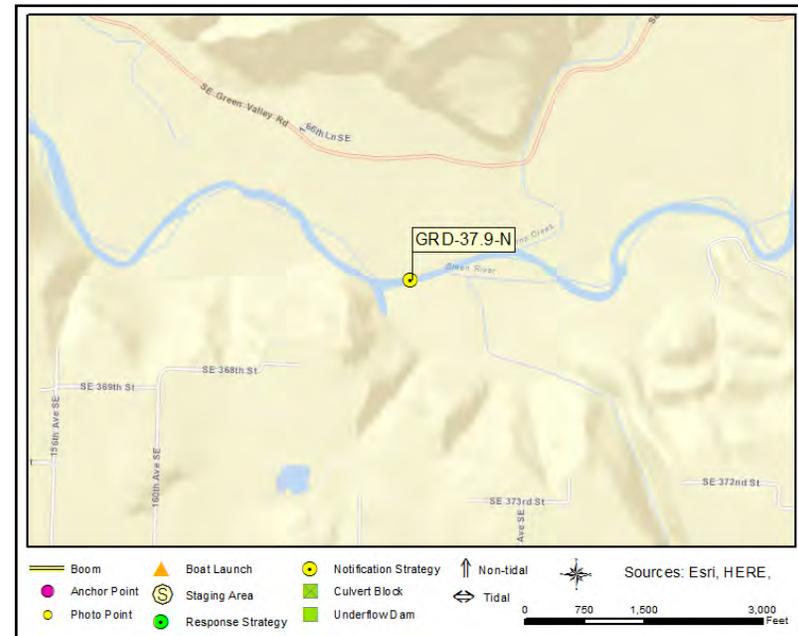
Try the following numbers in order until someone is reached:
 (253) 876-3360
 (253) 939-3311
 (253) 939-7738
 (253) 876-3246
 (253) 709-1813

Muckleshoot Tribe Fishermen/Boaters

GRD-37.9-N



GRD-37.9-N Photo: Local fishermen on the banks of the Green River in mid-November.



Site Contact

Muckleshoot Indian Tribe Fisheries Department
 Primary Contact :
 39015 172nd Ave SE
 Auburn, WA 98092
 253-931-0652

Nearest Address

39015 172nd Ave SE
 Auburn, WA 98092

Driving Directions

1. Start at I 5 Federal Way
2. Go south on I-5 toward 142b (0.41 miles)
3. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (4.42 miles)
4. Take ramp on the right to WA-164 E/Auburn Wy toward Enumclaw (0.18 miles)
5. At fork keep left on WA-164 E toward Enumclaw/Muckleshoot Reservation (0.03 miles)
6. Make sharp left on WA-164 (Auburn Way S) (6.56 miles)
7. Turn left on SE 392nd St (0.29 miles)
8. Turn left at the sign for the Philip Starr building (0.1 miles)
9. Finish at 39015 172nd Ave SE, 98092, on the left

King County Parks **GRD-42.0-N**

Position - Location: 47° 16.850', -122° 2.627' 47° 16' 51.0", -122° 2' 37.6" 47.28083, -122.04379 Auburn

Strategy Objective: Notification : Notify King County Parks to close parks along river and evacuate visitors from the water and banks

Implementation: Call King County Roads Emergency Line at 206-296-8100 and request a callback from the Parks Duty Officer.

Field Notes: From June - Sept visitors float the river in inflatables. Fishermen use the river year-round from banksides and small boats.

Watercourse: River - Below a Dam - Low flow July - Sept

Resources at Risk: County Park, Public Health and Safety

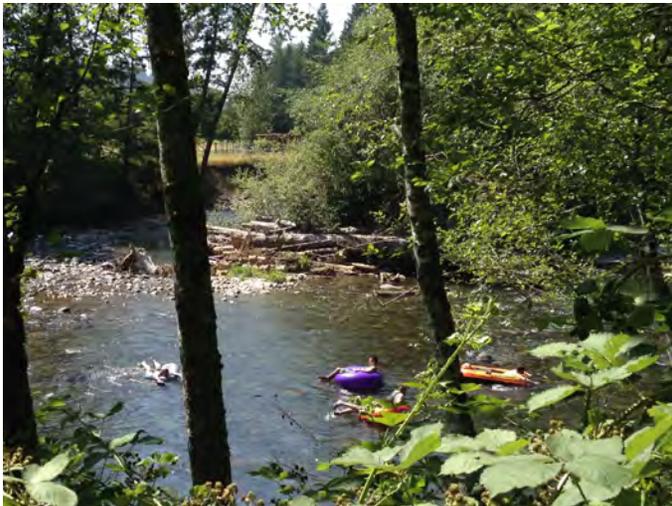


Communication Process and Action:

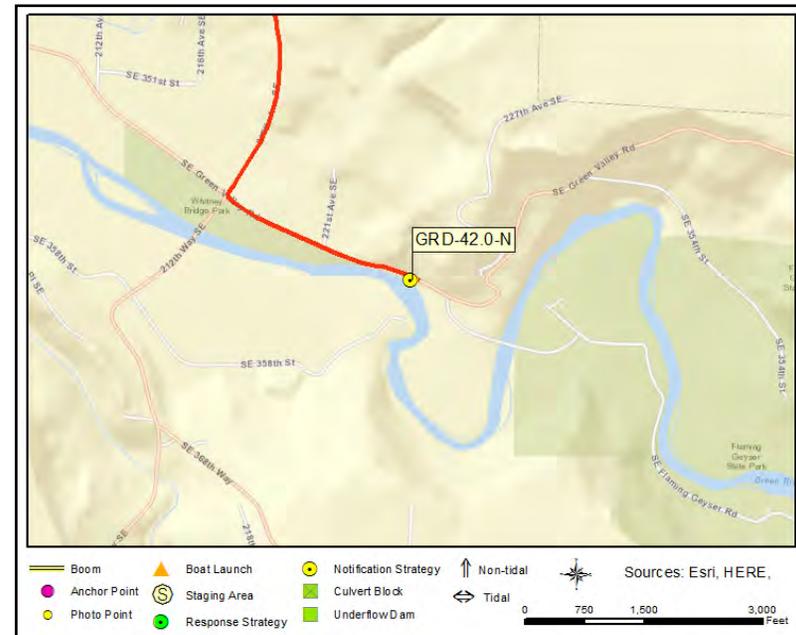
Call King County Roads Emergency Line at 206-296-8100 and request a callback from the Parks Duty Officer. Inform the Parks Officer of the situation and advise they consider closing any parks along the river located downstream of the spill point. Request they evacuate visitors from the water and water's edge.

King County Parks

GRD-42.0-N



GRD-42.0-N Photo: Recreational visitors floating the river just downstream of Flaming Geyser Park, during low water in July.



Site Contact

King County Parks and Recreation

Primary Contact :
201 S. Jackson Street, # 700
Seattle, WA 98104
206-296-8100

Nearest Address

22165 SE Green Valley Rd
Auburn, WA 98092

Driving Directions

1. From I-5 in Seattle, head south towards exit 149.
2. At exit 149 bear right onto ramp to WA-516 toward Kent/Des Moines (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (8.94 miles)
4. Turn right on 152nd Ave SE (0.76 miles)
5. Continue on Kent Black Diamond Rd SE (3.18 miles)
6. Continue on SE Auburn Black Diamond Rd (2.75 miles)
7. Turn right on 218th Ave SE (1.37 miles)
8. Turn left on SE Green Valley Rd (0.5 miles)
9. Finish at 22165 SE Green Valley Rd, 98092, on the right

Green River Filtration Plant **GRD-59.8-N**

Position - Location: 47° 18.489', -121° 51.331' 47° 18' 29.3", -121° 51' 19.9" 47.30815, -121.85552 Ravensdale

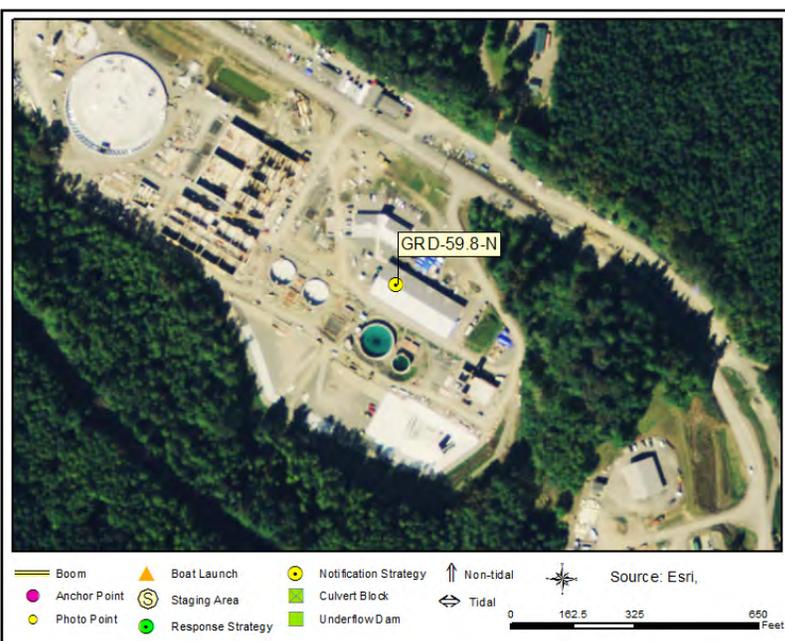
Strategy Objective: Notification : Protect City of Tacoma water supply

Implementation: Call 253-502-8346 for Tacoma Water 24hr Emergency Line. Explain situation regarding the spill and advise they protect their intakes.

Field Notes: Major intake is at RM 61 with additional intake near RM 59/filtration plant. Also have pipeline from upper watershed on North Fork Green River.

Watercourse: River - Below a Dam - Low flow July - Oct <500 cfs; max flow 12000 cfs

Resources at Risk: Fish Ladder(s), Public Health and Safety, Water Intakes



Communication Process and Action:

Call 253-502-8346 for Tacoma Water 24hr Emergency Line. Explain situation regarding the spill.

Call the following numbers in order until someone at Tacoma Water is reached:

- Treatment Facility Manager
- 253-396-3172 (desk)
- 253-377-9117 (cell)
- Water Quality Manager
- 253-502-8808 (desk)
- 253-381-2434 (cell)

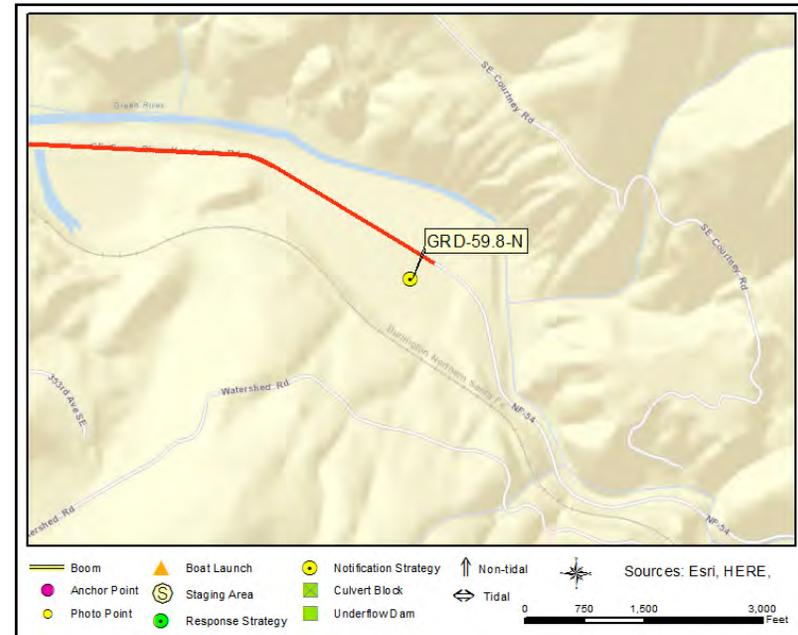
Tacoma Water may choose to deploy response equipment or shut off their intakes at the filtration plant. PUD staff may also self-deploy a protection/collection strategy above the diversion dam at RM 61 if equipment is available.

Green River Filtration Plant

GRD-59.8-N



GRD-59.8-N Photo: Adult salmon ladder and water diversion dam for City of Tacoma water supply. Looking W downstream from water intake on river right.



Site Contact

Tacoma Water
 Emergency Contact : Green River Water Treatment Facility
 36932 SE Green River Headworks Rd
 Ravensdale, WA 98051
 253-502-8346

Nearest Address

36932 SE Green River Headworks Rd
 Ravensdale, WA 98051

Driving Directions

1. From I-5 S in Seattle, take exit 147 for S 272nd St.
2. Turn left onto S 272nd St.
3. In 6 mi, turn right onto Kent-Kangley Rd/WA-518 E.
4. In 11.4 mi, slight right onto Retreat-Kanaskat Rd.
5. In 3.1 mi, turn right onto Cumberland Kanaskat Rd/ Cumberland Kanasket Rd SE.
6. In 1.5 mi, turn left onto Green River Headworks Rd.
7. Drive to the security checkpoint and register with the guard.

Howard Hanson Dam **GRD-64.6-N**

Position - Location: 47° 16.648', -121° 47.277' 47° 16' 38.9", -121° 47' 16.6" 47.27747, -121.78795 Ravensdale

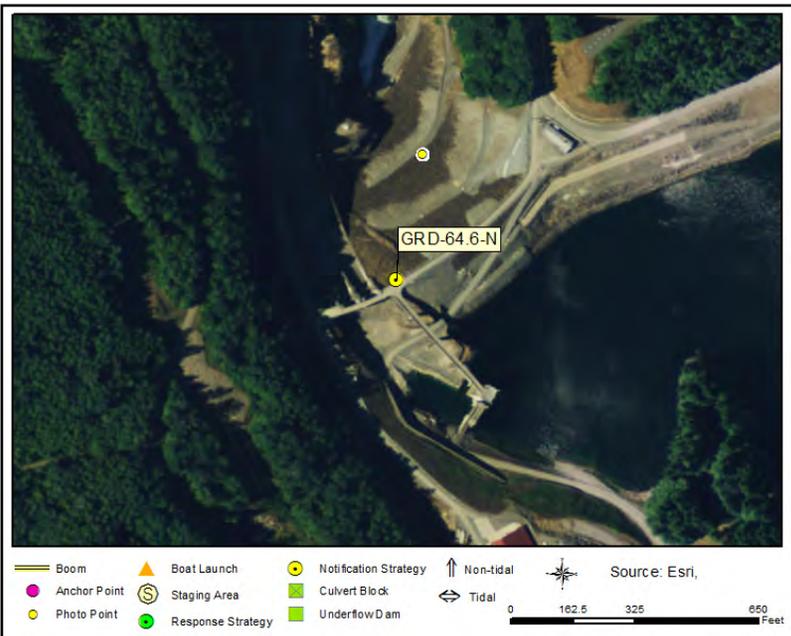
Strategy Objective: Notification : Notify dam of spill and potentially reduce flow

Implementation: Call the Reservoir Control Center at 206-764-6702 and inform them of the spill and response taking place.

Field Notes:

Watercourse: River - Below a Dam - Low flow July to October

Resources at Risk: USACE Management Area



Communication Process and Action:

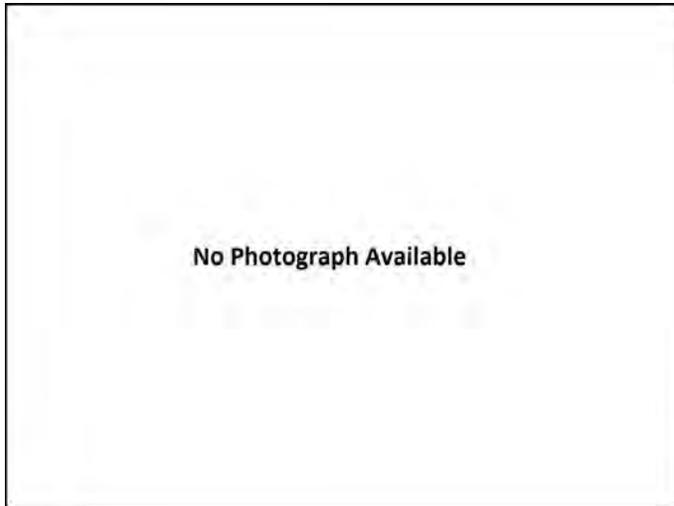
Call the U.S. Army Corps of Engineers Reservoir Control Center at 206-764-6702 or 206-764-3584 (M-F 7:30-4:30) and explain the situation regarding the spill. Request they reduce flow if possible, for responder safety and better oil recovery rates.

If the Control Center cannot be reached, call these numbers in order until someone at the Army Corps has been notified:
 District ECC: 206-764-6831 or 206-764-6910
 Operations Supervisor: 206-764-6975
 Environment Compliance Coordinator: 206-764-6717 or 360-825-3211
 Project Lead: 206-764-6975
 Project Safety Officer: 206-764-6975
 Project Manager: 206-764-3717

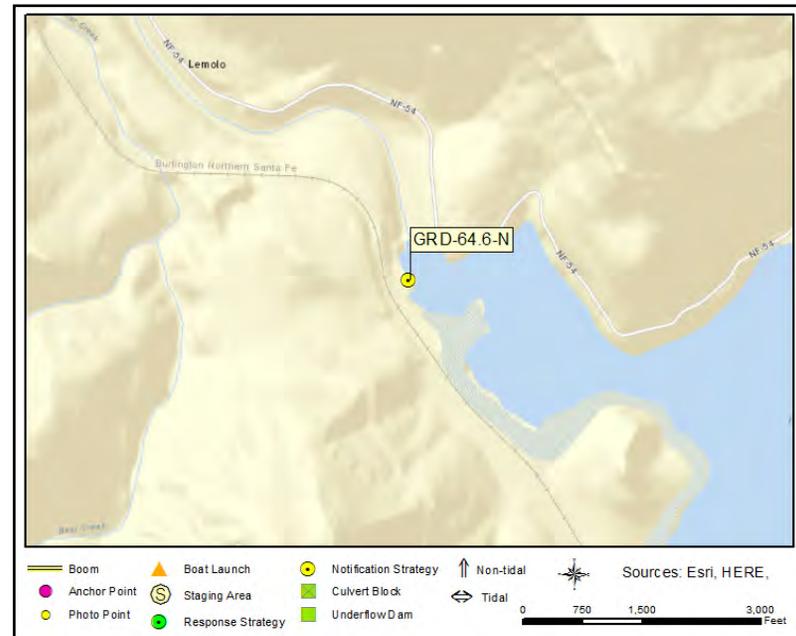
Note: The Army Corps will make the decision whether or not they will adjust the flow through the dam.

Howard Hanson Dam

GRD-64.6-N



GRD-64.6-N Photo: No photograph available for this location.



Site Contact

USACE Seattle District Reservoir Control Center
 Emergency Contact :
 WA
 206-764-6702

Nearest Address

31714 Cumberland Kanaskat Rd SE
 Ravensdale, WA 98051

Driving Directions

1. Start at I 5 Federal Way
2. At exit 142A bear right onto ramp and go on WA-18 E toward Auburn (11.22 miles)
3. Take ramp on the right to WA-516/Se 272nd St toward Covington (0.42 miles)
4. Turn right on WA-516 (SE 272nd St) toward Covington (4.7 miles)
5. Continue on SE Kent Kangley Rd (3.42 miles)
6. Turn right on Retreat-Kanaskat Rd SE (Retreat Kanasket Rd SE) 0.11 miles
7. Bear right (0.03 miles)
8. Bear right on Cumberland Kanaskat Rd SE (Cumberland Kanasket Rd SE) (1.41 miles)
9. Follow Cumberland Kanaskat Rd SE to security checkpoint at Tacoma Water Green River Filtration Plant. The road to the dam is one lane radio-controlled and security must escort visitors.

APPENDIX 4C
Staging Area 2-Pagers

STAGING AREAS – LIST

SA-GRD-33.8

SA-GRD-41.5

WDFW Soos Creek Boat Launch

SA-GRD-33.8

Staging Area

Position - Location: 47° 18.062', -122° 10.506' 47° 18' 3.7", -122° 10' 30.3" 47.30103, -122.17510 Auburn

Comments: Small gravel lot, no facilities



Location Information

| Asset | Type/Status | Amount/Number |
|---------------------|-----------------|--|
| | | 100 Gravel |
| Boat Dock(s) | No | |
| Boat Ramp(s) | Gravel | 1 Partially blocked by log. Shallow water. |
| Cell Phone Coverage | Yes | |
| Estimated Lot Size | | 12500 |
| Parking - Car | Gravel | 15 |
| Parking - Trailer | Gravel | 8 |
| Power | No | |
| Restroom | Restroom - None | |
| User Fee | No | |
| Waste Disposal | None | |
| Water (potable) | No | |

GRP Response Strategies Served:

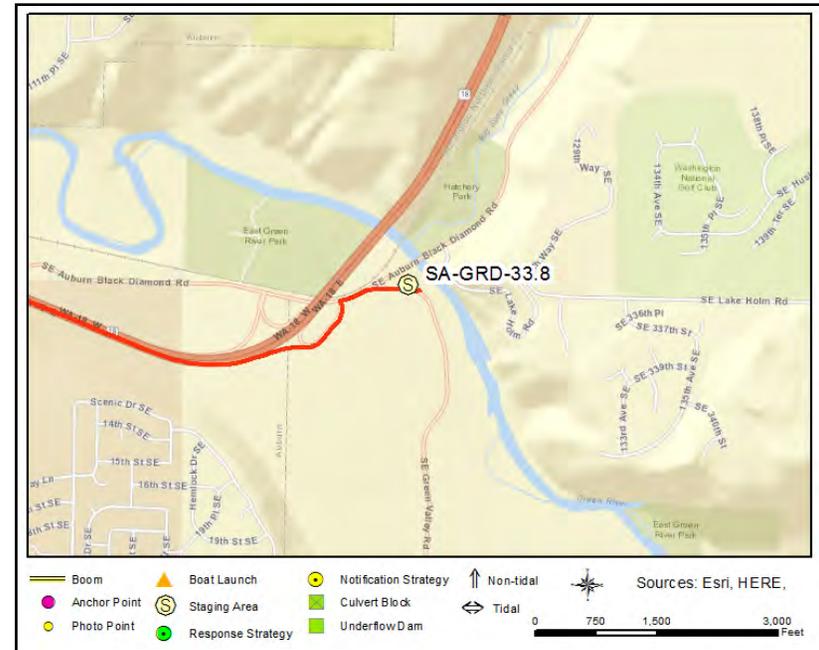
GRD-33.5

WDFW Soos Creek Boat Launch

SA-GRD-33.8



SA-GRD-33.8 Photo: From parking lot looking E down at gravel ramp. Note log preventing large boats from launching and visitors using lawn chairs in the river channel during low-water



Site Contact

WDFW Soos Creek Hatchery

Primary Contact :
253-931-3950

Washington Department of Fish and Wildlife

Alternate Contact : Region 4
425-775-1311

Nearest Address

12334 SE Green Valley Rd
Auburn, WA 98092

Driving Directions

1. From I-5, take exit 142A to merge onto WA-18 E toward Auburn.
2. Drive 6.2 miles to the Auburn-Black Diamond Rd exit.
3. Take ramp right toward Black Diamond.
4. Turn right onto SE Auburn Black Diamond Rd.
5. In 300 feet take the next right onto SE Green Valley Rd.
6. In 350 feet the boat launch is on your left.

Whitney Bridge Boat Launch

SA-GRD-41.5

Staging Area

Position - Location: 47° 16.980', -122° 3.278' 47° 16' 58.8", -122° 3' 16.7" 47.28300, -122.05464 Auburn

Comments: Paved lot, pit toilet, minimal facilities.



GRP Response Strategies Served:

Location Information

| Asset | Type/Status | Amount/Number |
|---------------------|----------------------|--|
| | | 0 |
| | | 75 % Asphalt |
| Boat Dock(s) | No | |
| Boat Ramp(s) | Gravel | 1 Easy slope. Shallow cobble at end |
| Boat Ramp(s) | Natural (Grass/Dirt) | 1 Footpath for hand launch - mud and grass |
| Cell Phone Coverage | Yes | |
| Estimated Lot Size | | 6800 |
| Parking - Car | Marked | 23 |
| Parking - Trailer | Gravel | 5 Parallel lot above boat ramp |
| Power | No | |
| Restroom | Restroom - None | |
| User Fee | No | |
| Waste Disposal | Trash Receptacle | 1 |
| Water (potable) | No | |

APPENDIX 4D
Boat Launch 2-Pagers

BOAT LAUNCHES – LIST

BL-GRD-18-7

BL-GRD-26.8

BL-GRD-33.8

BL-GRD-41.5

Van Doren's Landing Park

BL-GRD-18.7

Boat Launch Location

Position - Location: 47° 24.317', -122° 16.426' 47° 24' 19.0", -122° 16' 25.6" 47.40528, -122.27377 Kent

Comments: Hand launch only. Can drive partway down ramp but last 20' have narrow sides and mud bottom.



Location Information

| <u>Asset</u> | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|----------------------|---|
| | | 2 Picnic shelters |
| | | 100 Asphalt |
| Boat Ramp(s) | Natural (Grass/Dirt) | 1 Concrete entrance to 20' of narrow mud. |
| Cell Phone Coverage | Yes | |
| Estimated Lot Size | | 11000 Additional small lot 1/2 mi N |
| Parking - Car | Marked | 38 Additional 8 spaces 1/2 mile N |
| Parking - Trailer | Other | 8 If parking sideways across car spots |
| Power | Yes | |
| Restroom | Restroom - Flush | 2 |
| User Fee | No | |
| Water (potable) | Yes | |

GRP Response Strategies Served:

GRD-21.7, GRD-15.0, GRD-17.1, GRD-20.5, GRD-19.4

Van Doren's Landing Park

BL-GRD-18.7



SA-GRD-18.7 Photo: From mid-ramp looking down at the narrowest section, NW towards the Green River.



Site Contact

City of Kent Parks, Recreation and Community Services
 Land/Property Owner :
 253-856-5000

Nearest Address

21901 Russell Rd
 Kent, WA 98032

Driving Directions

1. From I-5 in Seattle, take exit 149 toward Kent/Des Moines.
2. Bear right onto ramp to WA-516 (0.26 miles)
3. Turn left on WA-516 (S Kent Des Moines Rd) (0.29 miles)
4. Turn left on Military Rd S (0.25 miles)
5. Turn right on S 231st Way (0.85 miles)
6. Turn left on Russell Rd (0.5 miles)
7. Turn left into Van Doren's Landing Park (just past the kennels).

King County Emergency Rescue boat launch **BL-GRD-26.8**

Boat Launch Location

Position - Location: 47° 21.818', -122° 13.220' 47° 21' 49.1", -122° 13' 13.2" 47.36364, -122.22034 Kent

Comments: Natural gravel and mud launch used for emergency rescues.



Location Information

| <u>Asset</u> | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|----------------------|--------------------------------------|
| Boat Ramp(s) | Natural (Grass/Dirt) | 1 |
| Boathouse | No | |
| Cell Phone Coverage | Yes | |
| Estimated Lot Size | | 3000 Gravel/mud |
| Parking - Car | Gravel | 2 May be able to use lot across road |
| Parking - Trailer | Gravel | 1 |
| Power | No | |
| User Fee | No | |
| Waste Disposal | Other | 0 |
| Water (potable) | No | |

GRP Response Strategies Served:

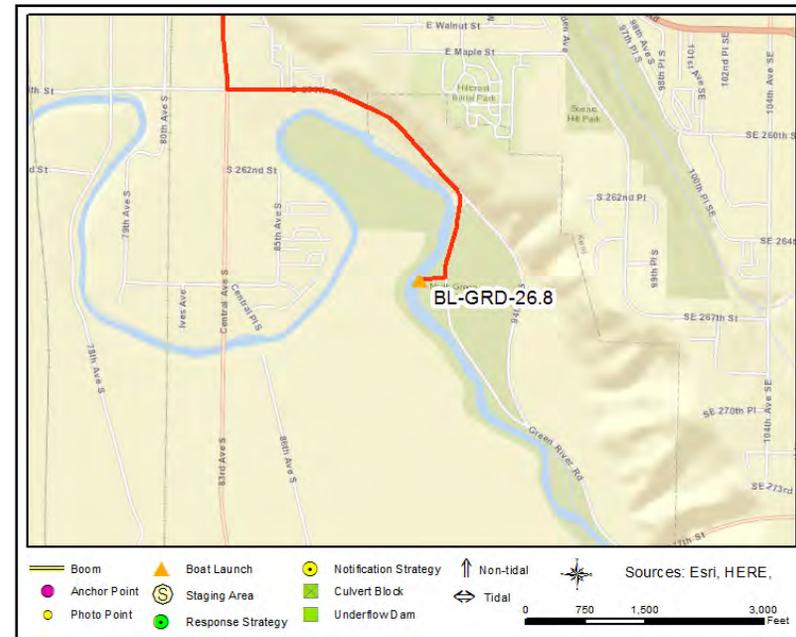
GRD-23.9

King County Emergency Rescue boat launch

BL-GRD-26.8



SA-GRD-26.8 Photo: Looking E uphill from water's edge at primitive dirt launch.



Site Contact

King County Parks and Recreation
 Land/Property Owner :
 201 S. Jackson Street, # 700
 Seattle, WA 98104
 206-296-8100

Nearest Address

26427 Green River Rd
 Kent, WA 98030

Driving Directions

1. From I-405 take exit 2 and follow ramp right for WA-167 South toward Auburn / Kent.
2. In 5.0 mi, take ramp right for 84th Ave S toward N Central Ave.
3. In 0.2 mi, turn left onto 84th Ave S.
4. In 2 mi, turn left onto S 259th St.
5. In 0.6 mi at curve, turn right to stay on Green River Rd.
6. In 0.2 mi, just past the gravel parking lot on the left, the gate to the boat ramp is on your right between two no-parking signs.

WDFW Soos Creek Boat Launch

BL-GRD-33.8

Boat Launch Location

Position - Location: 47° 18.062', -122° 10.506' 47° 18' 3.7", -122° 10' 30.3" 47.30103, -122.17510 Auburn

Comments: Hand-launch only, sandbar mid-channel, upstream of log jam



Location Information

| Asset | Type/Status | Amount/Number |
|---------------------|-----------------|--|
| | | 100 Gravel |
| Boat Dock(s) | No | |
| Boat Ramp(s) | Gravel | 1 Partially blocked by log. Shallow water. |
| Cell Phone Coverage | Yes | |
| Estimated Lot Size | | 12500 |
| Parking - Car | Gravel | 15 |
| Parking - Trailer | Gravel | 8 |
| Power | No | |
| Restroom | Restroom - None | |
| User Fee | No | |
| Waste Disposal | None | |
| Water (potable) | No | |

GRP Response Strategies Served:

GRD-33.5

WDFW Soos Creek Boat Launch

BL-GRD-33.8



SA-GRD-33.8 Photo: From parking lot looking E down at gravel ramp. Note log preventing large boats from launching and visitors using lawn chairs in the river channel during low-water



Site Contact

WDFW Soos Creek Hatchery

Primary Contact :
253-931-3950

Washington Department of Fish and Wildlife

Alternate Contact : Region 4
425-775-1311

Nearest Address

12334 SE Green Valley Rd
Auburn, WA 98092

Driving Directions

1. From I-5, take exit 142A to merge onto WA-18 E toward Auburn.
2. Drive 6.2 miles to the Auburn-Black Diamond Rd exit.
3. Take ramp right toward Black Diamond.
4. Turn right onto SE Auburn Black Diamond Rd.
5. In 300 feet take the next right onto SE Green Valley Rd.
6. In 350 feet the boat launch is on your left.

Whitney Bridge Boat Launch

BL-GRD-41.5

Boat Launch Location

Position - Location: 47° 16.980', -122° 3.278' 47° 16' 58.8", -122° 3' 16.7" 47.28300, -122.05464 Auburn

Comments: Gravel launch. Very shallow water in summer. Alternate hand launch on other side of bridge.



GRP Response Strategies Served:

GRD-41.5, GRD-41.4

Location Information

| Asset | Type/Status | Amount/Number |
|---------------------|----------------------|--|
| | | 0 |
| | | 75 % Asphalt |
| Boat Dock(s) | No | |
| Boat Ramp(s) | Gravel | 1 Easy slope. Shallow cobble at end |
| Boat Ramp(s) | Natural (Grass/Dirt) | 1 Footpath for hand launch - mud and grass |
| Cell Phone Coverage | Yes | |
| Estimated Lot Size | | 6800 |
| Parking - Car | Marked | 23 |
| Parking - Trailer | Gravel | 5 Parallel lot above boat ramp |
| Power | No | |
| Restroom | Restroom - None | |
| User Fee | No | |
| Waste Disposal | Trash Receptacle | 1 |
| Water (potable) | No | |

CHAPTER 5
(Reserved)

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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 Green/Duwamish 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 includes fundamental procedures for the discovery of cultural artifacts and human skeletal remains. General information about flight restrictions, hazing, 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 provided in this chapter are listed because they could not be addressed in Chapter 4 (Response Strategies and Priorities). Additional information from private organizations or federal, state, tribal, and local government agencies should also be sought during spills and considered.

The information provided in this chapter can be used in:

- Assisting the Environmental Unit (EU) and Operations in developing additional response strategies beyond those found in Chapter 4.
- Providing resources-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, eelgrass and marsh grasses in estuaries, and kelp beds in the ocean; microscopic plants and animals; and larger animals, such as fish, amphibians and reptiles, birds, mammals, and a wide variety of invertebrates, are all at potentially at risk from smothering, acute toxicity, and/or the chronic long-term effects that may result from being exposed to spilled oil.

The Green/Duwamish River system affords a wide variety of aquatic, riparian, and upland habitats. These varied habitats support a complex diversity of wildlife species, including large and small

mammals; songbirds, birds of prey, upland birds, and waterfowl; reptiles; and amphibians. Some species are resident throughout the year; others are migratory either within the subbasin or, in many cases, seasonally migrate outside the subbasin. Many wildlife species found in the subbasin are classified as threatened, endangered, sensitive, or of special concern 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)
- Federal Candidate (FC)
- Federal Species of Concern (FCo)
- State Endangered (SE)
- State Threatened (ST)
- State Candidate (SC)
- State Monitored (SM)
- State Sensitive (SS)

Sensitive species that may occur within this area, at some time of year, include the following federal and state listed species.

Birds:

- Bald eagle [FCo/SS]
- Black swift [FCo]
- Brewer's sparrow [FCo]
- Calliope hummingbird [FCo]
- Caspian tern [FCo],
- Cassin's finch [FCo],
- Flammulated owl [FCo],
- Fox sparrow [FCo],
- Lewis's woodpecker [FCo/SC],
- Long-billed curlew [FCo],
- Marbled murrelet [FT/ST],
- Olive-sided flycatcher [FCo],
- Peregrine falcon [FCo/SS],
- Pileated woodpecker [SC],
- Purple finch [FCo],
- Rufous hummingbird [FCo],
- Short-billed dowitcher [FCo],
- Short-eared owl [FCo],
- Steaked horned lark [FT/SE],
- Vaux's swift [SC],

- Williamson's sapsucker [FCo],
- Willow flycatcher [FCo]
- Yellow-billed cuckoo [FT/SC].

Mammals:

No listed mammals anticipated in this area.

Fish:

- Bull trout [FT/SC],
- Puget Sound Chinook [FT/SC], and
- Steelhead [FT].

Amphibian:

- Oregon spotted frog [FT/SE].

Plants:

- Golden paintbrush [FT].

6.2.1 General Resource Concerns**6.2.1 - Habitats**

- Duwamish River estuary for salmonids from the Duwamish/Green river systems. Tidally influenced area serves as a transitional area between the river and Elliott Bay. Several habitat restoration areas in this reach. The tidal influence wanes considerably above North Wind's Weir, but the salmonid transition zone extends to the Black River confluence.
- Wetlands in this region (outside of the tidal zone) are freshwater and range from seasonal open marshes to forested swamps along rivers and streams. All wetland types support a diverse array of amphibian, bird, insect, fish, and wildlife species.
- Riparian areas serve as transitional zones between the uplands and the rivers and consequently are heavily used by a variety of wildlife. They also contribute to fish habitat by providing shade, cover, and food.
- Steep forested hill slopes in developed areas along river valley. These areas are unstable but provide wildlife habitat and migration corridors.

- Side channels and stream mouths are important concentration and rearing areas for fish and provide feeding and resting areas for a variety of birds, including waterfowl and herons..
- Lowland lakes serve as foraging areas to winter waterfowl concentrations. Western grebes, mergansers, cormorants, coots and Canada geese are the most numerous species.
- Most rivers and streams throughout this region provide spawning and rearing habitat for various salmonid species.

6.2.1b - Fish and Shellfish

- All Northwest salmonid species, including Bull trout [FT/SC] and Puget Sound Chinook [FT/SC] are present and spawning in this river system. Juvenile salmonids use shallow nearshore areas extensively for feeding and rearing.
- Resident fish present year-round include Resident cutthroat and Rainbow trout, Three-spine stickleback, Sculpin (Reticulate, Riffle and Torrent varieties), Sucker, and Western brook lamprey.

6.2.1c - Wildlife

- Significant waterfowl concentrations present along the lower Green River and within associated wetlands below the Flaming Geyser Park. Harlequin duck nesting areas located throughout drainage above this park.
- Sensitive nesting species in the region include Bald eagles, Osprey, Northern Goshawks, Peregrine falcons and Great blue herons.
- Resident and migratory songbirds heavily utilize riparian habitats year-round and are susceptible to oiling if riparian vegetation and shorelines become contaminated.
- Winter elk range in upper reaches of the Green and Cedar Rivers. King County elk population includes resident and migratory elk.
- Other small mammals common to the region include beaver, muskrat, river otter and raccoon. These are vulnerable to contact with spilled oil because of their habitat preferences.

6.2.2 Specific Geographic Areas of Concern.

- 1) **Black River Riparian Forest and Wetland/Fort Dent Park:** Urban deciduous riparian forest and wetlands located at mouth of the Black River. Great blue heron colony on site. Waterfowl use area. Bald eagle [FCo/SS] nesting and foraging area.
- 2) **Green River Natural Resource Area:** ~300 acres of stormwater retention and managed wetland. Waterfowl concentration area. Salmonid rearing area. Van Dorn's and Valley Floor Parks are in the same general vicinity.
- 3) **North Green River Park:** Riparian vegetation and wetland habitat. Waterfowl concentration area.

- 4) **East Green River Park/Fenster Natural Area:** Riparian vegetation and wetland habitat along ~1400 feet of shoreline. Waterfowl concentration area. Flooded fields provide forage habitat for large numbers of dabbling ducks.
- 5) **Green River Natural Area:** ~920-acre area, with ~6 miles of shoreline. Deciduous riparian forest, wetlands, and meadows located along south bank of river.
- 6) **Black Diamond Natural Area:** ~650 acres. Deciduous riparian forest, wetlands, and meadows located along both river banks.

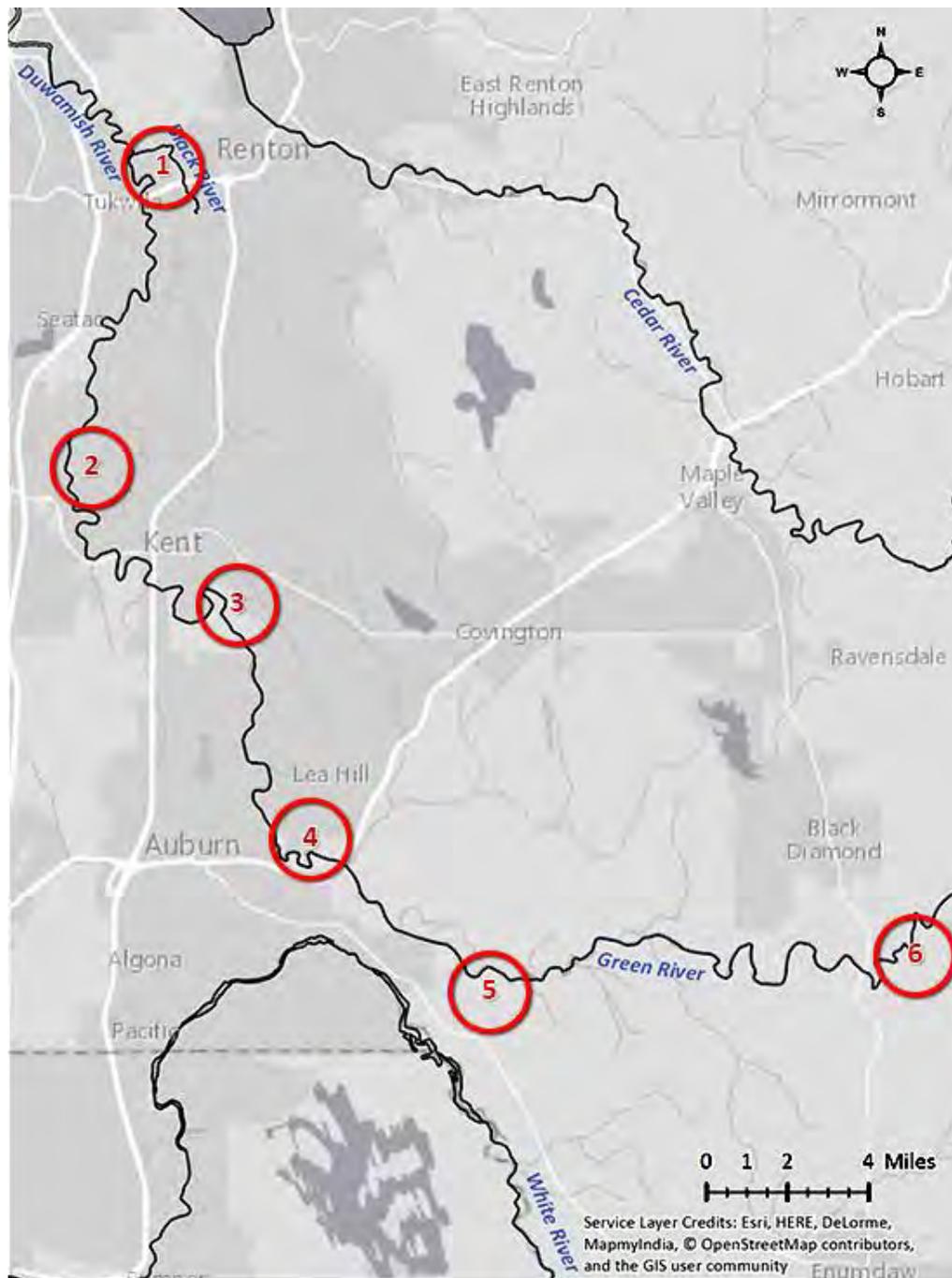


Figure 6-1: Duwamish/Green River Geographic Areas of Concern

6.2.3 Cultural Resources at Risk

Culturally sensitive sites are present within the Green River/Duwamish area. Due to the sensitive nature of this information, details regarding the location and type of cultural resources present are not included in this document. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, Washington Department of Archaeology and Historic Preservation (WDAHP) should be consulted before disturbing any soil or sediment during a response action. WDAHP may assign a person to monitor cleanup operations, or provide a list of professional archeologists that can be contracted to monitor response activities.

Information on the location of culturally sensitive sites is maintained by WDAHP and made available to Washington Department of Ecology for oil spill preparedness and response planning. The Muckleshoot Indian Tribe, Puyallup Tribe, Snoqualmie Tribe, Squaxin Island Tribe, and Tulalip Tribes may also be able to provide information on cultural resources at risk in this GRP area and should be consulted. After the Unified Command is established, information related to specific archeological concerns will be coordinated through the Environmental Unit.

| | | |
|-----------------------|-------------------------|--|
| WDAHP: | (360) 586-3065 | Rob.Whitlam@dahp.wa.gov |
| Muckleshoot Tribe: | (253) 939-3311 Ext 3272 | laura.murphy@muckleshoot.nsn.us |
| Puyallup Tribe: | (253) 573.7986 | brandon.reynon@puyalluptribe.com |
| Snoqualmie Tribe: | (425) 888-6551 Ext 1106 | steve@snoqualmietribe.us |
| Squaxin Island Tribe: | (360) 432-3850 | rfoster@squaxin.us |
| Tulalip Tribes: | (360) 716-2652 | ryoung@tulaliptribes-nsn.gov |

6.2.4 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. Refer to [Section 9403 of the Northwest Area Contingency Plan](#) for National Historic Preservation Act Compliance Guidelines during an emergency response.

6.2.5 Procedures for the Discovery of Cultural Resources

All work must be stopped immediately and the Incident Commander and Cultural Resource Specialist notified if any person monitoring work activities or involved in spill response believes that they have encountered cultural resources. 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 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 and traps
- 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

If WDAHP believes that the discovery is a cultural resource, the Incident Commander will take appropriate steps to protect the discovery site:

- The immediate area of the discovery site should be flagged. Vehicles or equipment must not be permitted to enter the discovery site. Work in the immediate area can not resume until treatment of the discovery has been completed.
- The Incident Commander (or representative) must contact WDAHP and arrange for the discovery to be evaluated by a professional archaeologist. The archaeologist will determine whether the discovery is potentially eligible for listing on the National Register of Historic Places. (36 CFR 60.4)
- The professional archaeologist will consult with WDAHP on the eligibility of the discovery for entry into the National Register. If WDAHP determines that the discovery is eligible, they will consult with the Incident Commander to determine an appropriate treatment for the discovery.
- If adverse impacts to an eligible site cannot be avoided, a treatment plan will be developed and implemented.

6.3 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 GRP area.

6.4 GENERAL INFORMATION

6.4.1 Flight restriction zones

Flight restriction zones may be recommended by the Environmental Unit (Planning Section) for the purpose of minimizing disturbance that could result in injury to wildlife during an oil spill. By keeping a safe distance or altitude from identified sensitive areas, pilots can minimize the risk of aircraft/ bird collisions, prevent the accidental hazing of wildlife into oiled areas, and avoid causing abandonment of nests or marine mammal pupping areas. 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 ft radius and below 1,000 ft 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.

6.4.2 Hazing

The use of boats and watercraft are usually restricted within 200 yards of offshore National Wildlife Refuge sites or other sensitive areas. Response organizations should immediately request a waiver from National Marine Fisheries Service [NMFS] and/or U.S. Fish and Wildlife Service regarding the inadvertent approach or hazing of marine mammals that may be encountered during open water response operations. After a Unified Command is formed, the Wildlife Branch (Operations Section) in consultation with the appropriate trustee agencies and the Environmental Unit will evaluate and recommend hazing options for the purpose of keeping un-oiled birds and marine mammals away from oil during a spill. Hazing 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 \(NWACP Section 9311\)](#).

6.4.3 Oiled Wildlife

Attempting to capture oiled wildlife can be hazardous to both the animal and the person attempting the capture the animal. 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

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|---|--|---------|-----------|---------------------|----------------|-------|
| A1 - Drinking Water Intakes | Tacoma Water Green River Filtration Plant | 36525 SE Green River Headworks Rd, Ravensdale WA 98051 | 47.3085 | -121.8566 | Tacoma Water | (253) 502-8346 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Cristy Creek (Flaming Geyser) Ponds | 23898 SE Flaming Geyser Rd, Auburn WA 98092 | 47.2720 | -122.0203 | WDFW Region 6 | (253) 931-3950 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Green River College Rearing Pond | 12401 SE 320th St, Auburn, WA 98092 | 47.3124 | -122.1762 | Green River College | (253) 833-9111 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Green River Screw Trap | 12586 SE Green Valley Rd, Auburn, WA 98092 | 47.2937 | -122.1677 | WDFW Region 6 | (253) 931-3950 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Icy Creek (Pautzke) Ponds | 36120 Enumclaw-Franklin Rd, Enumclaw WA | 47.2799 | -121.9787 | WDFW Region 6 | (253) 931-3950 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Keta Creek Hatchery | 34809 212th Ave SE, Auburn WA 98092 | 47.2913 | -122.0607 | MIT Fisheries | (253) 939-7738 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Palmer Ponds | 32915 SE 309th Street, Palmer WA, 98051 | 47.3235 | -121.9042 | MIT Fisheries | (253) 350-4411 | |
| B6 - Fish Hatcheries (Federal, State, and Private) | Soos Creek Hatchery | 13030 SE Auburn-Black Diamond Rd, Auburn | 47.3114 | -122.1667 | WDFW Region 6 | (253) 931-3950 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|--------------------------------|--|---------|-----------|--|----------------|-------|
| B6 – Fish Hatcheries (Federal, State, and Private) | Tacoma Headworks Fish Trap | 36932 SE Green River Headworks Rd, Ravensdale, WA 98051 | 47.3006 | -121.8402 | Tacoma Water | (253) 502-8346 | |
| C1 – Boating Areas | All | Green River/Duwamish | | | | | |
| C2 – Public Recreation Areas | All | Green River/Duwamish | | | | | |
| C3 – Sport Fishing Areas | All | Green River/Duwamish | | | | | |
| C4 – Parks and Beaches (National, State, and Local) | Talbot Hill Reservoir Park | 710 South 19th Street, Renton WA | 47.4625 | -122.2170 | City of Renton | (425) 430-6600 | |
| C4 – Parks and Beaches (National, State, and Local) | 57th Avenue South Mini Park | 13300 57th Avenue South, Tukwila WA | 47.4842 | -122.2640 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Auburn Environmental Park | 413 Western Ave. NW, Auburn WA | 47.3152 | -122.2430 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Auburn Narrows Natural Area | Auburn Black Diamond Rd and SE Green Valley Rd Auburn WA 98092 | 47.3037 | -122.1890 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Bass Lake Complex Natural Area | SE 376th at 250th Ave SE, Enumclaw, WA 98022 | 47.2608 | -122.0030 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Bicentennial Park | 7200 Strander Blvd, Tukwila WA | 47.4565 | -122.2470 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Bingaman Pond Natural Area | 18517 36th Ave S, Seattle, WA 98188 | 47.3477 | -122.2850 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Black Diamond BMX Park | 32802 4th Avenue, Black Diamond WA | 47.3081 | -122.0020 | City of Black Diamond | (360) 886-5700 | |
| C4 – Parks and Beaches (National, State, and Local) | Black Diamond Bridge Site | Highway 169 at Green River | 47.2775 | -121.9880 | Washington State Parks and Recreation Commission | (360) 902-8844 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|------------------------------|---|---------|-----------|----------------------------------|----------------|-------|
| C4 – Parks and Beaches (National, State, and Local) | Black Diamond Natural Area | Maple Valley Black Diamond Rd and 241st Ave SE Black Diamond WA 98010 | 47.3281 | -122.0130 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Black River Forest | North of Oakesdale Avenue SW and SW 7th Street, Renton WA | 47.4760 | -122.2400 | City of Renton | (425) 430-6600 | |
| C4 – Parks and Beaches (National, State, and Local) | Bow Lake Park | 5040 S. 178th St., SeaTac | 47.4445 | -122.2710 | City of SeaTac | (206) 973-4680 | |
| C4 – Parks and Beaches (National, State, and Local) | Brannan Park | 1019 28th St. NE, Auburn WA | 47.3325 | -122.2130 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Briscoe Park | S. 190th Street near 64th Avenue S, Kent WA | 47.4335 | -122.2610 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Camelot Park | 294 45th Pl S Federal Way WA 98001 | 47.3377 | -122.2790 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Cecil Moses Memorial Park | 112th St and Pacific Hwy S Tukwila WA 98168 | 47.5035 | -122.2980 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Centennial Viewpoint Park | 402 Mountain View Dr., Auburn WA | 47.3046 | -122.2570 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Clark Lake Park | SE 240th St. & SE 248th St. at 127th Avenue SE, Kent WA | 47.3842 | -122.1750 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Coal Car Historical Triangle | Roberts Drive and State Highway 169, Black Diamond WA | 47.3168 | -122.0050 | City of Black Diamond | (360) 886-5700 | |
| C4 – Parks and Beaches (National, State, and Local) | Codiga Park | 15460 65th Avenue South, Tukwila WA | 47.4897 | -122.2700 | City of Tukwila | (206) 798-2822 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|--------------------------------|--|---------|-----------|--|----------------|-------|
| C4 – Parks and Beaches (National, State, and Local) | Cottonwood Grove Park | S. 238th between Frager Road and Green River, Kent | 47.3880 | -122.2720 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Des Moines Creek Park | 2151 S 200th St, SeaTac, WA 98198 | 47.4130 | -122.3160 | City of Des Moines | (206) 870-6527 | |
| C4 – Parks and Beaches (National, State, and Local) | Des Moines Creek Park - SeaTac | 2151 S. 200th St., SeaTac | 47.4198 | -122.3060 | City of SeaTac | (206) 973-4680 | |
| C4 – Parks and Beaches (National, State, and Local) | Duwamish Hill Preserve | 3800 South 115th Street, Tukwila WA | 47.5014 | -122.2850 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Duwamish Park - Tukwila | 11646 42nd Avenue South, Tukwila WA | 47.4986 | -122.2800 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Dykstra Park | 1471 22nd St NE, Auburn, WA 98002 | 47.3269 | -122.2100 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Eagle Creek Park | Roberts Drive and Bruckners Way, Black Diamond WA | 47.3123 | -122.0240 | City of Black Diamond | (360) 886-5700 | |
| C4 – Parks and Beaches (National, State, and Local) | Fenster Natural Area | 2093 4th St SE, Auburn, WA 98002 | 47.3045 | -122.1999 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Flaming Geyser Natural Area | 228th Pl SE and SE Green Valley Rd Auburn WA 98092 | 47.2769 | -122.0410 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Flaming Geyser Park | Green Valley Rd and SE 354th St Auburn WA 98092 | 47.2793 | -122.0340 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Flaming Geyser State Park | 23898 SE Flaming Geyser Rd, Auburn WA 98092 | 47.2767 | -122.0200 | Washington State Parks and Recreation Commission | (360) 902-8844 | |
| C4 – Parks and Beaches (National, State, and Local) | Fort Dent Park | 6800 Fort Dent Way, Tukwila | 47.4704 | -122.2500 | City of Tukwila | (206) 798-2822 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|--|--|---------|-----------|--|----------------|-------|
| C4 – Parks and Beaches (National, State, and Local) | Foster Golf Links | 13500 Interurban Ave. S., Tukwila WA | 47.4806 | -122.2600 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Foster Park | S. 259th and 74th Avenue S., Kent WA | 47.3697 | -122.2420 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Ginder Creek Site | East of Roberts Drive near Library, Black Diamond WA | 47.3129 | -122.0080 | City of Black Diamond | (360) 886-5700 | |
| C4 – Parks and Beaches (National, State, and Local) | Grandview Park | 3600 S. 228th St., SeaTac | 47.3979 | -122.2840 | City of SeaTac | (206) 973-4680 | |
| C4 – Parks and Beaches (National, State, and Local) | Green River Natural Area | 37000 190th Ave SE Auburn WA 98092 | 47.2779 | -122.0990 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Green River Natural Resources Area | 22161 Russell Road South, Kent WA | 47.4065 | -122.2610 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Green River Trail Site | 6800 Fort Dent Way to 104th Ave SE and SE 316th St Tukwila WA 98168 | 47.3390 | -122.2130 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Green River Trail Site - Kent | 21501 Russell Road, Kent, WA | 47.4068 | -122.2690 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Green River Trail Site - Tukwila | S 116th at E Marginal Way, Tukwila | 47.4998 | -122.2870 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Hanging Gardens Site | 25901 SE 332nd St, Black Diamond, WA | 47.2910 | -121.9670 | Washington State Parks and Recreation Commission | (360) 902-8844 | |
| C4 – Parks and Beaches (National, State, and Local) | Hatchery Natural Area | Auburn Black Diamond Rd and SE Green Valley Rd Auburn WA 98092 | 47.3045 | -122.1730 | King County Parks and Recreation | (206) 296-8100 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|---------------------------------|---|---------|-----------|--|----------------|-------|
| C4 – Parks and Beaches (National, State, and Local) | Hogan Park at Russell Road | 24400 Russell Road, Kent | 47.3856 | -122.2630 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Horsehead Bend Natural Area | S 259th St and Green River Rd Kent WA 98058 | 47.3671 | -122.2230 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Hyde Lake Park | 304th Ave SE and 355th St Cumberland WA 98022 | 47.2808 | -121.9390 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Interurban Trail Site - Auburn | 1000 37th St NW, Auburn, WA 98001 | 47.3401 | -122.2390 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Interurban Trail Site - Kent | 7280 S 212th St, Kent, WA 98032 | 47.4155 | -122.2420 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Interurban Trail Site - Tukwila | 16784 W Valley Hwy, Seattle, WA 98188 | 47.4517 | -122.2420 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Isaac Evans Park | 29827 Green River RD SE, Auburn WA | 47.3318 | -122.2100 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Jellum Site | 29501 SE Green River Gorge Rd, Enumclaw, WA | 47.3140 | -121.9420 | Washington State Parks and Recreation Commission | (360) 902-8844 | |
| C4 – Parks and Beaches (National, State, and Local) | Jones Lake Open Space | 169 at Jones Lake Rd, Black Diamond WA | 47.3023 | -122.0050 | City of Black Diamond | (360) 886-5700 | |
| C4 – Parks and Beaches (National, State, and Local) | Kanaskat Natural Area | 35164 SE Green River Headworks Rd, Ravensdale, WA 98051 | 47.3149 | -121.8670 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Kanaskat Palmer Recreation Area | 32130 Cumberland-Kanaskat Rd SE, Ravensdale WA 98051 | 47.3190 | -121.9050 | Washington State Parks and Recreation Commission | (360) 902-8844 | |
| C4 – Parks and Beaches (National, State, and Local) | Kent Memorial Park | 850 Central Avenue N., Kent WA | 47.3903 | -122.2290 | City of Kent | (253) 856-5000 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|-----------------------------------|---|---------|-----------|--|----------------|-------|
| C4 - Parks and Beaches (National, State, and Local) | Lake Fenwick Park | 25828 Lake Fenwick Road, Kent WA | 47.3707 | -122.2660 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Lower Newaukum Creek Natural Area | 212th Ave SE and SE 370th St Black Diamond WA 98092 | 47.2708 | -122.0570 | King County Parks and Recreation | (206) 296-8100 | |
| C4 - Parks and Beaches (National, State, and Local) | Mary Olson Farm | 28728 Green River RD SE, Auburn WA | 47.3452 | -122.2050 | City of Auburn | (253) 876-1985 | |
| C4 - Parks and Beaches (National, State, and Local) | Mill Creek Earthworks Park | 100 Reiten Rd, Kent WA | 47.3731 | -122.2130 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Mullen Slough Natural Area | 24975 Frager Road S Kent WA 98032 | 47.3773 | -122.2610 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Neely Bridge Natural Area | 13380 SE 342nd St, Auburn, WA 98092 | 47.2928 | -122.1620 | King County Parks and Recreation | (206) 296-8100 | |
| C4 - Parks and Beaches (National, State, and Local) | Nolte State Park | 36921 Veazie Cumberland Road Enumclaw, WA 98022 | 47.2732 | -121.9390 | Washington State Parks and Recreation Commission | (360) 902-8844 | |
| C4 - Parks and Beaches (National, State, and Local) | North Green River Park | 28000 Green River Rd Kent, WA 98030 | 47.3536 | -122.2130 | King County Parks and Recreation | (206) 296-8100 | |
| C4 - Parks and Beaches (National, State, and Local) | North Green River Park | Garden Ave, Auburn WA 98092 | 47.3204 | -122.2072 | King County Parks and Recreation | (206) 296-8100 | |
| C4 - Parks and Beaches (National, State, and Local) | North SeaTac Park | S. 128th St. & 20th Ave. S., SeaTac | 47.4762 | -122.3130 | City of SeaTac | (206) 973-4680 | |
| C4 - Parks and Beaches (National, State, and Local) | Old Fishing Hole Park | 24945 Frager Road, south of W. Meeker Street | 47.3770 | -122.2690 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Palmer Jellum Connection | 33114 Cumberland Kanasket Rd SE, Ravensdale, WA 98051 | 47.3204 | -121.9200 | Washington State Parks and Recreation Commission | (360) 902-8844 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|-----------------------------|--|---------|-----------|--|----------------|-------|
| C4 – Parks and Beaches (National, State, and Local) | Park Orchard Park | 11058 SE 230th St Kent WA 98058 | 47.3972 | -122.1930 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Porter Levee Natural Area | 12450 SE Green Valley Rd, Auburn, WA 98092 | 47.2976 | -122.1720 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Riverbend Golf Course | 5821 S 240th St, Kent, WA 98032 | 47.3812 | -122.2680 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Riverpoint Park | 1450 32nd St. NE, Auburn WA | 47.3359 | -122.2100 | City of Auburn | (253) 876-1985 | |
| C4 – Parks and Beaches (National, State, and Local) | Seven Oaks Park | SE 259th St. and 118th Pl. SE, Kent WA | 47.3688 | -122.1850 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | Soos Creek Park and Trail | 140th Way SE and Hwy 169 to SE 266th St and 148th SE Kent WA 98042 | 47.3996 | -122.1550 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Southgate Park | 42nd Avenue South/South 135th Street, Tukwila WA | 47.4821 | -122.2830 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Springwood Park | 12700 SE 274th St., Kent WA | 47.3566 | -122.1710 | City of Kent | (253) 856-5000 | |
| C4 – Parks and Beaches (National, State, and Local) | State Park - Auburn Narrows | 12334 SE Green Valley Rd, Auburn WA 98092 | 47.3081 | -122.1950 | Washington State Parks and Recreation Commission | (360) 902-8844 | |
| C4 – Parks and Beaches (National, State, and Local) | Sunset Playfield | 13891 18th Ave S, Seattle, WA 98168 | 47.4780 | -122.3120 | King County Parks and Recreation | (206) 296-8100 | |
| C4 – Parks and Beaches (National, State, and Local) | Tukwila Community Center | 12424 42nd Ave. S., Tukwila WA | 47.4913 | -122.2780 | City of Tukwila | (206) 798-2822 | |
| C4 – Parks and Beaches (National, State, and Local) | Tukwila Park | 15460 65th Avenue South, Tukwila WA | 47.4642 | -122.2510 | City of Tukwila | (206) 798-2822 | |

| Category | Name | Location | Lat | Long | Contact | Phone | Email |
|---|--------------------------------|---|---------|-----------|-------------------------------------|----------------|-------|
| C4 - Parks and Beaches (National, State, and Local) | Turnkey Park | 23312 100th Ave. SE, Kent WA | 47.3938 | -122.2050 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Union Stump Historical Park | Cemetery Road and Roberts Drive, Black Diamond WA | 47.3120 | -122.0180 | City of Black Diamond | (360) 886-5700 | |
| C4 - Parks and Beaches (National, State, and Local) | Valley Floor Community Park | 20401 Frager Rd, Kent WA | 47.4137 | -122.2660 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Van Doren's Landing Park | 21901 Russell Road, Kent WA | 47.4061 | -122.2720 | City of Kent | (253) 856-5000 | |
| C4 - Parks and Beaches (National, State, and Local) | Waterworks Gardens | 639 Oakesdale Ave SW, Renton, WA 98057 | 47.4730 | -122.2400 | King County Water South Plant | (206) 263-1760 | |
| C4 - Parks and Beaches (National, State, and Local) | Whitney Bridge Park | SE Green Valley Rd and 218th Ave SE Auburn WA 98092 | 47.2827 | -122.0530 | King County Parks and Recreation | (206) 296-8100 | |
| C4 - Parks and Beaches (National, State, and Local) | Wilson Playfields | 13028 SE 251st Street, Kent WA | 47.3777 | -122.1670 | City of Kent | (253) 856-5000 | |