



# Grays Harbor

## Geographic Response Plan

### (GH GRP)



# **Grays Harbor**

## **Geographic Response Plan**

### **(GH GRP)**

*December 2013*

# Spill Response Contact Sheet

## Required Notifications for Oil Spills & Hazardous Substance Releases

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

### - Other Contact Numbers -

| <b>U.S. Environmental Protection Agency</b> |                 |
|---|-----------------|
| <b>Region 10 - Spill Response</b>           | (206) 553-1263* |
| Washington Ops Office                       | (360) 753-9437  |
| Oregon Ops Office                           | (503) 326-3250  |
| RCRA/CERCLA Hotline                         | (800) 424-9346  |
| Public Affairs                              | (206) 553-1203  |

| <b>U.S. Coast Guard</b>                          |                       |
|--|-----------------------|
| <b>Sector Columbia River</b>                     |                       |
| - Command Center                                 | (503) 861-6211*       |
| - Watchstander                                   | (503) 861-2242*       |
| - Incident Management Division                   | (503) 861-6477        |
| - Station Grays Harbor (Westport)                | (360) 268-0121*       |
| <b>13th Coast Guard District</b>                 | <b>(800) 982-8813</b> |
| <b>National Strike Force Coordination Center</b> | <b>(252) 331-6000</b> |
| - Pacific Strike Team                            | (415) 883-3311        |

| <b>National Oceanic Atmospheric Administration</b> |                |
|--|----------------|
| <b>Scientific Support Coordinator</b>              | (206) 526-6081 |
| Weather  | (206) 526-6087 |

| <b>Department of Interior</b>         |                |
|---------------------------------------|----------------|
| <b>Regional Environmental Officer</b> | (503) 326-2489 |

| <b>Other Federal Agencies</b>                 |                |
|---|----------------|
| <b>U.S. Fish &amp; Wildlife Service</b>       | (360) 753-9467 |
| <b>U.S. Army Corps of Engineers (Seattle)</b> | (206) 764-3400 |

| <b>Washington State</b>                          |                 |
|--|-----------------|
| <b>Dept Archaeology &amp; Hist. Preservation</b> | (360) 586-3065  |
| <b>Dept of Ecology</b>                           |                 |
| - Headquarters - Spills Program (Lacey)          | (360) 407-7455  |
| - Southwest Regional Office - Spills (Lacey)     | (360) 407-6370  |
| <b>Dept of Fish &amp; Wildlife</b>               |                 |
| - Region 6                                       | (360) 249-4628  |
| - Oil Spill Team (pgr)                           | (360) 534-8233* |
| - Emergency HPA Assistance (pgr)                 | (360) 534-8233* |
| <b>Dept of Transportation</b>                    | (360) 705-7000  |
| <b>Washington State Patrol</b>                   |                 |
| - District 8 Headquarters (Bremerton)            | (360) 473-0319* |
| - Hoquiam Detachment                             | (360) 533-9332  |

| <b>Tribal Contacts</b>      |                      |
|-----------------------------|----------------------|
| <b>Quinalt Nation</b>       | <b>360- 276-8211</b> |
| - Public Safety             | Ext. 358*            |
| - Environmental             | Ext. 292             |
| - Cultural Resources        | Ext. 245, Ext 520    |
| <b>Chehalis Tribe</b>       | <b>360- 273-5911</b> |
| - Public Safety             | 360- 273-7051        |
| <b>Shoalwater Bay Tribe</b> | <b>360-267-6766</b>  |
| - Emergency Management      | Ext. 5220, Ext. 5201 |
| - Environmental             | Ext. 5420, Ext. 5421 |

| <b>Local Government</b>                            |                        |
|--|------------------------|
| <b>Grays Harbor E-911 (All City &amp; County)</b>  | <b>(360) 533-8765*</b> |
| <b>City of Aberdeen</b>                            |                        |
| - Police (Non-Emergency)                           | (360) 533-8765*        |
| - Fire (Non-Emergency)                             | (360) 532-1254         |
| <b>City of Hoquiam</b>                             |                        |
| - Police (Non-Emergency)                           | (360) 532-0892         |
| - Fire (Non-Emergency)                             | (360) 637-6042         |
| <b>City of Cosmopolis (Police Non-Emergency)</b>   | (360) 532-9237         |
| <b>City of Westport (Police Non-Emergency)</b>     | (360) 268-9197         |
| <b>City of Ocean Shores (Police Non-Emergency)</b> | (360) 289-3331         |
| <b>Grays Harbor County</b>                         |                        |
| - County Dispatch (Police/Fire)                    | (360) 533-8765*        |
| - Emergency Management                             | (360) 249-3911         |
| - Health Department                                | (360) 249-4413         |
| <b>Pacific County</b>                              |                        |
| - County Dispatch (Police/Fire)                    | (360) 875-9397*        |
| - Emergency Management                             | (360) 875-9340         |
| - Health Department                                | (360) 875-9343         |

| <b>Response Contractors (OSRO &amp; PRC)</b> |                 |
|--|-----------------|
| <b>Cowlitz Clean Sweep</b>                   | (888) 423-6316* |
| <b>Global Diving &amp; Salvage</b>           | (800) 441-3483* |
| <b>NRC Environmental Services</b>            | (800) 337-7455* |

| <b>Utilities, Railroads, Pipelines, &amp; Regulated Facilities</b> |                 |
|--|-----------------|
| <b>Grays Harbor Public Utilities</b>                               | (360) 532-4220  |
| <b>Imperium Renewables</b>   | (360) 532-3754  |
| <b>BNSF Railway</b>  | (800) 832-5452* |
| <b>Union Pacific Railroad</b>                                      | (888) 877-7267* |

\* Contact Numbers staffed 24-hour/day

**Before you print this document:**

Chapter 4 with appendices (pages 4-1 through 4D-18; Adobe pages 23 to 242) and Appendix 6A (pages 6A-1 through 6A-6; Adobe pages 269 to 274) of this document are provided in “landscape” page orientation; all other chapters and appendices are oriented in “portrait.” In Chapter 4, the detailed (2-page) response strategies in Appendix 4A (pages 4A-3 through 4A-112; Adobe pages 87 to 196), notification strategies in Appendix 4B (pages 4B-3 through 4B-10; Adobe pages 199 to 206), staging area information in Appendix 4C (pages 4C-3 through 4C-18; Adobe pages 209 to 224), and boat launch location information in Appendix 4D (pages 4D-3 through 4D-18; Adobe pages 227 to 242) have all been designed for duplex printing (front and back side of paper), “open to top” configuration.



# Grays Harbor

## Geographic Response Plan

### Purpose and Use of this Plan

This Geographic Response Plan constitutes the federal and state on-scene coordinators' orders during the initial phase of an oil spill in the Grays Harbor area. It's meant to aid the response community during the initial phase of an oil spill incident; from the time a spill occurs until a Unified Command is established. The plan prioritizes response strategies based on the location where a spill might occur and the proximity of those locations to sensitive natural, cultural, and economic resources. By using this document it is hoped that immediate and proper action can be taken to minimize oil's impact on these sensitive resources.

**Response Strategy Selection:** The bulk of this plan is contained in Chapter 4. It provides information on GRP response strategies and the order they should be implemented based on potential spill origin points and their nearness to sensitive resources. Vicinity and sector maps and information on staging areas and boat launch locations are also provided in the chapter. After a spill occurs, the response strategies provided in Chapter 4 should be implemented as soon as possible. Unless circumstances unique to a particular spill situation dictate otherwise, the priority tables in Section 4.3 of the chapter should be used. The 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.

**Control and Containment of an Oil Spill at the Source is 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 the source is not feasible, or 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 take precedence until a Unified Command is formed. It is important to note that spill response priorities must rely on spill trajectory information. A booming strategy listed as a high priority in Section 4.3 would not necessarily be implemented if spill trajectory information didn't warrant action in that area. However, the priority tables should be followed until spill trajectory information becomes available. Modifications to any of the priority tables published in this plan must be approved by the Unified Command. The strategies discussed in this plan have been designed for use with persistent oils and may not be suitable for other petroleum products or hazardous substances. For hazardous substance spills, refer to the Northwest Area Contingency Plan, Chapter 7000.

**Resources at Risk:** Chapter 6 of this plan outlines sensitive resources at risk in the area that may be injured if impacted by oil. The implementation of certain strategies may be delayed if flight restrictions are associated with a particular resource until the required trustee consultation has been provided. Information in the chapter regarding flight restrictions should be followed before moving to implement any strategy requiring the use of aircraft.

**Information in Other Chapters of the Plan:** Chapter 1 provides an introduction to the plan and explains the GRP development process. Chapter 2 describes the area/site, physical features, hydrology, climate & winds, river flow/currents, and risks. Chapter 3 provides an overview of potential response options and considerations for the geographic area. Chapter 5 provides information on shoreline types and oil spill countermeasures. Finally, Chapter 7 provides information that might be needed to support logistics during the initial phase of a response.

|            |  |
|------------|--|
| Chapter 1  | Introduction                           |
| Chapter 2  | Site Description                       |
| Chapter 3  | Response Options and Considerations    |
| Chapter 4  | Response Strategies and Priorities     |
| Chapter 5  | Shoreline Countermeasures              |
| Chapter 6  | Resources at Risk                      |
| Chapter 7  | Logistical Information                 |
| Appendix A | Protection Techniques                  |
| Appendix B | GRP Contributors                       |
| Appendix C | GRP Comments, Corrections, Suggestions |

**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.

**Terminology and Definitions:** This Geographic Response Plan is considered part of the Northwest Area Contingency Plan (NWACP), just revised and distributed separately. 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. The NWACP is available on-line at <http://www.rrt10nwac.com/NWACP/Default.aspx>.

# Record of Changes

| Date    | Change Number | Summary of Changes  | Name of Person Making Change         |
|---------|---------------|---|--------------------------------------|
| 1/1995  | GH 001        | Total replacement of document with revised Chapter 4 based on field verification.   |                                      |
| 3/2003  | GH 002        | Update of Chapter 4 using GIS based maps, and new priority tables based on trajectory modeling.   | Dale Davis                           |
| 12/2013 | GH 003        | Comprehensive review and update of all chapters. Response Options/Consideration sheet added to Chapter 3. Significant changes to Chapter 4, including the addition of detailed (2-pager) information sheets in Chapter's appendices. Economic RAR information included in appendix to Chapter 6. Added Chapter 7 (Logistics) to the plan. | Harry Chichester<br>Danielle Butsick |
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# Grays Harbor Geographic Response Plan

## Chapter 1 – Introduction

This Geographic Response Plan serves as the federal and state on-scene-coordinators' orders during the initial phase of an oil spill response in the Grays Harbor area. This plan has been approved by U.S. Coast Guard Sector Columbia River and Washington State Department of Ecology. 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.rrt10.nwac.com/Comment>. Comments may also be emailed to us at [GRPs@ecy.wa.gov](mailto:GRPs@ecy.wa.gov) or submitted via U.S. Mail using the forms and information provided in Appendix "C" of this document.

GRPs have been developed for the marine and inland waters of Washington, Oregon, and Idaho. They are prepared through the efforts and in cooperation with Washington Department of Ecology, Oregon Department of Environmental Quality, Idaho State Emergency Response Commission, U.S. Coast Guard, Environmental Protection Agency, other state and federal agencies, tribal and local governments, response organizations, and emergency responders. GRPs are developed through workshops and meetings with federal, state, and local oil spill emergency response experts, response contractors, tribal representatives, industry, local governments, environmental and conservation organizations, ports, and pilots. Participants identify resources that may be at risk of injury from spills, develop oil spill response strategies to minimize injury to those resources, and provide information needed to support logistics during a spill response.

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. An updated (draft) plan is produced after site visits are completed. Comments on the draft plan are provided by trustee

agencies, stakeholders, and the public. A final version of the GRP is produced and published. A responsiveness summary is also published that addresses all public comments received during the GRP update process.

This plan has been developed for marine and estuarine areas of Grays Harbor. It encompasses an area of approximately 300 square miles, extending from the Chehalis River upstream of Cosmopolis, northwestward to Copalis Beach on the outer coast, southward to the border between Grays Harbor and Pacific Counties, then northeastward back towards Cosmopolis. The planning area includes coastal shoreline adjacent to Grays Harbor, the Grays Harbor entrance, Oyuhut Sink, Grays Harbor, North Bay, South Bay, Bowerman Basin, and most rivers and creeks that drain into Grays Harbor. The Grays Harbor GRP is bordered by the Willapa Bay GRP to the south and the Outer Coast GRP to the north and northwest. The cities and towns of Aberdeen (including South Aberdeen), Cosmopolis, Hoquiam, Ocean Shores, and Westport are located within this geographic area, as well as portions of Grays Harbor County.

An area site description and information on physical features, hydrology, river conditions, winds, climate, and risk are included in Chapter 2 of this document. An overview of potential response options and considerations for the geographic area is included in Chapter 3. Oil spill response strategy descriptions, response priorities, and area and sector maps are located in Chapter 4. Shoreline countermeasures are in Chapter 5. Information on natural, cultural, and economic resources at risk of injury from oil spills are in Chapter 6. Logistical information meant to help identify resources in the area that might be available to support the initial phase of an oil spill response can be found in Chapter 7.

# **Grays Harbor Geographic Response Plan**

## **Chapter 2 – Site Description**

### **2.1 - Chapter Introduction**

This chapter provides a description of the area's physical features, hydrology, climate and winds, and tides and currents. An oil spill risk assessment for Grays Harbor is also provided in this chapter. The area covered includes shorelines of the Pacific Coast adjacent to Grays Harbor, the Grays Harbor entrance, Oyhut Sink, Grays Harbor, North Bay, South Bay, Bowerman Basin, and the rivers and creeks in the area that drain into Grays Harbor.

### **2.2 - Physical Features**

The Grays Harbor estuary is approximately 13 miles across at its widest point and narrows in some places to less than 100 yards; its entrance from the Pacific Ocean is approximately 2.5 miles wide. The estuary is a drowned portion of the Chehalis River Valley, and it is continually filled in with river borne sediments as well as marine deposits. These build up as intertidal mud and sand flats, which make up the area's predominant physical feature. The three corners of the estuary are defined by the mouth of the Chehalis River to the east, the North Bay, and the South Bay. The North Bay receives waters from the Humptulips River; South Bay draws from the Elk and Johns Rivers and numerous tributaries. The major islands of the estuary are Goose and Sand Islands in North Bay; Whitcomb, Grass, and Laidlaw Islands in South Bay; and Rennie Island near the mouth of the Chehalis River. Bowerman Basin is located on the western side of Hoquiam. It is sheltered from Grays Harbor by a large peninsula occupied by Bowerman Field Airport. Shorelines inside Grays Harbor consist primarily of marsh and sheltered tidal flats, while coastal shorelines along the Pacific Ocean west of Grays Harbor are mainly fine grained sandy beaches.

The Grays Harbor GRP area contains marine and estuarine waters that are biologically rich and sensitive. A wide range of shoreline and marine habitats, plus abundant food resources, contribute to making the area home to a broad variety of fish and wildlife. Grays Harbor

supports more than 50 species of fish, numerous species of marine mammals, large populations of clams, oysters, and crabs, and more than 300 species of birds. It plays a critical role for migrating and wintering shorebirds, waterfowl and raptors. More than a million shorebirds stop to rest and feed each spring during the migration north to the Arctic. Eelgrass beds play a crucial role in supporting hundreds of thousands of ducks and geese from mid-September through mid-May. Grays Harbor also plays a significant role in the life history of Washington's harbor seal population. At times Grays Harbor and Willapa Bay account for almost 40% of the statewide population. The area supports a wide variety of fisheries resources including pacific salmon, pacific herring, surf smelt, and shellfish such as pacific oysters, crabs, cockle clams, eastern clams, and manila and horse clams. See Chapter 6 of this plan for more information on natural resources.

Land in the Grays Harbor area is predominantly rural, rural residential, or conservancy. Five state parks, a dozen boat ramps, and a hand-full of marinas are located here. Local economies are based on commercial fishing, lumber/forest products, shipping, tourism, green products, and construction (SR 520 pontoon project).

## **2.3 Hydrology**

Grays Harbor is a large estuary fed by a 2,600 square mile drainage basin. Water depths throughout most of Grays Harbor are usually less than 20 feet. However, depths up to 80 feet have been measured at the mouth of the estuary. Dredging of the harbor floor provides a narrow navigation channel that can range in depth from 46 feet at the bar crossing to 32 feet as it approaches Cosmopolis. Grays Harbor has three main channels; North Channel, Middle Channel, and South Channel. Presently, the North Channel is the only one dredged for navigation; the middle and south channels remain shoaled by erosion and sediment deposits. Numerous shallow channels created by ebb tide flows and river discharges are present throughout the area.

Net surface flow in this system is seaward. Winter storms increase the flow in rivers and streams that feed Grays Harbor, while flows decline during the summer. Seasonal freshwater input creates a range of salinity from 5 parts per thousand during the winter to 20 parts per thousand in the summer. The largest source of freshwater into Grays Harbor is from the Chehalis River. Other significant sources of freshwater into Grays Harbor from the north include all forks of the Hoquiam River, the Humptulips and Wishkah Rivers, as well as Chenois and Grass Creeks. The major attributing freshwater sources from the south are Elk River and Johns River (and tributaries), and Andrews, Barlow, Gold, O'Leary, Stafford and Chapin Creeks.



Near the entrance into the Grays Harbor estuary from the Pacific Ocean, less buoyant saltwater (from the ocean) flows beneath more buoyant freshwater (from the numerous rivers and streams that drain into Grays Harbor). During ebb tide, buoyant freshwater at the ocean/estuary innerface expands. Coupled with high winds brought on by severe winter storms, wave conditions near the entrance to Grays Harbor can be intense. Storms can also drive water toward the shore, where it accumulates, resulting in water levels above predicted tide levels. The low atmospheric pressure that accompanies storm events can sometimes cause the ocean to mound, raising water levels even further.<sup>1, 2</sup>

Portions of Water Resource Inventory Areas (WRIA) for Queets/Quinault (WRIA 21), Lower Chehalis (WRIA 22), and Willapa (WRIA 24) fall within the geographic boundaries of this plan.

**2.3.1 - Queets/Quinault (WRIA 21):** The Queets/Quinault Watershed is comprised of 755,674 acres along the Pacific coast of the Olympic Peninsula. It extends from Kalaloch Creek in the north to Connor Creek in the south. The watersheds of WRIA 21 are those of the Queets, Quinault, Moclips, Raft, and Copalis Rivers, as well as numerous tributaries that flow directly into the Pacific Ocean. The Queets and Quinault Rivers are the largest flow through the Olympic Mountains and their foothills. Also within WRIA 21 is a large coastal plain through which many smaller streams and rivers flow to the Pacific Ocean. Marine shorelines in the area span approximately 65 miles.<sup>3, 4</sup>

**2.3.2 - Lower Chehalis (WRIA 22):** The Lower Chehalis Watershed is the northwest portion of the Chehalis River Basin. Its waters include the Chehalis, Newaukum, Skookumchuck, Satsop, Wynoochee, and Wishkah Rivers, as well as numerous tributary creeks and streams. Within the 2,600 square miles that make up the Chehalis Basin, there are over 3,300 miles of rivers and streams. The Chehalis River starts in the Willapa Hills region near the town of Pe Ell and flows downstream through a variety of diverse eco-regions. It is bound on the west by the Pacific Ocean, on the east by the Deschutes River Basin, on the north by the Olympic Mountains, and on the south by the Willapa

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<sup>1</sup> US Army Corps of Engineers Engineer Research and Development Center Coastal and Hydraulics Laboratory. (2003, September). *North Jetty Performance and Entrance Navigation Channel Maintenance, Grays Harbor, Washington*. Retrieved from [http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=\\$N/1000716](http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=$N/1000716).

<sup>2</sup> Washington Department of Ecology. (n.d.). *Washington's Coast Weather*. Retrieved from <http://www.ecy.wa.gov/programs/sea/coast/storms/weather.html>.

<sup>3</sup> Washington Department of Ecology. (2012). *Focus on Water Availability: Queets-Quinault Watershed, WRIA 21*. Retrieved from <https://fortress.wa.gov/ecy/publications/publications/1111026.pdf>.

<sup>4</sup> Quinault Indian Tribe & Washington Coast Sustainable Salmon Partnership. (June 2011). *DRAFT WRIA 21 Queets/Quinault Salmon Habitat Recovery Strategy*. Retrieved from <http://www.wcssp.org/Documents/WRIA21WorkingDraftHabitatStrategy.pdf>.

Hills and Cowlitz River Basin. Elevations vary from sea level at Grays Harbor to 5,054 feet in the Olympic National Forest.<sup>5, 6</sup>

**2.3.3 - Willapa (WRIA 24):** The Willapa Watershed is located along Washington's south coast. It includes the Willapa, Johns, Elk, North, Nemah, Naselle, and Bear River drainages. The Johns and Elk Rivers are in the northern portion of WRIA 24. These rivers drain into Grays Harbor. The Bear, Nemah and Naselle subbasins are within the southern portion of WRIA 24; the Willapa River and its tributaries account for about 167,740 acres in its central portion. The entire watershed, excluding the Johns and Elk Rivers, drains into Willapa Bay.<sup>7, 8</sup>

## 2.4 – Climate & Winds

Summer temperatures in Grays Harbor are usually in the upper 60's (F). Winter lows are generally in the upper 30's (F) to low 40's (F). Annual precipitation varies throughout the area from 69 inches in Hoquiam to 83 inches in Aberdeen. Precipitation usually reaches its monthly maximums in December; Hoquiam 10 inches, Aberdeen 13 inches. Annual snowfall is typically light; Hoquiam 4.8 inches, Aberdeen 6 inches.<sup>9, 10</sup>

Winds in the Grays Harbor area, measured at Bowerman Field Airport in Hoquiam, blow toward the west in April through September and toward the east in October through March. In the summer months average wind speed is 8.5 mph. During the winter months average wind speed is 10.2 mph. December is typically the windiest month; average wind speed is 11.1 mph, blowing in an easterly direction.<sup>11, 12</sup>

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<sup>5</sup> Washington Department of Ecology. (2012). *Focus on Water Availability: Lower and Upper Chehalis Watersheds, WRIAs 22-23*. Retrieved from <https://fortress.wa.gov/ecy/publications/publications/1111027.pdf>.

<sup>6</sup> Chehalis Basin Partnership. (n.d.). *About the Chehalis Basin*. Retrieved from <http://www.chehalisbasinpartnership.org/about/about.htm>.

<sup>7</sup> Washington Department of Ecology. (2012). *Focus on Water Availability: Willapa Watershed, WRIA 24*. Retrieved from <https://fortress.wa.gov/ecy/publications/publications/1111028.pdf>.

<sup>8</sup> Pacific Conservation District. (2006). *Willapa Watershed Assessment*. Retrieved from [http://wcssp.org/WCSPSP\\_library/wria24/Willapa\\_watershed\\_assessment.pdf](http://wcssp.org/WCSPSP_library/wria24/Willapa_watershed_assessment.pdf).

<sup>9</sup> Western Regional Climate Center. (n.d.). *Hoquiam FCWOS AP, Washington (453807)*. Retrieved from <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?wa3807>.

<sup>10</sup> Western Regional Climate Center. (n.d.). *Aberdeen, Washington (450008)*. Retrieved from <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?wa0008>.

<sup>11</sup> Western Regional Climate Center. (n.d.). *Hoquiam Airport*. Retrieved from <http://www.wrcc.dri.edu/htmlfiles/westwind.final.html>.

<sup>12</sup> Western Regional Climate Center. (n.d.). *Hoquiam Airport, WA (KHQM)*. Retrieved from <http://www.wrcc.dri.edu/htmlfiles/westwinddir.html>.

## 2.5- Tides and Currents

The Grays Harbor estuary experiences semidiurnal tides which move slowly inward up the estuary, causing Aberdeen to experience high tide later than the mouth of the harbor. Grays Harbor has 53 miles of intertidal lands, with tidal influences reaching as far as Montesano, 32 miles from the harbor entrance. Based on NOAA tidal data for 2010, high and low tide levels fluctuate between -2.0ft and 11.2ft at Westport, and -1.4ft and 12.1ft at Aberdeen.<sup>13</sup>

Surrounding the entrance of Grays Harbor is a shallow bar where inward-flowing ocean swells converge with outward-flowing river currents. Currents in the vicinity of the bar can occasionally be erratic. At the harbor entrance, current velocities can reach 5 knots, but average current velocity is usually about 1.9 knots at flood tide and 2.8 knots at ebb tide. In channels through the bay, current velocities seldom exceed 3 knots.<sup>14</sup>

## 2.6 – Risk Assessment

Grays Harbor is plentiful in natural, cultural, and economic resources, all at risk of injury from oil spills. Potential risks to these resources include large commercial vessels, challenging navigation, waterfront facilities, road and rail systems, and other oil spill risks. This section briefly discusses these risks in the Grays Harbor GRP area.

Large Commercial Vessel Traffic: Grays Harbor has experienced significant economic growth in recent years, accompanied by increased tanker and cargo transport. Vessel arrival data shows more than a 200% increase in the arrival of tankers and cargo vessels since 2006. Bulk exports are the largest commodity handled at port facilities, and are expected to increase further over the next few years; especially shipments of grain, soybeans, and other agricultural products. Roll-on-roll-off imports/exports and commercial tank ship traffic are also likely to increase. Large commercial vessels typically carry significant amounts of heavy and blended fuel oils and other petroleum products, raising the potential for sensitive resources to be impacted if an oil spill incident were to occur.

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<sup>13</sup> National Oceanic and Atmospheric Administration. (2009, October 14). *NOAA Tides & Currents*. Retrieved from Tidal Station Locations and Ranges: <http://tidesandcurrents.noaa.gov/tides10/tab2wc1b.html#136>.

<sup>14</sup> National Oceanic and Atmospheric Administration. (2012, November 18). *United States Coast Pilot 7 2013 (45th) Edition*, 472. Retrieved from [http://www.nauticalcharts.noaa.gov/nsd/coastpilot/files/cp7/CPB7\\_E45\\_20121118\\_0008\\_WEB.pdf](http://www.nauticalcharts.noaa.gov/nsd/coastpilot/files/cp7/CPB7_E45_20121118_0008_WEB.pdf).

Navigation: Due to shoals and flats, the navigable channel into Grays Harbor narrows to 0.6 miles wide with a number of turns where well judged course changes are required. A breaking bar at the entrance to Grays Harbor, coupled with strong and sometimes erratic currents, can present a navigational challenge to commercial and recreational vessels entering or leaving port. Periods of limited visibility (fog, rain, and darkness) can add to this challenge. Submerged sections of the north and south jetties at the Grays Harbor entrance extend seaward about 0.2 and 0.9 miles (respectively). Hazardous breakers can occasionally be present near these jetties, especially during periods of heavy weather. Pilotage rules for commercial traffic must be followed in order to reduce the risk of groundings, collisions, or other accidents.

Facilities: Two bulk liquid facilities are located in Grays Harbor near waterfront areas in Aberdeen. Annually, millions of gallons of raw and refined product (primarily biodiesel, ethanol, and methanol) are transported to or from these facilities by rail, tank truck, and ship.

Road and Rail Systems: Road, rail, and other land-based transportation systems present an oil spill risk to Grays Harbor where they run adjacent to the shoreline or cross over rivers, creeks, and ditches that drain into the harbor. Commercial truck traffic on highways and roadways can contain hundreds to thousands of gallons of fuel and oil, especially fully loaded tank trucks. Train locomotives typically hold several thousand gallons of diesel fuel plus large quantities of lube and motor oils. Loaded train tank cars can contain tens of thousands of gallons of crude oil or other petroleum products. There has been a tenfold increase in rail cars visiting Grays Harbor since 1997. The continued use of rail to transport commercial products into and out from Grays Harbor is expected to expand even more in the upcoming years.

Other Oil Spill Risks: Other potential sources that add to oil spill risks in Grays Harbor include recreational watercraft, commercial fishing vessels, and charter boats that are anchored in the area, operating in Grays Harbor or off-shore, or moored at local docks and marinas. Spill risks include but are not limited to boat refueling accidents, the unintentional pumping of bilges, boat fires, and the grounding of vessels during periods of heavy weather. Land-based sources of spills that might impact Grays Harbor include road run-off and the migration of spilled oil through soil, ditches, and storm drain systems.

Winter Storms: Severe storms hit Washington's coast during the winter, bringing heavy rains, strong winds, and high waves. Coastal storm winds regularly top 40 mph. The annual peak speed of 55 mph can topple chimneys, utility lines, and trees. The entire county is vulnerable to wind storms. High winds are commonplace along the coast but not as frequently in East County. It is estimated that there is a 170% chance of an occurrence of at least one damaging wind event every year in Grays Harbor County.

Earthquakes: Grays Harbor County is particularly vulnerable to damaging earthquakes. The U.S. Geological Survey estimates that Grays Harbor County has a 40% to 50% chance of experiencing an earthquake with a magnitude of 5.0 within the next 50 years. The probability of a 7.0 magnitude is 12% to 15% during this same period. The Washington State Hazard Mitigation Plan estimates the probability of an earthquake event similar to the 2001 Nisqually earthquake, which had a noticeable impact in Grays Harbor County, is once every 35 years. A reoccurrence of an earthquake similar to the magnitude 7.1 Olympia event in 1949, the largest recorded earthquake in Washington State history, is once every 110 years. Estimates for the probability of a subduction quake are 10 to 14% over the next 50 years.

Liquefaction: Damage from an earthquake can occur to structures in areas subject to liquefaction where soil, especially sandy soils saturated with water, can liquefy or behave like a liquid during ground shaking. Of special concern are towers and tanks located on steep slopes with soils subject to liquefaction. A map showing liquefaction susceptibility in Grays Harbor can be found at [ftp://ww4.dnr.wa.gov/geology/pubs/ofr04-20/ofr2004-20\\_sheet27\\_graysharbor\\_liq.pdf](ftp://ww4.dnr.wa.gov/geology/pubs/ofr04-20/ofr2004-20_sheet27_graysharbor_liq.pdf).

Tsunamis: Grays Harbor County has been vulnerable to tsunami events. There is evidence that tsunamis may have occurred along the Washington coast in the past, but there is no or little documentation describing these events. Considerable evidence suggests a large earthquake created a tsunami with wave heights of 20' just over 300 years ago. Historical records reported tsunamis occurring along the Pacific Northwest coast at Astoria in December 1853, April 1868, and August of 1872. The 1960 Chilean Tsunami, generated by a 9.5 magnitude earthquake, resulted in small waves within Grays Harbor and two-foot waves in Tokeland. The 1964 Alaskan earthquake generated the largest tsunami waves to occur in the county to date (2.9' at Ocean Shores) but resulted in relatively minor damage and debris deposited throughout the coastal areas of the county.

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# Grays Harbor

## Spill Response Options & Considerations

| Waterbody Class | Open Water Rough (> 6' wave height)   |
|-----------------|---------------------------------------|
|                 | Open Water (0' – 6' wave height)      |
|                 | Protected Water (0' – 3' wave height) |
|                 | Calm Water (0' – 1' wave height)      |
|                 | High current (> 1kt)                  |
|                 | Shallow water (< 10')                 |

| 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 <i>(Note:1)</i> |
|                            | Vessel Based Skimming Operations <i>(Note:2)</i>   |
|                            | Shore Based Skimming Operations <i>(Note:3)</i>    |
|                            | Shoreline Protection Booming <i>(Note:4)</i>       |
|                            | Shoreline Cleanup Activities <i>(Note: 5)</i>      |
|                            | In-Situ Burning <u>Areas Not Pre-Approved</u>      |
|                            | Dispersant Use <u>Areas Not Pre-Approved</u>       |

| Considerations | Shoreline Access can be Limited by Geography             |
|----------------|--|
|                | Shoreline Access can be Limited by Private Property      |
|                | Shellfish or Aquaculture in area                         |
|                | State Wildlife Refuge / National Wildlife Refuge in area |
|                | Shorebird Habitat – International Fly Way                |
|                | Marina (Public or Commercial) in area                    |
|                | Commercial Vessel Movement / Port Area                   |
|                | Place / Port of Refuge (with Tug Assist Capability)      |
|                | Recreational Boat Traffic / Movement                     |
|                | Tribal Lands or Interest <i>(Note: 6)</i>                |
|                | USCG Base in area  |
|                | Low Visibility – Seasonally Persistent                   |
|                | Sea Conditions – Seasonally Rough or Extreme             |

| Location |            |         |              |          |           |           |       |
|----------|------------|---------|--------------|----------|-----------|-----------|-------|
| Aberdeen | Cosmopolis | Hoquiam | Ocean Shores | Westport | North Bay | South Bay | Ocean |

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See the Northwest Area Contingency Plan (NWACP - Section 1900) for more information on the terminology used on this sheet. The NWACP is available online at <http://www.rtt10nwac.com/NWACP/Default.aspx>.

**Note 1:** Collection for Skimming Operations response options should include use of enhanced skimming using a U-boom, V – boom, or J – boom Configuration. It may also include the use of Current Buster (boom).

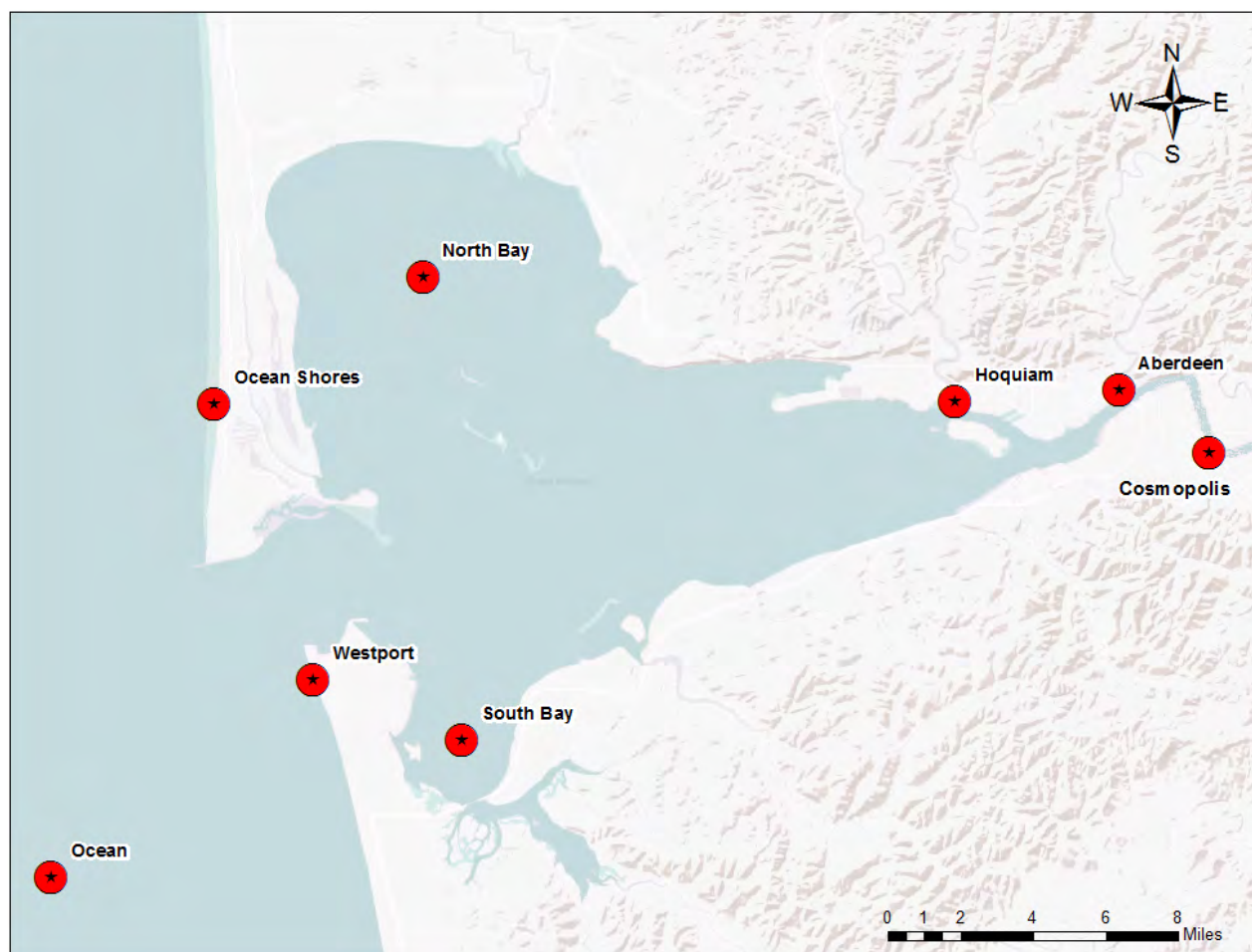
**Note 2:** Vessel Based Skimming Operations response options should include use of advancing skimmers; weir, belt, brush, drum, or other skimmer types.

**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 (C-Plans), and “ad-hoc” strategies developed during the spill itself.

**Note 5:** Shoreline Cleanup options depend on beach type. Potential activities should 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.



Washington State Department of Ecology

**NORTHWEST AREA COMMITTEE**

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**GRAYS HARBOR**  
**GEOGRAPHIC RESPONSE PLAN**

(GH GRP)

**CHAPTER 4**

***Response Strategies & Priorities***

December 2013

**Before you print this document:**

This chapter and appendices are provided in “landscape” page orientation. The detailed (2-page) response strategies in Appendix 4A (pages 4A-3 through 4A-112; Adobe pages 87 to 196), notification strategies in Appendix 4B (pages 4B-3 through 4B-10; Adobe pages 199 to 206), staging area information in Appendix 4C (pages 4C-3 through 4C-18; Adobe pages 209 to 224), and boat launch location information in Appendix 4D (pages 4D-3 through 4D-18; Adobe pages 227 to 242) have all been designed for duplex printing (front and back side of paper), “open to top” configuration.

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## 4.1 - Chapter Introduction

This chapter provides information on GRP response strategies and the order (priority) they should be implemented based on potential spill origin points, and the proximity of sensitive resources to them. Area maps, sector maps, and information on staging areas and boat launch locations are also provided in this chapter. During a spill incident, GRP response strategies should be implemented as soon as possible. Unless circumstances unique to a particular spill situation dictate otherwise, the priority tables in Section 4.3 should be used to decide the order that GRP strategies are deployed. The downstream movement of oil and the time it takes to mobilize response resources to deploy GRP strategies must always be considered when setting implementation priorities. Information on shoreline types and countermeasures, resources at risk/sensitive areas, and flight restrictions can be found in Chapter 5 and Chapter 6 of this plan. Information on protection techniques can be found in Appendix A of this plan.

The Geographic Response Plan (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 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 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. In Washington State, an Emergency Hydraulic Project Approval (HPA) permit is required if implementation of a response strategy would reduce, interrupt, or divert the flow of water in a stream, creek, or river. This includes but is not limited to the installation of culvert blocks and underflow dams. To obtain an Emergency HPA contact the WDFW Oil Spill Team at 360-534-8233 (24-hour pager). WDFW Oil Spill Team won't be able to provide HPAs for restoration activities associated with an oil spill or for non-oil spill related activities. Non-oil spill HPAs may be requested through the WDFW regional offices or at 360-902-2537.
- 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.
  - Washington State Patrol – Hoquiam Detachment (360-533-9332)
  - Grays Harbor County Sherriff (360-249-3711)
  - Aberdeen Police (360-533-8765 Dispatch)
  - Hoquiam Police (360-532-0892)
  - Ocean Shores Police (360-533-8765)
  - Westport Police (360-268-9197)
  - Quinault Tribal Nation Public Safety (360-276-8211 ext:358)

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 speed will likely require modifications to boom deflection angles (see Table 4-9). 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<br>100 Feet<br>(seconds) | Velocity<br>(ft/sec) | Velocity<br>(m/sec) | Velocity<br>(knots) | Max Boom<br>Deflection Angle<br>(degrees) | Boom required for<br>100-foot Profile to<br>Current (feet) | Anchors if Placed<br>Every 50 feet<br>(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

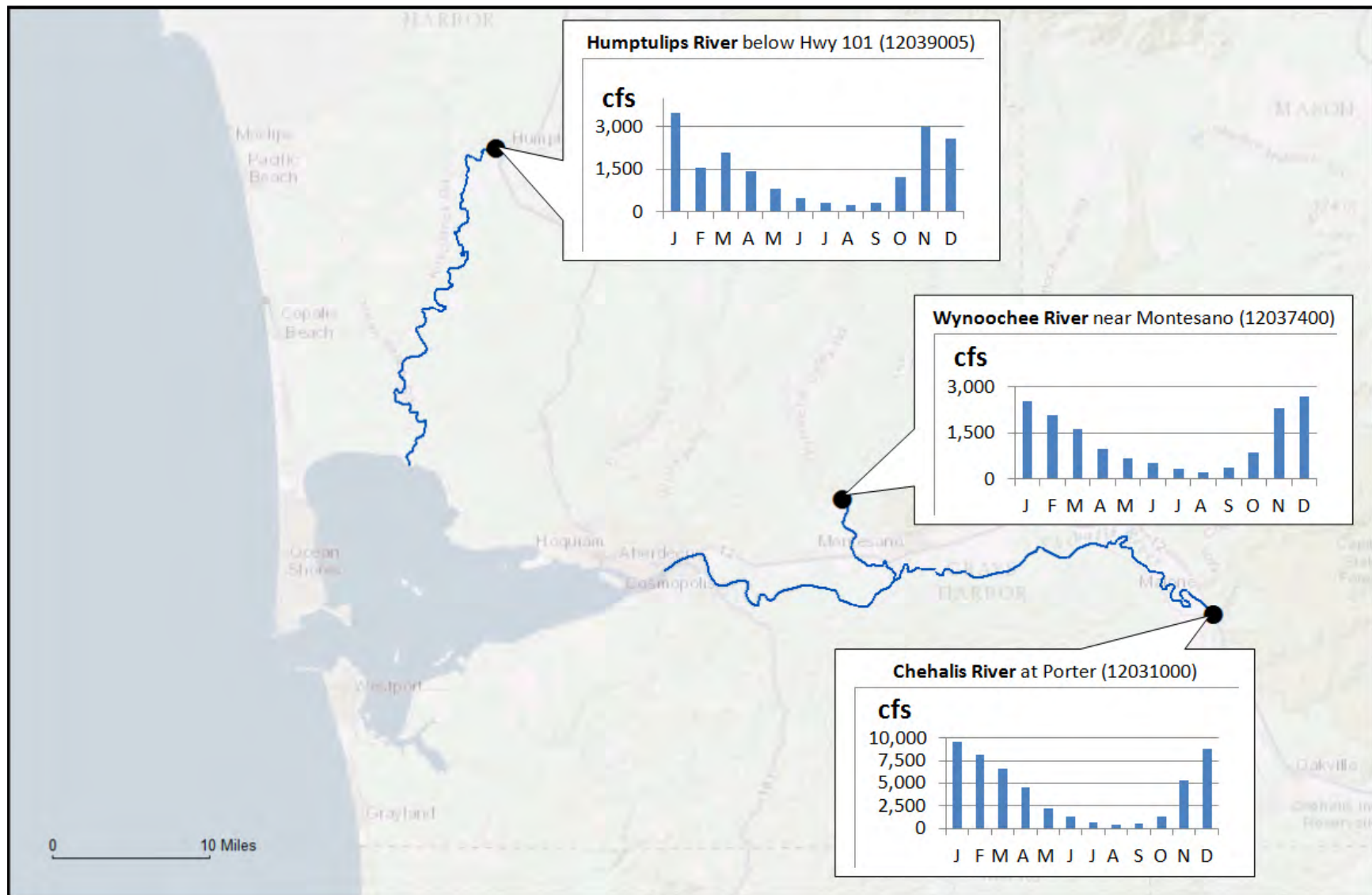
#### 4.1.2 - Historical River Streamflow Ranges:

Gage/stream-flow data from U.S. Geological Survey (USGS) was used to determine the mean monthly stream discharge for rivers and streams in the Grays Harbor area. Stream discharge is recorded in cubic feet per second (cfs); velocities in miles per hour (mph) or nautical miles per hour (knots) are not available. Table 4.1 provides information that can be used to calculate 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 Appendix A of this plan. Information on USGS river gage readings can be found online at <http://maps.waterdata.usgs.gov/mapper/index.html>.

|            | <i>Streamflow - Monthly Average in Cubic Feet per Second (cfs)</i> |   |   |
|------------|--|---|---|
|            | <b>Chehalis River</b><br>at Porter (12031000)                      | <b>Wynoochee River</b><br>near Montesano (12037400) | <b>Humptulips River</b><br>below Hwy 101 (12039005) |
| <b>Jan</b> | 9,530  | 2,530   | 3,500   |
| <b>Feb</b> | 8,090  | 2,070   | 1,560   |
| <b>Mar</b> | 6,570  | 1,620   | 2,070   |
| <b>Apr</b> | 4,480  | 993   | 1,410   |
| <b>May</b> | 2,200  | 685   | 797   |
| <b>Jun</b> | 1,260  | 518   | 498   |
| <b>Jul</b> | 621  | 336   | 302   |
| <b>Aug</b> | 417  | 239   | 224   |
| <b>Sep</b> | 536  | 373   | 318   |
| <b>Oct</b> | 1,250  | 865   | 1,240   |
| <b>Nov</b> | 5,310  | 2,310   | 2,980   |
| <b>Dec</b> | 8,830  | 2,680   | 2,600   |

Table 4.2 - Historic Streamflow for specific Rivers in Grays Harbor GRP Area

**Figure 4.1 – USGS Mean Monthly Discharge Measurements for Rivers in the Grays Harbor Area**



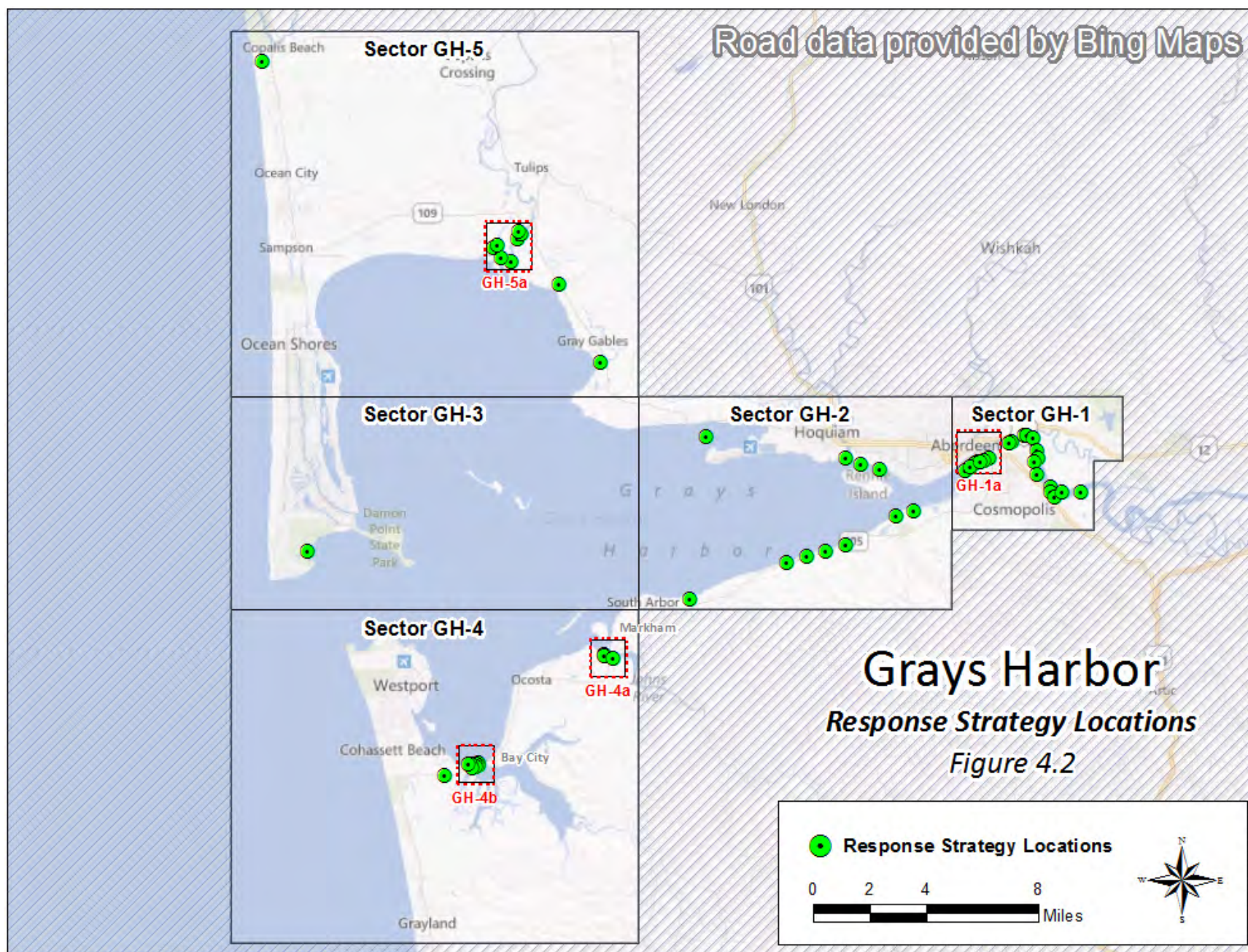
## 4.2 – Area Overview Maps

The following maps provide a geographic overview of the Grays Harbor 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.

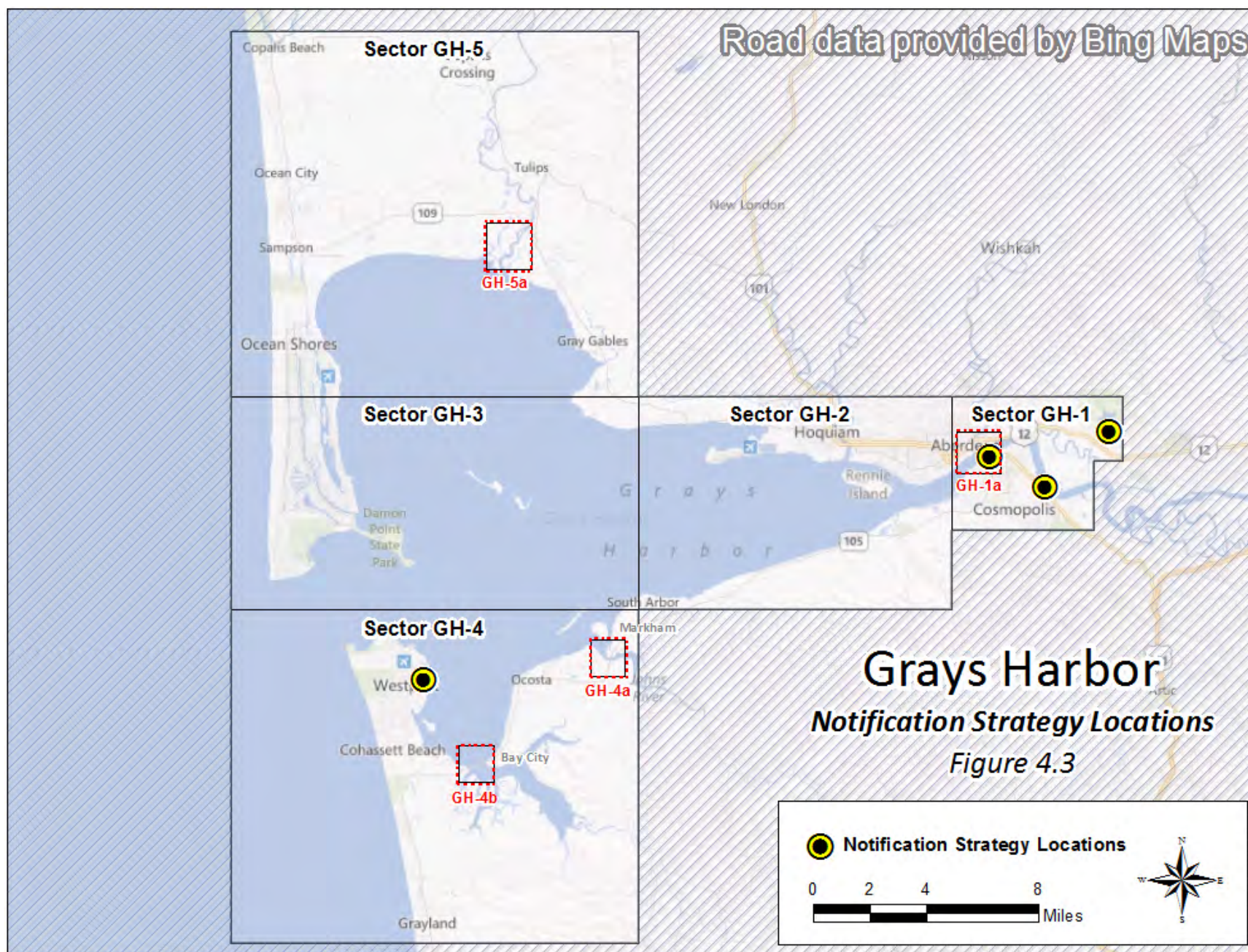
The following area maps are provided for reference:

- Response Strategy Locations
- Notification Strategy Locations
- Staging Areas
- Boat Launch Locations
- Potential Oil Spill Origin Points

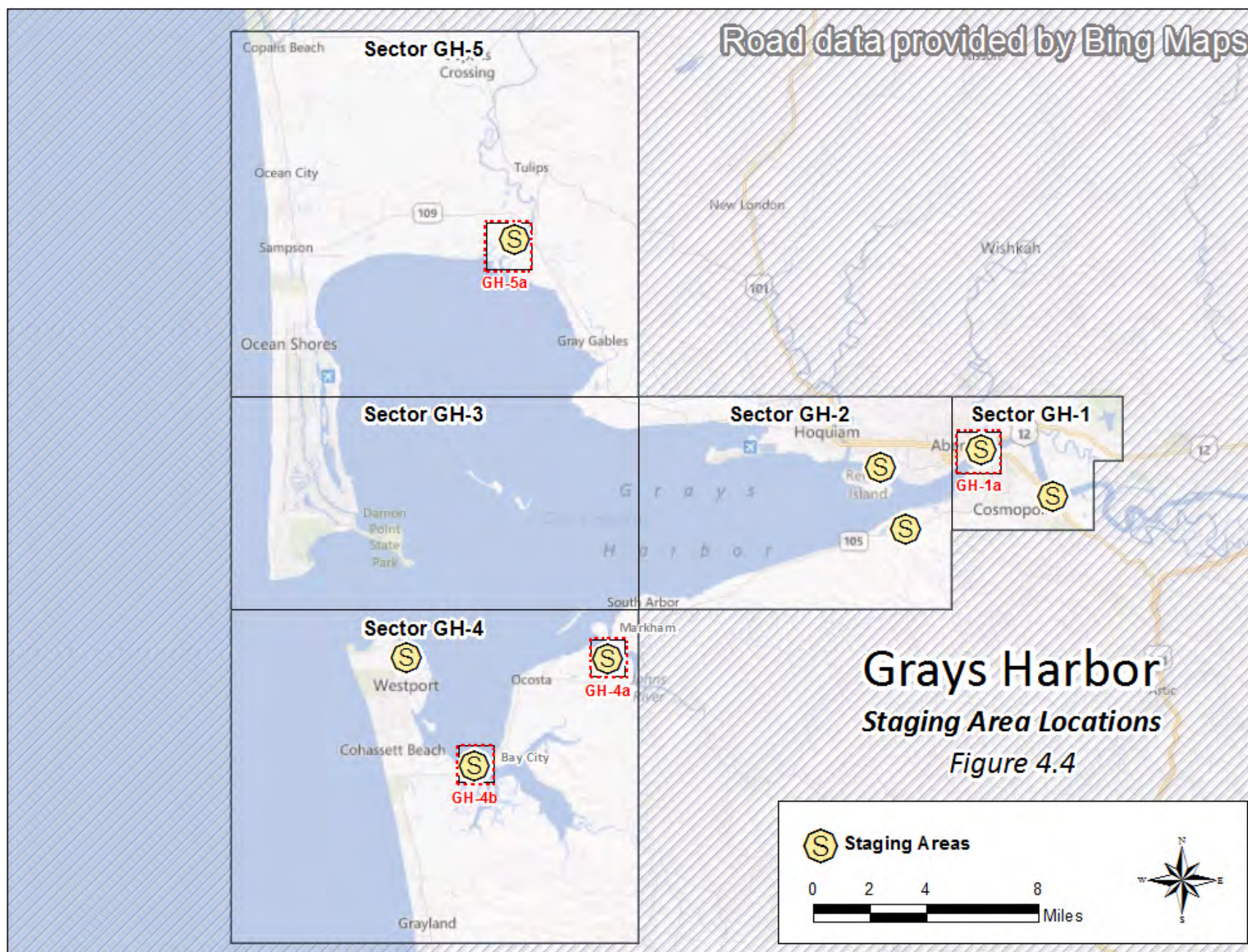




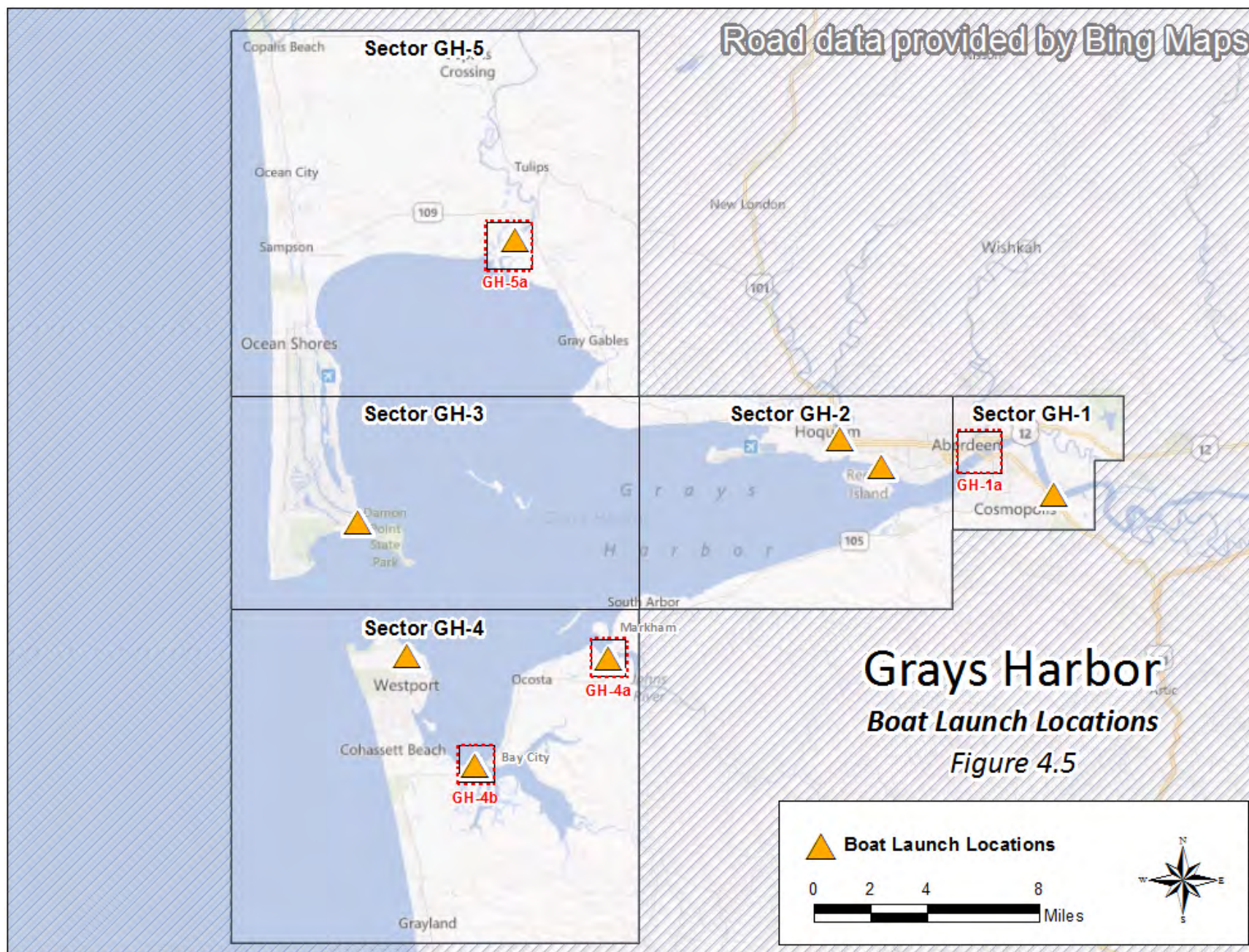




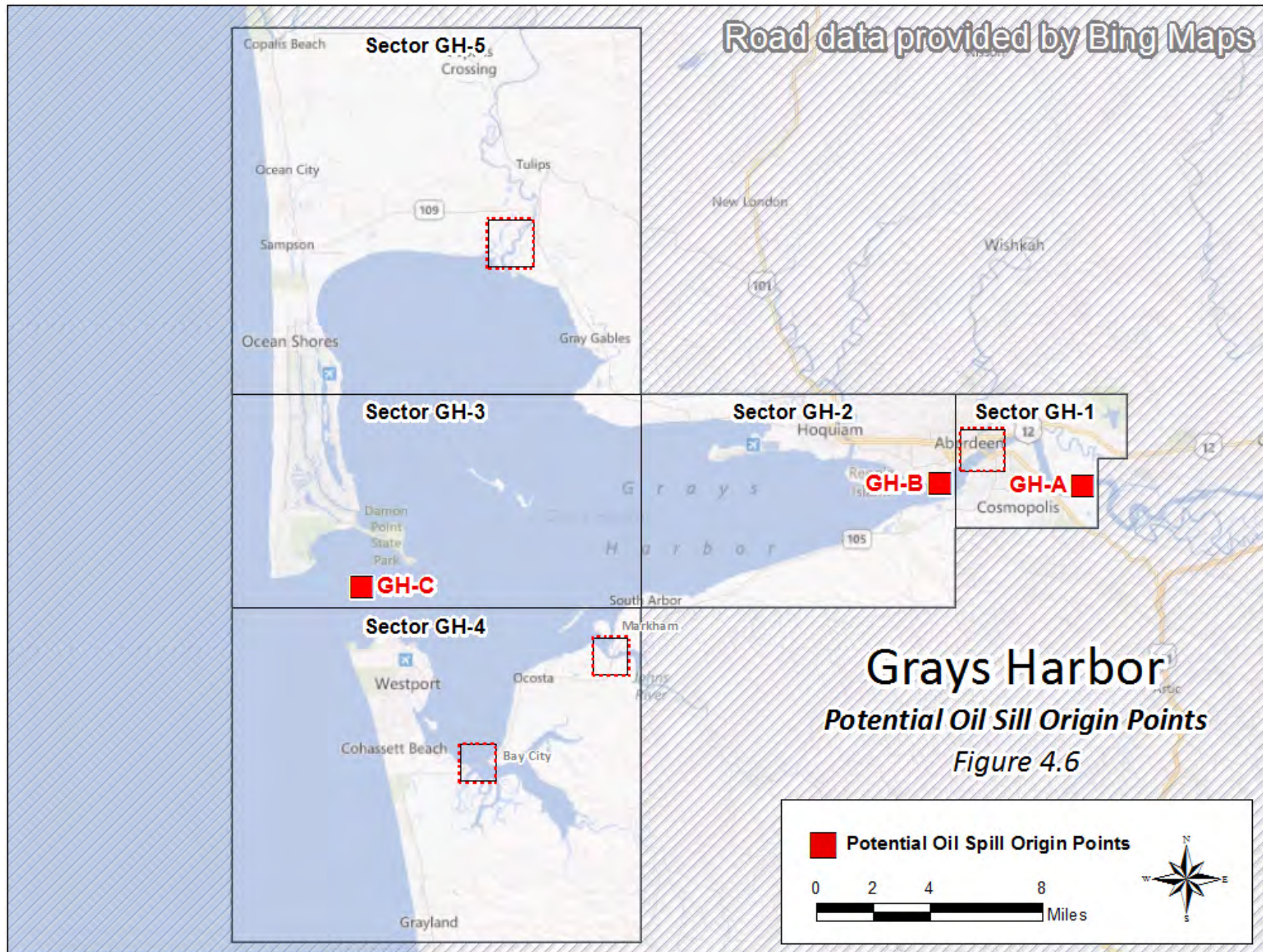












### 4.3 – Strategy & Response Priorities:

**4.3.1 - General Response Priorities:** The following list provides the order of response priorities after an oil spill into the Grays Harbor area.

1. Safety is always the number one priority. Do not implement GRP strategies or take actions that will unduly jeopardize public, worker, or personal safety.
2. Notify local public health and safety personnel.
3. Control and contain the source of the spill; mobilize resources to the spill location. Source control and containment are always a higher priority than the implementation of GRP strategies.
4. Determine the priority or order 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).
5. As response resources become available, implement the GRP Strategies in order of priority.
6. 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:** The following tables provide the strategy implementation order for Potential Oil Spill Origin Points in the Grays Harbor area; points GH-A, GH-B, and GH-C. These points are displayed on area overview and sector maps as red boxes. In establishing response priorities, or selecting an appropriate Potential Oil Spill Origin Point, 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, and then continued upstream towards the spill source.

***“Source control and containment are always a higher priority than GRP strategy implementation”***

**Table 4.3**

| <b>"GH-A" (Chehalis River Upstream of Cosmopolis)</b> |                        |                   |                        |                         |                         |
|---|------------------------|-------------------|------------------------|-------------------------|-------------------------|
| <b>Implementation Priority</b>                        | <b>Strategy Number</b> | <b>Sector Map</b> | <b>Strategy Matrix</b> | <b>Strategy Details</b> | <b>Best Implemented</b> |
| <b>1</b>  | <b>CHER-2.5-N</b>      | 4-18              | 4-52                   | 4B-5                    | N/A - Notification      |
| <b>2</b>  | <b>CHER-0.15-N</b>     | 4-19              | 4-52                   | 4B-3                    | N/A - Notification      |
| <b>3</b>  | <b>LKAB-0.0-N</b>      | 4-18              | 4-52                   | 4B-7                    | N/A - Notification      |
| <b>4</b>  | <b>WSHR-0.0</b>        | 4-19              | 4-51                   | 4A-109                  | Slack High Tide         |
| <b>5</b>  | <b>CHER-0.7b</b>       | 4-18              | 4-28                   | 4A-9                    | Slack High Tide         |
| <b>6</b>  | <b>CHER-1.25b</b>      | 4-18              | 4-29                   | 4A-13                   | Slack High Tide         |
| <b>7</b>  | <b>CHER-1.4</b>        | 4-18              | 4-29                   | 4A-15                   | Slack High Tide         |
| <b>8</b>  | <b>CHER-1.7b</b>       | 4-18              | 4-30                   | 4A-19                   | Slack High Tide         |
| <b>9</b>  | <b>CHER-2.0b</b>       | 4-18              | 4-31                   | 4A-23                   | Slack High Tide         |
| <b>10</b>   | <b>CHER-2.6</b>        | 4-18              | 4-32                   | 4A-25                   | Slack High Tide         |
| <b>11</b>   | <b>CHER-3.0</b>        | 4-18              | 4-33                   | 4A-31                   | Slack High Tide         |
| <b>12</b>   | <b>CHER-3.5</b>        | 4-18              | 4-33                   | 4A-33                   | Slack High Tide         |
| <b>13</b>   | <b>CHER-2.8</b>        | 4-18              | 4-32                   | 4A-29                   | Slack High Tide         |

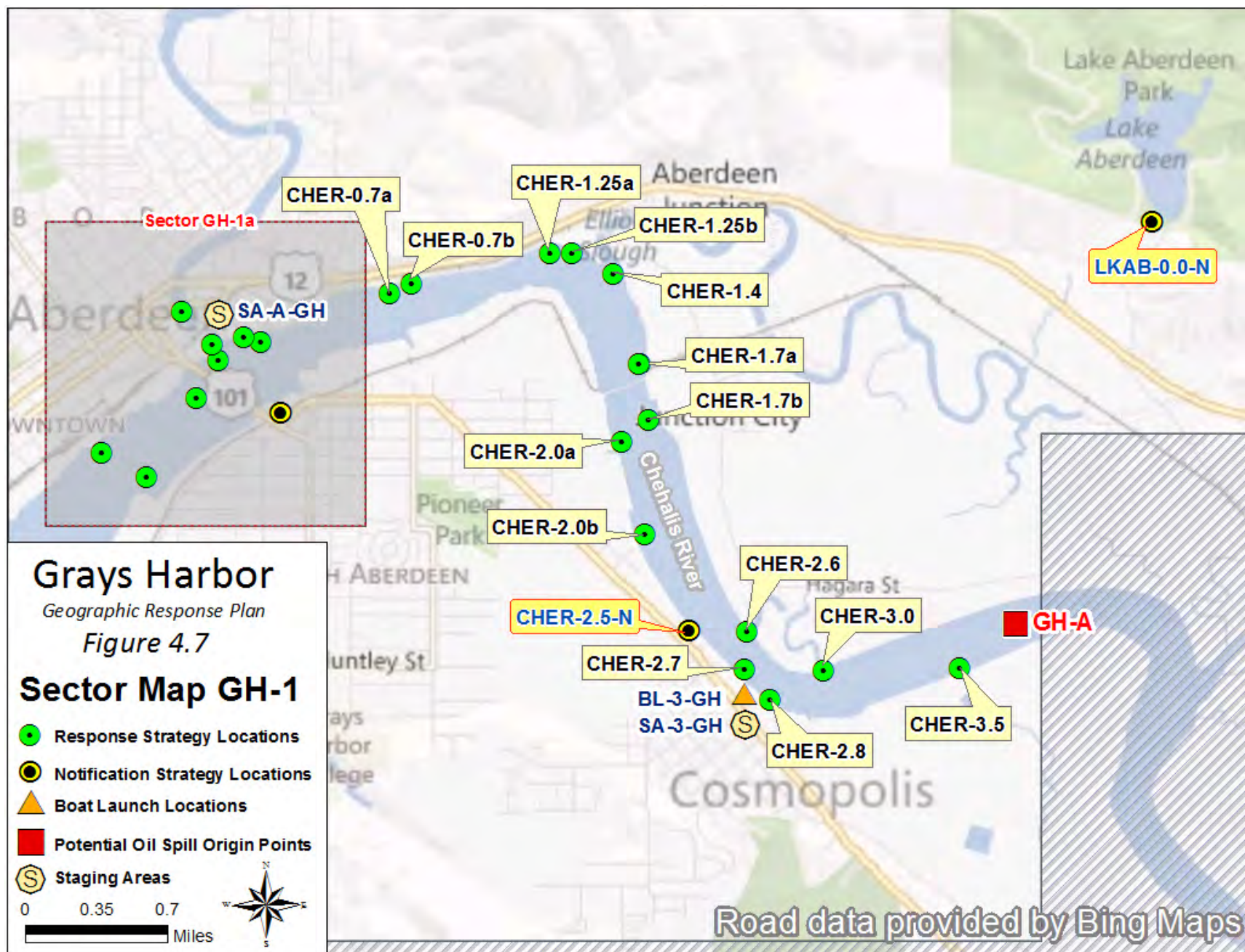
**Table 4.4**

| <b>"GH-B" (Aberdeen / Hoquiam / Port of Grays Harbor)</b> |                        |                   |                        |                         |                                |
|---|------------------------|-------------------|------------------------|-------------------------|--------------------------------|
| <b>Implementation Priority</b>                            | <b>Strategy Number</b> | <b>Sector Map</b> | <b>Strategy Matrix</b> | <b>Strategy Details</b> | <b>Best Implemented</b>        |
| <b>1</b>  | <b>CHER-0.15-N</b>     | 4-19              | 4-52                   | 4B-3                    | N/A - Notification             |
| <b>2</b>  | <b>LKAB-0.0-N</b>      | 4-18              | 4-52                   | 4B-7                    | N/A - Notification             |
| <b>3</b>  | <b>CHER-2.5-N</b>      | 4-18              | 4-52                   | 4B-5                    | N/A - Notification             |
| <b>4</b>  | <b>WEST-0.0-N</b>      | 4-22              | 4-52                   | 4B-9                    | N/A - Notification             |
| <b>5</b>  | <b>CHER-1.25a</b>      | 4-18              | 4-28                   | 4A-11                   | Slack High Tide, or High > Low |
| <b>6</b>  | <b>CHER-0.7a</b>       | 4-18              | 4-27                   | 4A-7                    | Slack High Tide, or High > Low |
| <b>7</b>  | <b>CHER-1.4</b>        | 4-18              | 4-29                   | 4A-15                   | Slack High Tide                |
| <b>8</b>  | <b>CHER-1.7a</b>       | 4-18              | 4-30                   | 4A-17                   | Slack High Tide, or High > Low |
| <b>9</b>  | <b>CHER-2.0a</b>       | 4-18              | 4-31                   | 4A-21                   | Slack High Tide, or High > Low |
| <b>10</b>   | <b>CHER-2.7</b>        | 4-18              | 4-32                   | 4A-27                   | Slack High Tide, or High > Low |
| <b>11</b>   | <b>CHER-2.6</b>        | 4-18              | 4-32                   | 4A-25                   | Slack High Tide, or High > Low |
| <b>12</b>   | <b>CHER-3.0</b>        | 4-18              | 4-33                   | 4A-31                   | Slack High Tide, or High > Low |
| <b>13</b>   | <b>CHER-3.5</b>        | 4-18              | 4-33                   | 4A-33                   | Slack High Tide, or High > Low |
| <b>14</b>   | <b>CHER-2.8</b>        | 4-18              | 4-32                   | 4A-29                   | Slack High Tide, or High > Low |
| <b>15</b>   | <b>CHER-0.2</b>        | 4-19              | 4-27                   | 4A-5                    | Slack High Tide, or High > Low |
| <b>16</b>   | <b>CHER-0.0</b>        | 4-19              | 4-27                   | 4A-3                    | Slack High Tide, or High > Low |
| <b>17</b>   | <b>GH6</b>             | 4-19              | 4-39                   | 4A-57                   | Slack High Tide                |
| <b>18</b>   | <b>GH7</b>             | 4-19              | 4-40                   | 4A-59                   | Slack High Tide                |
| <b>19</b>   | <b>GH5</b>             | 4-19              | 4-39                   | 4A-55                   | Slack High Tide                |
| <b>20</b>   | <b>WSHR-0.0</b>        | 4-19              | 4-51                   | 4A-109                  | Slack High Tide                |
| <b>21</b>   | <b>GH2</b>             | 4-20              | 4-37                   | 4A-49                   | High Tide Only                 |
| <b>22</b>   | <b>GH1</b>             | 4-21              | 4-37                   | 4A-47                   | Low Tide Only                  |
| <b>23</b>   | <b>CHRC-0.1</b>        | 4-20              | 4-35                   | 4A-39                   | High Tide                      |
| <b>24</b>   | <b>NSKC-0.2</b>        | 4-20              | 4-50                   | 4A-103                  | High Tide                      |



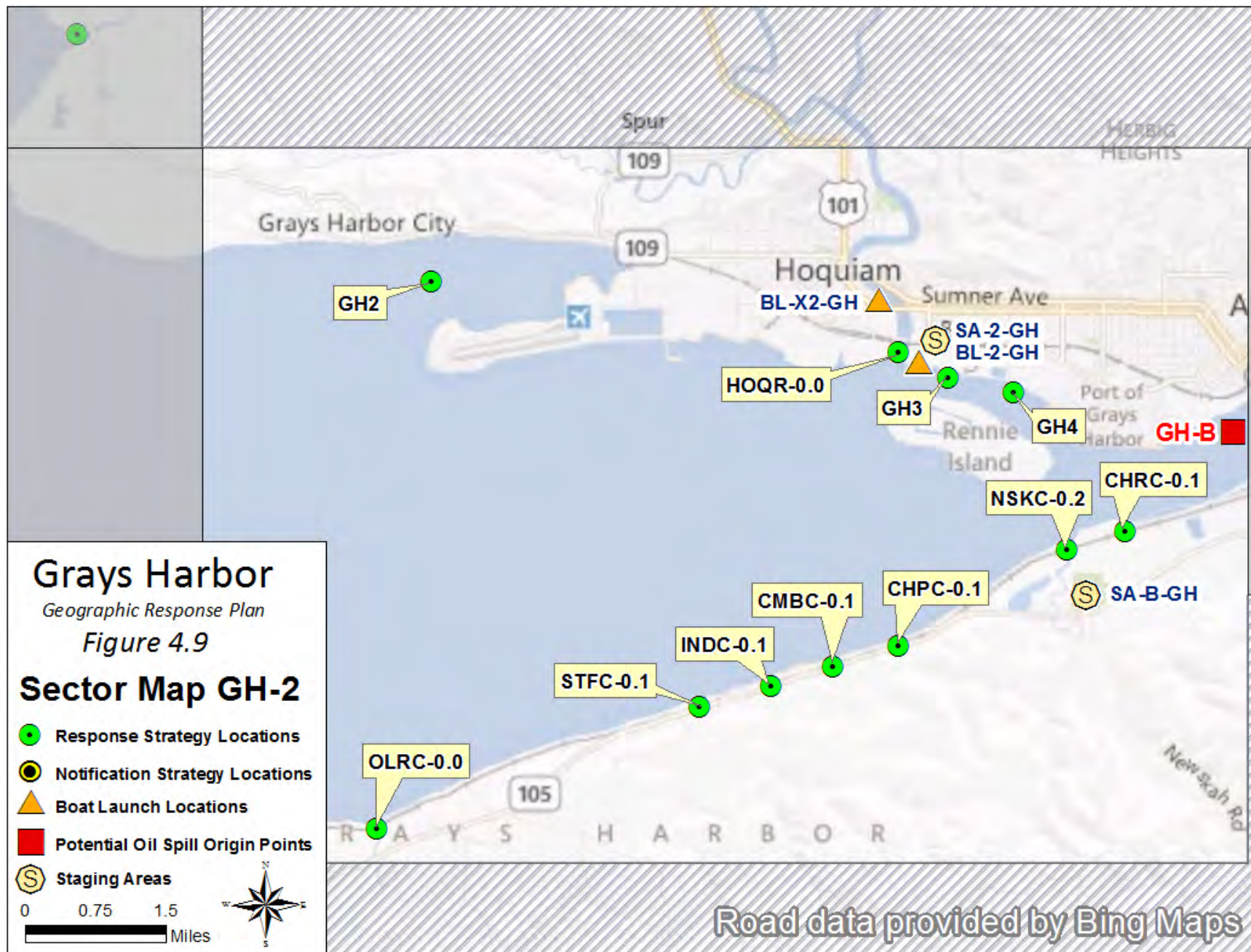
**Table 4.5**

| <b>"GH-C" (Grays Harbor Entrance)</b> |                        |                   |                        |                         |                                |
|---------------------------------------|------------------------|-------------------|------------------------|-------------------------|--------------------------------|
| <b>Implementation Priority</b>        | <b>Strategy Number</b> | <b>Sector Map</b> | <b>Strategy Matrix</b> | <b>Strategy Details</b> | <b>Best Implemented</b>        |
| <b>1</b>                              | <b>WEST-0.0-N</b>      | 4-22              | 4-52                   | 4B-9                    | N/A - Notification             |
| <b>2</b>                              | <b>CHER-0.15-N</b>     | 4-19              | 4-52                   | 4B-3                    | N/A - Notification             |
| <b>3</b>                              | <b>LKAB-0.0-N</b>      | 4-18              | 4-52                   | 4B-7                    | N/A - Notification             |
| <b>4</b>                              | <b>GH2</b>             | 4-20              | 4-37                   | 4A-49                   | High Tide Only                 |
| <b>5</b>                              | <b>GH1</b>             | 4-21              | 4-37                   | 4A-47                   | Low Tide Only                  |
| <b>6</b>                              | <b>GH8</b>             | 4-24              | 4-40                   | 4A-61                   | Slack High Tide, or High > Low |
| <b>7</b>                              | <b>GH14</b>            | 4-24              | 4-43                   | 4A-75                   | Slack High Tide, or High > Low |
| <b>8</b>                              | <b>GH12</b>            | 4-24              | 4-42                   | 4A-71                   | Slack High Tide, or High > Low |
| <b>9</b>                              | <b>GH11</b>            | 4-24              | 4-42                   | 4A-69                   | Slack Tide, or Low > High      |
| <b>10</b>                             | <b>GH10a</b>           | 4-24              | 4-41                   | 4A-65                   | Slack High Tide, or High > Low |
| <b>11</b>                             | <b>GH10b</b>           | 4-24              | 4-41                   | 4A-67                   | Slack High Tide, or High > Low |
| <b>12</b>                             | <b>GH9</b>             | 4-24              | 4-41                   | 4A-63                   | Slack Tide, or Low > High      |
| <b>13</b>                             | <b>GH13</b>            | 4-24              | 4-43                   | 4A-73                   | Slack Tide, or Low > High      |
| <b>14</b>                             | <b>GH15</b>            | 4-22              | 4-44                   | 4A-77                   | Slack High Tide, or High > Low |
| <b>15</b>                             | <b>JHNR-0.0a</b>       | 4-23              | 4-49                   | 4A-97                   | Slack High Tide                |
| <b>16</b>                             | <b>JHNR-0.0b</b>       | 4-23              | 4-49                   | 4A-99                   | Slack High Tide                |
| <b>17</b>                             | <b>GRSC-0.1</b>        | 4-25              | 4-45                   | 4A-81                   | Slack High Tide                |
| <b>18</b>                             | <b>GILS-0.0</b>        | 4-26              | 4-44                   | 4A-79                   | High Tide Only                 |
| <b>19</b>                             | <b>HMPR-0.0</b>        | 4-26              | 4-45                   | 4A-83                   | Slack High Tide                |
| <b>20</b>                             | <b>CMBS-0.1</b>        | 4-26              | 4-36                   | 4A-43                   | Slack High Tide                |
| <b>21</b>                             | <b>JESS-0.35</b>       | 4-26              | 4-48                   | 4A-95                   | Slack High Tide                |
| <b>22</b>                             | <b>CHNC-0.1</b>        | 4-25              | 4-34                   | 4A-35                   | Slack Tide, or Low > High      |
| <b>23</b>                             | <b>HOQR-0.0</b>        | 4-20              | 4-47                   | 4A-91                   | Slack Tide                     |
| <b>24</b>                             | <b>GH5</b>             | 4-19              | 4-39                   | 4A-55                   | Slack High Tide                |

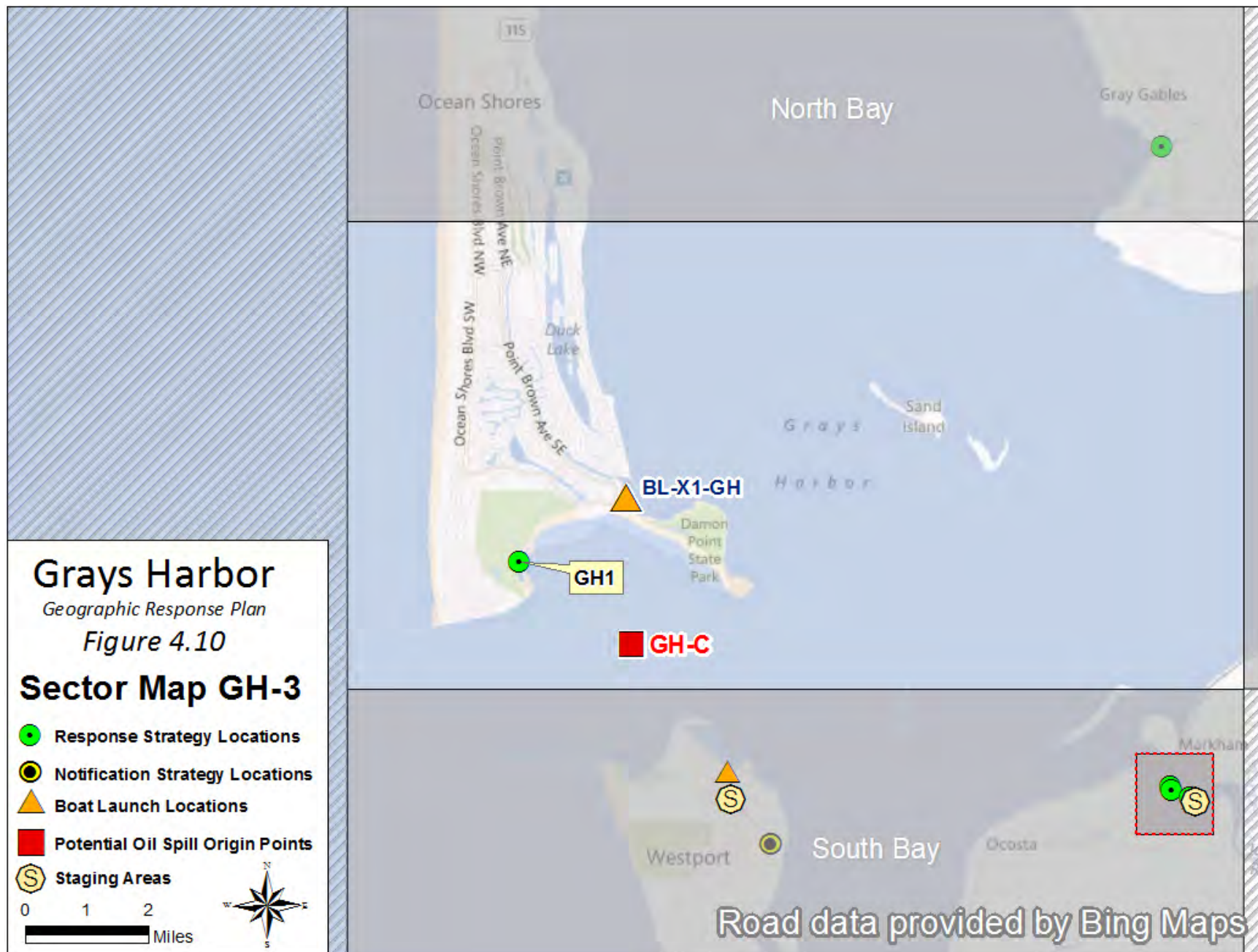


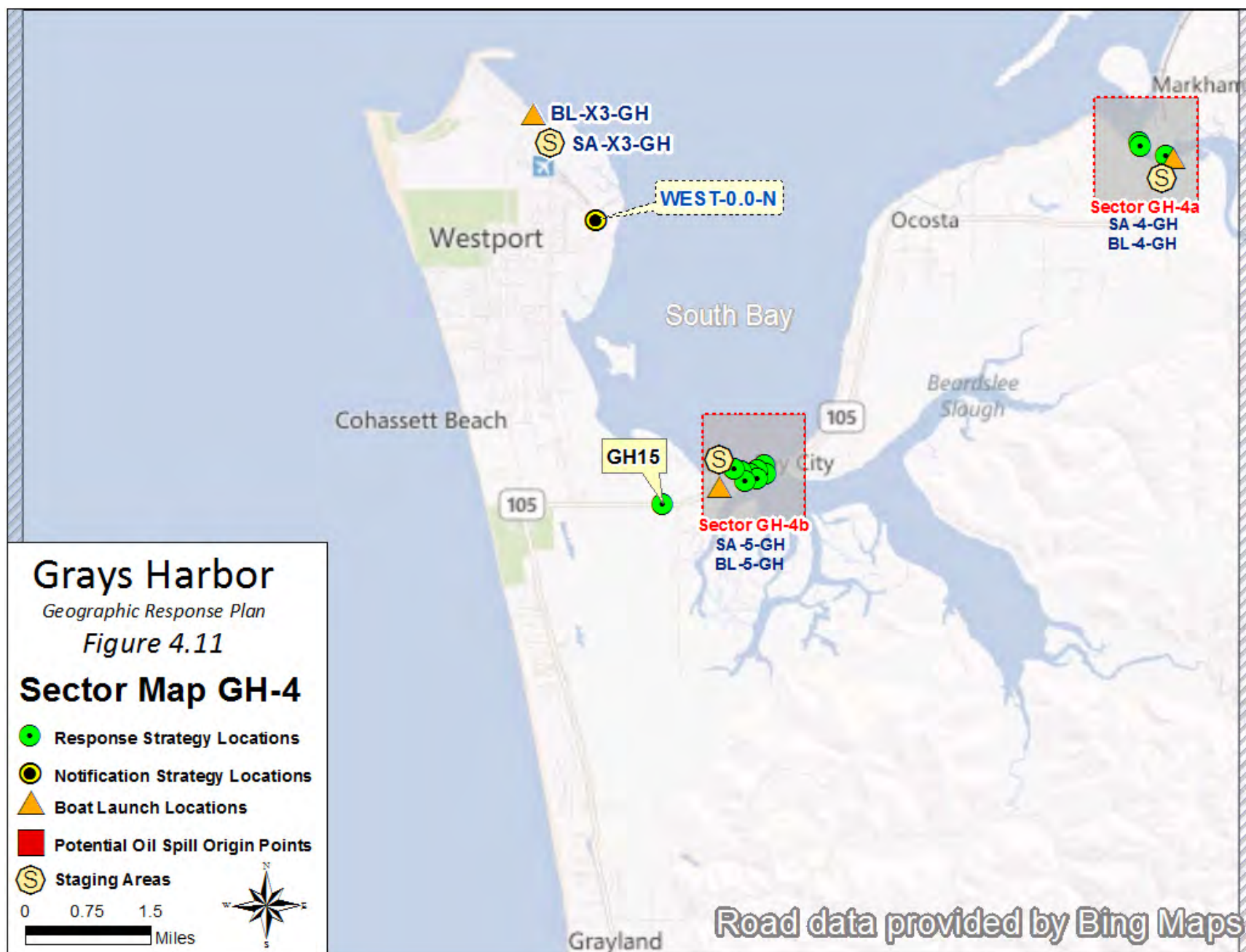


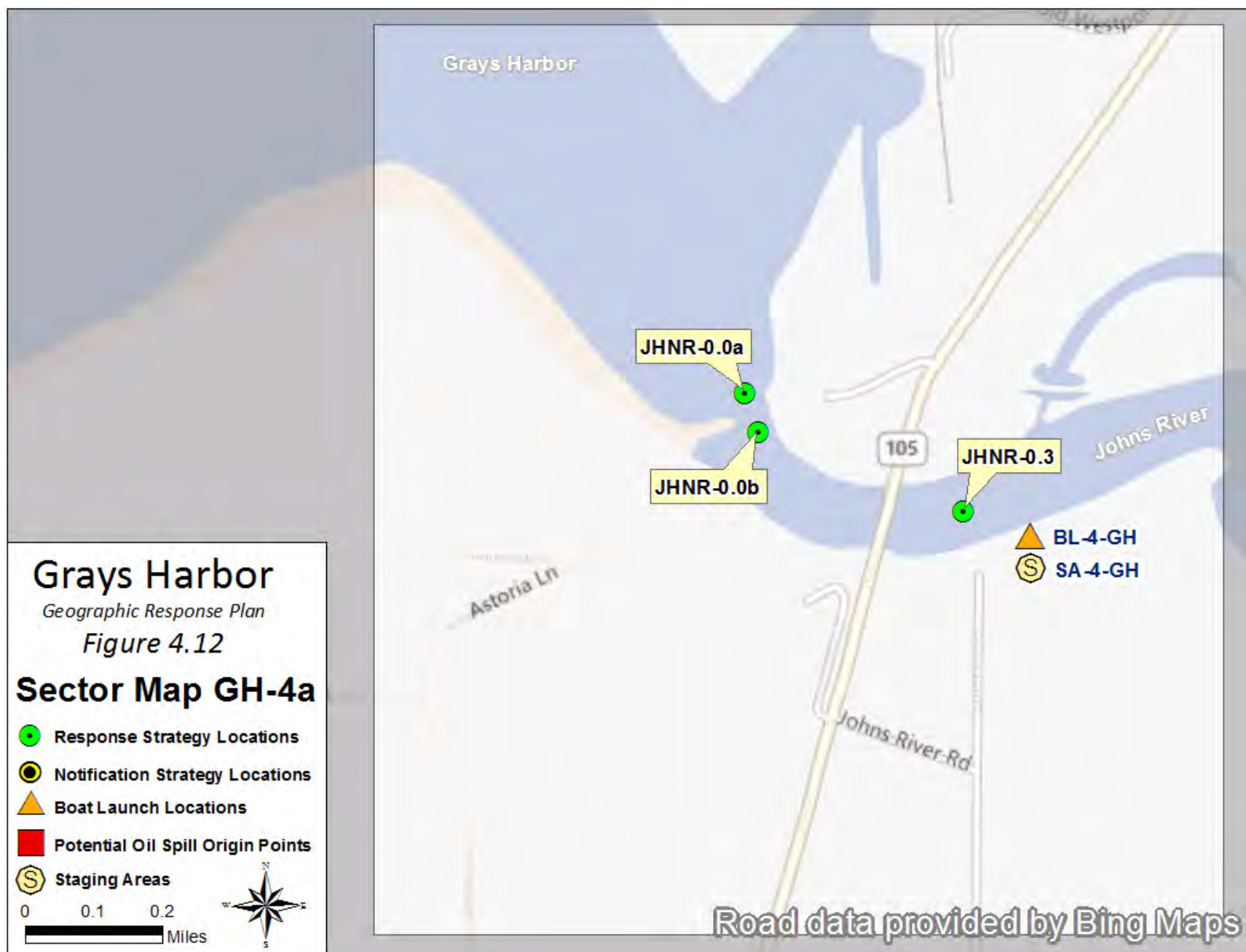






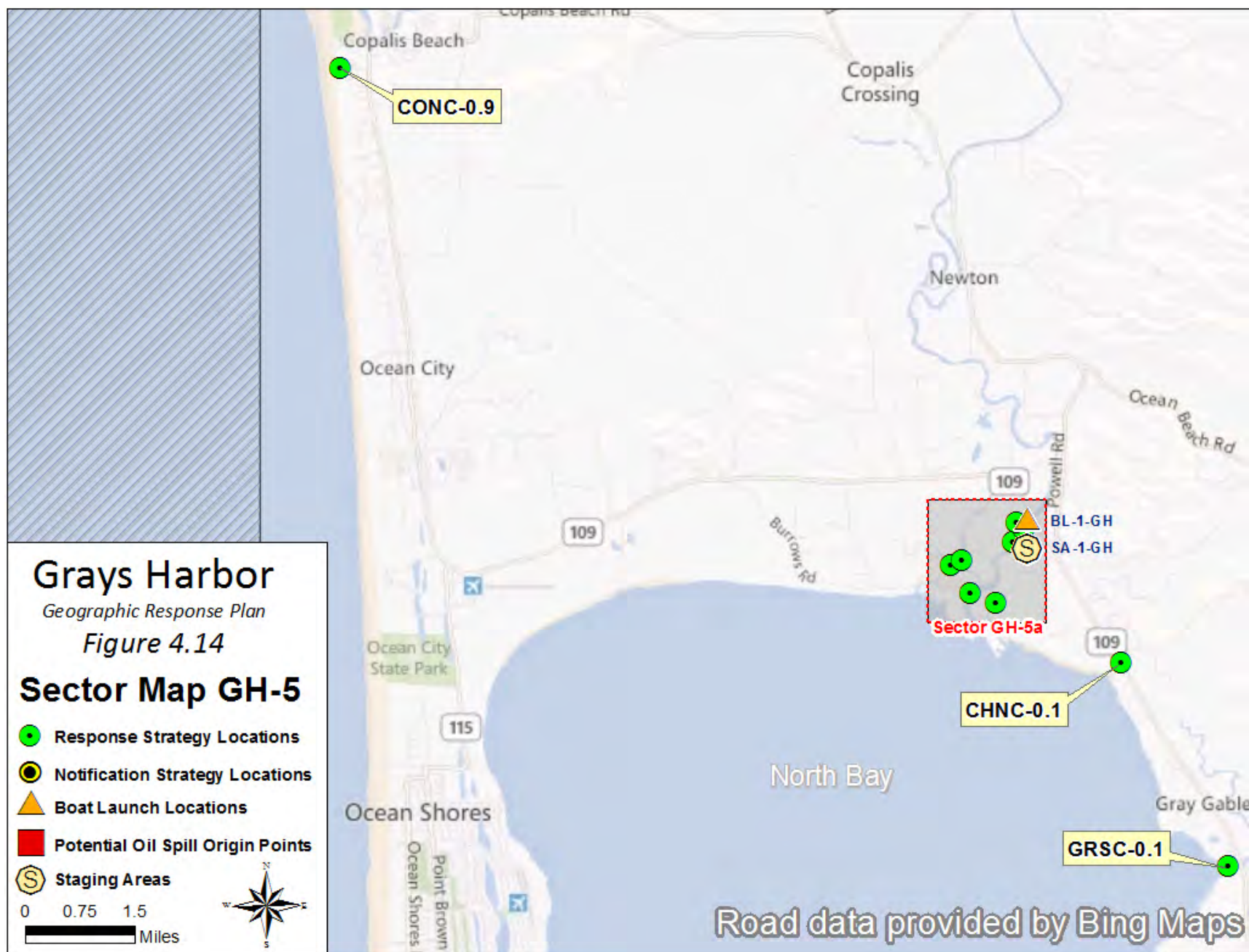


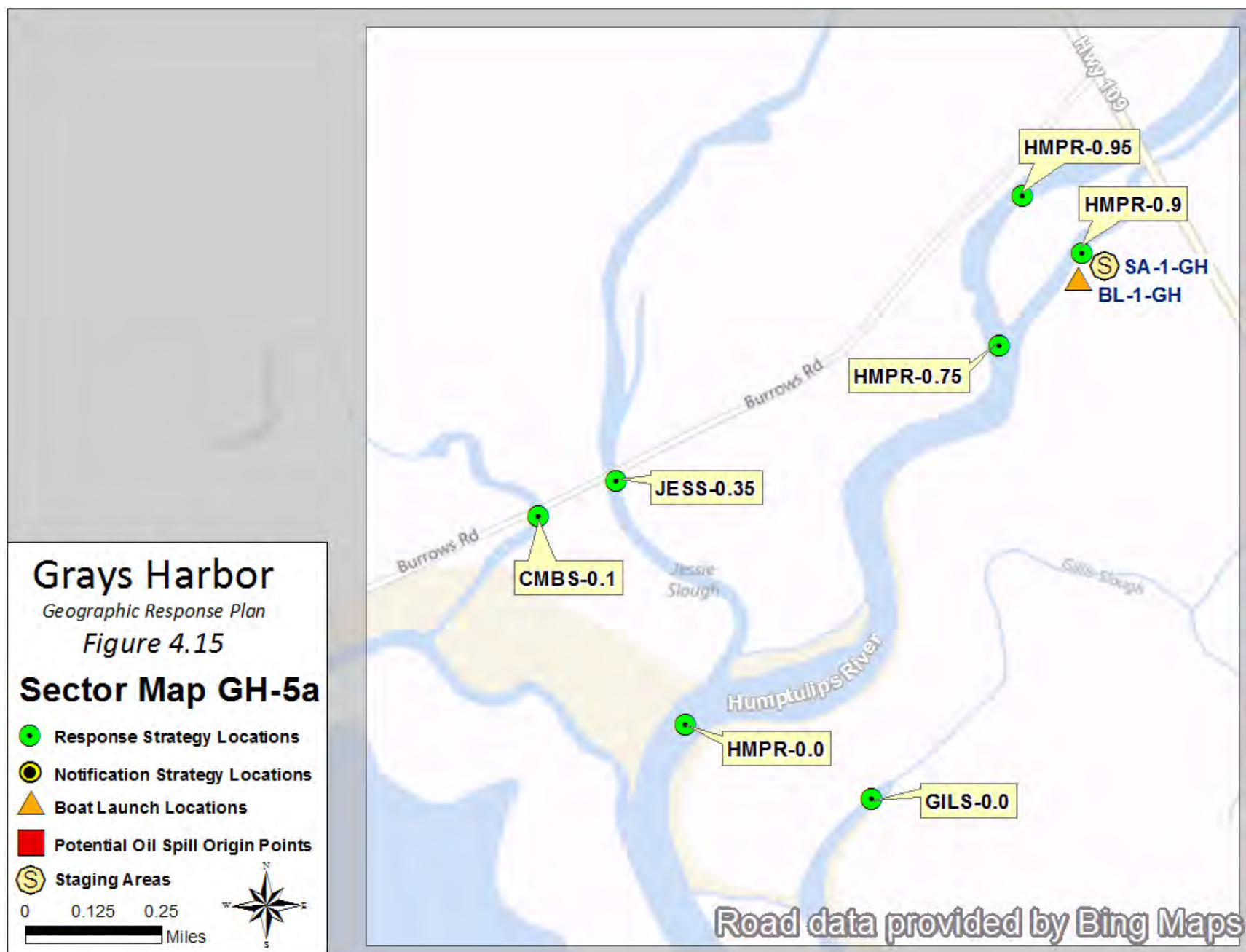












## Grays Harbor Geographic Response Plan

| Strategy Number | Location   | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk                          | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|---------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| CHER-0.0        | Aberdeen<br>Chehalis River<br>Hwy101 Bridge<br>East Side of Bridge<br>N46.973463<br>W123.808845            | Collection    | 700ft       | Yes       | On-Site:<br><br>Staging Area (SA-A-GH) is on site. Use Boat Launch BL-2-GH (Hoquiam 28th Street).                                 | Salmon, Steelhead, Waterfowl, and Wetlands | Best implemented at slack tide towards low. Notify Port of Grays Harbor (property owner) before implementation; call (360) 533-9528.  | 4-19               | 4A-3                     |
| CHER-0.2        | Aberdeen<br>Chehalis River<br>Hwy101 Bridge<br>East of Bridge<br>Behind Walmart<br>N46.97437<br>W123.80598 | Collection    | 400ft       | Yes       | Off-Site:<br><br>Staging Area (SA-A-GH) is 700ft to the west of strategy location. Use Boat Launch BL-2-GH (Hoquiam 28th Street). | Salmon, Steelhead, Waterfowl, and Wetlands | Best implemented at slack high tide moving towards low. Notify Port of Grays Harbor (property owner) before implementation; call (360) 533-9528.  | 4-19               | 4A-5                     |
| CHER-0.7a       | Aberdeen<br>Chehalis River<br>Morrison<br>Riverfront Park<br>N46.97668<br>W123.79677                       | Collection    | 400ft       | Yes       | On-Site:<br><br>Stage near the park's east end turning circle, adjacent to the pier/dock. Use Boat Launch BL-3-GH (Cosmopolis).   | Salmon, Steelhead, Waterfowl, and Wetlands | Best implemented at slack tide towards low. Notify Aberdeen Parks Department before implementation; call (360) 537-3229. After hours, contact Aberdeen Fire Department (via County Dispatch) at (360) 533-8765. | 4-18               | 4A-7                     |



## Grays Harbor Geographic Response Plan

| Strategy Number   | Location   | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk   | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-------------------|--|---------------|-------------|-----------|---|---|---|--------------------|--------------------------|
| <b>CHER-0.7b</b>  | Aberdeen<br>Chehalis River<br>Morrison<br>Riverfront Park<br>N46.977158<br>W123.795222                   | Collection    | 300ft       | Yes       | On-Site:<br><br>Stage near the park's east end turning circle, adjacent to the pier/dock. Use Boat Launch BL-3-GH (Cosmopolis).   | Salmon, Steelhead, Waterfowl, and Wetlands                      | Best implemented at slack tide towards high. Notify Aberdeen Parks Department before implementation; call (360) 537-3229. After hours, contact Aberdeen Fire Department (via County Dispatch) at (360) 533-8765.                                | 4-18               | 4A-9                     |
| <b>CHER-1.25a</b> | Aberdeen<br>Chehalis River<br>West of<br>Elliot Slough<br>Lakeside Industries<br>N46.97860<br>W123.78536 | Collection    | 500ft       | Yes       | On-Site:<br><br>Stage equipment at Lakeside Industries, inside fenceline adjacent to river. Use Boat Launch BL-3-GH (Cosmopolis). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide. Notify Lakeside Industries for access and assistance; call (360) 533-0610. After hours call (360) 533-7624, (360) 580-7452, (360) 580-6508 or Aberdeen Fire Department (via County Dispatch) at (360) 533-8765. | 4-18               | 4A-11                    |



## Grays Harbor Geographic Response Plan

| Strategy Number   | Location   | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk   | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-------------------|--|---------------|-------------|-----------|---|---|---|--------------------|--------------------------|
| <b>CHER-1.25b</b> | Aberdeen<br>Chehalis River<br>West of<br>Elliot Slough<br>Lakeside Industries<br>N46.97861<br>W123.78382 | Collection    | 300ft       | Yes       | On-Site:<br><br>Stage equipment at Lakeside Industries, inside fenceline adjacent to river. Use Boat Launch BL-3-GH (Cosmopolis). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide. Notify Lakeside Industries for access and assistance; call (360) 533-0610. After hours call (360) 533-7624, (360) 580-7452, (360) 580-6508 or Aberdeen Fire Department (via County Dispatch) at (360) 533-8765. | 4-18               | 4A-13                    |
| <b>CHER-1.4</b>   | Aberdeen<br>Chehalis River<br>Elliot Slough<br>Mouth of Slough<br>N46.977593<br>W123.780931              | Exclusion     | 600ft       | Yes       | Off-Site:<br><br>Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH).                 | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide. Strategy located just outside fenceline of Lakeside Industries along trail; call Lakeside Industries at (360) 533-0610 for assistance - afterhours call (360) 533-7624, (360) 580-7452, (360) 580-6508.         | 4-18               | 4A-15                    |

## Grays Harbor Geographic Response Plan

| Strategy Number  | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea  | Resources at Risk   | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|------------------|---|---------------|-------------|-----------|--|---|--|--------------------|--------------------------|
| <b>CHER-1.7a</b> | Aberdeen<br>Junction City<br>Chehalis River<br>Sierra Pacific Dock<br>N46.973292<br>W123.77904  | Collection    | 500ft       | Yes       | On-Site:<br><br>Stage equipment at Sierra Pacific Industries, north end of dock area.<br>Use Boat Launch BL-3-GH (Cosmopolis). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide towards low. Notify Sierra Pacific Industries for access and assistance; call (360) 580-2993, after-hours (360) 589-1811 or (360) 388-7974. Debris moving with tide in & out of this location is likely; boom monitoring needed.  | 4-18               | 4A-17                    |
| <b>CHER-1.7b</b> | Aberdeen<br>Junction City<br>Chehalis River<br>Sierra Pacific Dock<br>N46.970582<br>W123.778375 | Collection    | 600ft       | Yes       | On-Site:<br><br>Stage equipment at Sierra Pacific Industries, south end of dock area.<br>Use Boat Launch BL-3-GH (Cosmopolis). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide towards high. Notify Sierra Pacific Industries for access and assistance; call (360) 580-2993, after-hours (360) 589-1811 or (360) 388-7974. Debris moving with tide in & out of this location is likely; boom monitoring needed. | 4-18               | 4A-19                    |

## Grays Harbor Geographic Response Plan

| Strategy Number  | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea  | Resources at Risk   | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|------------------|---|---------------|-------------|-----------|--|---|---|--------------------|--------------------------|
| <b>CHER-2.0a</b> | South Aberdeen<br>Chehalis River<br>Weyerhaeuser<br>Dock<br>N46.969538<br>W123.780299 | Collection    | 650ft       | Yes       | On-Site:<br><br>Stage near north side of<br>Weyerhaeuser dock.<br>Launch workboat from<br>Cosmopolis boat ramp<br>(BL-3-GH). | Salmon, Steelhead,<br>Waterfowl,<br>Shorebirds,<br>Marshes, and<br>Wetlands | Best implemented at<br>slack tide towards low.<br>Notify Weyerhaeuser<br>before<br>implementation; call<br>(253) 924-5000 and<br>(360) 580-3300.<br>Notify on-site security<br>before<br>implementation or for<br>access assistance; call<br>(360) 581-2052 or<br>(360) 581-2085.<br>(360) 589-1811 or<br>(360) 388-7974. | 4-18               | 4A-21                    |
| <b>CHER-2.0b</b> | South Aberdeen<br>Chehalis River<br>Weyerhaeuser<br>Dock<br>N46.965058<br>W123.778679 | Collection    | 600ft       | Yes       | On-Site:<br><br>Stage near south end of<br>Weyerhaeuser dock.<br>Launch workboat from<br>Cosmopolis boat ramp<br>(BL-3-GH).  | Salmon, Steelhead,<br>Waterfowl,<br>Shorebirds,<br>Marshes, and<br>Wetlands | Best implemented at<br>slack tide towards<br>high. Notify<br>Weyerhaeuser before<br>implementation; call<br>(253) 924-5000 and<br>(360) 580-3300.<br>Notify on-site security<br>before<br>implementation or for<br>access assistance; call<br>(360) 581-2052 or<br>(360) 581-2085.<br>(360) 580-3300.                     | 4-18               | 4A-23                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk   | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|---|---|--|--------------------|--------------------------|
| <b>CHER-2.6</b> | Aberdeen<br>Junction City<br>Chehalis River<br>Unnamed Slough #1<br>N46.960357<br>W123.771481                     | Exclusion     | 200ft       | Yes       | Off-Site:<br><br>Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide. Land access to site is not possible. Ensure boom ends at Point A and Point C are placed above high water marks on shore.   | 4-18               | 4A-25                    |
| <b>CHER-2.7</b> | Cosmopolis<br>Chehalis River<br>at Cosmo Specialty Fibers Boat Launch<br>N46.95853<br>W123.77158                  | Collection    | 600ft       | Yes       | On-Site:<br><br>Stage in parking lot for Boat Ramp (see SA-3-GH & BL-3-GH)  | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes and Wetlands  | Notify Cosmo Specialty Fibers (boat ramp owners) before implementation; call (360) 500-4604. Allow half the ramp to be used for oil collection and the other half for launching workboats and equipment.     | 4-18               | 4A-27                    |
| <b>CHER-2.8</b> | Cosmopolis<br>Chehalis River<br>Just Upstream from Cosmo Specialty Fibers - Boat Launch<br>N46.9571<br>W123.76979 | Exclusion     | 800ft       | Yes       | On-Site:<br><br>Stage in parking lot for Boat Ramp (see SA-3-GH & BL-3-GH)  | Sensitive Resources   | Best implemented during slack high tide. Ensure boom between Points A & B doesn't block access to boat ramp.<br>Notify Cosmo Specialty Fibers (boat ramp owners) before implementation; call (360) 500-4604. | 4-18               | 4A-29                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk   | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|---|---|---|--------------------|--------------------------|
| <b>CHER-3.0</b> | Aberdeen<br>Junction City<br>Chehalis River<br>Unnamed Slough #2<br>N46.958491<br>W123.765988 | Exclusion     | 200ft       | Yes       | Off-Site:<br><br>Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide. Land access to site is not possible. Ensure boom ends at Point A and Point C are placed above river's high water mark along shore.  | 4-18               | 4A-31                    |
| <b>CHER-3.5</b> | Cosmopolis<br>Chehalis River<br>Unnamed Slough #3<br>N46.958617<br>W123.756375                | Exclusion     | 350ft       | Yes       | Off-Site:<br><br>Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands | Best implemented at slack tide. Land access to site through Cosmo Specialty Fibers facility is very limited. Notify Cosmo Specialty Fibers before implementation; call (360) 500-4604. Ensure boom ends at Point A & Point C are set above river's high water mark. | 4-18               | 4A-33                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location   | Strategy Type            | Boom Length | Boat Req? | StagingArea   | Resources at Risk                                  | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|--------------------------|-------------|-----------|---|--|--|--------------------|--------------------------|
| CHNC-0.1        | North Bay<br>Chenois Creek<br>Hwy109<br>East Side of Road<br>N47.03158<br>W124.02537           | Exclusion,<br>Collection | 350ft       | Yes       | On-Site:<br><br>Stage at Chenois Creek on dirt road (right side of road, immediately after Hwy 109 bridge when traveling north) | Salmon, Steelhead, Waterfowl, and Wetlands         | Notify private property owner; Call (360) 532-7246. Tidally influenced area. Ensure boom ends are set above the highest high water marks on creek banks during implementation. Use dirt road on river right (immediately after Hwy 109 Bridge) to access site. | 4-25               | 4A-35                    |
| CHPC-0.1        | South Channel<br>Chaplin Creek<br>at Hwy105<br>North Side of Road<br>N46.940149<br>W123.877439 | Exclusion                | 100ft       | No        | On-Site:<br><br>Stage on shoulder, west side of bridge past end of guardrail.   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Temporary use of roadway (shoulder) may be required to implement this strategy; follow WADOT work zone traffic control guidelines.                   | 4-20               | 4A-37                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type            | Boom Length | Boat Req? | StagingArea   | Resources at Risk  | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|--------------------------|-------------|-----------|---|--|--|--------------------|--------------------------|
| CHRC-0.1        | South Aberdeen<br>Charley Creek<br>NW of Bishop<br>Athletic Complex<br>N46.95208<br>W123.842502 | Exclusion,<br>Collection | 200ft       | No        | Off-Site:<br><br>Use Bishop Athletic<br>Complex Parking Lot (SA-<br>B-GH), ~0.5 miles to the<br>SW from strategy site | Wetlands, Sea Run<br>Cutthroat, Salmon,<br>and Waterfowl | Best implemented at<br>slack high tide. Access<br>site through Bishop<br>Athletic Complex in<br>South Aberdeen; call<br>Aberdeen Parks<br>(360-537-3229) or<br>Aberdeen Fire<br>Department (360-<br>533-8765) if gate is<br>locked. Transport<br>equipment to site<br>using ATV and trailer. | 4-20               | 4A-39                    |
| CMBC-0.1        | South Channel<br>Campbell Creek<br>at Hwy105<br>North Side of Road<br>N46.937985<br>W123.887671 | Exclusion                | 50ft        | No        | On-Site:<br><br>Stage on shoulder, west<br>side of bridge past end<br>of guardrail.                                   | Wetlands, Sea Run<br>Cutthroat, Salmon,<br>and Waterfowl | Tidally influenced<br>location - ensure<br>boom ends are set<br>above the highest high<br>water marks on creek<br>banks. Temporary use<br>of roadway (shoulder)<br>may be required to<br>implement this<br>strategy; follow<br>WADOT work zone<br>traffic control<br>guidelines.             | 4-20               | 4A-41                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type            | Boom Length | Boat Req? | StagingArea   | Resources at Risk                                | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|--------------------------|-------------|-----------|---|--|--|--------------------|--------------------------|
| <b>CMBS-0.1</b> | North Bay<br>Campbell Slough<br>Burrows Road<br>South Side of Road<br>N47.04462<br>W124.05892 | Exclusion,<br>Collection | 200ft       | Yes       | On-Site:<br><br>Stage on sholder of<br>Burrows Rd (W side of<br>bridge) or property (on E<br>side of bridge) if<br>property owner grants<br>access. | Salmon, Steelhead,<br>Waterfowl, and<br>Wetlands | Best implemented at<br>slack high tide. Ensure<br>boom ends are set<br>above the highest high<br>water marks along<br>shore. Temporary use<br>of roadway (one lane)<br>may be required to<br>implement strategy; at<br>minimum follow<br>WADOT work zone<br>traffic control<br>guidelines. | 4-26               | 4A-43                    |
| <b>CONC-0.9</b> | Copalis Beach<br>Conner Creek<br>Heath Road<br>End of Road<br>N47.11128<br>W124.17948         | Exclusion,<br>Collection | 400ft       | No        | On-Site:<br><br>Stage equipment at the<br>end of Heath Road<br>(before pedestrian<br>bridge)  | Coho Salmon,<br>Shorebirds                       | Best implemented at<br>slack tide. Ensure<br>boom ends are set<br>above the highest high<br>water marks on creek<br>banks during<br>implementation. Boom<br>angle may need to be<br>adjusted during peak<br>stream-flow periods in<br>flood & ebb tidal cycle.                             | 4-25               | 4A-45                    |



## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type                | Boom Length        | Boat Req? | StagingArea   | Resources at Risk   | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|------------------------------|--------------------|-----------|---|---|--|--------------------|--------------------------|
| <b>GH1</b>      | Ocean Shores<br>Oyhut Sink<br>N46.93773<br>W124.15487                     | Exclusion -<br>Sorbent/Snare | No<br>Hard<br>Boom | No        | Off-Site:<br><br>Stage at trail head to beach (vacant lot near 1412 E Ocean Shores Blvd SW, Ocean Shores).                  | Marshes, Shorebirds, and Waterfowl  | Must implement at or near low tide. Sorbent / Snare boom Strategy Only. ATVs required. Limited access at high tide. Notify WDFW Oyhut Unit before implementation; call (360) 533-5676  | 4-21               | 4A-47                    |
| <b>GH2</b>      | Hoquiam<br>Bowerman Basin<br>Near GH Airport<br>N46.978291<br>W123.949556 | Exclusion -<br>Sorbent/Snare | No<br>Hard<br>Boom | Yes       | On-Site:<br><br>Stage off Hwy 109 near ~MP2.8 (GH-PUD Property). Workboats can launch from 28th Street Boat Ramp (BL-2-GH). | Sensitive Nesting Sites, Waterfowl, Shorebirds, Marshes, and Wetlands. Sweetgrass along shoreline areas | Notify USFWS Grays Harbor NWR; (360) 742-9153, (360) 789-6353, or (360) 753-9467. Notify GH PUD for access to road/trail off Hwy109; (360) 537-3721 or (888) 541-5923. Notify Ecology (Preparedness) before using plywood sheets; call pgr (360) 923-6020. | 4-20               | 4A-49                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk                                | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| <b>GH3</b>      | Hoquiam<br>Hoquiam Reach<br>North Side<br>of Channel<br>at Harbor Paper<br>N46.96823<br>W123.86994                      | Collection    | 1200ft      | Yes       | On-Site:<br><br>Stage on Ontario Street<br>adjacent to Hoquiam<br>Reach at Harbor Paper<br>facility | Salmon and Other<br>Fish & Wildlife<br>Resources | Best implemented<br>during slack tide.<br>Notify Harbor Paper<br>before staging &<br>strategy deployment;<br>Call (888) 676-6528<br>x5201. Launch<br>workboat from 28th<br>Street Boat<br>Ramp/Hoquiam (BL-2-<br>GH). Tidally influenced<br>area - ensure boom<br>set above high water<br>marks.  | 4-20               | 4A-51                    |
| <b>GH4</b>      | Hoquiam<br>Hoquiam Reach<br>North Side<br>of Channel<br>End of 28th Street<br>at Boat Launch<br>N46.96667<br>W123.85969 | Collection    | 700ft       | Yes       | On-Site:<br><br>28th Street Boat Launch<br>(SA-2-GH) Parking Lot;<br>Boat Launch (BL-2-GH)          | Salmon and Other<br>Fish & Wildlife<br>Resources | Best implemented<br>during slack tide. Boat<br>Launch available<br>onsite (BL-2-GH). Do<br>not block the boat<br>ramp; strategy should<br>land on east side of<br>ramp. Ensure<br>additional boom (hard<br>boom and sorbents)<br>are placed to block<br>canal w/culvert<br>adjacent to boat ramp. | 4-20               | 4A-53                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea  | Resources at Risk                                | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|--|--|---|--------------------|--------------------------|
| GH5             | Aberdeen<br>Aberdeen Reach<br>North Side<br>of Channel<br>N46.969<br>W123.817147                | Collection    | 700ft       | Yes       | Off-Site:<br><br>Stage at mouth of<br>Wishkah River in<br>Aberdeen (SA-A-GH).<br>Launch Workboat from<br>28th Street Boat Launch<br>(BL-2-GH). | Salmon, Steelhead,<br>Waterfowl, and<br>Wetlands | Best implemented at<br>slack high tide. Launch<br>workboat from 28th<br>Street Boat Launch (BL-<br>2-GH), then transport<br>boom & equipment to<br>site from staging area<br>(SA-A-GH). Possible to<br>nose workboat into<br>shore between pilings.<br>"Walk-in" land access<br>possible. | 4-19               | 4A-55                    |
| GH6             | Aberdeen<br>Aberdeen Reach<br>Hwy101 Bridge<br>West Side of Bridge<br>N46.971637<br>W123.810412 | Diversion     | 700ft       | Yes       | Off-Site:<br><br>Stage at mouth of<br>Wishkah River in<br>Aberdeen (SA-A-GH).<br>Launch Workboat from<br>28th Street Boat Launch<br>(BL-2-GH). | Salmon, Steelhead,<br>Waterfowl, and<br>Wetlands | Best implemented at<br>slack high tide. Launch<br>workboat from 28th<br>Street Boat Launch (BL-<br>2-GH), then transport<br>boom & equipment to<br>site from staging area<br>(SA-A-GH).   | 4-19               | 4A-57                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea  | Resources at Risk                                | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|--|--|---|--------------------|--------------------------|
| GH7             | South Aberdeen<br>Aberdeen Reach<br>South Side<br>of Channel<br>N46.96783<br>W123.81397           | Diversion     | 700ft       | Yes       | Off-Site:<br><br>Stage at mouth of<br>Wishkah River in<br>Aberdeen (SA-A-GH).<br>Launch Workboat from<br>28th Street Boat Launch<br>(BL-2-GH). | Salmon, Steelhead,<br>Waterfowl, and<br>Wetlands | Best implemented at<br>slack high tide. Launch<br>workboat from 28th<br>Street Boat Launch (BL-<br>2-GH), then transport<br>boom & equipment to<br>site from staging area<br>(SA-A-GH). Possible to<br>nose workboat into<br>shore between pilings.<br>"Walk-in" land access<br>possible. | 4-19               | 4A-59                    |
| GH8             | South Bay<br>Hwy105 Bridge<br>NE Corner of Bridge<br>Elk River Estuary<br>N46.86367<br>W124.06703 | Collection    | 500ft       | Yes       | Off-Site:<br><br>Stage at Brady's<br>Seafoods (SA-5-GH). Use<br>boat launch at Bradys<br>(BL-5-GH) or Westport<br>(BL-X3-GH)                   | Saltmarsh,<br>Waterfowl, and<br>Shorebirds       | Best implemented at<br>slack high tide or high<br>tide moving to low.<br>Collect oil using<br>sorbent and snare<br>boom; vac truck and<br>on-water recovery<br>would be very difficult<br>to set up and maintain<br>at this location (Point<br>A).  | 4-24               | 4A-61                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type            | Boom Length | Boat Req? | StagingArea  | Resources at Risk                          | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|--------------------------|-------------|-----------|--|--|--|--------------------|--------------------------|
| <b>GH9</b>      | South Bay<br>Hwy105 Bridge<br>South Side of<br>Bridge<br>Elk River Estuary<br>N46.86261<br>W124.06669 | Exclusion,<br>Collection | 500ft       | Yes       | Off-Site:<br><br>Stage at Brady's<br>Seafoods (SA-5-GH). Use<br>boat launch at Bradys<br>(BL-5-GH) or Westport<br>(BL-X3-GH) | Saltmarsh,<br>Waterfowl, and<br>Shorebirds | Best implemented<br>during slack tide or<br>tide moving towards<br>high. Collect oil using<br>sorbent and snare<br>boom within collection<br>pocket until on-water<br>recovery (with<br>storage) at strategy<br>location is available. | 4-24               | 4A-63                    |
| <b>GH10a</b>    | South Bay<br>Hwy105 Bridge<br>North Side of<br>Bridge<br>Elk River Estuary<br>N46.86299<br>W124.06817 | Diversion                | 400ft       | Yes       | Off-Site:<br><br>Stage at Brady's<br>Seafoods (SA-5-GH). Use<br>boat launch at Bradys<br>(BL-5-GH) or Westport<br>(BL-X3-GH) | Saltmarsh,<br>Waterfowl, and<br>Shorebirds | Best implemented at<br>slack high tide or high<br>tide moving towards<br>low.  | 4-24               | 4A-65                    |
| <b>GH10b</b>    | South Bay<br>Hwy105 Bridge<br>North Side of<br>Bridge<br>Elk River Estuary<br>N46.86266<br>W124.06952 | Diversion                | 400ft       | Yes       | Off-Site:<br><br>Stage at Brady's<br>Seafoods (SA-5-GH). Use<br>boat launch at Bradys<br>(BL-5-GH) or Westport<br>(BL-X3-GH) | Saltmarsh,<br>Waterfowl, and<br>Shorebirds | Best implemented at<br>slack high tide or high<br>tide moving towards<br>low.  | 4-24               | 4A-67                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type            | Boom Length | Boat Req? | StagingArea  | Resources at Risk                          | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|--------------------------|-------------|-----------|--|--|---|--------------------|--------------------------|
| <b>GH11</b>     | South Bay<br>Hwy105 Bridge<br>South Side of<br>Bridge<br>Elk River Estuary<br>N46.86203<br>W124.06827 | Exclusion,<br>Collection | 500ft       | Yes       | Off-Site:<br><br>Stage at Brady's<br>Seafoods (SA-5-GH). Use<br>boat launch at Bradys<br>(BL-5-GH) or Westport<br>(BL-X3-GH) | Saltmarsh,<br>Waterfowl, and<br>Shorebirds | Best implemented during slack tide or tide moving towards high. *Collect oil using sorbent and snare boom within collection pocket until on-water recovery (with storage) at strategy location is available.              | 4-24               | 4A-69                    |
| <b>GH12</b>     | South Bay<br>Hwy105 Bridge<br>NW Corner of<br>Bridge<br>Elk River Estuary<br>N46.86288<br>W124.07086  | Collection               | 700ft       | Yes       | Off-Site:<br><br>Stage at Brady's<br>Seafoods (SA-5-GH). Use<br>boat launch at Bradys<br>(BL-5-GH) or Westport<br>(BL-X3-GH) | Saltmarsh,<br>Waterfowl, and<br>Shorebirds | Best implemented at slack high tide or high tide moving towards low. Collect oil using sorbent and snare boom; vac truck and on-water recovery would be very difficult to set up and maintain at this location (Point A). | 4-24               | 4A-71                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location   | Strategy Type         | Boom Length | Boat Req? | StagingArea  | Resources at Risk                    | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|-----------------------|-------------|-----------|--|--------------------------------------|---|--------------------|--------------------------|
| <b>GH13</b>     | South Bay<br>Hwy105 Bridge<br>South Side of Bridge<br>Elk River Estuary<br>N46.86168<br>W124.07024 | Exclusion, Collection | 400ft       | Yes       | Off-Site:<br><br>Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) | Saltmarsh, Waterfowl, and Shorebirds | Best implemented during slack tide or tide moving towards high. Collect oil using sorbent and snare boom within collection pocket until on-water recovery (with storage) at strategy location is available. | 4-24               | 4A-73                    |
| <b>GH14</b>     | South Bay<br>Laidlaw Island<br>East End of Island at Brady's Oysters<br>N46.86324<br>W124.0723     | Collection            | 700ft       | Yes       | On-Site:<br><br>Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH)  | Saltmarsh, Waterfowl, and Shorebirds | Best implemented at slack high tide or high tide moving towards low.  | 4-24               | 4A-75                    |



## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk                          | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|---|--|--|--------------------|--------------------------|
| <b>GH15</b>     | South Bay<br>Hwy105<br>W of Laidlaw Island<br>N46.85895<br>W124.08453   | Exclusion     | 150ft       | No        | On-Site:<br><br>Stage on shoulder of Hwy105 (west bound lane); follow WADOT work zone traffic control guidelines. | Saltmarsh, Waterfowl, and Shorebirds       | Best implemented at middle to low outgoing tide. Temporary use of roadway (lane and shoulder) is required to implement this strategy; follow WADOT work zone traffic control guidelines. Water volume inflow and outflow to/from culvert can be significant. | 4-22               | 4A-77                    |
| <b>GILS-0.0</b> | North Bay<br>Gillis Slough<br>Mouth of Slough<br>N47.0395<br>W124.05007 | Exclusion     | 300ft       | Yes       | Off-Site:<br><br>WDFW Water Access Point off Hwy 109 before Humptulips River Bridge (SA-1-GH & BL-1-GH)           | Salmon, Steelhead, Waterfowl, and Wetlands | High Tide Only. Area is very shallow, muddy, with obstructions so airboat use is highly recommended. Tidally influenced area; ensure boom ends are set above the highest high water marks on river banks during implementation.                              | 4-26               | 4A-79                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk  | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|---------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| <b>GRSC-0.1</b> | North Bay<br>Grass Creek<br>Hwy109<br>West Side of Bridge<br>N47.00406<br>W124.002112 | Exclusion     | 550ft       | Yes       | On-Site:<br><br>Stage at Lyttle Seafoods in parking area after checking in with property owner. | Sensitive Nesting Sites, Waterfowl, Shorebirds, Marshes, and Wetlands. | Notify private property owner in advance of staging & strategy deployment; Call (360) 580-9043. Launch workboat from 28th Street Boat Ramp/Hoquiam (BL-2-GH) or airboat fm WDFW Access on Humptulips River (BL-1-GH). Best implemented at/near high tide. | 4-25               | 4A-81                    |
| <b>HMPR-0.0</b> | North Bay<br>Humptulips River at Jessie Slough<br>N47.04085<br>W124.05502             | Exclusion     | 600ft       | Yes       | Off-Site:<br><br>WDFW Water Access Point off Hwy 109 before Humptulips River Bridge (SA-1-GH)   | Salmon, Steelhead, Waterfowl, and Wetlands                             | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. River flows from Oct through June may reduce chance of oil movement upstream from North Bay.           | 4-26               | 4A-83                    |

## Grays Harbor Geographic Response Plan

| Strategy Number  | Location  | Strategy Type            | Boom Length | Boat Req? | StagingArea  | Resources at Risk                                | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|------------------|---|--------------------------|-------------|-----------|--|--|---|--------------------|--------------------------|
| <b>HMPR-0.75</b> | North Bay<br>Humptulips River<br>N47.047698<br>W124.046674              | Diversion,<br>Collection | 300ft       | Yes       | Off-Site:<br>WDFW Water Access<br>Point off Hwy 109 before<br>Humptulips River Bridge<br>(SA-1-GH) | Salmon, Steelhead,<br>Waterfowl, and<br>Wetlands | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle. | 4-26               | 4A-85                    |
| <b>HMPR-0.9</b>  | North Bay<br>Humptulips River<br>WDFW Access<br>N47.04938<br>W124.04449 | Collection               | 400ft       | Yes       | On-Site:<br>WDFW Water Access<br>Point off Hwy 109 before<br>Humptulips River Bridge<br>(SA-1-GH)  | Salmon, Steelhead,<br>Waterfowl, and<br>Wetlands | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle. | 4-26               | 4A-87                    |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type         | Boom Length | Boat Req? | StagingArea   | Resources at Risk                          | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|-----------------------|-------------|-----------|---|--|--|--------------------|--------------------------|
| HMPR-0.95       | North Bay<br>Humptulips River<br>Hwy109 Bridge<br>Down from Bridge<br>N47.05041<br>W124.04607 | Collection            | 400ft       | Yes       | Off-Site:<br>WDFW Water Access Point (SA-1-GH) and small pull-off on Burrows Rd (0.2 Miles SW of Hwy109 after bridge) | Salmon, Steelhead, Waterfowl, and Wetlands | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle.        | 4-26               | 4A-89                    |
| HOQR-0.0        | Hoquiam<br>Hoquiam River<br>Mouth of River<br>near Harbor Paper<br>N46.97087<br>W123.8775     | Exclusion, Collection | 1000ft      | Yes       | On-Site:<br>Stage on east side of river in back lot of Harbor Paper facility near railroad bridge                     | Salmon, Steelhead, Waterfowl, and Wetlands | Best implemented during slack tide. Notify Harbor Paper before staging & strategy deployment; Call (888) 676-6528 x5201. Launch workboat from 28th Street Boat Ramp/Hoquiam (BL-2-GH). Tidally influenced area - ensure boom set above high water marks. | 4-20               | 4A-91                    |

## Grays Harbor Geographic Response Plan

| Strategy Number  | Location   | Strategy Type         | Boom Length | Boat Req? | StagingArea   | Resources at Risk                                  | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|------------------|--|-----------------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| <b>INDC-0.1</b>  | South Channel<br>Indian Creek at<br>Hwy105 (~MP 43.1)<br>North Side of Road<br>N46.935944<br>W123.897245 | Exclusion             | 100ft       | No        | On-Site:<br><br>Stage on shoulder, west side of bridge past end of guardrail.                     | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Temporary use of roadway (shoulder) may be required to implement this strategy; follow WADOT work zone traffic control guidelines.    | 4-20               | 4A-93                    |
| <b>JESS-0.35</b> | North Bay<br>Jessie Slough<br>Burrows Road<br>South Side of Road<br>N47.04525<br>W124.056861             | Exclusion, Collection | 400ft       | Yes       | On-Site:<br><br>Stage along sholder of Burrows Road; small pulloff area near SE corner of bridge. | Salmon, Steelhead, Waterfowl, and Wetlands         | Tidally influenced location - ensure boom ends are set above the highest high water marks along shore. Temporary use of roadway (one lane) may be required to implement strategy; at minimum follow WADOT work zone traffic control guidelines. | 4-26               | 4A-95                    |

## Grays Harbor Geographic Response Plan

| Strategy Number  | Location   | Strategy Type         | Boom Length | Boat Req? | StagingArea  | Resources at Risk                             | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|------------------|--|-----------------------|-------------|-----------|--|---|---|--------------------|--------------------------|
| <b>JHNR-0.0a</b> | Markham<br>Johns River<br>Hwy105 Bridge<br>North of Bridge<br>N46.901763<br>W124.002202    | Exclusion             | 400ft       | Yes       | Off-Site:<br><br>Stage at WDFW River Access Point for Johns River (SA-4-GH). Use boat launch at same location (BL-4-GH). | Salt Marsh, Shorebirds, Waterfowl, and Salmon | Best implemented at slack high tide. Use additional anchoring systems to keep boom secure in river. Use anchoring posts or existing structures to secure boom to banks. | 4-23               | 4A-97                    |
| <b>JHNR-0.0b</b> | Markham<br>Johns River<br>Hwy105 Bridge<br>North of Bridge<br>N46.901206<br>W124.001906    | Exclusion             | 300ft       | Yes       | Off-Site:<br><br>Stage at WDFW River Access Point for Johns River (SA-4-GH). Use boat launch at same location (BL-4-GH). | Salt Marsh, Shorebirds, Waterfowl, and Salmon | Best implemented at slack high tide.  | 4-23               | 4A-99                    |
| <b>JHNR-0.3</b>  | Markham<br>Johns River<br>Hwy105 Bridge<br>Upstream of Bridge<br>N46.900079<br>W123.997601 | Exclusion, Collection | 700ft       | Yes       | On-Site:<br><br>Stage at WDFW River Access Point for Johns River (SA-4-GH). Use boat launch at same location (BL-4-GH).  | Salt Marsh, Shorebirds, Waterfowl, and Salmon | Best implemented at slack high tide moving towards low.   | 4-23               | 4A-101                   |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location   | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk                                  | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|---------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| <b>NSKC-0.2</b> | South Aberdeen<br>Newskah Creek<br>Hwy 105<br>North Side of Road<br>N46.950152<br>W123.851573                    | Exclusion     | 150ft       | No        | Off-Site:<br><br>Use Bishop Athletic Complex Parking Lot (SA-B-GH), ~0.5 miles to the SW from strategy site                           | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl | Best implemented at slack high tide. Access site through Bishop Athletic Complex in South Aberdeen; call Aberdeen Parks (360-537-3229) or Aberdeen Fire Department (360-533-8765) if gate is locked. Transport equipment to site using ATV and trailer. | 4-20               | 4A-103                   |
| <b>OLRC-0.0</b> | South Arbor<br>O'Leary Creek<br>Unnamed Road<br>North Side Hwy105<br>Mouth of Creek<br>N46.920978<br>W123.957861 | Exclusion     | 100ft       | No        | On-Site:<br><br>Coordinate with Property Owner on use of home parking area for staging (as close to old railroad bridge as possible). | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl | Private Property - Check with property owner before implementation. Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks.   | 4-20               | 4A-105                   |



## Grays Harbor Geographic Response Plan

| Strategy Number | Location   | Strategy Type | Boom Length | Boat Req? | StagingArea   | Resources at Risk                                  | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|--|---------------|-------------|-----------|---|--|---|--------------------|--------------------------|
| STFC-0.1        | South Channel<br>Stafford Creek<br>Hwy105<br>North Side<br>N46.933744<br>W123.908232 | Exclusion     | 50ft        | No        | On-Site:<br><br>Stage in old dirt/gravel driveway (off highway shoulder) on west side of bridge past end of guardrail.          | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Follow WADOT work zone traffic control guidelines if staging any equipment (including vehicles) on the side of Hwy 105. | 4-20               | 4A-107                   |
| WSHR-0.0        | Aberdeen<br>Wishkah River<br>Mouth of River<br>N46.97424<br>W123.809248              | Exclusion     | 750ft       | Yes       | Off-Site:<br><br>Stage at mouth of Wishkah River in Aberdeen (SA-A-GH). Launch Workboat from 28th Street Boat Launch (BL-2-GH). | Salmon   | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH), then transport boom & equipment to site from staging area immediately downstream of strategy location on river left (SA-A-GH).       | 4-19               | 4A-109                   |

## Grays Harbor Geographic Response Plan

| Strategy Number | Location  | Strategy Type            | Boom Length | Boat Req? | StagingArea  | Resources at Risk | Comments  | Sector Map (Page#) | Strategy Details (Page#) |
|-----------------|---|--------------------------|-------------|-----------|--|-------------------|---|--------------------|--------------------------|
| WSHR-0.2        | Aberdeen<br>Wishkah River<br>Zelasko Park (S F St)<br>N46.975789<br>W123.811443 | Exclusion,<br>Collection | 800ft       | Yes       | On-Site:<br><br>Stage on road (S F Street) adjacent to Zelasko Park or on park grounds if no street parking available. | Salmon            | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH). Vac truckk collection at Point A during incoming tide (if collecting oil). | 4-19               | 4A-111                   |

## Grays Harbor Geographic Response Plan

| Strategy Number    | Location  | Strategy Type | Resources at Risk  | Implementation   | Comments   | Sector Map (Page#) | Strategy Details (Page#) |
|--------------------|---|---------------|--|--|--|--------------------|--------------------------|
| <b>CHER-0.15-N</b> | Aberdeen<br>South Aberdeen<br>N46.970954<br>W123.804464               | Notification  | General Fish and Wildlife Resources                      | Call City of Aberdeen Public Works 360-537-3241 or 360-533-5817. Ask them to close tidal flood gates for Alder Creek.              | Prevent oil from entering Alder Creek at the Chehalis River by having City of Aberdeen close tidal flood gates   | 4-19               | 4B-3                     |
| <b>CHER-2.5-N</b>  | Cosmopolis<br>Mill Creek<br>N46.96039<br>W123.77562                   | Notification  | General Fish and Wildlife Resources, Sensitive Resources | Call City of Cosmopolis Public Works (360) 533-4280 or (360) 580-6227. Ask them to close gates on both sides of bridge over creek. | Prevent oil from entering Mill Creek at the Chehalis River by having City of Cosmopolis close flood gates        | 4-18               | 4B-5                     |
| <b>LKAB-0.0-N</b>  | Aberdeen<br>Lake Aberdeen<br>WDFW Hatchery<br>N46.98016<br>W123.74282 | Notification  | Chinook Salmon, Coho Salmon, Steelhead                   | Notify WDFW Lake Aberdeen Hatchery of oil spill. Call: (360) 533-1663, (360) 532-3686, or (360) 589-1296                           | Inform WDFW hatchery of oil spill in area so release of fish won't coincide with ongoing spill response efforts. | 4-18               | 4B-7                     |
| <b>WEST-0.0-N</b>  | Westport<br>E Elizabeth Ave<br>N46.89253<br>W124.09612                | Notification  | General Fish and Wildlife Resources                      | Call City of Westport Street Department at (360) 268-9091 or (360) 581-5772. Ask them to verify that gates are working properly.   | Prevent oil from entering unnamed canal near the end of E Elizabeth Avenue in Westport                           | 4-22               | 4B-9                     |

## Grays Harbor Geographic Response Plan

| Site Number | Name   | Position                | Nearest Address                                   | Contact   | Strategies Served  | Comments   | Sector Map (Page#) | Site Details (Page#) |
|-------------|--|-------------------------|---|---|--|--|--------------------|----------------------|
| SA-1-GH     | North Bay - Humptulips River - WDFW Water Access Site (Morley) | N47.04924<br>W124.04407 | 1349 Washington 109 Highway 109 Hoquiam, WA 98550 | WDFW Region 6<br>48 Devonshire Road Montesano, WA 98563<br>Ph: (360) 249-4628<br>TeamMontesano@dfw.wa.gov | GILS-0.0<br>HMPR-0.0<br>HMPR-0.75<br>HMPR-0.9<br>HMPR-0.95           | Boat Ramp - Concrete (1)<br>Restrooms (1)<br>No Dock<br>No Power<br>No Water<br>Parking (Unmarked)<br>24,000sqft (dirt/gravel)<br>No Covered Spaces<br>Discovery Pass Required | 4-26               | 4C-3                 |
| SA-2-GH     | Hoquiam - 28th Street Boat Launch (Parking Area)               | N46.96778<br>W123.86006 | 718 28th Street Hoquiam, WA 98550                 | Port of Grays Harbor<br>111 S. Wooding Street Aberdeen, WA 98520<br>(360) 533-9528                        | GH4  | Boat Ramp - Concrete (1)<br>Dock (1)<br>Restrooms - HoneyBucket<br>No Power<br>No Water<br>Parking (Unmarked)<br>17,500sqft (gravel)<br>No Covered Spaces                      | 4-20               | 4C-5                 |
| SA-3-GH     | Cosmopolis - Chehalis River Boat Launch (Parking Area)         | N46.95721<br>W123.77086 | 1101 1st Street Cosmopolis, WA 98537              | Cosmo Specialty Fibers<br>Shift Supervisor<br>(360) 500-4604  | CHER-1.4<br>CHER-2.6<br>CHER-2.7<br>CHER-2.8<br>CHER-3.0<br>CHER-3.5 | Boat Ramp - Aspht/Grvl (1)<br>No Dock<br>No Restrooms<br>No Power<br>No Water<br>Parking (Unmarked)<br>65,000sqft (dirt/gravel)<br>No Covered Spaces<br>Private Property       | 4-18               | 4C-7                 |

## Grays Harbor Geographic Response Plan

| Site Number | Name   | Position                | Nearest Address                           | Contact  | Strategies Served  | Comments  | Sector Map (Page#) | Site Details (Page#) |
|-------------|--|-------------------------|---|--|--|---|--------------------|----------------------|
| SA-4-GH     | Markham - Johns River Boat Launch (Parking Area)         | N46.89947<br>W123.99611 | 24 Game Farm Road<br>Aberdeen, WA 98520   | WDFW Region 6<br>48 Devonshire Road<br>Montesano, WA 98563<br>Ph: (360) 249-4628<br>TeamMontesano@dfw.wa.gov | JHNR-0.0a<br>JHNR-0.0b<br>JHNR-0.3                           | Boat Ramp - Concrete (1)<br>Restrooms (1)<br>No Dock<br>No Power<br>No Water<br>Parking (Unmarked)<br>22,500sqft (gravel/grass)<br>No Covered Spaces<br>Discovery Pass Required | 4-23               | 4C-9                 |
| SA-5-GH     | South Bay - Brady's Oysters (Hwy 105 / Elk River Bridge) | N46.8616<br>W124.07372  | 3714 Oyster Place E<br>Aberdeen, WA 98520 | Brady's Oysters<br>3714 Oyster Place E<br>Aberdeen, WA 98520<br>(360) 268 5518<br>brady@bradysoysters.com    | GH8<br>GH9<br>GH10a<br>GH10b<br>GH11<br>GH12<br>GH13<br>GH14 | Boat Ramp - Shell (1)<br>No Dock<br>No Restrooms<br>No Power<br>No Water<br>Parking (Unmarked)<br>10,000sqft (dirt/gravel)<br>No Covered Spaces<br>Private Property             | 4-24               | 4C-11                |
| SA-A-GH     | Aberdeen - Wishkah River                                 | N46.97486<br>W123.80823 | 913 W Heron Street<br>Aberdeen, WA 98520  | Port of Grays Harbor<br>111 S. Wooding Street<br>Aberdeen, WA 98520<br>(360) 533-9528                        | CHER-0.0<br>CHER-0.2<br>GH5<br>GH6<br>GH7<br>WSHR-0.0        | No Usable Boat Ramp<br>No Dock<br>No Restrooms<br>No Power<br>No Water<br>Parking (Unmarked)<br>30,000sqft (dirt)<br>No Covered Spaces<br>No Known User Fee                     | 4-19               | 4C-13                |



## Grays Harbor Geographic Response Plan

| Site Number | Name  | Position                | Nearest Address                           | Contact   | Strategies Served    | Comments  | Sector Map (Page#) | Site Details (Page#) |
|-------------|---|-------------------------|---|---|----------------------|---|--------------------|----------------------|
| SA-B-GH     | South Aberdeen - Bishop Athletic Complex    | N46.94602<br>W123.84678 | 144 State Route 105<br>Aberdeen, WA 98520 | City of Aberdeen Parks Department<br>200 E Market Street<br>Aberdeen, WA 98520<br>Ph: (360) 537-3229<br>krharris@aberndeenwa.gov            | CHRC-0.1<br>NSKC-0.2 | No Boat Ramp or Dock<br>Restrooms Available<br>Water Available<br>Power Unknown<br>Ample Parking<br>1,950,000sqft (grass)<br>Covered Spaces Limited<br>No Known User Fee<br>Coordinate w City Parks | 4-20               | 4C-15                |
| SA-X3-GH    | Westport Marina (Southeast End Parking Lot) | N46.90331<br>W124.10654 | 1900 Nyhus Street N<br>Westport, WA 98595 | Westport Marina (Westhaven Cove)<br>Port of Grays Harbor<br>111 S. Wooding Street<br>Aberdeen, WA 98520<br>(360) 268-9665 or (360) 533-9528 | No Info              | Boat Ramp - Concrete (2)<br>Docks (2)<br>No Restrooms<br>No Power<br>No Water<br>Ample Parking<br>120,000sqft (gravel)<br>No Covered Spaces<br>No Known User Fee                                    | 4-22               | 4C-17                |

## Grays Harbor Geographic Response Plan

| Site Number | Name   | Position                | Nearest Address                                   | Contact   | Strategies Served  | Comments   | Sector Map (Page#) | Site Details (Page#) |
|-------------|--|-------------------------|---|---|--|--|--------------------|----------------------|
| BL-1-GH     | North Bay - Humptulips River - WDFW Water Access Site (Morley) | N47.04935<br>W124.04442 | 1349 Washington 109 Highway 109 Hoquiam, WA 98550 | WDFW Region 6<br>48 Devonshire Road Montesano, WA 98563<br>Ph: (360) 249-4628<br>TeamMontesano@dfw.wa.gov | GILS-0.0<br>GRSC-0.1<br>HMPR-0.0<br>HMPR-0.75<br>HMPR-0.9<br>HMPR-0.95   | Boat Ramp - Concrete (1)<br>Restrooms (1)<br>No Dock<br>No Power<br>No Water<br>Parking (Unmarked)<br>24,000sqft (dirt/gravel)<br>No Covered Spaces<br>Discovery Pass Required | 4-26               | 4D-3                 |
| BL-2-GH     | Hoquiam - 28th Street Boat Launch                              | N46.9676<br>W123.86008  | 718 28th Street Hoquiam, WA 98550                 | Port of Grays Harbor<br>111 S. Wooding Street Aberdeen, WA 98520<br>(360) 533-9528                        | CHER-0.0<br>CHER-0.2<br>GH2<br>GH3<br>GH4<br>GH5<br>GH6<br>GH7<br>HOQR-0.0<br>WSHR-0.0<br>WSHR-0.2   | Boat Ramp - Concrete (1)<br>Dock (1)<br>Restrooms - HoneyBucket<br>No Power<br>No Water<br>Parking (Unmarked)<br>17,500sqft (gravel)<br>No Covered Spaces                      | 4-20               | 4D-5                 |
| BL-3-GH     | Cosmopolis - Chehalis River Boat Launch                        | N46.95774<br>W123.77129 | 1101 1st Street Cosmopolis, WA 98537              | Cosmo Specialty Fibers<br>Shift Supervisor<br>(360) 500-4604  | CHER-0.7a<br>CHER-0.7b<br>CHER-1.25a<br>CHER-1.25b<br>CHER-1.4<br>CHER-1.7a<br>CHER-1.7b<br>CHER-2.0a<br>CHER-2.0b<br>CHER-2.6<br>CHER-2.7<br>CHER-2.8<br>CHER-3.0<br>CHER-3.5 | Boat Ramp - Aspht/Grvl (1)<br>No Dock<br>No Restrooms<br>No Power<br>No Water<br>Parking (Unmarked)<br>65,000sqft (dirt/gravel)<br>No Covered Spaces<br>Private Property       | 4-18               | 4D-7                 |

## Grays Harbor Geographic Response Plan

| Site Number     | Name   | Position                | Nearest Address                                 | Contact  | Strategies Served  | Comments  | Sector Map (Page#) | Site Details (Page#) |
|-----------------|--|-------------------------|---|--|--|---|--------------------|----------------------|
| <b>BL-4-GH</b>  | Markham - Johns River Boat Launch                                    | N46.89979<br>W123.99624 | 24 Game Farm Road<br>Aberdeen, WA 98520         | WDFW Region 6<br>48 Devonshire Road<br>Montesano, WA 98563<br>Ph: (360) 249-4628<br>TeamMontesano@dfw.wa.gov | JHNR-0.0a<br>JHNR-0.0b<br>JHNR-0.3                           | Boat Ramp - Concrete (1)<br>Restrooms (1)<br>No Dock<br>No Power<br>No Water<br>Parking (Unmarked)<br>22,500sqft (gravel/grass)<br>No Covered Spaces<br>Discovery Pass Required | 4-23               | 4D-9                 |
| <b>BL-5-GH</b>  | South Bay - Brady's Oysters Boat Launch (Hwy 105 / Elk River Bridge) | N46.86222<br>W124.07248 | 3714 Oyster Place E<br>Aberdeen, WA 98520       | Brady's Oysters<br>3714 Oyster Place E<br>Aberdeen, WA 98520<br>(360) 268 5518<br>brady@bradysoysters.com    | GH8<br>GH9<br>GH10a<br>GH10b<br>GH11<br>GH12<br>GH13<br>GH14 | Boat Ramp - Shell (1)<br>No Dock<br>No Restrooms<br>No Power<br>No Water<br>Parking (Unmarked)<br>10,000sqft (dirt/gravel)<br>No Covered Spaces<br>Private Property             | 4-24               | 4D-11                |
| <b>BL-X1-GH</b> | Ocean Shores - Quinault Marina                                       | N46.94816<br>W124.12972 | 1056 Discovery Ave SE<br>Ocean Shores, WA 98569 | Quinault Marina<br>Tom Mail (Camp Host)<br>(360) 289-4789<br>(360) 580-2123                                  | No Info  | Boat Ramp - Asphalt (1)<br>No Restrooms<br>No Dock<br>No Power<br>No Water<br>Parking (Unmarked)<br>68,000sqft (dirt/gravel)<br>No Covered Spaces<br>User Fee Unknown           | 4-21               | 4D-13                |

## Grays Harbor Geographic Response Plan

| Site Number     | Name   | Position                | Nearest Address                           | Contact   | Strategies Served | Comments   | Sector Map (Page#) | Site Details (Page#) |
|-----------------|--|-------------------------|---|---|-------------------|--|--------------------|----------------------|
| <b>BL-X2-GH</b> | Hoquiam - 9th Street Boat Launch (Hoquiam River) | N46.97725<br>W123.88154 | 827 Levee Street<br>Hoquiam, WA 98550     | City of Hoquiam<br>609 8th Street<br>Hoquiam, WA 98550  | No Info           | Boat Ramp - Dirt/Gravel (1)<br>No Restrooms<br>No Dock<br>No Power<br>No Water<br>Limited Parking (On Street)<br>5,500sqft (grass/gravel)<br>Covered Spaces (100sqft)<br>No Known User Fee | 4-20               | 4D-15                |
| <b>BL-X3-GH</b> | Westport Marina Boat Launch                      | N46.90408<br>W124.10603 | 1900 Nyhus Street N<br>Westport, WA 98595 | Westport Marina (Westhaven Cove)<br>Port of Grays Harbor<br>111 S. Wooding Street<br>Aberdeen, WA 98520<br>(360) 268-9665 or (360) 533-9528 | No Info           | Boat Ramp - Concrete (2)<br>Docks (2)<br>No Restrooms<br>No Power<br>No Water<br>Ample Parking<br>120,000sqft (gravel)<br>No Covered Spaces<br>No Known User Fee                           | 4-22               | 4D-17                |

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# **Appendix 4A**

## **Response Strategy 2-Pagers**

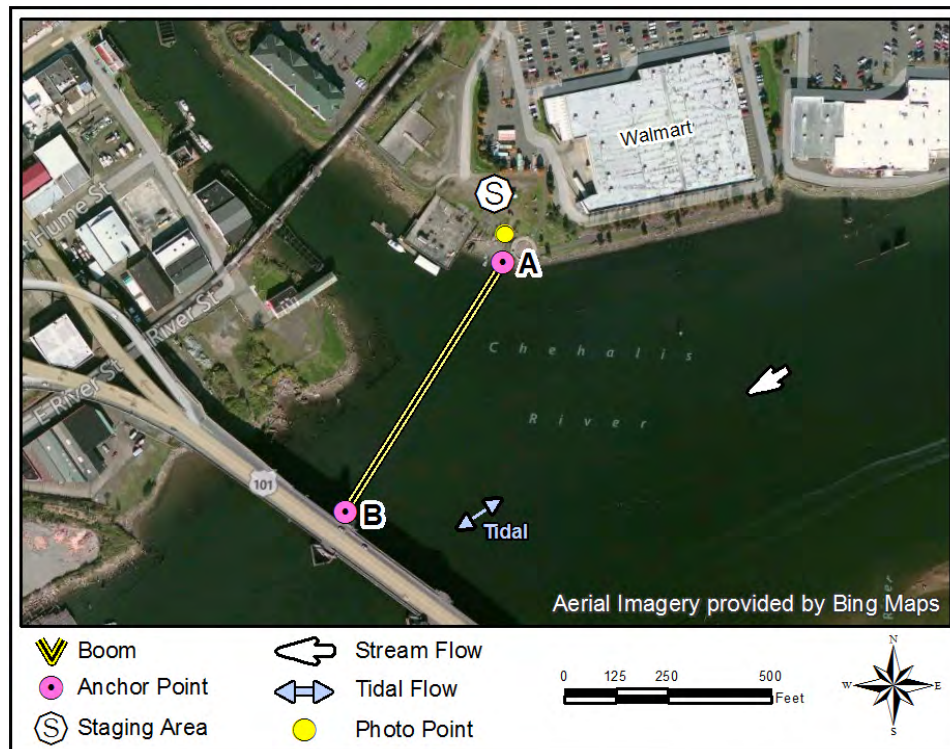
### **Response Strategies – List**

|                   |                 |                  |                  |
|-------------------|-----------------|------------------|------------------|
| <b>CHER-0.0</b>   | <b>CHER-3.0</b> | <b>GH7</b>       | <b>HMPR-0.9</b>  |
| <b>CHER-0.2</b>   | <b>CHER-3.5</b> | <b>GH8</b>       | <b>HMPR-0.95</b> |
| <b>CHER-0.7a</b>  | <b>CHNC-0.1</b> | <b>GH9</b>       | <b>HOQR-0.0</b>  |
| <b>CHER-0.7b</b>  | <b>CHPC-0.1</b> | <b>GH10a</b>     | <b>INDC-0.1</b>  |
| <b>CHER-1.25a</b> | <b>CHRC-0.1</b> | <b>GH10b</b>     | <b>JESS-0.35</b> |
| <b>CHER-1.25b</b> | <b>CMBC-0.1</b> | <b>GH11</b>      | <b>JHNR-0.0a</b> |
| <b>CHER-1.4</b>   | <b>CMBS-0.1</b> | <b>GH12</b>      | <b>JHNR-0.0b</b> |
| <b>CHER-1.7a</b>  | <b>CONC-0.9</b> | <b>GH13</b>      | <b>JHNR-0.3</b>  |
| <b>CHER-1.7b</b>  | <b>GH1</b>      | <b>GH14</b>      | <b>NSKC-0.2</b>  |
| <b>CHER-2.0a</b>  | <b>GH2</b>      | <b>GH15</b>      | <b>OLRC-0.0</b>  |
| <b>CHER-2.0b</b>  | <b>GH3</b>      | <b>GILS-0.0</b>  | <b>STFC-0.1</b>  |
| <b>CHER-2.6</b>   | <b>GH4</b>      | <b>GRSC-0.1</b>  | <b>WSHR-0.0</b>  |
| <b>CHER-2.7</b>   | <b>GH5</b>      | <b>HMPR-0.0</b>  | <b>WSHR-0.2</b>  |
| <b>CHER-2.8</b>   | <b>GH6</b>      | <b>HMPR-0.75</b> |                  |

# Aberdeen - Chehalis River (NE Side of Hwy 101 Bridge)

CHER-0.0

|                             |   |   |          |
|-----------------------------|---|---|----------|
| <b>Position - Location:</b> | 46.97346  | -123.808845   | Aberdeen |
| <b>Strategy Objective:</b>  | Collection  | Collect oil moving upstream on the Chehalis River during incoming tide            |          |
| <b>Implementation:</b>      | On north side of Chehalis River (river right) at the mouth of the Wishkah River, secure end of 700ft length of boom to shore near Point A (N46.97444, W123.80807) above the high water mark. Use workboat to tow boom out into the river and downstream, securing or anchoring the remaining boom end to NE corner of bridge works/fender system (east/upstream side of bridge) for the NW bridge stanchion/support near Point B (N46.97275, W123.80949). Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to shore. Vac truck collection at Point A. |   |          |
| <b>Staging Area:</b>        | On-Site:  | Staging Area (SA-A-GH) is on site. Use Boat Launch BL-2-GH (Hoquiam 28th Street). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Swift Currents and Eddys near Bridge   |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards low. Notify Port of Grays Harbor (property owner) before implementation; call (360) 533-9528.  |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |   |          |



## Recommended Equipment

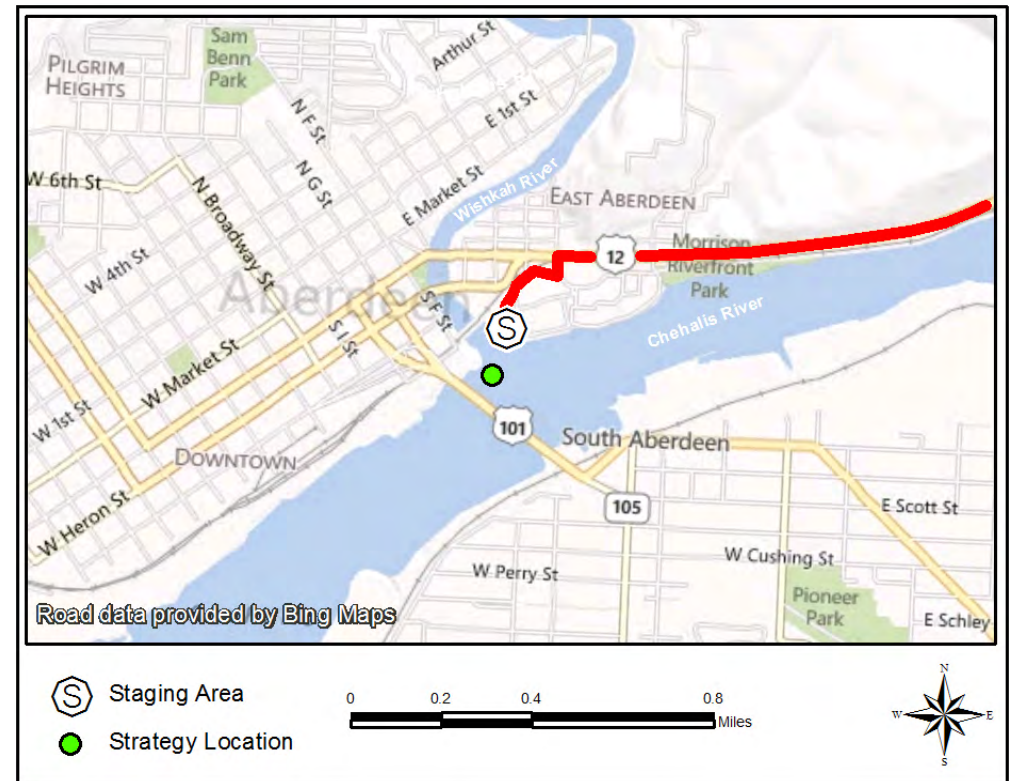
|     |      |  |
|-----|------|--|
| 700 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside) and (1) Post Driver      |
| 600 | Feet | Line - 1/2" poly line                                    |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



CHER-0.0 Photo: At shoreside anchor point location at the mouth of the Wishkah River (River Left) looking out towards Hwy 101 Bridge.



## SiteContact

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

## NearestAddress

913 W Heron Street  
Aberdeen, WA 98520

## DrivingDirections

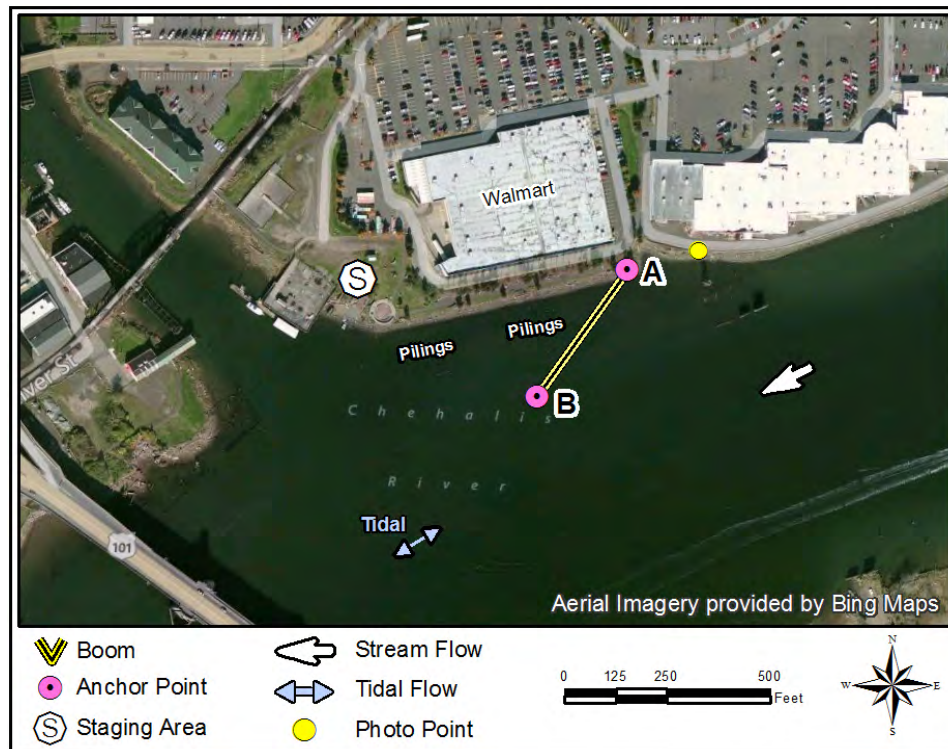
- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.



# Aberdeen - Chehalis River (East & Upstream of Hwy 101 Bridge)

CHER-0.2

|                             |   |  |          |
|-----------------------------|---|--|----------|
| <b>Position - Location:</b> | 46.97437  | -123.80598   | Aberdeen |
| <b>Strategy Objective:</b>  | Collection  | Collect oil moving upstream on the Chehalis River during incoming tide   |          |
| <b>Implementation:</b>      | On north side of Chehalis River (river right) upstream of the Wishkah River (mouth) behind the Walmart store, secure end of 400ft length of boom to shore near Point A (N46.97491 W123.80553) above the high water mark. Upstream of the group of nearshore pilings, use workboat to tow remaining boom end out into the river and then downstream, anchoring it near Point B (N46.97404, W123.80635) vicinity of channel navigation marker. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to shore. Use vacuum truck at Point A to recover collected oil. |  |          |
| <b>Staging Area:</b>        | Off-Site:   | Staging Area (SA-A-GH) is 700ft to the west of strategy location. Use Boat Launch BL-2-GH (Hoquiam 28th Street). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Pilings; Rocky Shoreline   |  |          |
| <b>Field Notes:</b>         | Best implemented at slack high tide moving towards low. Notify Port of Grays Harbor (property owner) before implementation; call (360) 533-9528.  |  |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |  |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |  |          |



## Recommended Equipment

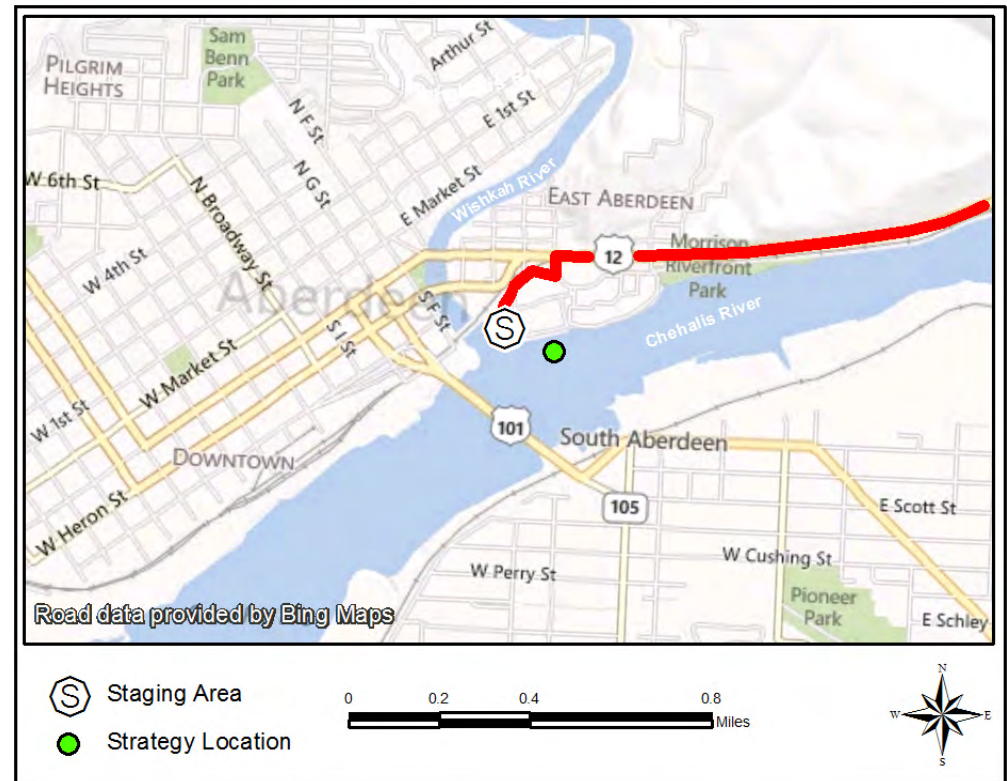
|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 5   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |



CHER-0.2 Photo: Upstream of strategy location, looking downstream towards site and Hwy 101 Bridge. Channel Marker (Dayboard) is towards center left.



### SiteContact

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

### NearestAddress

913 W Heron Street  
Aberdeen, WA 98520

### DrivingDirections

TO STAGING AREA: (SA-A-GH)

- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.



# Aberdeen - Chehalis River (Morrison Riverfront Park)

CHER-0.7a

|                             |  |   |          |
|-----------------------------|--|---|----------|
| <b>Position - Location:</b> | 46.97668   | -123.79677  | Aberdeen |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving upstream on the Chehalis River during incoming tide  |          |
| <b>Implementation:</b>      | On north side of Chehalis River (river right) at downstream/shoreside corner of the Morrison Riverfront Park pier, secure end of 400ft length of boom to shore near Point A (N46.97712, W123.79626). Use workboat to tow remaining boom end out into the river and downstream, anchoring it near Point C (N46.97644, W123.79729). Pull tension on boom ~75ft from Point A, securing portion of boom to downstream side of pier near Point B (N46.97694, W123.79615). Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to shore. Vac truck collection at Point A. |   |          |
| <b>Staging Area:</b>        | On-Site:   | Stage near the park's east end turning circle, adjacent to the pier/dock. Use Boat Launch BL-3-GH (Cosmopolis). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Rocky Shoreline   |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards low. Notify Aberdeen Parks Department before implementation; call (360) 537-3229. After hours, contact Aberdeen Fire Department (via County Dispatch) at (360) 533-8765.  |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands   |   |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 5   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |



CHER-0.7a Photo: From pier/dock at Morrison Riverfront Park, looking downstream on the Chehalis River towards strategy location and river right.



### SiteContact

City of Aberdeen Parks Department  
200 E Market Street  
Aberdeen, WA 98520  
Ph: (360) 537-3229  
krharris@aberndeenwa.gov

### NearestAddress

115 S Fleet Street  
Aberdeen, WA 98520

### DrivingDirections

- ① Enter Aberdeen from the West on Hwy 12
- ② At the first stop light, turn left into the shopping center complex.
- ③ Take the first available left turn and follow the drive along the north side of the parking lot and Top Foods store
- ④ Cross Fleet Street and entering Morrison Riverfront Park, heading towards the Rotary Log Pavillion.
- ⑤ Follow the road (Sargent Blvd) along the north side of the Log Pavillion and continue east ~900ft to the rotary circle. Stage equipment in the parking area near the rotary.

# Aberdeen - Chehalis River (Morrison Riverfront Park)

CHER-0.7b

|                             |   |   |          |
|-----------------------------|---|---|----------|
| <b>Position - Location:</b> | 46.97716  | -123.795222   | Aberdeen |
| <b>Strategy Objective:</b>  | Collection  | Collect oil moving downstream on the Chehalis River during outgoing tide  |          |
| <b>Implementation:</b>      | On north side of Chehalis River (river right) ~120ft upstream of Morrison Riverfront Park pier/dock, upstream of any significant debris, secure end of 300ft length of boom to shore near Point A (N46.97727, W123.79577) above the high water mark. Use workboat to tow remaining boom end out into the river and upstream, anchoring it near Point B (N46.97703, W123.79467) about ~100ft downstream from channel navigation marker. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to shore. Use vacuum truck at Point A to recover collected oil. |   |          |
| <b>Staging Area:</b>        | On-Site:  | Stage near the park's east end turning circle, adjacent to the pier/dock. Use Boat Launch BL-3-GH (Cosmopolis). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Rocky Shoreline  |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards high. Notify Aberdeen Parks Department before implementation; call (360) 537-3229. After hours, contact Aberdeen Fire Department (via County Dispatch) at (360) 533-8765.  |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |   |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 300 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





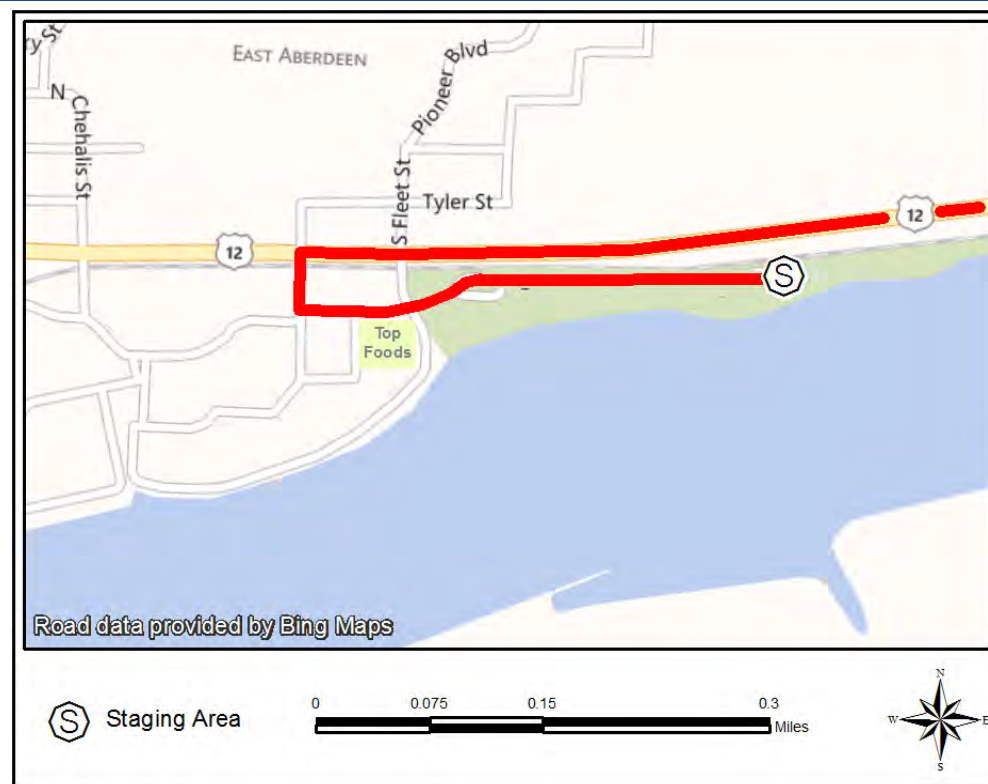
CHER-0.7b Photo: From pier/dock at Morrison Riverfront Park, looking upstream on the Chehalis River towards strategy location and river right. Channel Marker (Dayboard) visible in center of photo.

## SiteContact

City of Aberdeen Parks Department  
200 E Market Street  
Aberdeen, WA 98520  
Ph: (360) 537-3229  
krharris@aberdeenwa.gov

## NearestAddress

115 S Fleet Street  
Aberdeen, WA 98520



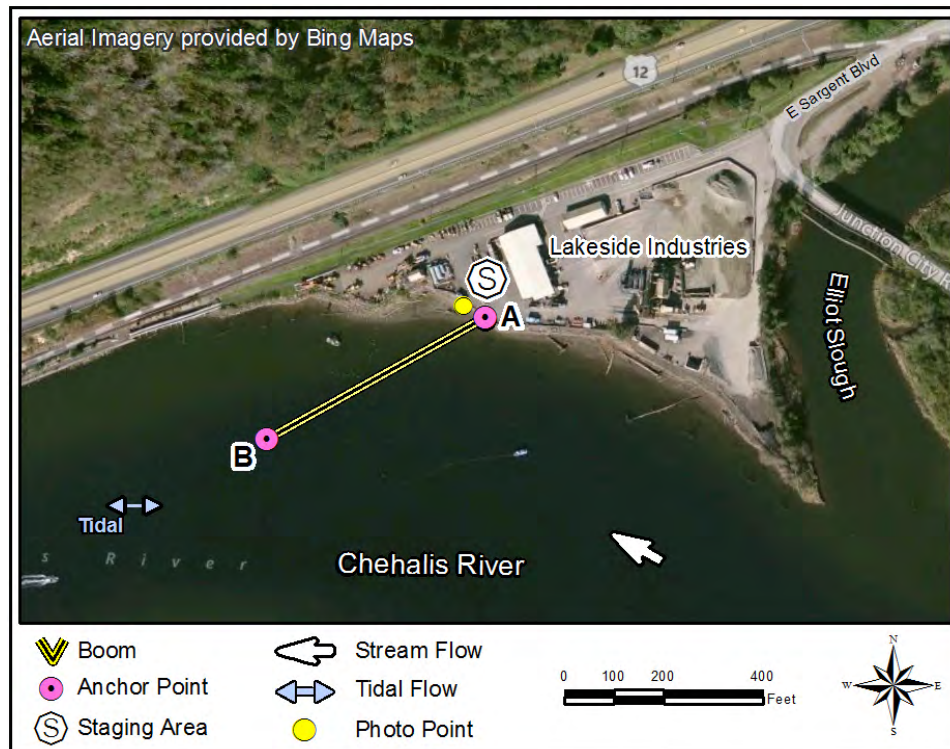
## DrivingDirections

- ① Enter Aberdeen from the West on Hwy 12
- ② At the first stop light, turn left into the shopping center complex.
- ③ Take the first available left turn and follow the drive along the north side of the parking lot and Top Foods store
- ④ Cross Fleet Street and entering Morrison Riverfront Park, heading towards the Rotary Log Pavillion.
- ⑤ Follow the road (Sargent Blvd) along the north side of the Log Pavillion and continue east ~900ft to the rotary circle. Stage equipment in the parking area near the rotary.

# Aberdeen - Chehalis River - West of Elliot Slough (Lakeside Industries)

CHER-1.25a

|                             |   |   |          |
|-----------------------------|---|---|----------|
| <b>Position - Location:</b> | 46.97860  | -123.78536  | Aberdeen |
| <b>Strategy Objective:</b>  | Collection  | Collect oil moving upstream on Chehalis River during incoming tide  |          |
| <b>Implementation:</b>      | On river right of Chehalis River (north side) ~750ft downstream from Elliot Slough, secure 500ft length of boom to shore near Point A (N46.97898, W123.78444) outside the fence at Lakeside Industries adjacent to the river. Use workboat to pull boom from shore, out into the river, and downstream. Anchor offshore end of boom near Point B (N46.97826, W123.78615; ~300ft from river bank). Adjust boom angles as needed for conditions. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to shore. Use vacuum truck at Point A to recover collected oil. |   |          |
| <b>Staging Area:</b>        | On-Site:  | Stage equipment at Lakeside Industries, inside fenceline adjacent to river. Use Boat Launch BL-3-GH (Cosmopolis). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Rocky Shoreline; Overgrown Vegetation outside Fenceline  |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide. Notify Lakeside Industries for access and assistance; call (360) 533-0610.<br>After hours call (360) 533-7624, (360) 580-7452, (360) 580-6508 or Aberdeen Fire Depatment (via County Dispatch) at (360) 533-8765.   |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands   |   |          |



## Recommended Equipment

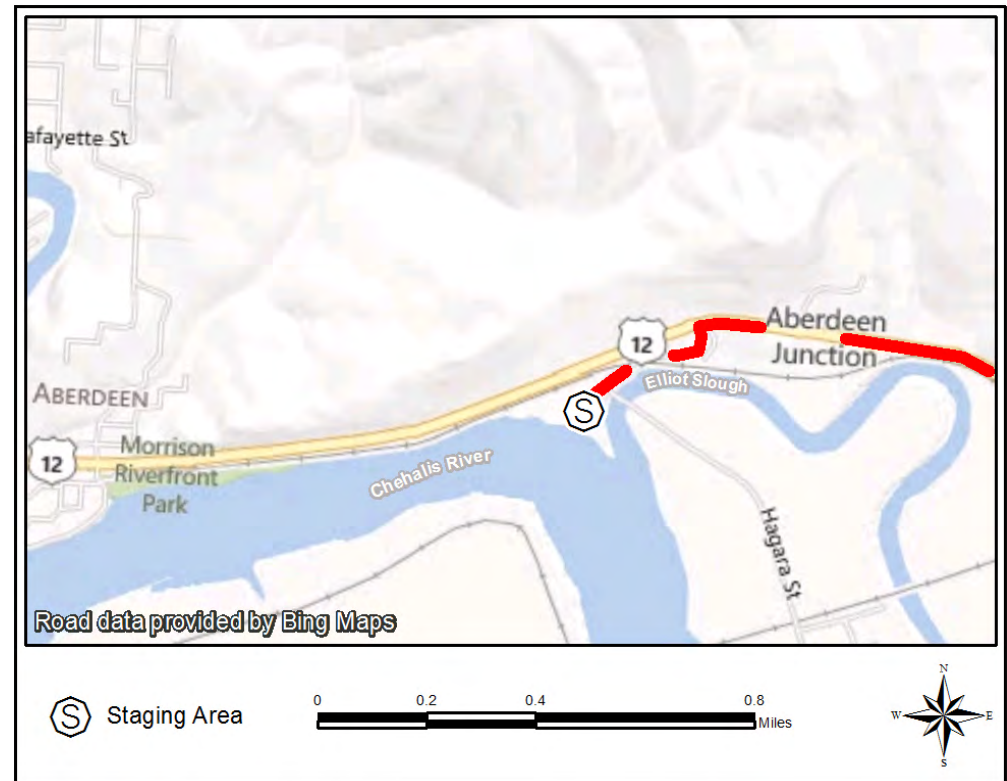
|     |      |  |
|-----|------|--|
| 500 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



CHER-1.25a Photo: At strategy location immediately outside the fenceline of Lakeside Industries, looking downstream on the Chehalis River.



### SiteContact

Lakeside Industries (Property Owner)  
Ph: (360) 533-0610  
Ph: (360) 533-7624  
Ph: (360) 580-7452  
Ph: (360) 580-6508

### NearestAddress

199 E Sargent Blvd  
Aberdeen, WA 98520

### DrivingDirections

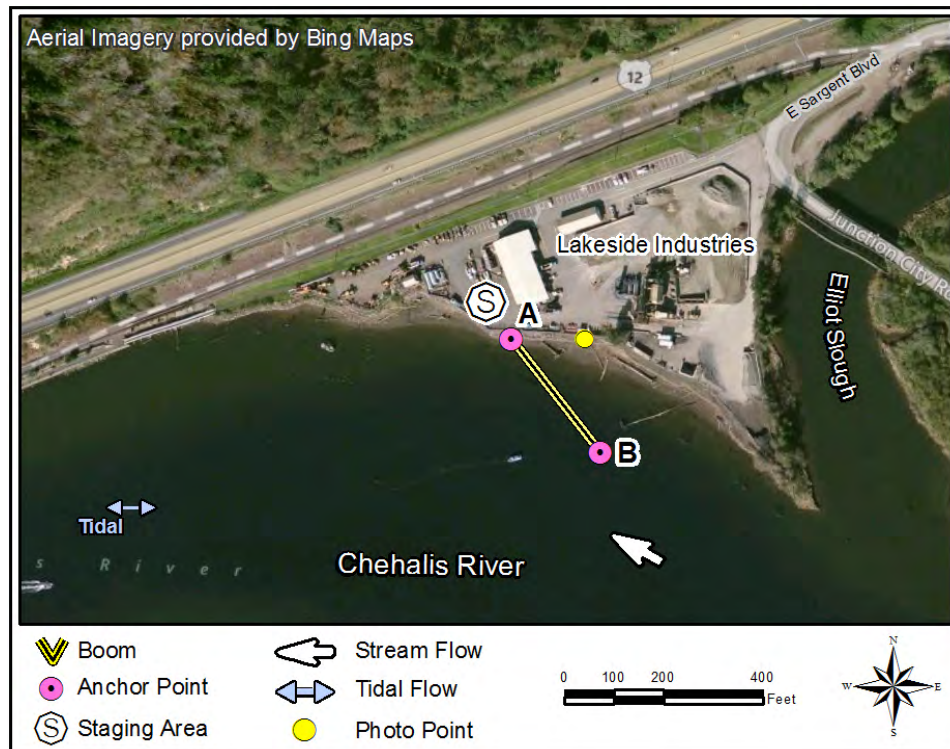
- ① Travel on Hwy 12 towards Aberdeen/Hoquiam from Montesano
- ② From the Wynoochee River Bridge (1st bridge west of Montesano) travel on Hwy 12 for 6.6 miles
- ③ Turn left at stoplight onto E Sargent Blvd (last light before entering Aberdeen)
- ④ After the turn, follow the road to the right. Lakeside Industries is the facility straight ahead before the road curves back to the left. Do not cross over the bridge. Stage within the fenced area at Lakeside Industries near the gate that opens to the Chehalis River.



# Aberdeen - Chehalis River - West of Elliot Slough (Lakeside Industries)

CHER-1.25b

|                             |  |   |          |
|-----------------------------|--|---|----------|
| <b>Position - Location:</b> | 46.97861   | -123.78382  | Aberdeen |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving downstream on Chehalis River during outgoing tide  |          |
| <b>Implementation:</b>      | On river right of Chehalis River (north side) ~700ft downstream from Elliot Slough, secure 300ft section of boom to shore near Point A (N46.97891, W123.78418) outside the fence at Lakeside Industries adjacent to the river. Use workboat to pull boom from shore, out into the river, and upstream. Anchor offshore end of boom near Point B (N46.97831, W123.78343; ~185ft from river bank). Adjust boom angles as needed for conditions. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to shore. Use vacuum truck at Point A to recover collected oil. |   |          |
| <b>Staging Area:</b>        | On-Site:   | Stage equipment at Lakeside Industries, inside fenceline adjacent to river. Use Boat Launch BL-3-GH (Cosmopolis). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Rocky Shoreline; Overgrown Vegetation outside Fenceline   |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide. Notify Lakeside Industries for access and assistance; call (360) 533-0610.<br>After hours call (360) 533-7624, (360) 580-7452, (360) 580-6508 or Aberdeen Fire Depatment (via County Dispatch) at (360) 533-8765.  |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |   |          |



## Recommended Equipment

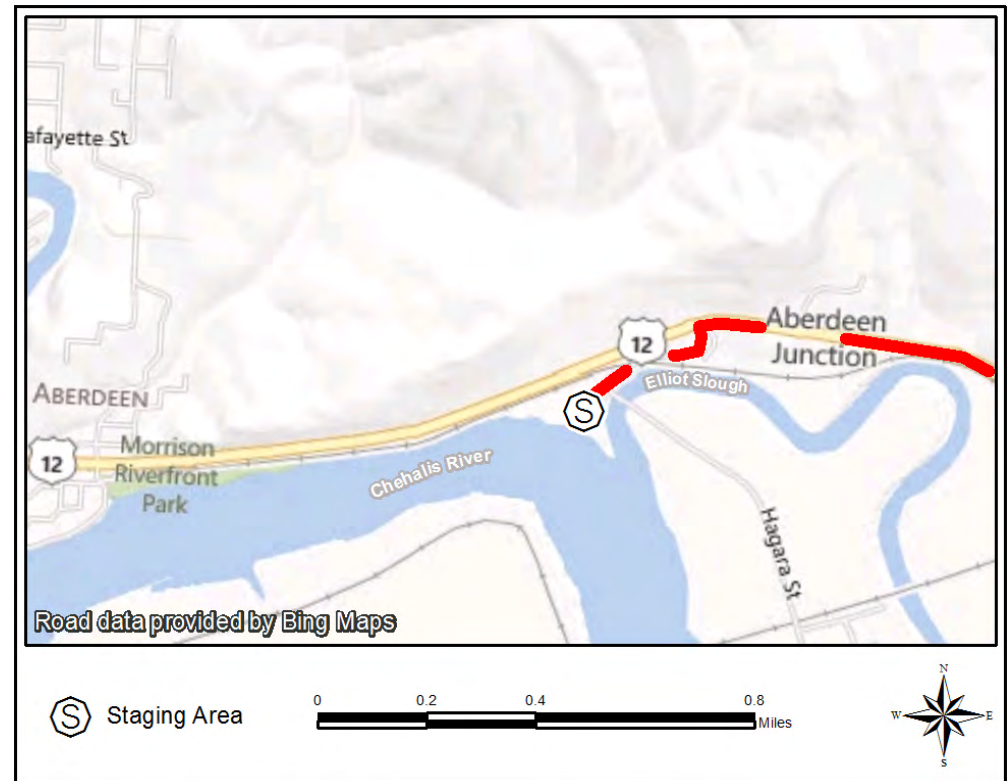
|     |      |  |
|-----|------|--|
| 300 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 4   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |



CHER-1.25b Photo: At strategy location immediately outside the fenceline of Lakeside Industries, looking upstream on the Chehalis River.



#### SiteContact

Lakeside Industries (Property Owner)

Ph: (360) 533-0610

Ph: (360) 533-7624

Ph: (360) 580-7452

Ph: (360) 580-6508

#### NearestAddress

199 E Sargent Blvd  
Aberdeen, WA 98520

#### DrivingDirections

- ① Travel on Hwy 12 towards Aberdeen/Hoquiam from Montesano
- ② From the Wynoochee River Bridge (1st bridge west of Montesano) travel on Hwy 12 for 6.6 miles
- ③ Turn left at stoplight onto E Sargent Blvd (last light before entering Aberdeen)
- ④ After the turn, follow the road to the right. Lakeside Industries is the facility straight ahead before the road curves back to the left. Do not cross over the bridge. Stage within the fenced area at Lakeside Industries near the gate that opens to the Chehalis River.

# Aberdeen - Chehalis River - Elliot Slough (Mouth)

CHER-1.4

|                             |  |  |          |
|-----------------------------|--|--|----------|
| <b>Position - Location:</b> | 46.97759   | -123.780931  | Aberdeen |
| <b>Strategy Objective:</b>  | Exclusion  | Prevent oil from entering Elliot Slough during incoming or outgoing tide.                        |          |
| <b>Implementation:</b>      | Using workboat, tow 600ft boom to strategy location from Cosmopolis Boat Launch during slack tide. Secure boom end to NW corner of Elliot Slough (mouth) near Point A (N46.97809, W123.78169) above the high water mark. Tow remaining boom end (SE) across slough and upstream on the Chehalis River, securing it to the bank near Point B (N46.97693, W123.77994) on river right. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts, trees, or existing structures to secure boom to shore. Place sorbent boom behind hard boom to further reduce chance oil/sheen movement up into slough. |  |          |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Muddy & Unstable Shoreline; Overgrown Vegetation  |  |          |
| <b>Field Notes:</b>         | Best implemented at slack tide. Strategy located just outside fenceline of Lakeside Industries along trail; call Lakeside Industries at (360) 533-0610 for assistance - afterhours call (360) 533-7624, (360) 580-7452, (360) 580-6508.  |  |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |  |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |  |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 600 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 600 | Feet | Boom - Sorbent   |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-1.4 Photo: At anchor point on NW side of strategy location at mouth of Elliot Slough (slough right) looking across to slough left and upstream on the Chehalis River towards Cosmopolis.

#### SiteContact

Lakeside Industries (Strategy Location)

Ph: (360) 533-0610

Ph: (360) 533-7624

Ph: (360) 580-7452

Ph: (360) 580-6508

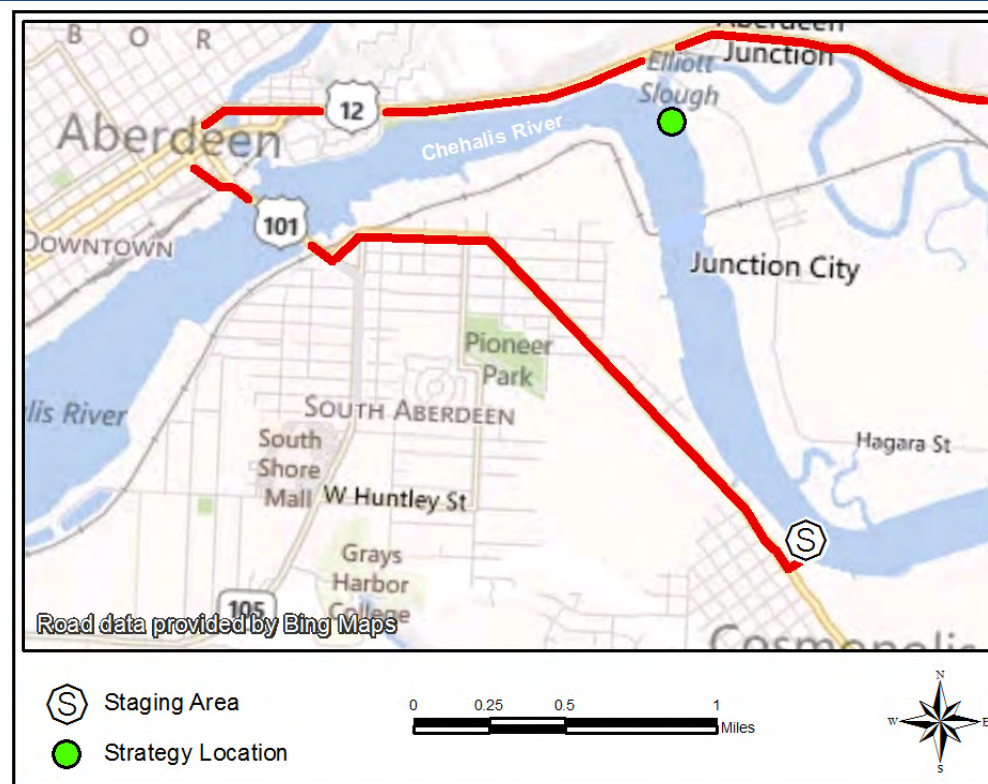
#### NearestAddress

Strategy Location:

199 E Sargent Blvd, Aberdeen, WA 98520

Staging Area:

1101 1st Street, Cosmopolis, WA 98537



#### DrivingDirections

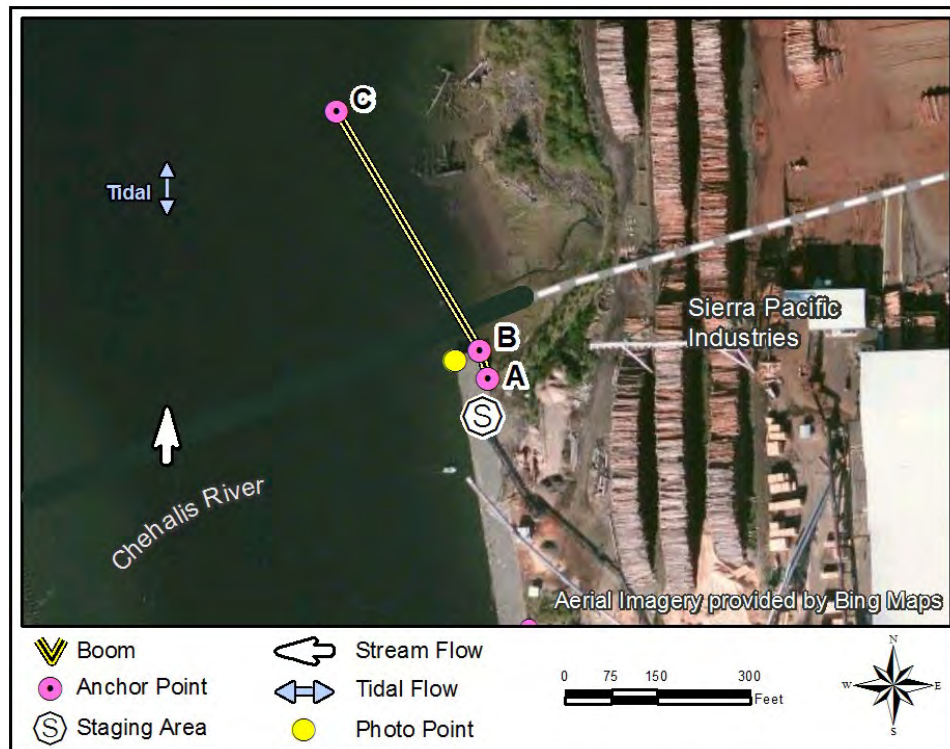
TO STAGING AREA: (SA-3-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.

# Aberdeen/Junction City - Chehalis River (Sierra Pacific)

CHER-1.7a

|                             |  |   |          |
|-----------------------------|--|---|----------|
| <b>Position - Location:</b> | 46.97329   | -123.77904  | Aberdeen |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving upstream on the Chehalis River during incoming tide                                      |          |
| <b>Implementation:</b>      | On Chehalis River (river right) at north end of Sierra Pacific dock, secure end of 500ft length of boom to inside pocket of dock near Point A (N46.97269, W123.77853). Extend boom northward (~50ft) along the inside of the dock to its corner, securing it near Point B (N46.97281, W123.77859). Use workboat to tow boom out from Point B into the Chehalis River and downstream, anchoring the remaining boom end near Point C (N46.973838, W123.779574, ~400ft downstream from dock and ~230ft out from shore). Use additional anchoring systems to keep boom secure in river. Adjust boom angles as needed for conditions. Vac truck collection. |   |          |
| <b>Staging Area:</b>        | On-Site:   | Stage equipment at Sierra Pacific Industries, north end of dock area. Use Boat Launch BL-3-GH (Cosmopolis). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls - Cable Hazard; Water Hazard; Exposed & Submerged Pilings and Debris; Muddy Shoreline; Overgrown Vegetation  |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards low. Notify Sierra Pacific Industries for access and assistance; call (360) 580-2993, after-hours (360) 589-1811 or (360) 388-7974. Debris moving with tide in & out of this location is likely; boom monitoring needed.  |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |   |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 500 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 6   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





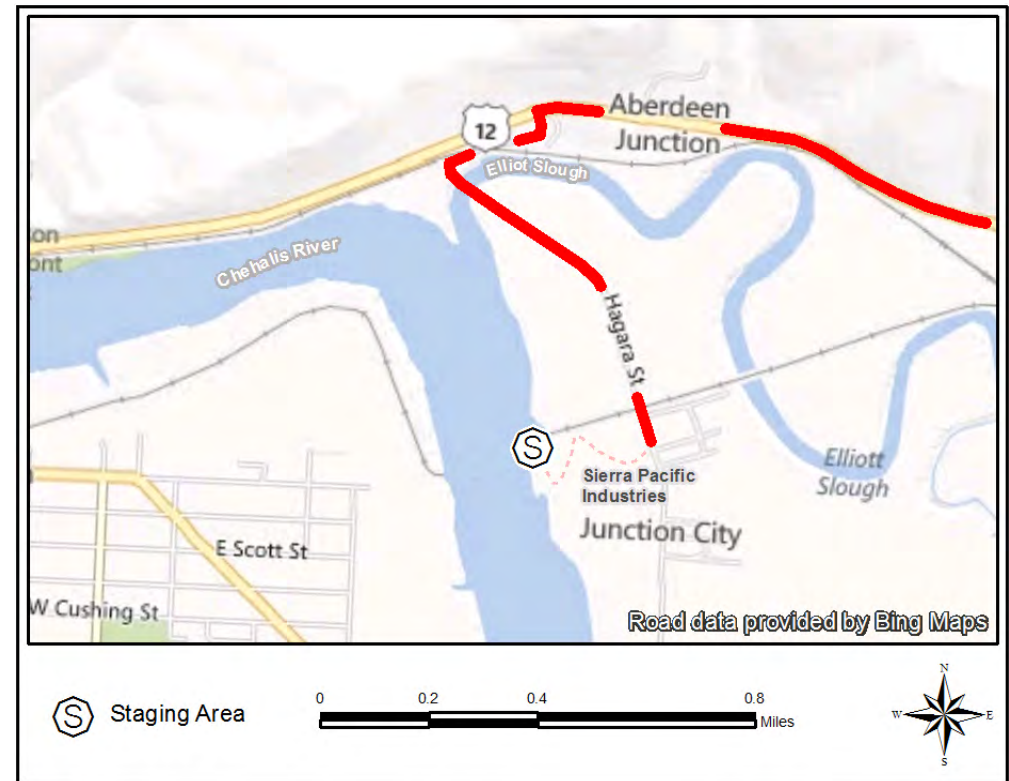
CHER-1.7a Photo: At north end of Sierra Pacific dock on river right of the Chehalis River, looking downstream at strategy location and river right. Elliot Slough and Lakeside Industries facility in background.

#### SiteContact

Sierra Pacific Industries  
Safety / Environmental Coordinator  
301 Hagara Street, Aberdeen, WA 98520  
(360) 580-2993  
(360) 589-1811 or (360) 388-7974

#### NearestAddress

301 Hagara Street  
Aberdeen, WA 98520



#### DrivingDirections

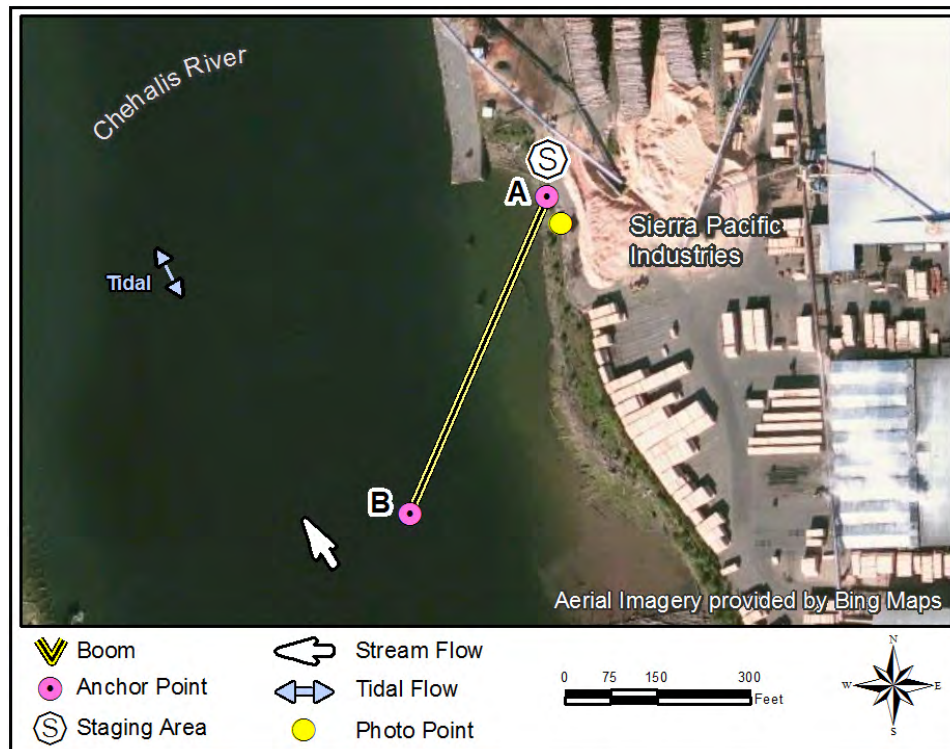
- ① Travel on Hwy 12 towards Aberdeen/Hoquiam from Montesano
- ② From the Wynoochee River Bridge (1st bridge west of Montesano) travel on Hwy 12 for 6.6 miles
- ③ Turn left at stoplight onto E Sargent Blvd (last light before entering Aberdeen)
- ④ After the turn the road will curve to the right and back to the left, becoming Hagara Street. Cross the bridge over Elliot Slough and continue on Hagara Street for 0.6 miles. Sierra Pacific will be on your right. Check in with facility, then stage equipment at/near dock area. Escort to dock area may be required.



# Aberdeen/Junction City - Chehalis River (Sierra Pacific)

CHER-1.7b

|                             |  |   |          |
|-----------------------------|--|---|----------|
| <b>Position - Location:</b> | 46.97058   | -123.778375   | Aberdeen |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving downstream on the Chehalis River during outgoing tide                                    |          |
| <b>Implementation:</b>      | On Chehalis River (river right) shoreside area just south (SE) of Sierra Pacific dock, secure end of 600ft length of boom to bank above high water mark near Point A (N46.97141, W123.77776) using shoreside anchoring posts, trees, or existing structures. Use workboat to tow boom out into the Chehalis River, between pilings and upstream, anchoring remaining boom end near Point B (N46.96999, W123.77856, ~500ft upstream of dock and ~320ft out from shore). Use additional anchoring systems to keep boom secure in river. Adjust boom angles as needed for conditions. Vac truck collection. |   |          |
| <b>Staging Area:</b>        | On-Site:   | Stage equipment at Sierra Pacific Industries, south end of dock area. Use Boat Launch BL-3-GH (Cosmopolis). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls - Cable Hazard; Water Hazard; Exposed & Submerged Pilings and Debris; Muddy Shoreline; Overgrown Vegetation  |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards high. Notify Sierra Pacific Industries for access and assistance; call (360) 580-2993, after-hours (360) 589-1811 or (360) 388-7974. Debris moving with tide in & out of this location is likely; boom monitoring needed.   |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |   |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 600 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



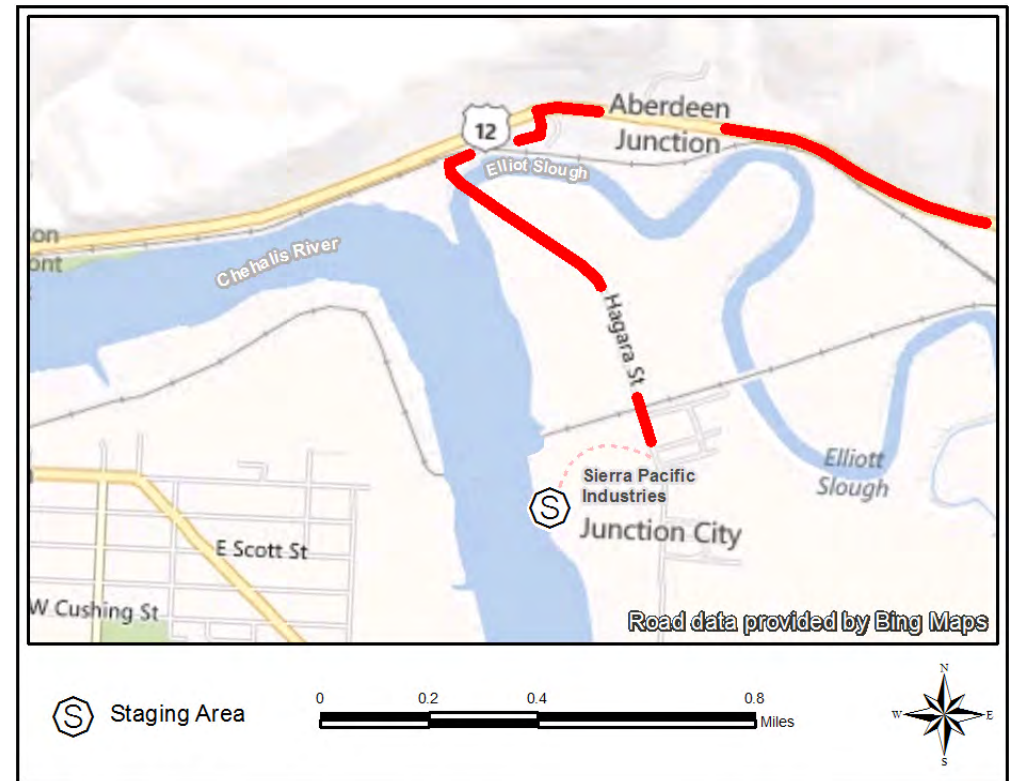
CHER-1.7b Photo: At strategy location on river right of the Chehalis River, upstream (SE) of Sierra Pacific dock (south end), looking upstream and across towards river left.

#### SiteContact

Sierra Pacific Industries  
Safety / Environmental Coordinator  
301 Hagara Street, Aberdeen, WA 98520  
(360) 580-2993  
(360) 589-1811 or (360) 388-7974

#### NearestAddress

301 Hagara Street  
Aberdeen, WA 98520



#### DrivingDirections

- ① Travel on Hwy 12 towards Aberdeen/Hoquiam from Montesano
- ② From the Wynoochee River Bridge (1st bridge west of Montesano) travel on Hwy 12 for 6.6 miles
- ③ Turn left at stoplight onto E Sargent Blvd (last light before entering Aberdeen)
- ④ After the turn the road will curve to the right and back to the left, becoming Hagara Street. Cross the bridge over Elliott Slough and continue on Hagara Street for 0.6 miles. Sierra Pacific will be on your right. Check in with facility, then stage equipment at/near dock area. Escort to dock area may be required.

# South Aberdeen - Chehalis River (Bay City Log Yard Dock)

CHER-2.0a

|                             |   |  |          |
|-----------------------------|---|--|----------|
| <b>Position - Location:</b> | 46.96954  | -123.780299  | Aberdeen |
| <b>Strategy Objective:</b>  | Collection  | Collect oil moving upstream on the Chehalis River during incoming tide                           |          |
| <b>Implementation:</b>      | On Chehalis River (river left) at north end of the Weyerhaeuser Dock (north of Cosmopolis), secure end of 650ft length of boom to inside pocket of dock near Point A (N46.9689 W123.78085). Extend boom eastward (~100ft) along dock to its corner, securing it near Point B (N46.96896 W123.7805). Use workboat to tow boom out from Point B into the Chehalis River and downstream, anchoring remaining boom end near Point C (N46.97036 W123.7801, ~500ft downstream from dock and ~300ft out from shore). Use additional anchoring systems to keep boom secure in river. Adjust boom angles as needed for conditions. Vac truck collection. |  |          |
| <b>Staging Area:</b>        | On-Site:  | Stage near north side of Weyerhaeuser dock. Launch workboat from Cosmopolis boat ramp (BL-3-GH). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Elevated Dock; Unstable Docks & Piers; Exposed & Submerged Pilings, Debris; Muddy Shorelines   |  |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards low. Notify Weyerhaeuser before implementation; call (253) 924-5000 and (360) 580-3300. Notify on-site security before implementation or for access assistance; call (360) 581-2052 or (360) 581-2085.   |  |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |  |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands   |  |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 650 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 200 | Feet | Line - 1/2" poly line                                    |
| 1   | Each | Vac Truck(s)   |
|     |      |  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-2.0a Photo: At north end of Weyerhaeuser dock on river left of the Chehalis River, looking downstream at strategy location and river right.



## SiteContact

Emergency & AH: (253) 924-5000  
 Primary Contact: (360) 580-3300 cell  
 Security: (360) 581-2052 cell  
 (360) 581-2085 cell

## NearestAddress

100 N Decatur St  
 Aberdeen, WA 98520-7855

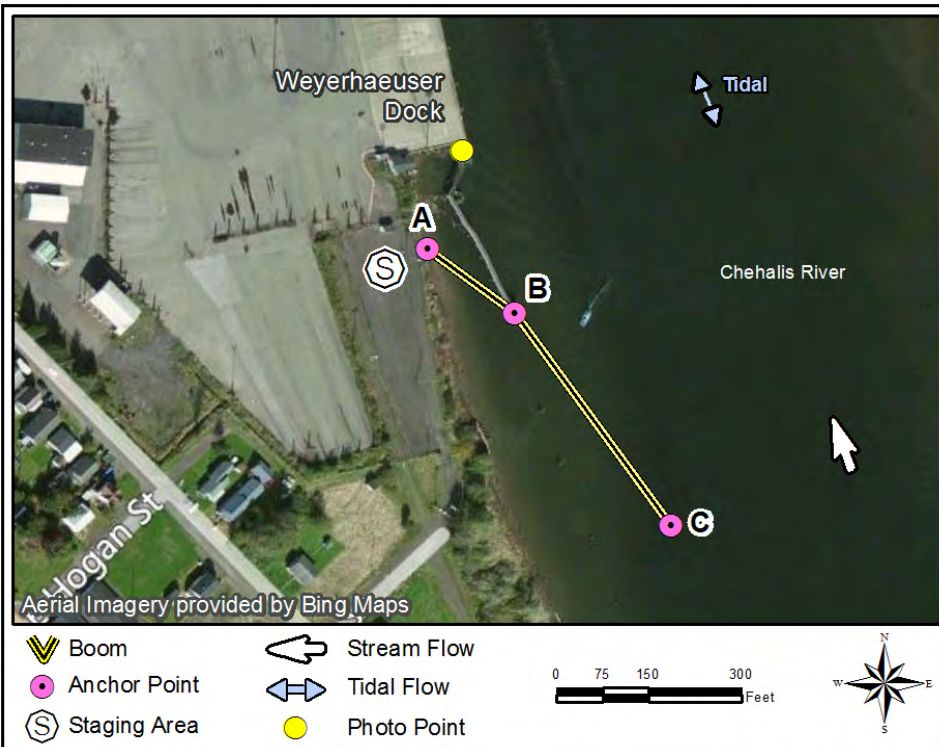
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 0.5 miles and turn left onto N Evans Street.
- ⑥ Travel on N Evans Street for 0.1 miles. At the end of the road, continue through the open gate into the old Weyerhaeuser facility property, staying on the road that curves to the right.
- ⑦ Follow the road to the east for 0.5 miles, past the scales, and towards the Chehalis River. Then travel south for 0.4 miles towards the Pacific Veneer facility, before heading 0.1 miles to the east towards the Weyerhaeuser dock. Stage equipment near the north end of the dock.

# South Aberdeen - Chehalis River (Bay City Log Yard Dock)

CHER-2.0b

|                             |  |   |          |
|-----------------------------|--|---|----------|
| <b>Position - Location:</b> | 46.96506   | -123.778679   | Aberdeen |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving downstream on the Chehalis River during outgoing tide                        |          |
| <b>Implementation:</b>      | On Chehalis River (river left) ~200ft SW of south end of the Weyerhaeuser Dock (north of Cosmopolis), secure end of 600ft length of boom to bank above high water mark near Point A (N46.96567, W123.77967) using shoreside anchoring posts or existing structures. Using workboat, tow boom SE (~175ft) securing it to end of catwalk platform near Point B (N46.96541, W123.7791). Tow remaining boom upstream, anchoring end near Point C (N46.9645, W123.77802, ~400ft past end of catwalk and ~230ft offshore). Use additional anchoring systems to keep boom secure in river. Adjust boom angles as needed for conditions. Vac truck collection. |   |          |
| <b>Staging Area:</b>        | On-Site:   | Stage near south end of Weyerhaeuser dock. Launch workboat from Cosmopolis boat ramp (BL-3-GH). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Elevated Dock; Unstable Docks & Piers; Exposed & Submerged Pilings, Debris; Muddy Shorelines  |   |          |
| <b>Field Notes:</b>         | Best implemented at slack tide towards high. Notify Weyerhaeuser before implementation; call (253) 924-5000 and (360) 580-3300. Notify on-site security before implementation or for access assistance; call (360) 581-2052 or (360) 581-2085.   |   |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |   |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |   |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 600 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-2.0b Photo: At south end of Weyerhaeuser Dock on Chehalis River looking upstream towards strategy location on river left.



## SiteContact

Emergency & AH: (253) 924-5000  
 Primary Contact: (360) 580-3300 cell  
 Security: (360) 581-2052 cell  
 (360) 581-2085 cell

## NearestAddress

100 N Decatur St  
 Aberdeen, WA 98520-7855

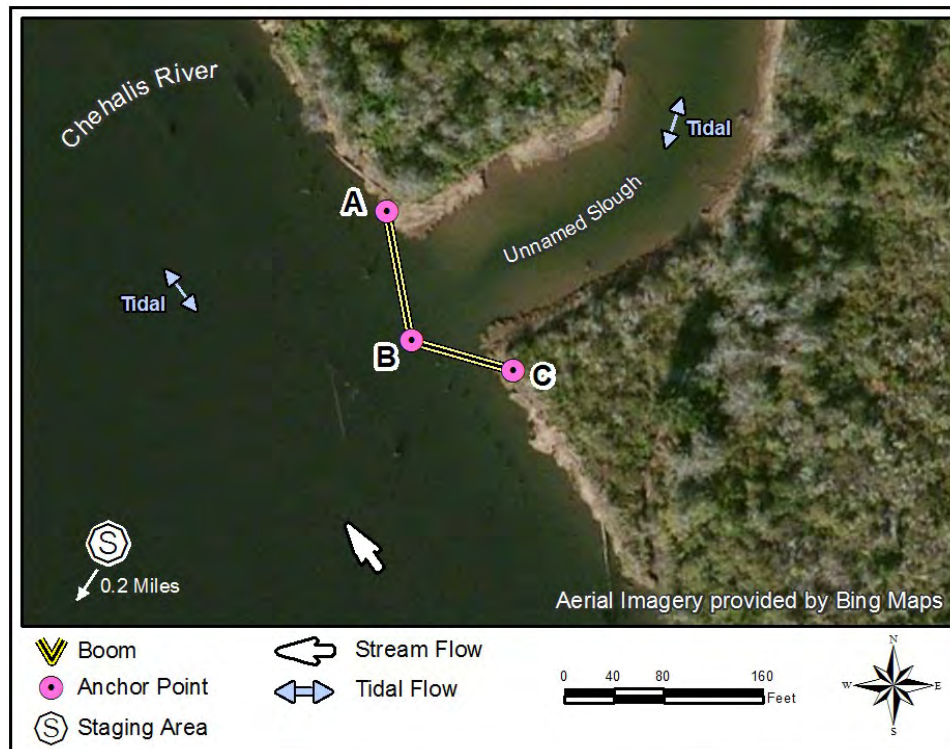
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 0.5 miles and turn left onto N Evans Street.
- ⑥ Travel on N Evans Street for 0.1 miles. At the end of the road, continue through the open gate into the old Weyerhaeuser facility property, staying on the road that curves to the right.
- ⑦ Follow the road to the east for 0.5 miles, past the scales, and towards the Chehalis River. Then travel south for 0.4 miles towards the Pacific Veneer facility, before heading ~0.2 miles to the SE towards south end of the Weyerhaeuser dock. Stage equipment on asphalt ~200ft SW of the dock's south end.

# Aberdeen/Junction City - Chehalis River (Unnamed Slough)

CHER-2.6

|                             |  |  |  |
|-----------------------------|--|--|--|
| <b>Position - Location:</b> | 46.96036   | -123.771481  | Aberdeen   |
| <b>Strategy Objective:</b>  | Exclusion  |  | Prevent oil from entering unnamed slough during incoming or outgoing tide. |
| <b>Implementation:</b>      | Using workboat, tow 200ft length of boom to strategy location on river right of Chehalis River, about ~850ft downstream and opposite side of river from Cosmopolis Boat Ramp (BL-3-GH). Anchor end of boom near Point A (N46.96065 W123.77159) and remaining boom end near Point C (N46.96031 W123.77116). Pull tension near boom center point, anchoring it slightly askew (towards upstream) at Point B (N46.96036 W123.77150), avoiding pilings. Use anchor posts or trees to secure boom to river banks. Use additional anchoring systems to keep boom secure in river. Back hard boom with 200ft sorbent boom for added protection. |  |  |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Exposed & Submerged Pilings; Floating Debris; Muddy Shorelines; Overgrown Vegetation  |  |  |
| <b>Field Notes:</b>         | Best implemented at slack tide. Land access to site is not possible. Ensure boom ends at Point A and Point C are placed above high water marks on shore.   |  |  |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |  |  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |  |  |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 200 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 200 | Feet | Boom - Sorbent   |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 2   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Heaving Line(s)  |

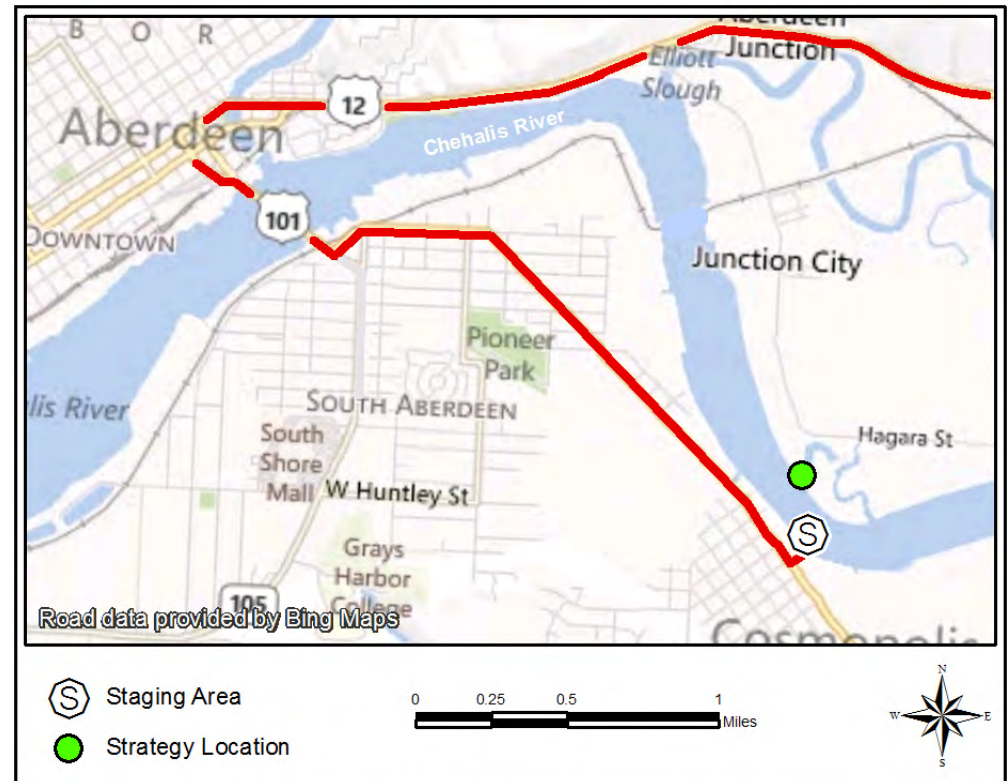
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-2.6 Photo: Aerial photo of unnamed slough on river right of Chehalis River, South of Junction City (Aberdeen) and NE of Cosmopolis.



#### SiteContact

No Information

#### NearestAddress

No Information

#### DrivingDirections

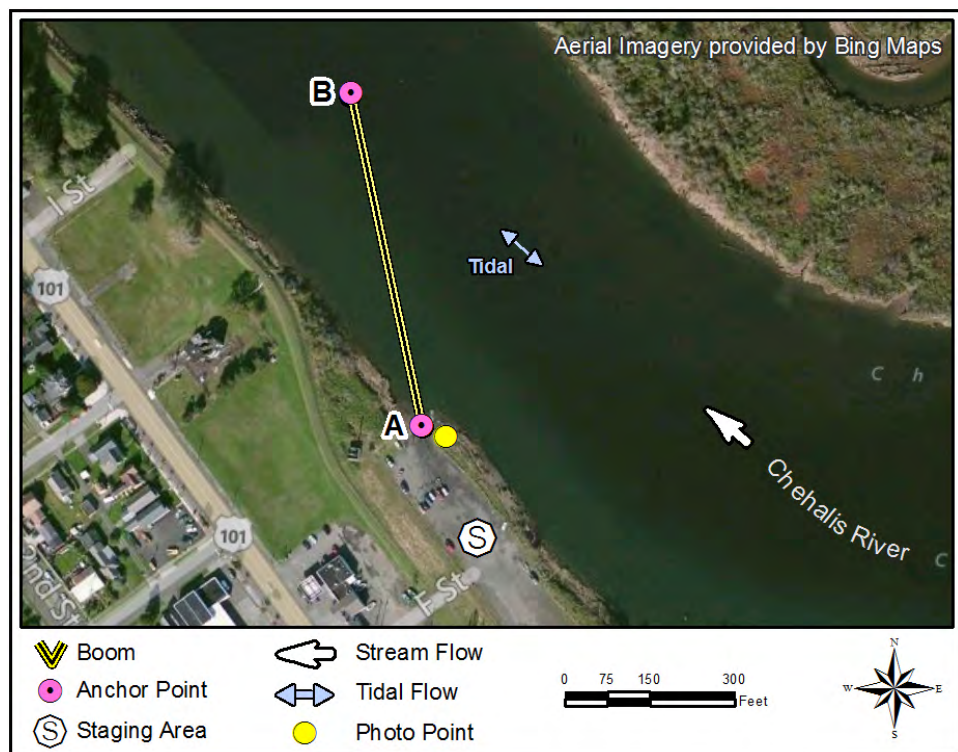
TO STAGING AREA: (SA-3-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.

# Cosmopolis - Chehalis River Boat Launch

CHER-2.7

|                             |  |  |            |
|-----------------------------|--|--|------------|
| <b>Position - Location:</b> | 46.95853   | -123.77158   | Cosmopolis |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving upstream on Chehalis River during incoming tide |            |
| <b>Implementation:</b>      | On west side of river (river left) in Cosmopolis, secure end of 600ft length of boom to center of boat ramp (BL4-GH), above the high water mark near Point A (N46.95773, W123.77129). Use workboat to tow remaining boom end out into the river and downstream, anchoring it near Point B (N46.95932, W123.77190, ~285ft out from bank on river left). Actual angle of boom may need to be adjusted depending on tidally influenced river flow conditions. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts to secure boom at boat launch. Use vacuum truck at Point A to recover collected oil. |  |            |
| <b>Staging Area:</b>        | On-Site:   | Stage in parking lot for Boat Ramp (see SA-3-GH & BL-3-GH)         |            |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Vehicle Traffic in Parking Area   |  |            |
| <b>Field Notes:</b>         | Notify Cosmo Specialty Fibers (boat ramp owners) before implementation; call (360) 500-4604. Allow half the ramp to be used for oil collection and the other half for launching workboats and equipment.   |  |            |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |  |            |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes and Wetlands   |  |            |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 600 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Vac Truck(s)   |
|     |      |  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-2.7 Photo: At strategy location and boat ramp on river left of the Chehalis River in Comopolis, looking downstream.



## SiteContact

Cosmo Specialty Fibers  
Shift Supervisor  
(360) 500-4604

## NearestAddress

1101 1st Street  
Cosmopolis, WA 98537

## DrivingDirections

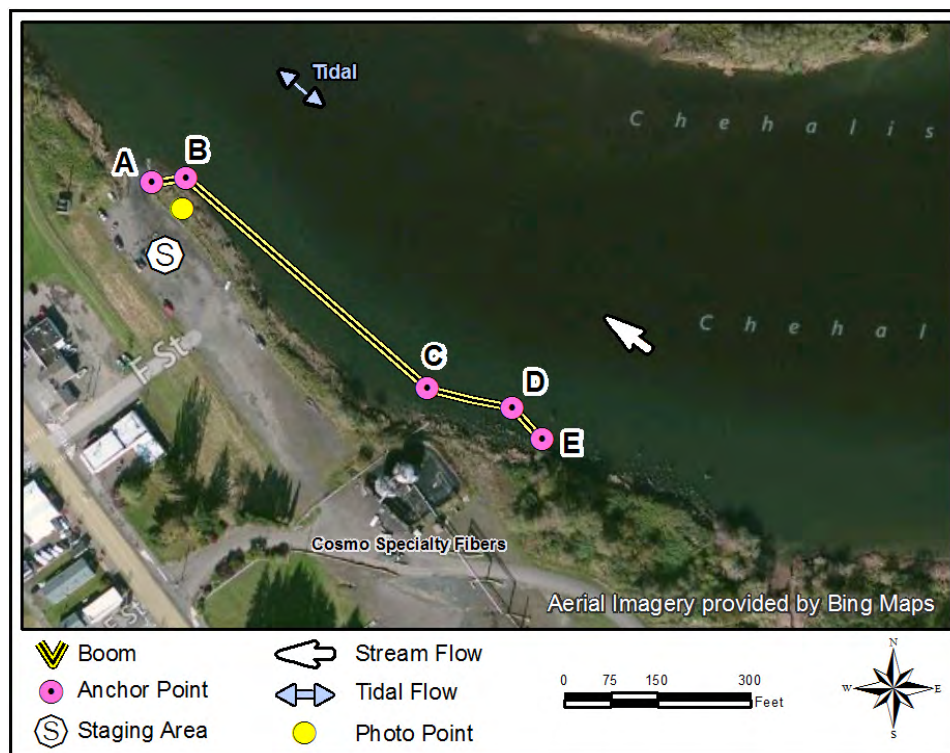
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.



# Cosmopolis - Chehalis River

CHER-2.8

|                             |   |  |   |
|-----------------------------|---|--|---|
| <b>Position - Location:</b> | 46.95710  | -123.76979   | Cosmopolis  |
| <b>Strategy Objective:</b>  | Exclusion   |  | Keep oil off river bank adjacent to Cosmopolis boat launch parking area on river left |
| <b>Implementation:</b>      | On west side of river (river left) in Cosmopolis, secure 800ft length of boom to area upstream of boat ramp (BL4-GH), above high water mark near Point A (N46.95772, W123.77119). Then extend boom ~60ft down to river bank at Point B and use workboat to pull boom out into river and upstream ~750ft to Point E (N46.95667, W123.76861, ~180ft beyond Cosmo Specialty Fibers fence line). Use large pilings at Points C & D to secure boom near shore. Use additional anchoring systems to keep boom secure in river between Points B & C. Try to use existing structures to secure boom to shore before using anchoring posts. Back with sorbent. |  |   |
| <b>Staging Area:</b>        | On-Site:  | Stage in parking lot for Boat Ramp (see SA-3-GH & BL-3-GH) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Submerged Pilings; Vehicle Traffic in Parking Area   |  |   |
| <b>Field Notes:</b>         | Best implemented during slack high tide. Ensure boom between Points A & B doesn't block access to boat ramp. Notify Cosmo Specialty Fibers (boat ramp owners) before implementation; call (360) 500-4604.   |  |   |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |  |   |
| <b>Resources at Risk:</b>   | Sensitive Resources   |  |   |



## Recommended Equipment

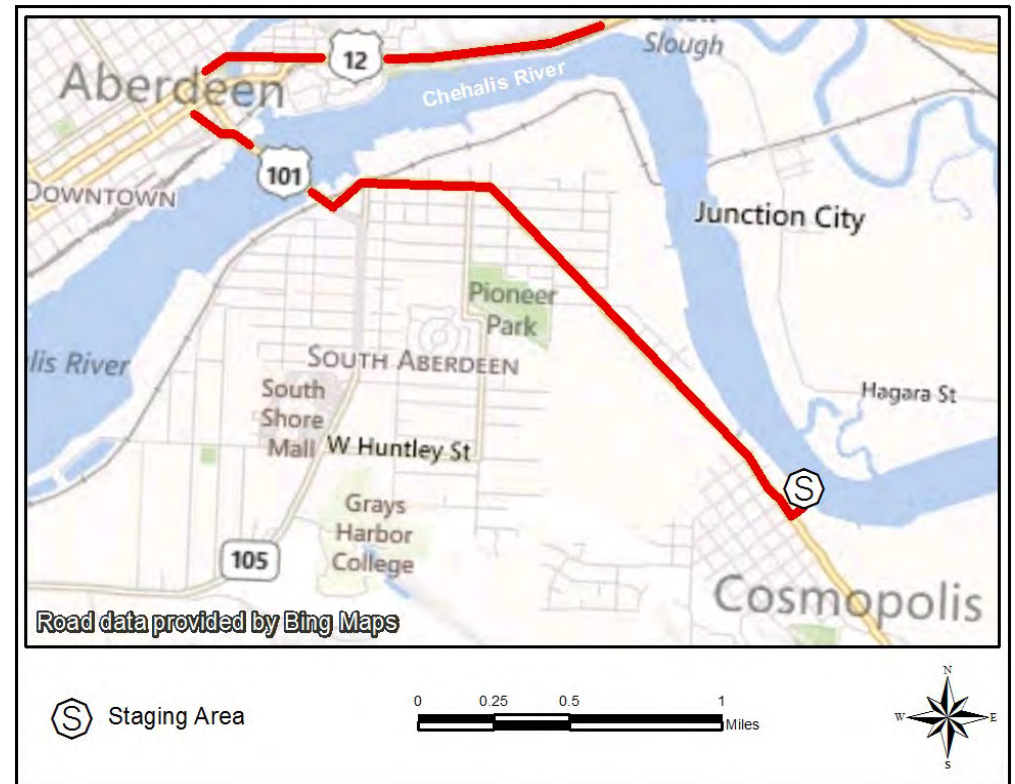
|     |      |  |
|-----|------|--|
| 800 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 800 | Feet | Boom - Sorbent   |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
|     |      |  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



CHER-2.8 Photo: At strategy location on river left in Cosmopolis, looking upstream, slightly viewing bank on river left.



#### SiteContact

Cosmo Specialty Fibers  
Shift Supervisor  
(360) 500-4604

#### NearestAddress

1101 1st Street  
Cosmopolis, WA 98537

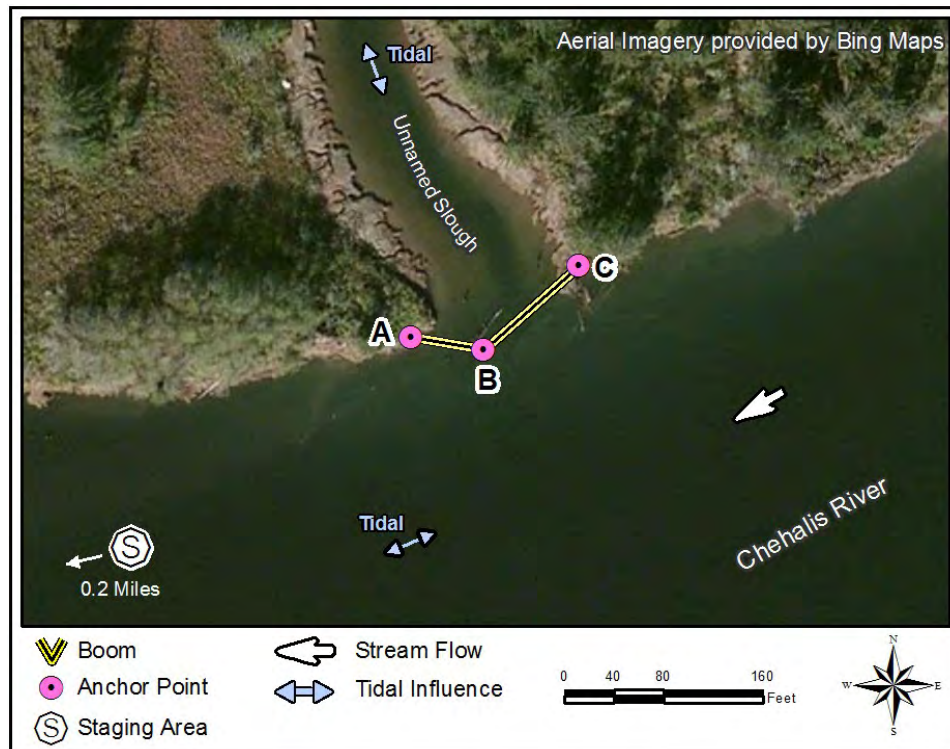
#### DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.

# Aberdeen/Junction City - Chehalis River (Unnamed Slough)

CHER-3.0

|                             |  |  |          |
|-----------------------------|--|--|----------|
| <b>Position - Location:</b> | 46.95849   | -123.765988  | Aberdeen |
| <b>Strategy Objective:</b>  | Exclusion  | Prevent oil from entering unnamed slough during incoming or outgoing tide.                       |          |
| <b>Implementation:</b>      | Using workboat, tow 200ft length of boom to strategy location on river right of Chehalis River, about ~1300ft upstream and opposite side of river from Cosmopolis Boat Ramp (BL-3-GH). Avoid obstructions and anchor boom end near Point A (N46.95848, W123.76632) and remaining boom end near Point C (N46.95865, W123.76578). Pull tension near boom center point, anchoring it slightly askew (towards downstream) at Point B (N46.95846, W123.76608). Use anchor posts or trees to secure boom to river banks. Use additional anchoring systems to keep boom secure in river. Back hard boom with 200ft sorbent boom for added protection. |  |          |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Exposed & Submerged Pilings; Floating Debris; Muddy Shorelines; Overgrown Vegetation  |  |          |
| <b>Field Notes:</b>         | Best implemented at slack tide. Land access to site is not possible. Ensure boom ends at Point A and Point C are placed above river's high water mark along shore.   |  |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River  |  |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands  |  |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 200 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 200 | Feet | Boom - Sorbent   |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 2   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Heaving Line(s)  |

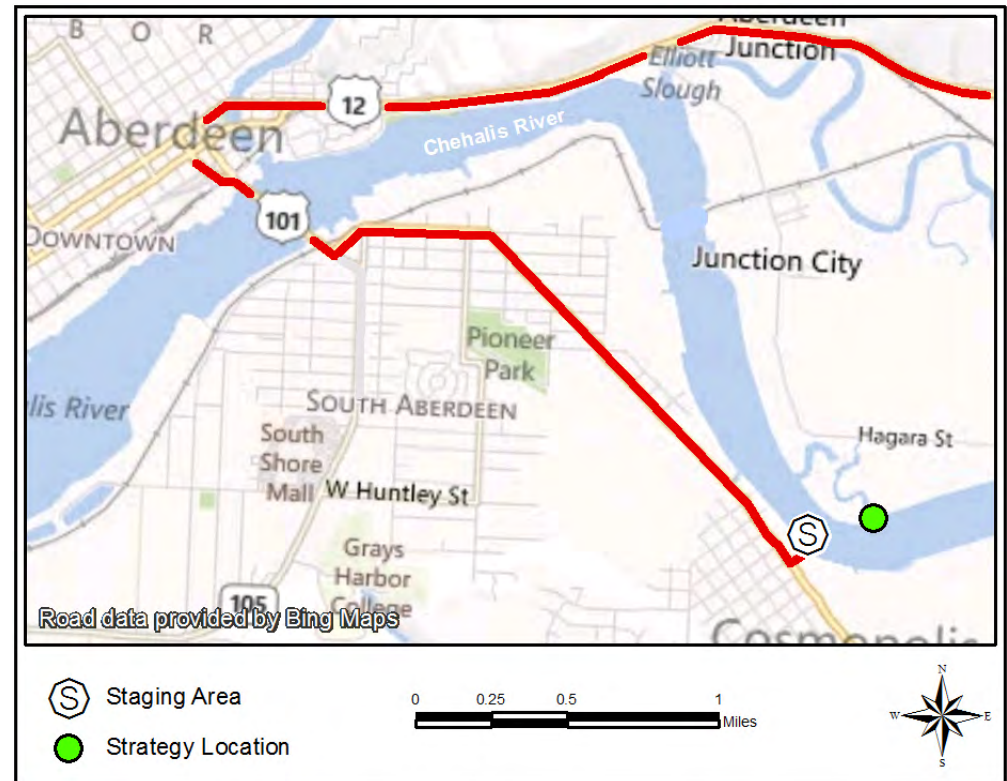
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-3.0 Photo: Aerial photo of unnamed slough on river right of Chehalis River, South of Junction City (Aberdeen) and east of Cosmopolis.



#### SiteContact

No Information

#### NearestAddress

No Information

#### DrivingDirections

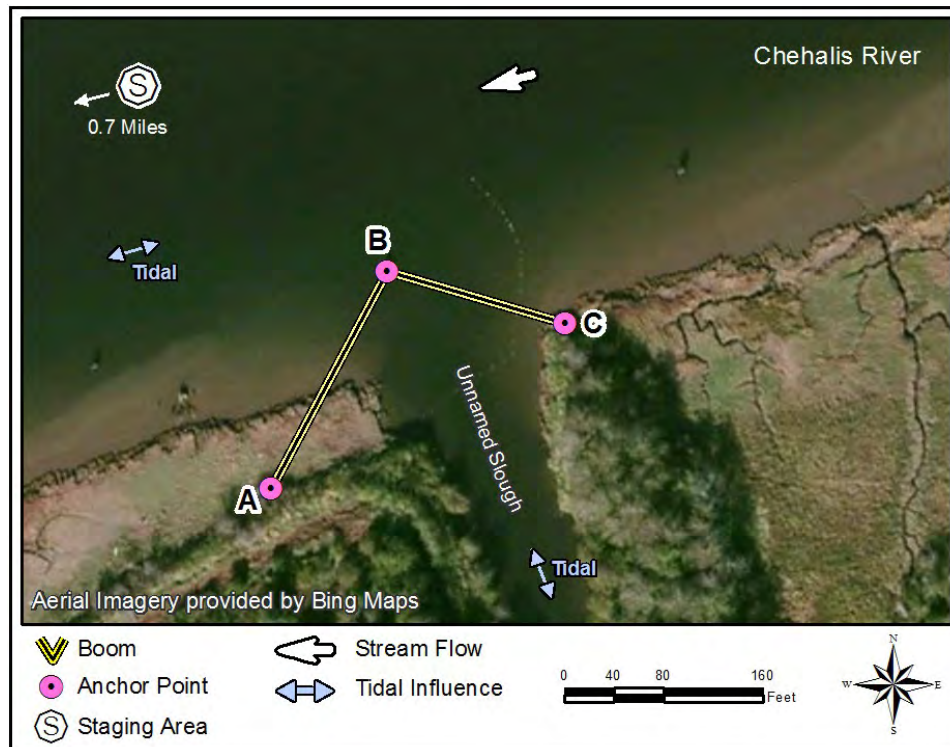
TO STAGING AREA: (SA-3-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.

## Cosmopolis - Chehalis River (Unnamed Slough)

CHER-3.5

|                             |   |  |  |
|-----------------------------|---|--|--|
| <b>Position - Location:</b> | 46.95862  | -123.756375  | Cosmopolis   |
| <b>Strategy Objective:</b>  | Exclusion   |  | Prevent oil from entering unnamed slough during incoming or outgoing tide. |
| <b>Implementation:</b>      | Using workboat, tow 350ft length of boom to strategy location on river left of Chehalis River, ~0.7 miles upstream fm Cosmopolis Boat Ramp (BL-3-GH). Avoid obstructions and anchor boom end near Point A (N46.95813 W123.75674); anchor point may vary depending on river level. Anchor remaining boom end on upstream side of slough near Point C (N46.95852, W123.75581). Pull tension near boom center point, anchoring it in place at Point B (N46.95862, W123.75639) or secure to piling. Use anchor posts or trees to secure boom to banks. Use additional anchoring systems to keep boom secure in river. Back hard boom w 350ft sorbent. |  |  |
| <b>Staging Area:</b>        | Off-Site:   | Stage at Cosmopolis Boat Launch Parking Lot (SA-3-GH). Use boat ramp at same location (BL-3-GH). |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Exposed & Submerged Pilings; Floating Debris; Muddy Shorelines; Overgrown Vegetation   |  |  |
| <b>Field Notes:</b>         | Best implemented at slack tide. Land access to site through Cosmo Specialty Fibers facility is very limited. Notify Cosmo Specialty Fibers before implementation; call (360) 500-4604. Ensure boom ends at Point A & Point C are set above river's high water mark.   |  |  |
| <b>Watercourse:</b>         | River (with tidal influence) - Chehalis River   |  |  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, Shorebirds, Marshes, and Wetlands   |  |  |



### Recommended Equipment

|     |      |  |
|-----|------|--|
| 350 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 350 | Feet | Boom - Sorbent   |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 200 | Feet | Line - 1/2" poly line                                    |

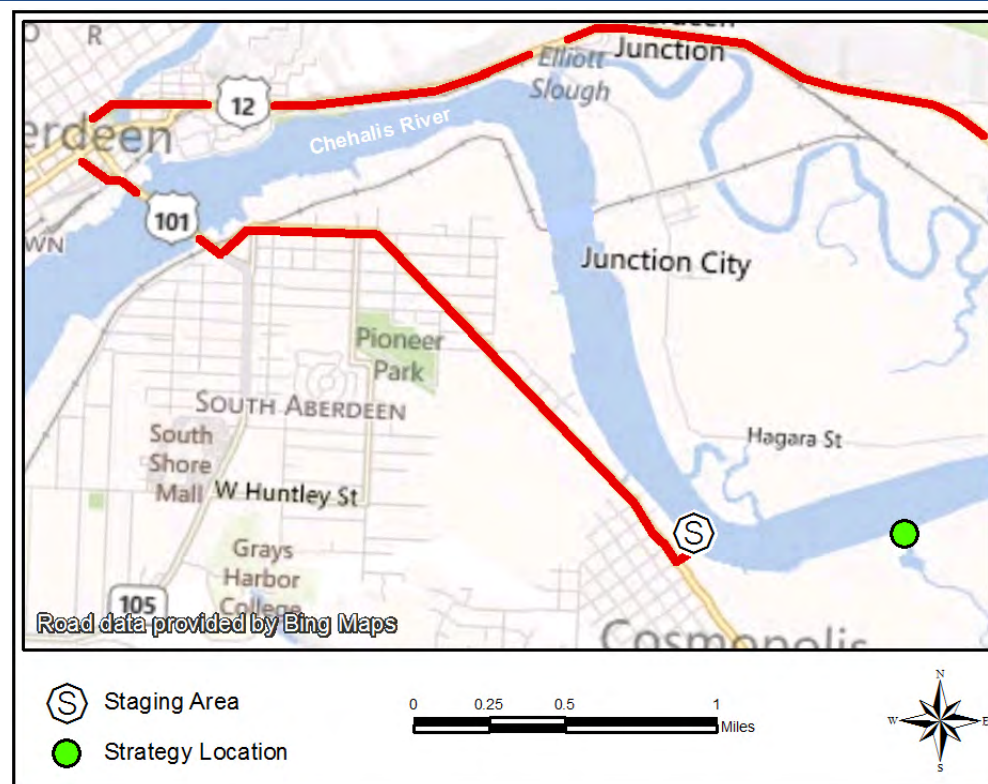
### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHER-3.5 Photo: Aerial photo of unnamed slough on river left of Chehalis River, east of Cosmopolis.



#### SiteContact

Cosmo Specialty Fibers  
Shift Supervisor  
(360) 500-4604

#### NearestAddress

1101 1st Street  
Cosmopolis, WA 98537

#### DrivingDirections

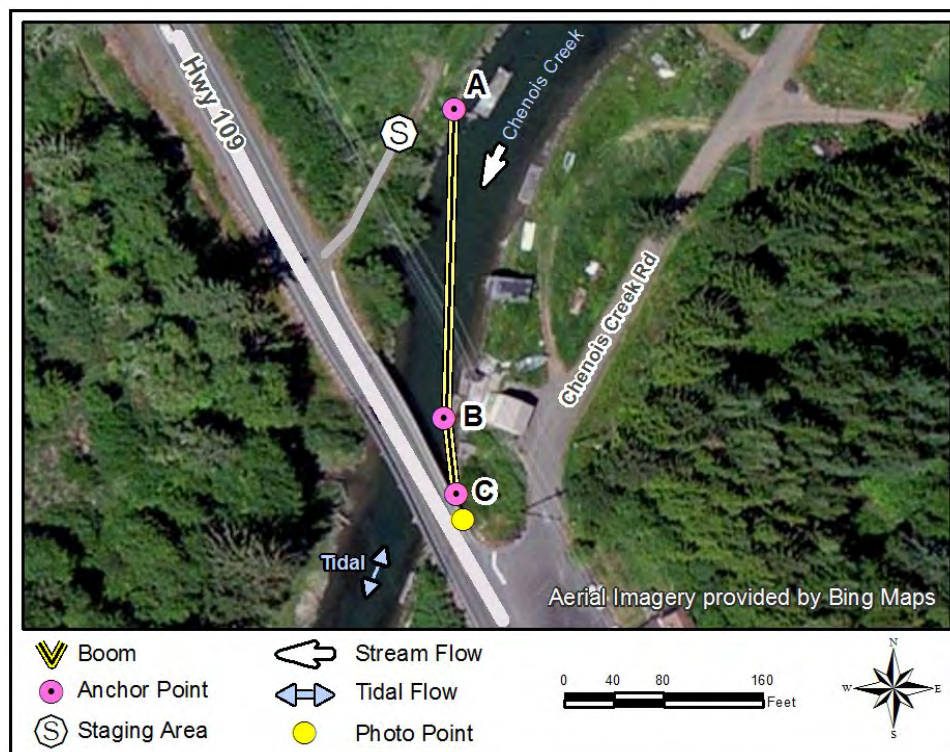
TO STAGING AREA: (SA-3-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.

## North Bay - Chenois Creek

CHNC-0.1

|                             |   |   |                          |
|-----------------------------|---|---|--------------------------|
| <b>Position - Location:</b> | 47.03158  | -124.02537  | Grays Harbor - North Bay |
| <b>Strategy Objective:</b>  | Exclusion, CollectionKeep oil out of Chenois Creek; Collect oil entering creek from North Bay.  |   |                          |
| <b>Implementation:</b>      | On west side of creek (creek right) ~200ft upstream from Hwy 109 Bridge, secure end of 350ft length of boom to bank above high water mark near Point A (immediately downstream of small dock). Use hand-launch work boat to guide 350ft boom downstream to SE corner of Hwy 109 Bridge near Point C on river left. Securing boom to corner of old dock at Point B (~65ft away from Point C). Use additional lines and anchoring systems to keep boom secure in creek. Use shoreside anchoring posts, the bridge, or trees to secure boom ends to shore. Use vacuum truck on river right to collect recovered oil. |   |                          |
| <b>Staging Area:</b>        | On-Site:  | Stage at Chenois Creek on dirt road (right side of road, immediately after Hwy 109 bridge when traveling north) |                          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Brush/Heavy Vegetation   |   |                          |
| <b>Field Notes:</b>         | Notify private property owner; Call (360) 532-7246. Tidally influenced area. Ensure boom ends are set above the highest high water marks on creek banks during implementation. Use dirt road on river right (immediately after Hwy 109 Bridge) to access site.  |   |                          |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Chenois Creek  |   |                          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |   |                          |



### Recommended Equipment

|     |      |   |
|-----|------|---|
| 350 | Feet | Boom - B3 (River Boom) or equivalent              |
| 1   | Each | Workboat(s) - (hand-launch)                       |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats)     |
| 6   | Each | Anchoring Post(s) - (shoreside)                   |
| 2   | Each | Anchoring Post Driver(s)                          |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom) |
| 500 | Feet | Line - 3/8" poly line                             |
| 1   | Each | Vac Truck(s)                                      |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





CHNC-0.1 Photo: On creek left on upstream side of Hwy 109 bridge near Point C. Looking upstream towards Point B and across Chenois Creek towards Point A.

#### SiteContact

Private Property Owner  
Call: (360) 532-7246

#### NearestAddress

5 Chenois Creek Rd  
Hoquiam, WA 98550



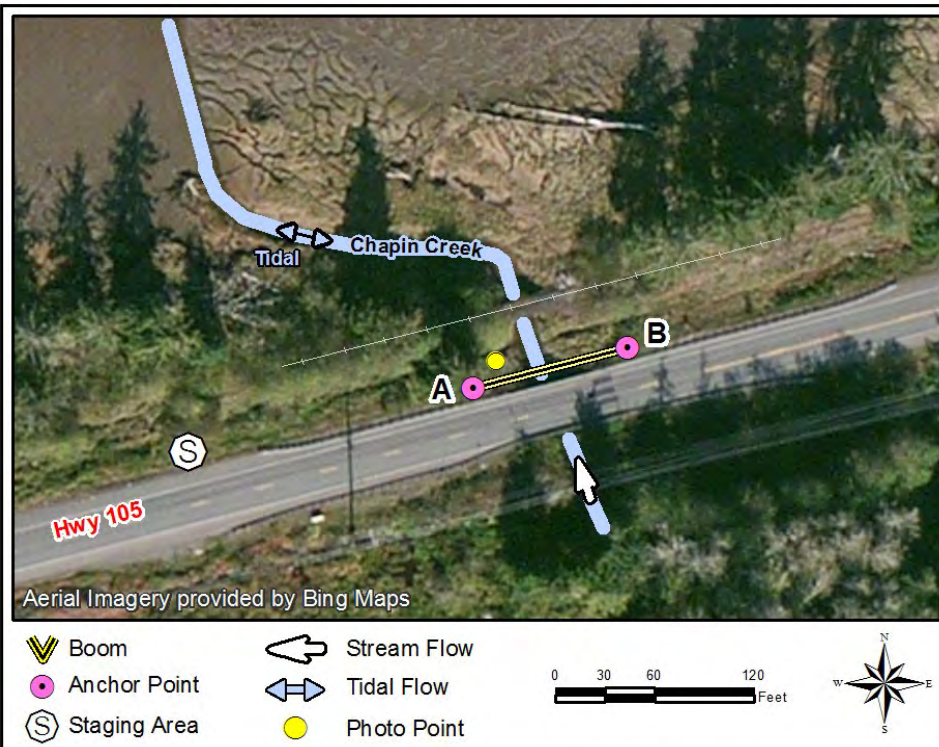
#### DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 8.7 Miles
- ⑤ Slow down as you cross the Hwy 109 Bridge over Chenois Creek, then turn right onto the dirt road <100ft after the bridge.
- ⑥ Stage on the dirt road, downstream of the small dock.

## South Channel - Chapin Creek at Hwy 105 (MP 44)

CHPC-0.1

|                             |  |   |  |
|-----------------------------|--|---|--|
| <b>Position - Location:</b> | 46.94015   | -123.877439   | Grays Harbor - South Channel   |
| <b>Strategy Objective:</b>  | Exclusion  |   | Prevent oil from migrating past Hwy 105 Bridge on Chapin Creek during incoming tide. |
| <b>Implementation:</b>      | Secure end of 100ft length of boom to bank near northwest corner of Hwy 105 Bridge over Chapin Creek at Point A (N46.94012, W123.87764). Use heaving line and 200ft length of line to transport remaining end of boom across to creek right (east side of creek) and secure to shore near Point B (N46.94019, W123.87727). Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. Back hard boom with multiple lines of sorbent and snare booms as needed for added protection. |   |  |
| <b>Staging Area:</b>        | On-Site:   | Stage on shoulder, west side of bridge past end of guardrail. |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Debris & Heavy Brush Along Creek Banks, Muddy & Unstable Creek Banks  |   |  |
| <b>Field Notes:</b>         | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Temporary use of roadway (shoulder) may be required to implement this strategy; follow WADOT work zone traffic control guidelines.   |   |  |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Chapin Creek  |   |  |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl   |   |  |



### Recommended Equipment

|     |      |                                      |
|-----|------|--------------------------------------|
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent                       |
| 100 | Feet | Boom - Snare (Pom-Poms)              |
| 8   | Each | Anchoring Post(s) - (shoreside)      |
| 2   | Each | Anchoring Post Driver(s)             |
| 1   | Each | Heaving Line(s)                      |
| 200 | Feet | Line - 1/2" poly line                |
|     |      |                                      |

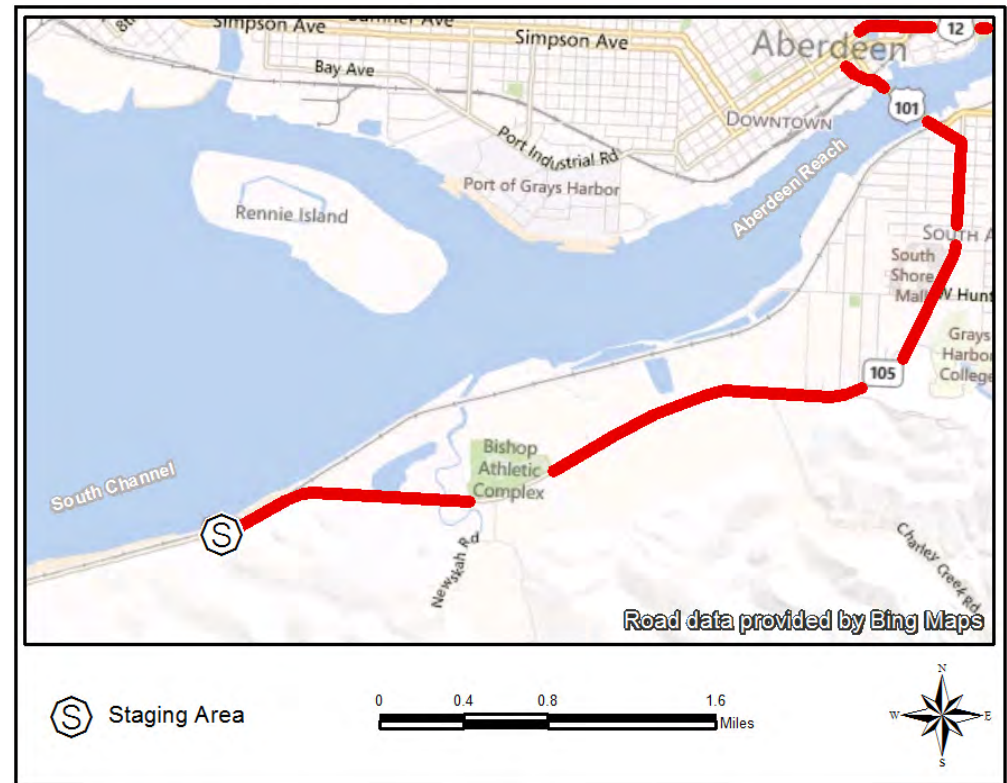
### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |





CHPC-0.1 Photo: On creek left of Chapin Creek near NW corner of Hwy 105 Bridge, looking slightly towards bridge and creek right. Very muddy banks.



## SiteContact

No Information

## NearestAddress

Hwy 105 - Mile Post 44  
West of Aberdeen

## DrivingDirections

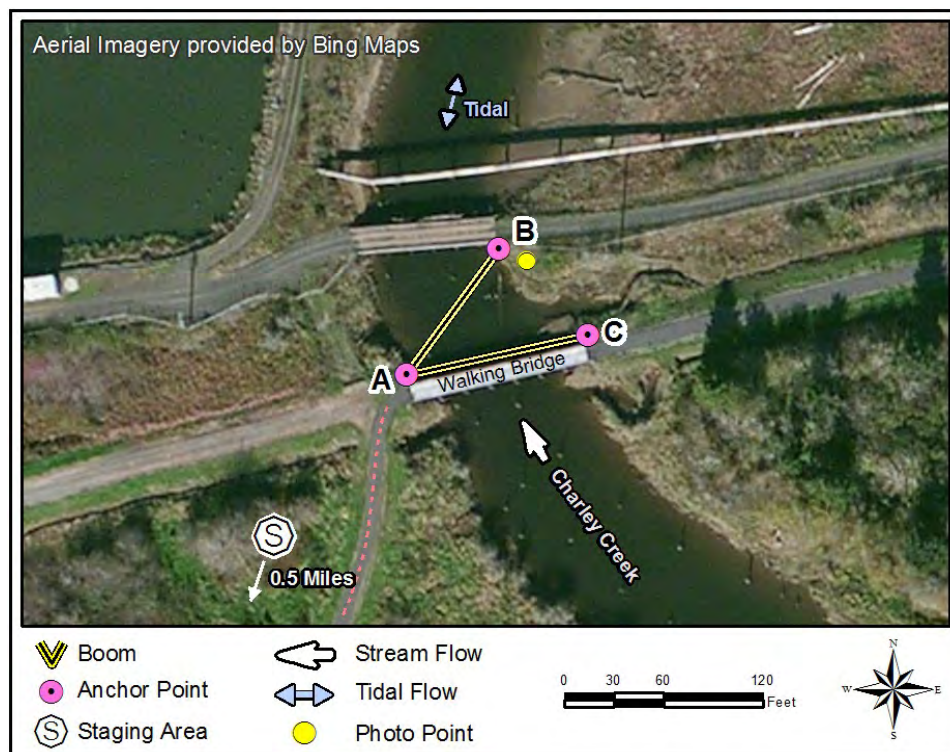
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 4.8 miles, pulling over to the shoulder just after crossing bridge over creek at Hwy 105 MP44. Stage on shoulder of highway, immediately west of guardrail on west side of creek (creek left). Ensure WADOT work zone traffic control guidelines are followed.



## South Aberdeen - Charley Creek

CHRC-0.1

|                             |   |  |  |
|-----------------------------|---|--|--|
| <b>Position - Location:</b> | 46.95208  | -123.842502  | Aberdeen   |
| <b>Strategy Objective:</b>  | Exclusion, Collection   |  | Keep oil out of Charley Creek; Collect oil entering creek from Grays Harbor on incoming tide |
| <b>Implementation:</b>      | Secure ~midpoint of 200ft length of boom to bank near northwest corner of walking bridge over Charley Creek at Point A (N46.95199, W123.84269). Use line to pull boom downstream and across to creek right (east side of creek) and secure to shore near Point B (N46.95220, W123.84248). Use line and walking bridge to bring remaining end of boom across creek from Point A to Point C (N46.95207, W123.84225). Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. Back hard boom with sorbent and snare booms as needed for added protection; especially upstream of the walking bridge. |  |  |
| <b>Staging Area:</b>        | Off-Site:   | Use Bishop Athletic Complex Parking Lot (SA-B-GH), ~0.5 miles to the SW from strategy site |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Brush Along Creek Banks, Muddy & Unstable Creek Banks   |  |  |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Access site through Bishop Athletic Complex in South Aberdeen; call Aberdeen Parks (360-537-3229) or Aberdeen Fire Department (360-533-8765) if gate is locked. Transport equipment to site using ATV and trailer.   |  |  |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Charley Creek  |  |  |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl  |  |  |



### Recommended Equipment

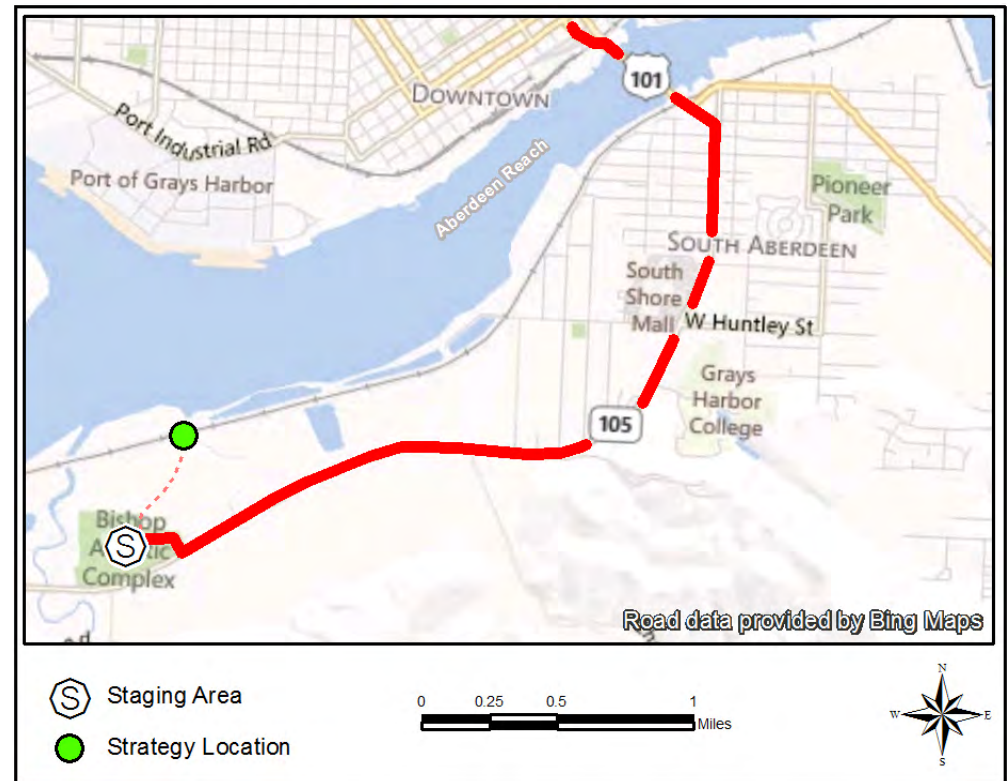
|     |      |  |
|-----|------|--|
| 200 | Feet | Boom - B3 (River Boom) or equivalent                 |
| 200 | Feet | Boom - Sorbent                                       |
| 200 | Feet | Boom - Snare (Pom-Poms)                              |
| 9   | Each | Anchoring Post(s) - (shoreside) and (2) Post Drivers |
| 2   | Each | Heaving Line(s)                                      |
| 200 | Feet | Line - 1/2" poly line                                |
| 3   | Each | ATV (with trailer)                                   |
| 1   | Each | Skimmer, portable, with shoreside storage            |

### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |



CHRC-0.1 Photo: On Charley Creek (creek right) looking upstream and across to river left (near Point A) and walking bridge.



## SiteContact

City of Aberdeen Parks Department  
200 E Market Street  
Aberdeen, WA 98520  
Ph: (360) 537-3229  
krharris@aberndeenwa.gov

## NearestAddress

144 State Route 105  
Aberdeen, WA 98520

## DrivingDirections

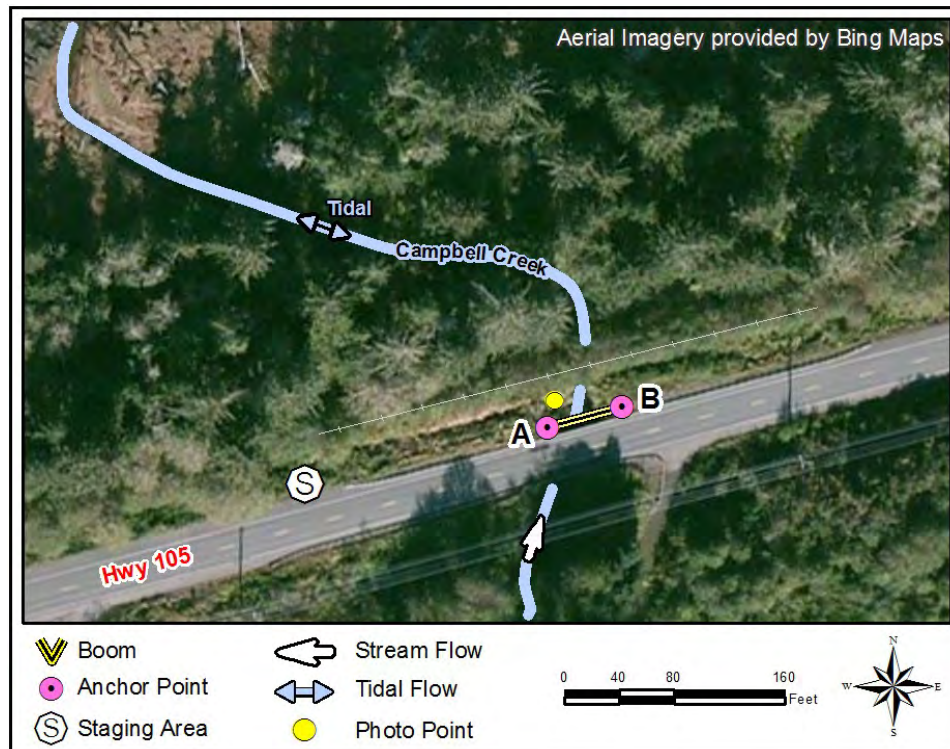
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 3.0 miles (~0.3 miles west of Hwy 105 MP46), turning right into drive leading to Bishop Athletic Complex. Coordinate use of parking lot for staging by contacting the Aberdeen Parks Department at (360) 537-3229 or (after hours) the Aberdeen Fire Department through Grays Harbor County Dispatch at (360) 533-8765.
- ⑤ Use ATV and trailer to transport equipment to strategy location (0.5 miles NE) to west side of walking bridge over Charley Creek using the trail NE of the parking lot, adjacent to the baseball field fence.



## South Channel - Campbell Creek at Hwy 105 (~MP 43.5)

CMBC-0.1

|                             |  |   |                              |
|-----------------------------|--|---|------------------------------|
| <b>Position - Location:</b> | 46.93799   | -123.887671   | Grays Harbor - South Channel |
| <b>Strategy Objective:</b>  | Exclusion Prevent oil from migrating past Hwy 105 Bridge on Campbell Creek during incoming tide.   |   |                              |
| <b>Implementation:</b>      | Secure end of 50ft length of boom to bank at northwest corner of Hwy 105 Bridge over Campbell Creek near Point A (N46.93796, W123.88780) on creek left. Use line to pull boom across to creek right (east side of creek) and secure remaining boom end to shore near Point B (N46.93801, W123.88758). Ensure boom is effectively deployed in creek on downstream side (north side) of bridge and not hung up on vegetation. Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. Run multiple lines of sorbent and snare boom across creek, upstream of old railroad culvert, as needed for added protection. |   |                              |
| <b>Staging Area:</b>        | On-Site:   | Stage on shoulder, west side of bridge past end of guardrail. |                              |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Heavy Brush & Vegetation Along Creek Banks, Muddy & Unstable Creek Banks  |   |                              |
| <b>Field Notes:</b>         | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Temporary use of roadway (shoulder) may be required to implement this strategy; follow WADOT work zone traffic control guidelines.   |   |                              |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Campbell Creek  |   |                              |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl   |   |                              |



### Recommended Equipment

|     |      |                                      |
|-----|------|--------------------------------------|
| 50  | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent                       |
| 100 | Feet | Boom - Snare (Pom-Poms)              |
| 8   | Each | Anchoring Post(s) - (shoreside)      |
| 2   | Each | Anchoring Post Driver(s)             |
| 2   | Each | Heaving Line(s)                      |
| 200 | Feet | Line - 1/2" poly line                |
|     |      |                                      |

### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |

## South Channel - Campbell Creek at Hwy 105 (~MP 43.5)

CMBC-0.1



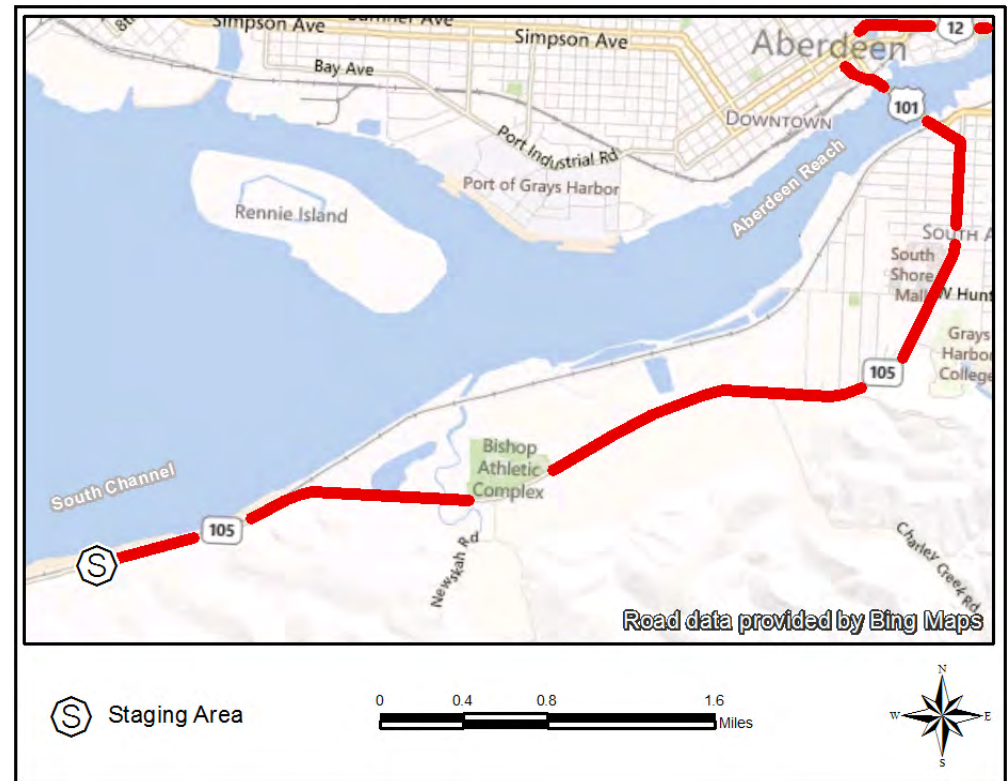
CMBC-0.1 Photo: On creek left of Campbell Creek near NW corner of Hwy 105 Bridge, looking towards bridge and overgrown vegetation on creek right near NE corner of bridge.

### SiteContact

No Information

### NearestAddress

Hwy 105 - Mile Post 43.5



### DrivingDirections

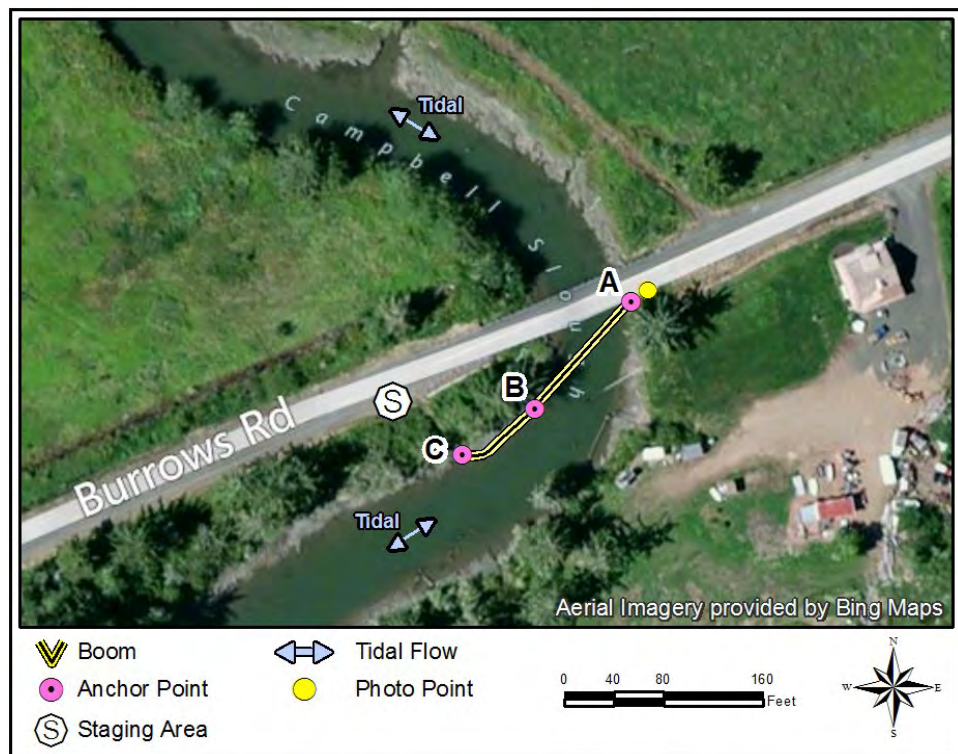
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 5.3 miles, pulling over to the shoulder 0.5 miles beyond Hwy 105 MP44 (~MP43.5), immediately west of guardrail past the west end of the bridge (creek left). Stage on shoulder of highway. Ensure WADOT work zone traffic control guidelines are followed.



# North Bay - Campbell Slough

CMBS-0.1

|                             |   |  |   |
|-----------------------------|---|--|---|
| <b>Position - Location:</b> | 47.04462  | -124.05892   | Grays Harbor - North Bay  |
| <b>Strategy Objective:</b>  | Exclusion, Collection   |  | Keep oil out of Campbell Slough; Collect oil entering slough from North Bay |
| <b>Implementation:</b>      | Deploy boom from downstream side of bridge (east end) unless access to property on east side of slough is granted by property owner. Secure end of 200ft length of boom to shore near western corner of bridge on slough left, downstream side, near Point A. Using hand-launch work boat, guide boom downstream (~190ft) and secure to shore on slough right near Point C. Near Point B (~120ft away from Point A) push boom into shore and secure it to slough right. Use additional lines and anchoring systems to keep boom secure in slough. Use shoreside anchoring posts, the bridge, or trees to secure boom ends to shore. |  |   |
| <b>Staging Area:</b>        | On-Site:  | Stage on sholder of Burrows Rd (W side of bridge) or property (on E side of bridge) if property owner grants access. |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Debris & Heavy Brush Along Banks of Slough   |  |   |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Ensure boom ends are set above the highest high water marks along shore. Temporary use of roadway (one lane) may be required to implement strategy; at minimum follow WADOT work zone traffic control guidelines.  |  |   |
| <b>Watercourse:</b>         | Slough - Campbell Slough  |  |   |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |  |   |



## Recommended Equipment

|     |      |   |
|-----|------|---|
| 200 | Feet | Boom - B3 (River Boom) or equivalent          |
| 1   | Each | Workboat(s) - (hand-launch)                   |
| 2   | Each | Anchoring System(s) - (anchor, lines, floats) |
| 300 | Feet | Line - 3/8" poly line                         |
| 9   | Each | Anchoring Post(s) - (shoreside)               |
| 2   | Each | Anchoring Post Driver(s)                      |
| 2   | Each | Heaving Line(s)                               |
| 1   | Each | Vac Truck(s)                                  |

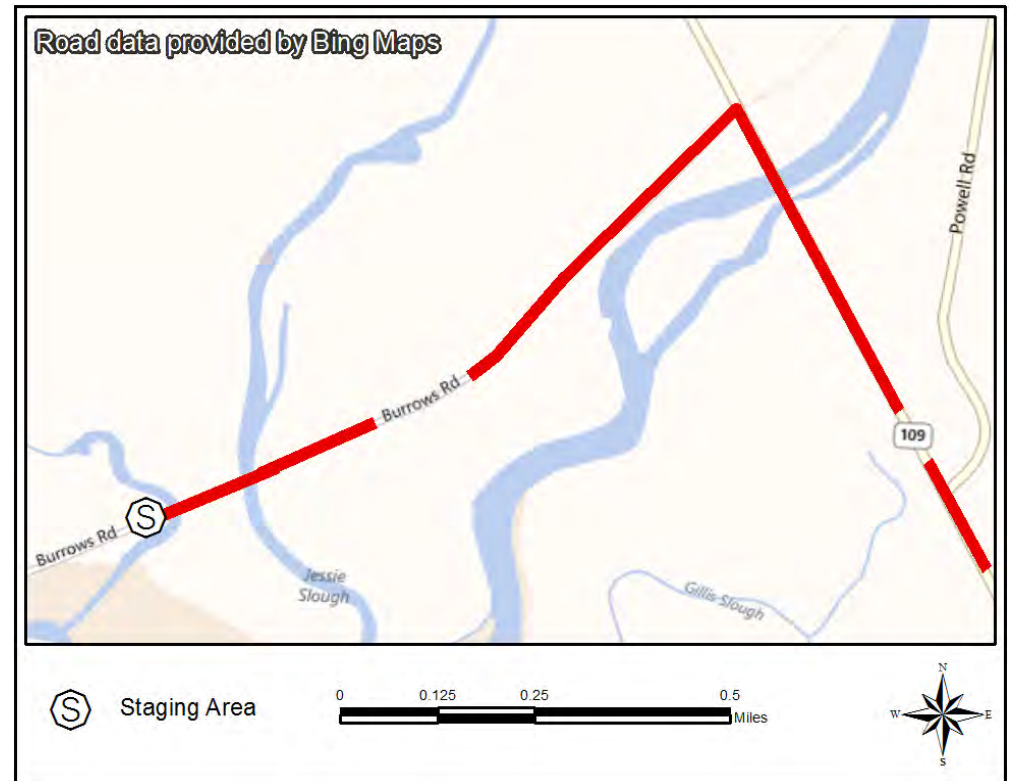
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





CMBS-0.1 Photo: On Burrows Rd near SE corner of bridge, looking SW towards western side of Campbell Slough and outlet of slough into North Bay.



## SiteContact

No Information

## NearestAddress

127 Burrows Rd  
Hoquiam, WA 98550

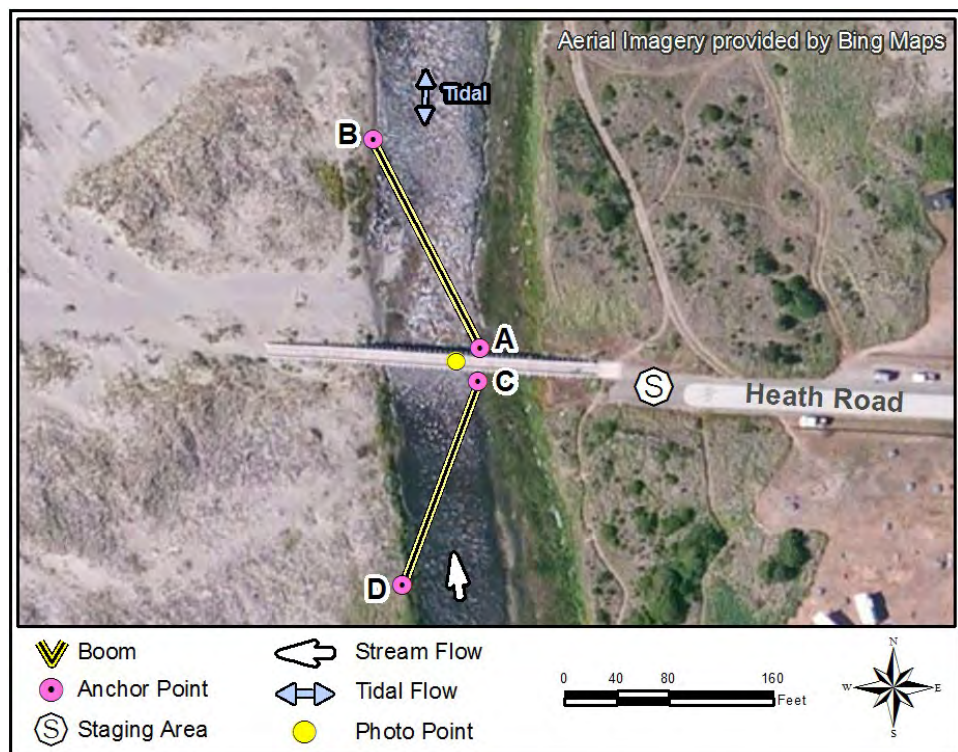
## DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.4 Miles
- ⑤ After crossing the Humptulips River Bridge, turn left onto Burrows Rd (first left after bridge)
- ⑥ Travel on Burrows Rd for 0.9 Miles (second bridge); stage at small pulloff area near SW corner of bridge

# Copalis Beach - Conner Creek

CONC-0.9

|                             |  |   |               |
|-----------------------------|--|---|---------------|
| <b>Position - Location:</b> | 47.11128   | -124.17948  | Copalis Beach |
| <b>Strategy Objective:</b>  | Exclusion, CollectionKeep oil out of Conner Creek; Collect oil moving into or out of the creek.  |   |               |
| <b>Implementation:</b>      | Secure end of 200ft length of boom to creek right near NE corner of pedestrian bridge (Point A). Walk line across bridge to creek left and then North (~170ft). Using the line, pull boom across to creek left (Point B) and secure remaining boom end to bank. Secure second 200ft section of boom to creek bank near SE corner of pedestrian bridge (Point C). Walk line across bridge to creek left and then South (~170ft). Pull boom across to creek left (Point D) and secure. Adjust boom angles as needed for stream-flow conditions. Use additional lines to keep boom secure in creek. Use shoreside anchoring posts to secure boom ends to creek banks. |   |               |
| <b>Staging Area:</b>        | On-Site:   | Stage equipment at the end of Heath Road (before pedestrian bridge) |               |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard  |   |               |
| <b>Field Notes:</b>         | Best implemented at slack tide. Ensure boom ends are set above the highest high water marks on creek banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle.   |   |               |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Conner Creek  |   |               |
| <b>Resources at Risk:</b>   | Coho Salmon, Shorebirds  |   |               |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B3 (River Boom) or equivalent (200ft lengths x 2) |
| 12  | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 500 | Feet | Line - 3/8" poly line                                    |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Skimmer (appropriately sized)                            |
| 1   | Each | Storage (for recovered oil)                              |
| 1   | Each | ATV  |

## Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |



CONC-0.9 Photo: View of Conner Creek looking downstream from pedestrian bridge at end of Heath Road looking north.



## SiteContact

No information

## NearestAddress

31 Heath Rd  
Copalis Beach, WA 98535

## DrivingDirections

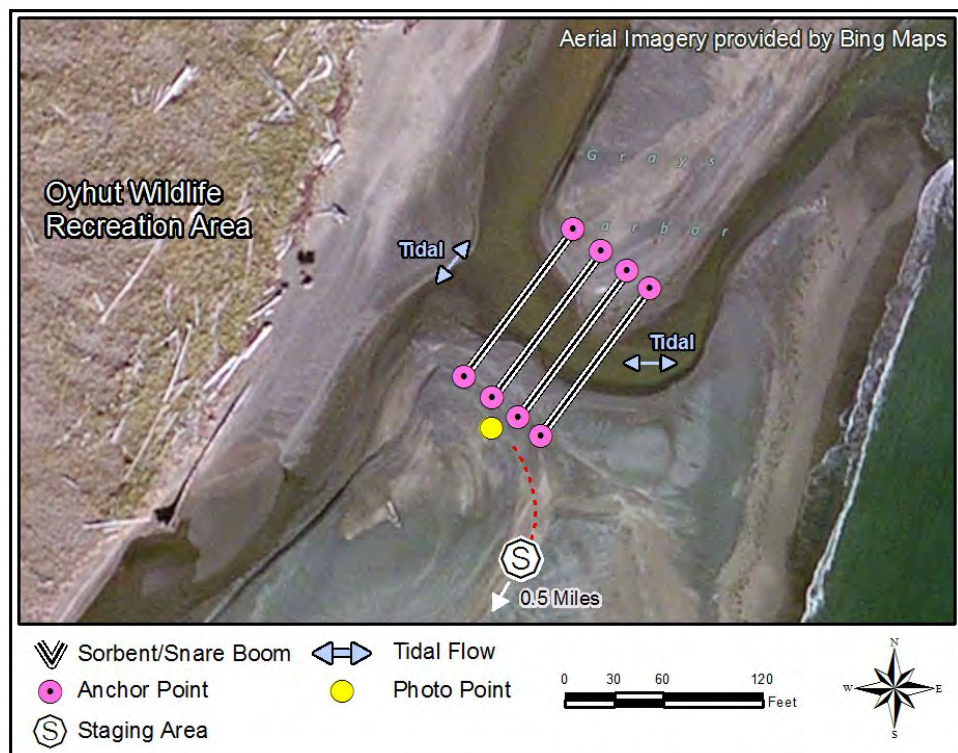
- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101 and stay in the right lane
- ③ Travel on Hwy 101 for 4.4 Miles, then turn left onto Ocean Beach Road
- ④ Travel on Ocean Beach Road for 10.4 Miles, then turn left onto Copalis Beach Road
- ⑤ Travel on Copalis Beach Road for 4.5 Miles, then stay straight onto Hwy 109
- ⑥ Travel on Hwy 109 for 0.4 Miles (beyond road's curve to the left), then turn right onto Heath Road
- ⑦ Travel on Heath Road 0.3 Miles. Stage equipment at the end of the road before pedestrian bridge



# Ocean Shores - Oyhut Sink

GH1

|                             |   |   |                       |
|-----------------------------|---|---|-----------------------|
| <b>Position - Location:</b> | 46.93773  | -124.15487  | Ocean Shores          |
| <b>Strategy Objective:</b>  | Exclusion - Sorbent/Snare   |   | Keep oil out of Oyhut |
| <b>Implementation:</b>      | Install multiple lines/strings of sorbent and snare boom across tidal channel at or near low tide when channel is relatively free of water. Provide adequate seperation between strings as needed to prevent or minimize the chance of entanglement. Current center point of channel is near N46.93773, W124.15487, but may vary as the tidal flat is prone to shift. Check sorbents and snare booms during each low-tide period and replace as needed. |   |                       |
| <b>Staging Area:</b>        | Off-Site:   | Stage at trail head to beach (vacant lot near 1412 E Ocean Shores Blvd SW, Ocean Shores). |                       |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris Hazard on Beach; Unstable Surfaces (sand, gravel, mud)  |   |                       |
| <b>Field Notes:</b>         | Must implement at or near low tide. Sorbent / Snare boom Strategy Only. ATVs required. Limited access at high tide. Notify WDFW Oyhut Unit before implementation; call (360) 533-5676   |   |                       |
| <b>Watercourse:</b>         | Bay - Grays Harbor Entrance   |   |                       |
| <b>Resources at Risk:</b>   | Marshes, Shorebirds, and Waterfowl  |   |                       |



## Recommended Equipment

|     |      |                                 |
|-----|------|---------------------------------|
| 300 | Feet | Boom - Sorbent                  |
| 300 | Feet | Boom - Snare (Pom-Poms)         |
| 20  | Each | Anchoring Post(s) - (shoreside) |
| 4   | Each | Anchoring Post Driver(s)        |
| 3   | Each | ATV (with trailer)              |
|     |      |                                 |
|     |      |                                 |
|     |      |                                 |

## Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 4 | Laborer(s)    |
|   |               |





GH1 Photo: On SW side of tidal channel on Oyhut Sink looking NE as high tide approaches. Channel is relatively free of water at or near low tide.



## SiteContact

WDFW Johns River Wildlife Area  
Oyhut Unit - Manager  
4686 Wishkah Road  
Aberdeen, WA 98520  
(360) 533-5676

## NearestAddress

1412 E Ocean Shores Blvd SW  
Ocean Shores, WA 98569

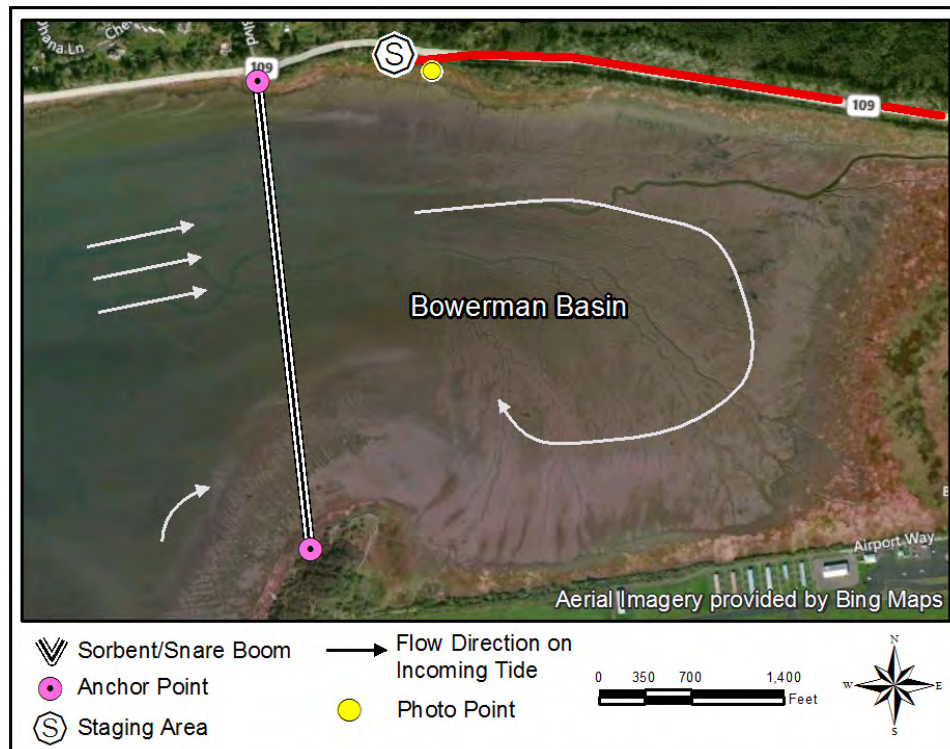
## DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 miles
- ④ Travel (North) on Hwy 109 for 16.1 miles, turning left onto State Route (SR) 115 towards Ocean Shores
- ⑤ After 1.9 miles, SR 115 will curve to the right and become Damon Road. 0.4 miles beyond curve, stay on SR 115 by turning left onto Point Brown Avenue NE.
- ⑥ Continue south on SR 115 for 0.7 miles and then turn right at circle onto W Chance a La Mer NW
- ⑦ Travel on W Chance a La Mer NW for 0.2 miles and then turn left onto Ocean Shores Blvd NW
- ⑧ Continu on Ocean Shores Blvd NW for 4.6 mile becoming E Ocean Shores Blvd SW before curve to left
- ⑨ Continue on E Ocean Shores Blvd SW for 0.9 miles, turning right into short drivewaafter treatment plant. Stage near vacant lot with trail head. Follow trail ~0.5 miles (SE then north) to strategy site.

# Hoquiam - Bowerman Basin (Grays Harbor National Wildlife Refuge)

GH2

|                             |  |   |         |
|-----------------------------|--|---|---------|
| <b>Position - Location:</b> | 46.97829   | -123.949556   | Hoquiam |
| <b>Strategy Objective:</b>  | Exclusion - Sorbent/SnareKeep oil out of Bowerman Basin during incoming tide.  |   |         |
| <b>Implementation:</b>      | Install multiple 4000ft lengths (lines, strings) of sorbent boom and snare boom across the entrance to Bowerman Basin along the line of old pilings that extend north from the NW corner of the airport to the north side of the basin. Use shoreside anchoring posts or trees to secure boom ends to shore. Use old pilings or anchoring systems to keep lines of sorbent & snare in place within the basin. At staging area, use 4x8 plywood sheets to form narrow corridor from shore to water, minimizing injury to sweetgrass by compressing it with plywood rather than trampling it. Airboat use highly recommended. Multiple tidal cycles to deploy. |   |         |
| <b>Staging Area:</b>        | On-Site:   | Stage off Hwy 109 near ~MP2.8 (GH-PUD Property). Workboats can launch from 28th Street Boat Ramp (BL-2-GH). |         |
| <b>Site Safety:</b>         | Mud Flat at Low Tide - Don't get your boat stuck. Slips, Trips, Falls; Water Hazard; Heavy Brush & Debris Along Shore; Pilings   |   |         |
| <b>Field Notes:</b>         | Notify USFWS Grays Harbor NWR; (360) 742-9153, (360) 789-6353, or (360) 753-9467. Notify GH PUD for access to road/trail off Hwy109; (360) 537-3721 or (888) 541-5923. Notify Ecology (Preparedness) before using plywood sheets; call pgr (360) 923-6020.   |   |         |
| <b>Watercourse:</b>         | Bay - Grays Harbor - Bowerman Basin (area very shallow/mud flat at low tide; high tide deployment recommended)   |   |         |
| <b>Resources at Risk:</b>   | Sensitive Nesting Sites, Waterfowl, Shorebirds, Marshes, and Wetlands. Sweetgrass along shoreline areas  |   |         |



| Recommended Equipment |      |   |
|-----------------------|------|---|
| 8000                  | Feet | Sorbent Boom  |
| 8000                  | Feet | Snare Boom (pom-poms)                                     |
| 4                     | Each | Workboat(s) of adequate size/type - AIRBOATS RECOMMENDED  |
| 20                    | Each | Anchoring System(s) - (anchor, lines, floats)             |
| 8                     | Each | Anchoring Post(s) - (shoreside); 2 Anchoring Post Drivers |
| 1                     | Each | Bolt Cutter(s) - to cut lock to PUD entrance if needed.   |
| 500                   | Feet | Line - 3/8" poly line                                     |
| 12                    | Each | Plywood sheets (4ft x 8ft)                                |

| Recommended Personnel |                  |
|-----------------------|------------------|
| 2                     | Supervisor(s)    |
| 12                    | Laborer(s)       |
| 4                     | Boat Operator(s) |





GH2 Photo: Locked cable entrance to dirt/gravel trail off Hwy 109 where equipment can be staged and transferred to workboats from shore during high tide.

#### SiteContact

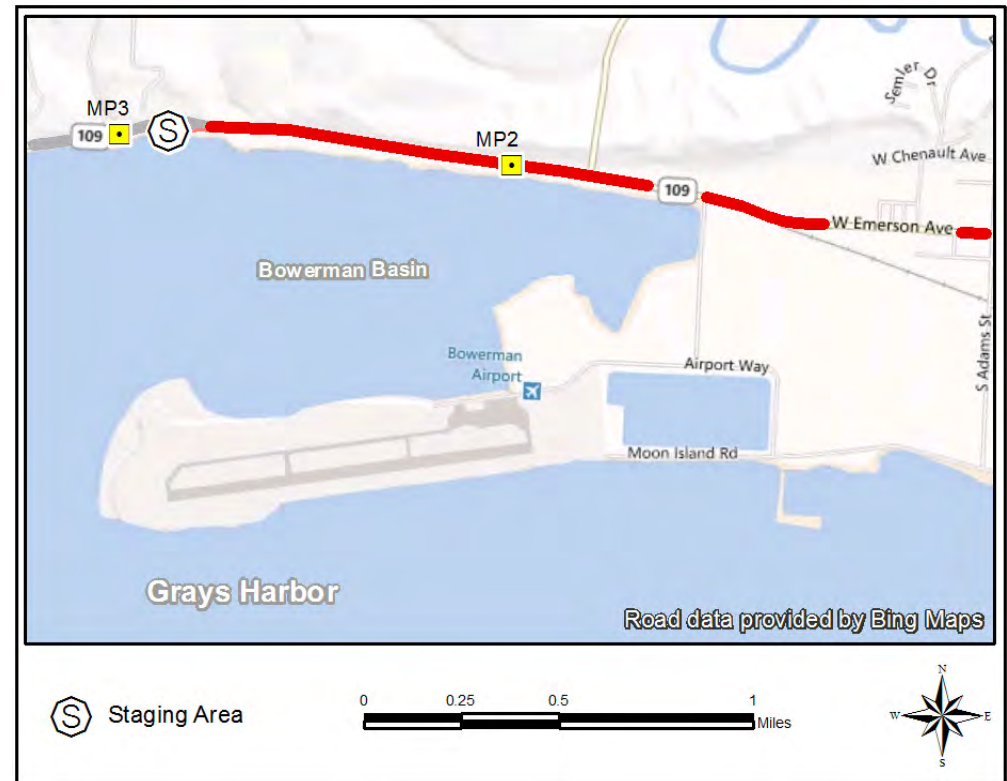
USFWS Grays Harbor NWR (360) 742-9153  
(360) 789-6353 or (360) 753-9467

Grays Harbor PUD (24hr Dispatch)  
(360) 537-3721 or (888) 541-5923

#### NearestAddress

158 Washington 109  
Hoquiam, WA 98550

(Hwy 109 - Mile Post 2.8)



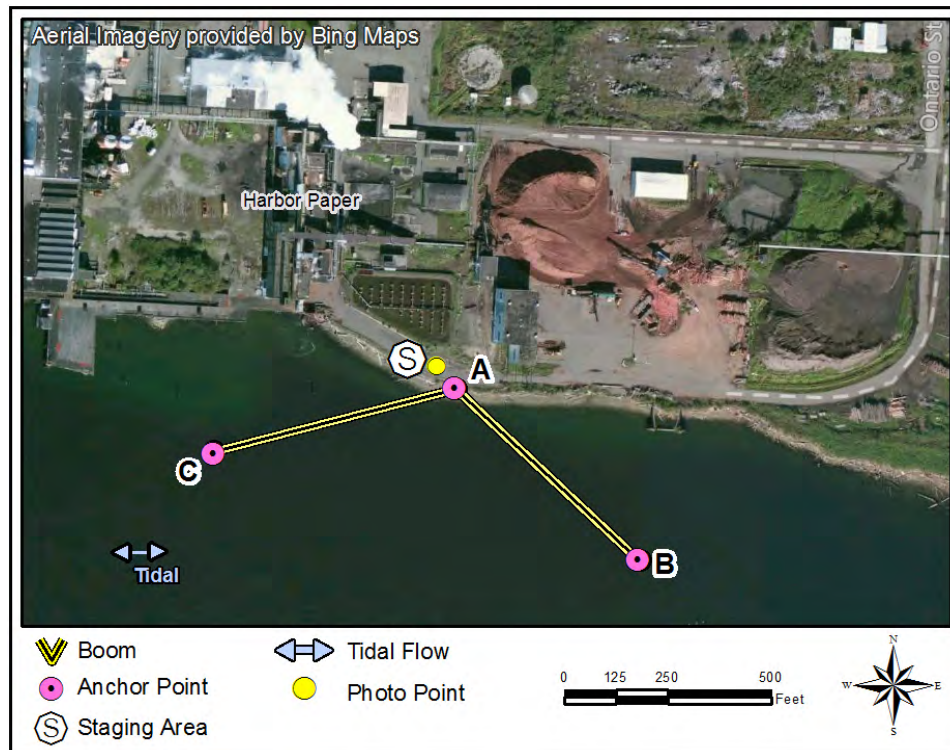
#### DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Levee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 miles
- ④ Travel (North) on Hwy 109 for 2.8 miles and pull off onto shoulder/pull out area on left side of Hwy 109.
- ⑤ If cable to dirt/gravel trail is locked, contact Grays Harbor PUD and either receive permission to cut the lock or wait for them to arrive and unlock it; GH-PUD (800) 562-7726 or (360) 532-4220.
- ⑥ Stage trucks and equipment towards west end of dirt/gravel trail (as far west as you can access). Depending on season, vegetation may be dense, blocking access to shoreline. Vegetation might need to be cleared using machete or other vegetation hand-cutting tools. Sorbents & Snare can be transferred to workboats from shoreline.

# Hoquiam - Hoquiam Reach (North Side of Channel)

GH3

|                             |  |  |             |
|-----------------------------|--|--|-------------|
| <b>Position - Location:</b> | 46.96823   | -123.86994   | Hoquiam, WA |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving up Hoquiam Reach on flood tide or down the channel on ebb |             |
| <b>Implementation:</b>      | On north side of channel adjacent to Harbor Paper facility, use anchor posts or existing structures to secure 600ft section of boom to shore near Point A (N46.96879, W123.86994, ~500ft west of old dock structure). Use workboat to pull boom out away from shore & east, anchoring boom end near Point B (N46.96771, W123.86809, ~370ft fm shore). Secure end of second 600ft boom to shore near Point A. Pull boom out away from shore and west, anchoring it near Point C (N46.96831, W123.87226, ~330ft fm shore). Use additional anchoring systems to keep boom secure in channel. Adjust boom angles as needed for conditions. Vac truck collection. |  |             |
| <b>Staging Area:</b>        | On-Site:   | Stage on Ontario Street adjacent to Hoquiam Reach at Harbor Paper facility   |             |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Rocky Banks; Rail & Bridge Hazard; may have Submerged Pilings near shore at high tide   |  |             |
| <b>Field Notes:</b>         | Best implemented during slack tide. Notify Harbor Paper before staging & strategy deployment; Call (888) 676-6528 x5201. Launch workboat from 28th Street Boat Ramp/Hoquiam (BL-2-GH). Tidally influenced area - ensure boom set above high water marks.   |  |             |
| <b>Watercourse:</b>         | Bay - Grays Harbors - Hoquaim Reach  |  |             |
| <b>Resources at Risk:</b>   | Salmon and Other Fish & Wildlife Resources   |  |             |



## Recommended Equipment

|      |      |  |
|------|------|--|
| 1200 | Feet | Boom - B3 (Contractor Boom) or equivalent (2x600ft)      |
| 1    | Each | Workboat(s) - of adequate size for type & amount of boom |
| 10   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3    | Each | Anchoring Post(s) - (shoreside)                          |
| 1    | Each | Anchoring Post Driver(s)                                 |
| 1    | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2    | Each | Heaving Line(s)  |
| 1    | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





GH3 Photo: On north side of Hoquiam Reach at Harbor Paper facility, looking up the channel ESE towards Aberdeen.



## SiteContact

Harbor Paper  
(888) 676-6528 x5201

## NearestAddress

810 Ontario Street  
Hoquiam, WA 98550

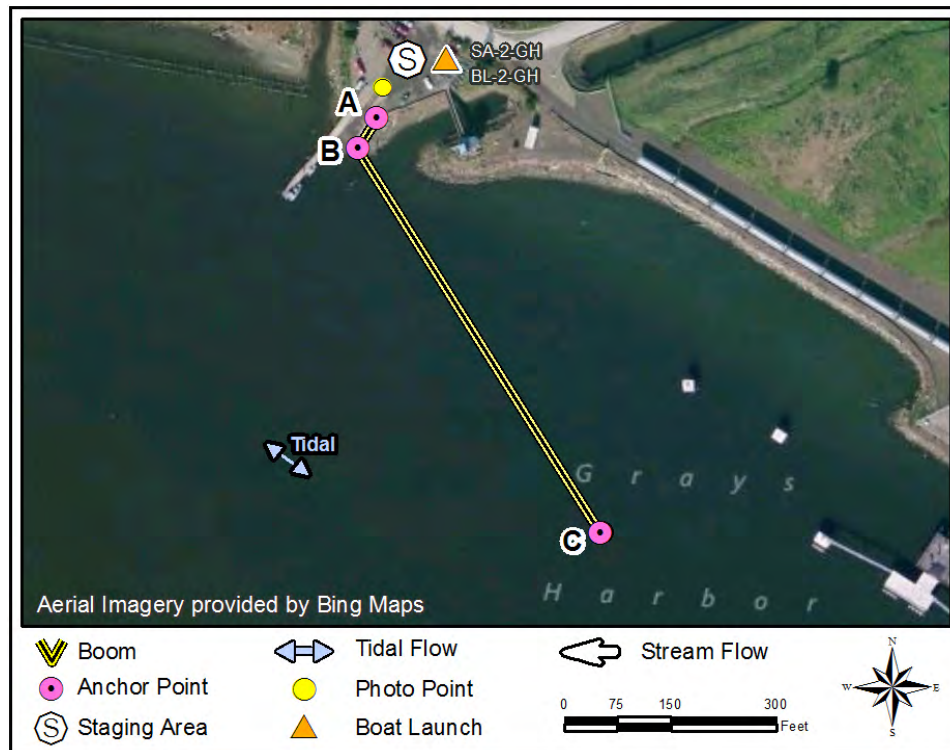
## DrivingDirections

- ① Cross over Wishkah River Bridge in Aberdeen and continue west (Hwy 12 & Hwy 101 merge together)
- ② After ~2.8 Miles turn left onto Ontario Street
- ③ Stay on Ontario Street for 0.7 miles, curving to the right as you near the water.
- ④ Notify Harbor Paper and then stage on Ontario Street; about 500ft beyond the remains of the old dock that will be on your left hand side after the curve.

# Hoquiam - Hoquiam Reach (28th Street Boat Launch)

GH4

|                             |   |  |         |
|-----------------------------|---|--|---------|
| <b>Position - Location:</b> | 46.96667  | -123.85969   | Hoquiam |
| <b>Strategy Objective:</b>  | Collection  | Collect oil in Cow Point Reach during outgoing tide.                 |         |
| <b>Implementation:</b>      | On north side of channel at the 28th Street Boat Ramp, use anchor posts or existing structures to secure 700ft section of boom to shore on eastern side of boat ramp near Point A (N46.96754, W123.86016). Extend boom down along the eastern side of the ramp ~50ft to Point B. Use workboat to pull boom out away from shore & southeast, anchoring boom end near Point C (N46.96598, W123.85879) or securing it to piling at/near that location. Use additional anchoring systems to keep boom secure in channel. Adjust boom angles as needed for conditions. Vac truck collection on east side of boat ramp. |  |         |
| <b>Staging Area:</b>        | On-Site:  | 28th Street Boat Launch (SA-2-GH) Parking Lot; Boat Launch (BL-2-GH) |         |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Rocky River Banks; Rail & Bridge Hazard; may have Submerged Pilings near shore at high tide  |  |         |
| <b>Field Notes:</b>         | Best implemented during slack tide. Boat Launch available onsite (BL-2-GH). Do not block the boat ramp; strategy should land on east side of ramp. Ensure additional boom (hard boom and sorbents) are placed to block canal w/culvert adjacent to boat ramp.   |  |         |
| <b>Watercourse:</b>         | Bay - Grays Harbors - Cow Point Reach   |  |         |
| <b>Resources at Risk:</b>   | Salmon and Other Fish & Wildlife Resources  |  |         |

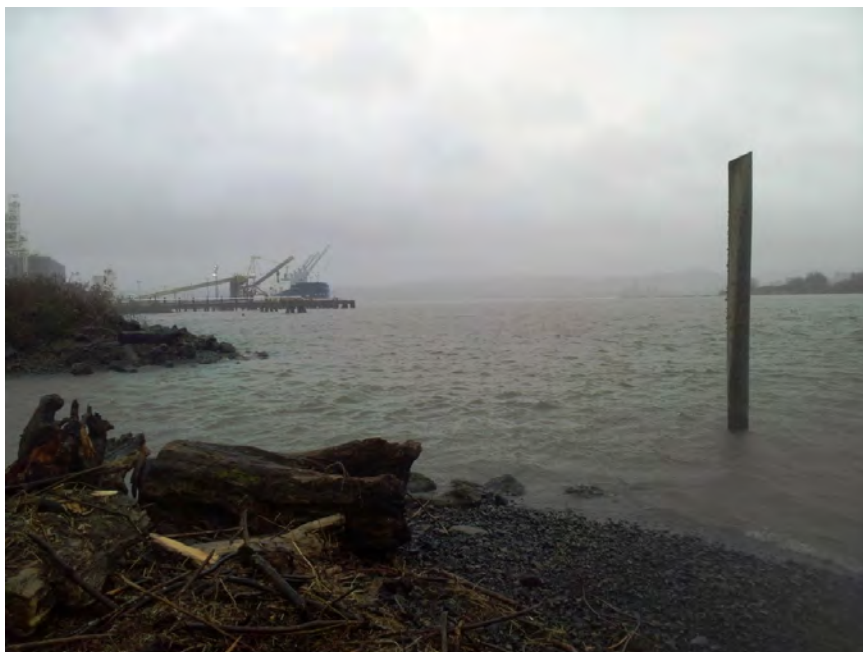


## Recommended Equipment

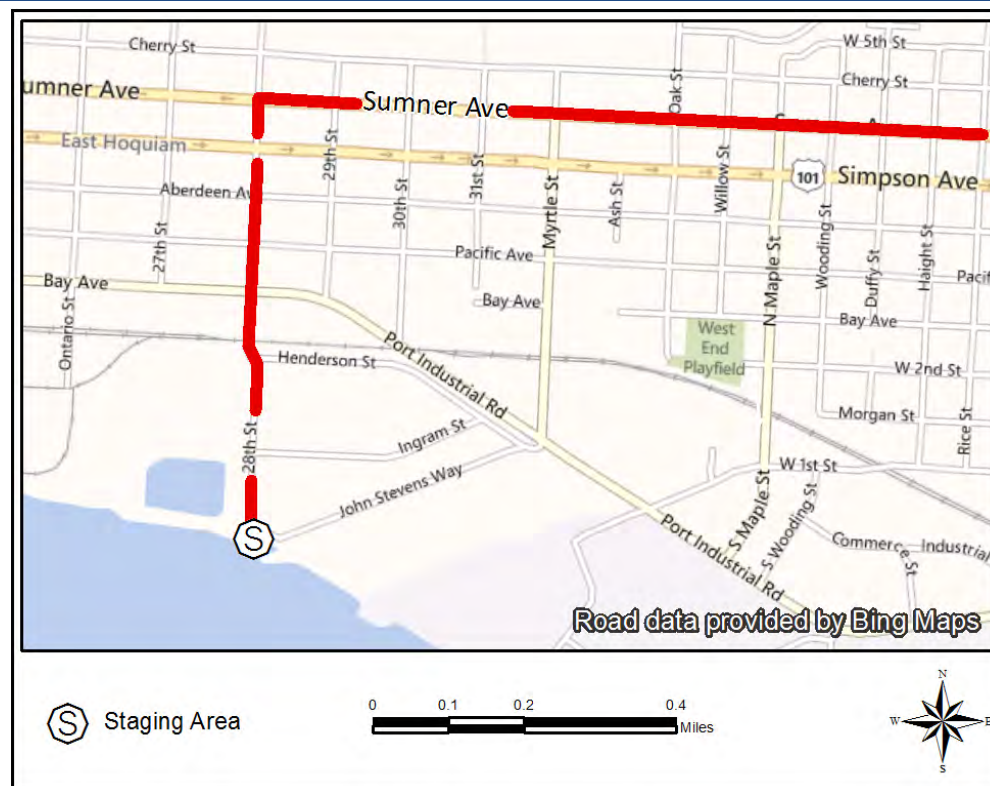
|     |      |  |
|-----|------|--|
| 700 | Feet | Boom - B3 (Contractor Boom) or equivalent                |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



GH4 Photo: On north side of Cow Point Reach at 28th Street Boat Launch in Hoquiam, looking up the channel SE towards Aberdeen.



## SiteContact

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

## NearestAddress

718 28th Street  
Hoquiam, WA 98550

## DrivingDirections

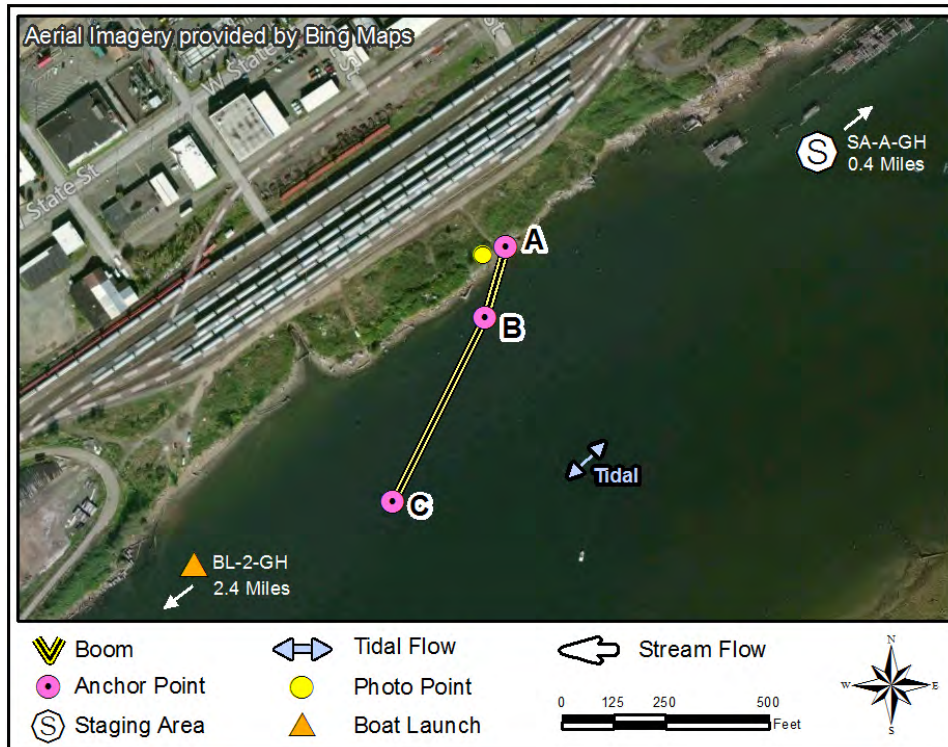
- ① Cross over Wishkah River Bridge in Aberdeen and continue west (Hwy 12 & Hwy 101 merge together)
- ② After ~2.6 Miles turn left onto 28th Street
- ③ Stay on 28th Street for 0.5 miles, staying to the right after crossing the railroad tracks. Stage in parking area near boat ramp at end of roadway.



# Aberdeen - Aberdeen Reach (North Side of Channel)

GH5

|                             |  |  |          |
|-----------------------------|--|--|----------|
| <b>Position - Location:</b> | 46.96900   | -123.817147  | Aberdeen |
| <b>Strategy Objective:</b>  | Collection   | Collect oil on north side of Aberdeen Reach during outgoing tide   |          |
| <b>Implementation:</b>      | Transport 700ft boom to site using work boat and pass boom end to onshore crew; workboat should be able to navigate between pilings at high slack tide. Use anchor posts or existing structures to secure boom to shore near Point A (N46.970015, W123.816626). Use workboat to pull boom from shore, between pilings, and SW out into Aberdeen Reach (away from Hwy101 bridge). Anchor boom end near Point C (N46.968295, W123.817623; ~400ft from shore). Secure boom to piling or anchor near Point B (N46.969534, W123.816795; ~180ft SW of Point A). Use additional anchoring systems to keep boom secure in water. Vac truck collection. |  |          |
| <b>Staging Area:</b>        | Off-Site:  | Stage at mouth of Wishkah River in Aberdeen (SA-A-GH). Launch Workboat from 28th Street Boat Launch (BL-2-GH). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Submerged Pilings at High Tide; Debris along Shoreline  |  |          |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH), then transport boom & equipment to site from staging area (SA-A-GH). Possible to nose workboat into shore between pilings. "Walk-in" land access possible.  |  |          |
| <b>Watercourse:</b>         | Bay - Grays Harbor - Aberdeen Reach  |  |          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands   |  |          |

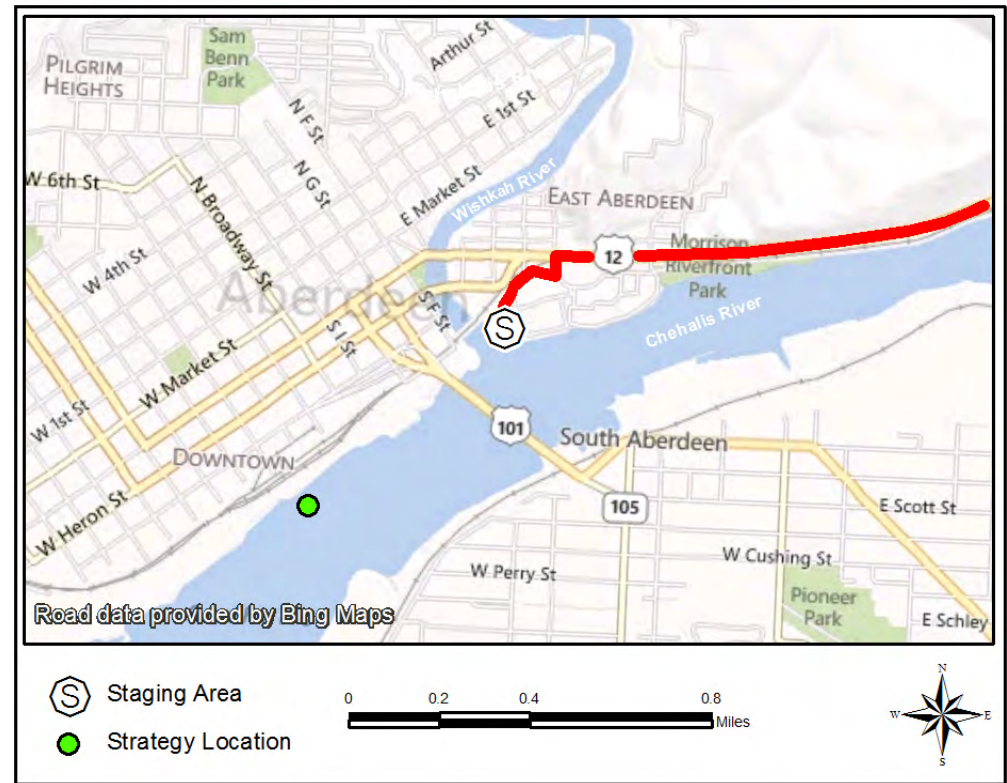


| Recommended Equipment |      |  |
|-----------------------|------|--|
| 700                   | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1                     | Each | Workboat(s) - of adequate size for type & amount of boom |
| 10                    | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3                     | Each | Anchoring Post(s) - (shoreside)                          |
| 1                     | Each | Anchoring Post Driver(s)                                 |
| 1                     | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2                     | Each | Heaving Line(s)  |
| 1                     | Each | Vac Truck(s)   |
| Recommended Personnel |      |  |
| 1                     |      | Supervisor(s)  |
| 4                     |      | Laborer(s)   |
| 1                     |      | Boat Operator(s)   |





GH5 Photo: At strategy location looking SW towards Aberdeen Reach.



## SiteContact

No Information

## NearestAddress

Staging Area: (SA-A-GH)  
913 W Heron St, Aberdeen, WA 98520  
Boat Launch: (BL-2-GH)  
718 28th St, Hoquiam, WA 98550  
Strategy Location:  
399 River St, Aberdeen, WA 98520

## DrivingDirections

TO STAGING AREA: (SA-A-GH)

- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.

# Aberdeen - Aberdeen Reach (West Side of Hwy 101 Bridge)

GH6

|                             |  |  |  |
|-----------------------------|--|--|--|
| <b>Position - Location:</b> | 46.97164   | -123.810412  | Aberdeen   |
| <b>Strategy Objective:</b>  | Diversion  |  | Divert oil moving up into Aberdeen Reach towards the north side of the channel |
| <b>Implementation:</b>      | Transport 700ft boom to strategy location. On west side Hwy 101 bridge over the Chehalis River, secure or anchor boom end to SW corner of bridge works/fender system for the NW bridge stanchion/support near Point A (N46.972468, W123.809838). Tow boom SW (away from bridge), anchoring the remaining boom end near Point B (N46.970767, W123.811061); adjust boom angle as needed for conditions. Use additional anchoring systems to keep boom secure in water. |  |  |
| <b>Staging Area:</b>        | Off-Site:  | Stage at mouth of Wishkah River in Aberdeen (SA-A-GH). Launch Workboat from 28th Street Boat Launch (BL-2-GH). |  |
| <b>Site Safety:</b>         | Water Hazard with Floating Debris Possible; Submerged Pilings at High Tide; Swift Currents and Eddys near Bridge   |  |  |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH), then transport boom & equipment to site from staging area (SA-A-GH).  |  |  |
| <b>Watercourse:</b>         | Bay - Grays Harbor - Aberdeen Reach  |  |  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands   |  |  |



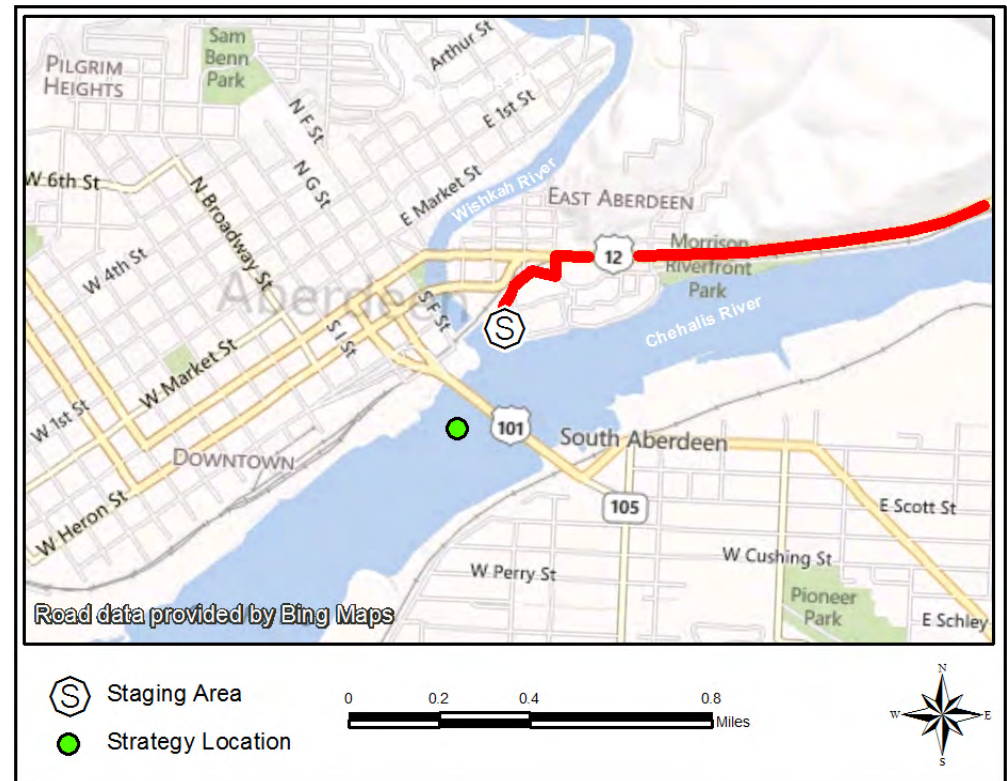
| Recommended Equipment |      |  |
|-----------------------|------|--|
| 700                   | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1                     | Each | Workboat(s) - of adequate size for type & amount of boom |
| 10                    | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1                     | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 600                   | Feet | Line - 1/2" poly line                                    |
|                       |      |  |
|                       |      |  |
|                       |      |  |

| Recommended Personnel |                  |
|-----------------------|------------------|
| 1                     | Supervisor(s)    |
| 4                     | Laborer(s)       |
| 1                     | Boat Operator(s) |





GH6 Photo: On Aberdeen Reach looking NE towards west side of Hwy 101 bridge.



## SiteContact

No Information

## NearestAddress

Staging Area: (SA-A-GH)  
 913 W Heron St, Aberdeen, WA 98520  
 Boat Launch: (BL-2-GH)  
 718 28th St, Hoquiam, WA 98550  
 Strategy Location:  
 Hwy 101 Bridge over Chehalis River

## DrivingDirections

TO STAGING AREA: (SA-A-GH)

- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.

## South Aberdeen - Aberdeen Reach (South Side of Channel)

GH7

|                             |   |  |  |
|-----------------------------|---|--|--|
| <b>Position - Location:</b> | 46.96783  | -123.81397   | Aberdeen, WA   |
| <b>Strategy Objective:</b>  | Diversion   |  | Divert oil moving up into Aberdeen Reach towards the north side of the channel |
| <b>Implementation:</b>      | Transport 700ft boom to site using work boat and pass boom end to onshore crew; workboat should be able to navigate between pilings at high slack tide. Use anchor posts or existing structures to secure boom to shore near Point A (N46.96703, W123.81455). Use workboat to pull boom from shore, between pilings, and NE out into Aberdeen Reach (towards Hwy101 bridge). Anchor boom end near Point C (N46.96862, W123.81322; ~420ft from shore). Secure boom to pilings or anchor near Point B (N46.96745, W123.81431; ~170ft NE of Point A). Use additional anchoring systems to keep boom secure in water. |  |  |
| <b>Staging Area:</b>        | Off-Site:   | Stage at mouth of Wishkah River in Aberdeen (SA-A-GH). Launch Workboat from 28th Street Boat Launch (BL-2-GH). |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Submerged Pilings at High Tide; Heavy Brush along Shoreline  |  |  |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH), then transport boom & equipment to site from staging area (SA-A-GH). Possible to nose workboat into shore between pilings. "Walk-in" land access possible.   |  |  |
| <b>Watercourse:</b>         | Bay - Grays Harbor - Aberdeen Reach   |  |  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |  |  |



### Recommended Equipment

|     |      |  |
|-----|------|--|
| 700 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Heavy duty pruners (for hand removal of vegetation)      |

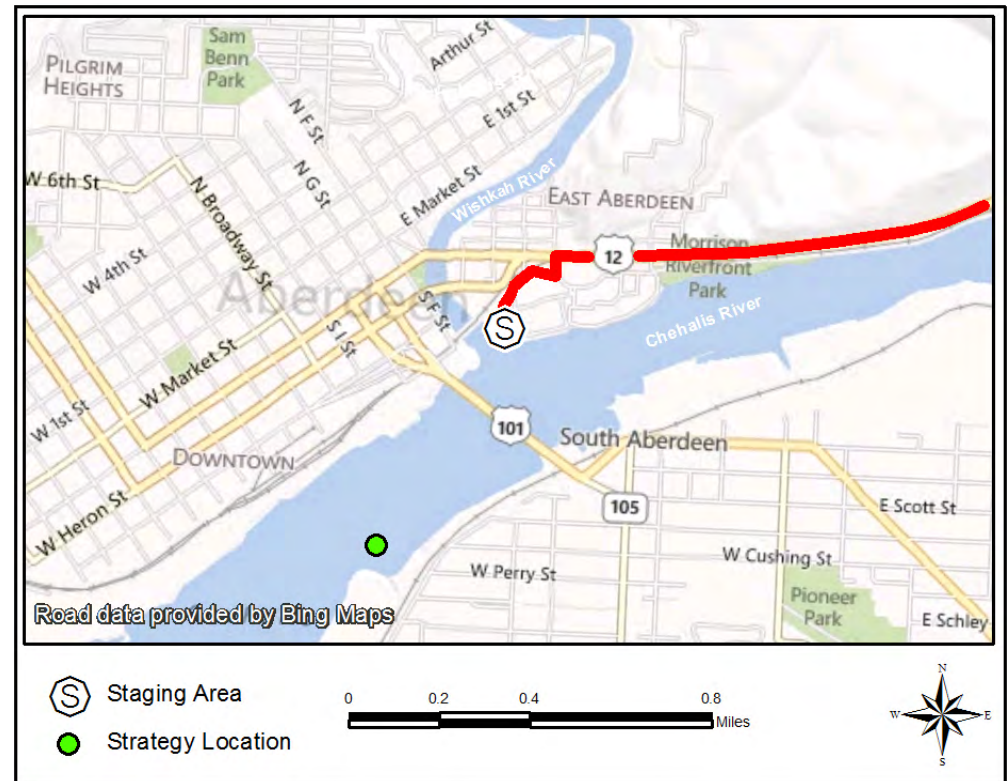
### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





GH7 Photo: On shore at strategy location in South Aberdeen, looking NNW across Aberdeen Reach towards Aberdeen.



## SiteContact

No information

## NearestAddress

Staging Area: (SA-A-GH)  
 913 W Heron St, Aberdeen, WA 98520  
 Boat Launch: (BL-2-GH)  
 718 28th St, Hoquiam, WA 98550  
 Strategy Location:  
 510 SW Front St, Aberdeen, 98520

## DrivingDirections

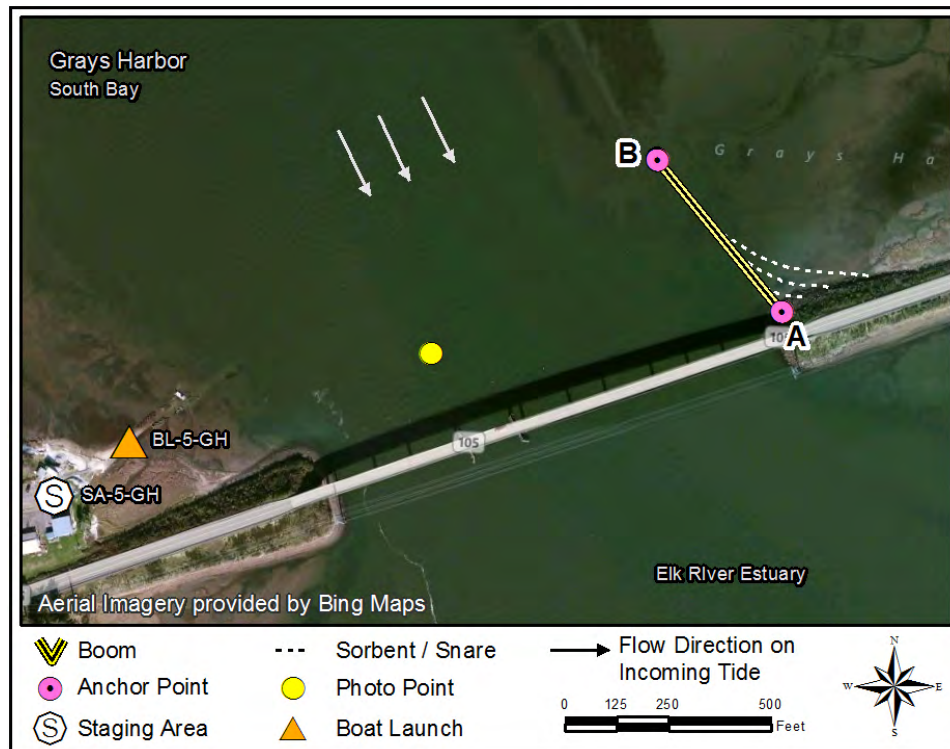
TO STAGING AREA: (SA-A-GH)

- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.

# South Bay - Hwy 105 Bridge over Elk River Estuary (NE Corner)

GH8

|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Position - Location:</b> | 46.86367  | -124.06703  | South Bay - Bay City  |
| <b>Strategy Objective:</b>  | Collection  |   | Collect oil in South Bay before it moves into the Elk River Estuary |
| <b>Implementation:</b>      | From NE corner of Hwy105 Bridge over Elk River Estuary, secure end of 500ft length of boom to shore near Point A (N46.86317, W124.06647) above high water mark. Use workboat to tow boom NW from shore, out into South Bay, anchoring the remaining boom end near Point B (N46.86414, W124.06772). Boom angle and Point B anchoring point may need to be modified based on actual conditions. Use additional anchoring systems to keep boom secure in water. Use shoreside anchoring posts or existing structures to secure boom to shore. Run multiple lines of sorbent and snare boom from shore to boom line for collection. |   |   |
| <b>Staging Area:</b>        | Off-Site:   | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Rocky, RipRap, & Unstable Shorelines; Strong Tidal Currents   |   |   |
| <b>Field Notes:</b>         | Best implemented at slack high tide or high tide moving to low. Collect oil using sorbent and snare boom; vac truck and on-water recovery would be very difficult to set up and maintain at this location (Point A).  |   |   |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay  |   |   |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds  |   |   |



## Recommended Equipment

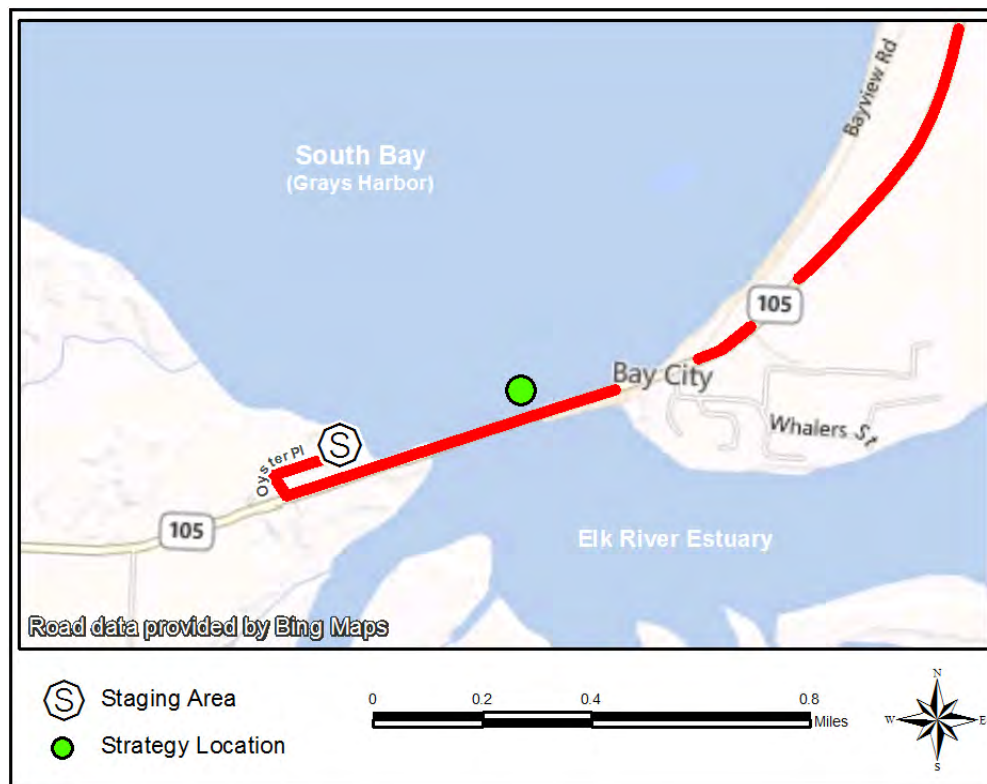
|     |      |  |
|-----|------|--|
| 500 | Feet | Boom - B2 (Contractor Boom) or equivalent                      |
| 700 | Feet | Boom - Sorbent   |
| 700 | Feet | Boom - Snare (Pom-Poms)  |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom       |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)                  |
| 3   | Each | Anchoring Post(s) - (shoreside) with (1) Anchoring Post Driver |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)              |
| 500 | Feet | Line - 3/8" poly line  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



GH8 Photo: On north side of Hwy105 Bridge looking east towards NE corner of bridge and general location of strategy's shorside anchor point (Point "A").



## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520

## DrivingDirections

TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

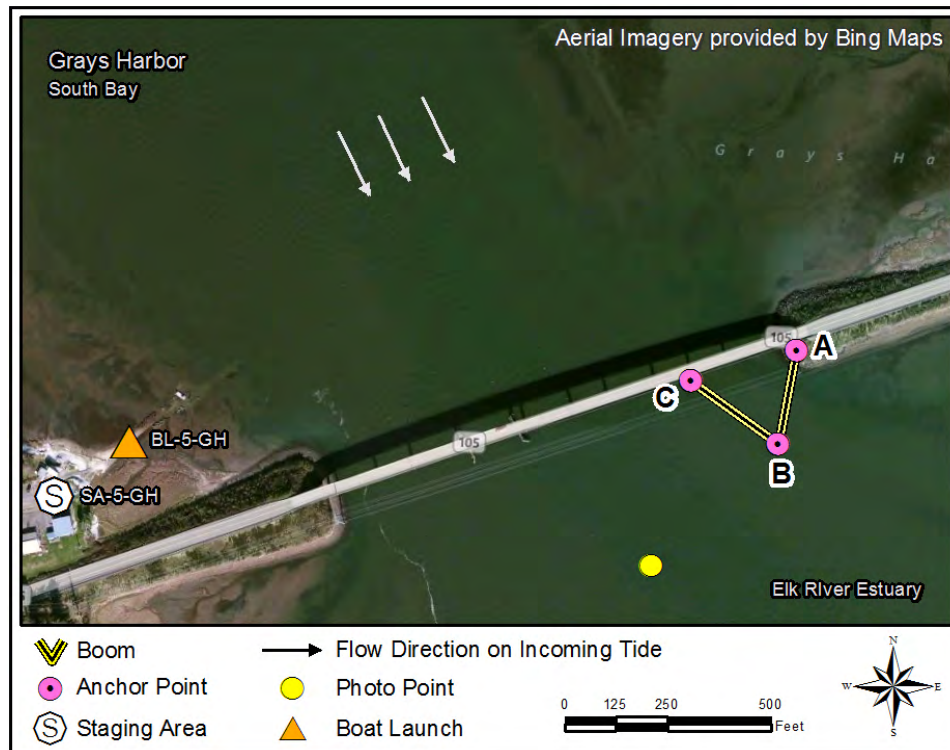
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.



## South Bay - South Side of Hwy 105 Bridge over Elk River Estuary

GH9

|                             |  |   |   |
|-----------------------------|--|---|---|
| <b>Position - Location:</b> | 46.86261   | -124.06669  | South Bay - Bay City  |
| <b>Strategy Objective:</b>  | Exclusion, Collection  |   | Keep oil out of the Elk River Estuary; collect oil moving into estuary south of Hwy105 Bridge |
| <b>Implementation:</b>      | At SE corner of Hwy 105 Bridge (Elk River Estuary side of bridge) secure end of 500ft length of boom to shore at base of the bridge near Point A (N46.86294, W124.06632). Secure remaining boom end to SW side of bridge support stanchion near Point C (N46.86269, W124.06731, 3rd stanchion from east end of bridge). Tow center-point of boom south (into Elk River Estuary) anchoring it near Point B (N46.86229, W124.06643; ~230ft from bridge). Use additional anchoring systems to keep boom secure in water. Use sorbent and snare boom within collection pocket until nearshore on-water recovery (with storage) is available. |   |   |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Rocky, RipRap, & Unstable Shorelines; Strong Tidal Currents  |   |   |
| <b>Field Notes:</b>         | Best implemented during slack tide or tide moving towards high. Collect oil using sorbent and snare boom within collection pocket until on-water recovery (with storage) at strategy location is available.  |   |   |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay   |   |   |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds   |   |   |



### Recommended Equipment

|     |      |  |
|-----|------|--|
| 500 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 500 | Feet | Boom - Sorbent   |
| 500 | Feet | Boom - Snare (Pom-Poms)                                  |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 6   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 500 | Feet | Line - 1/2" poly line                                    |
| 1   | Unit | On-water Skimmer (nearshore) with Storage                |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





GH9 Photo: Photo: On Elk River Estuary south of Hwy105 bridge, looking east towards SE corner of bridge and strategy location. Anchor Points A & C are shown.

## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520



## DrivingDirections

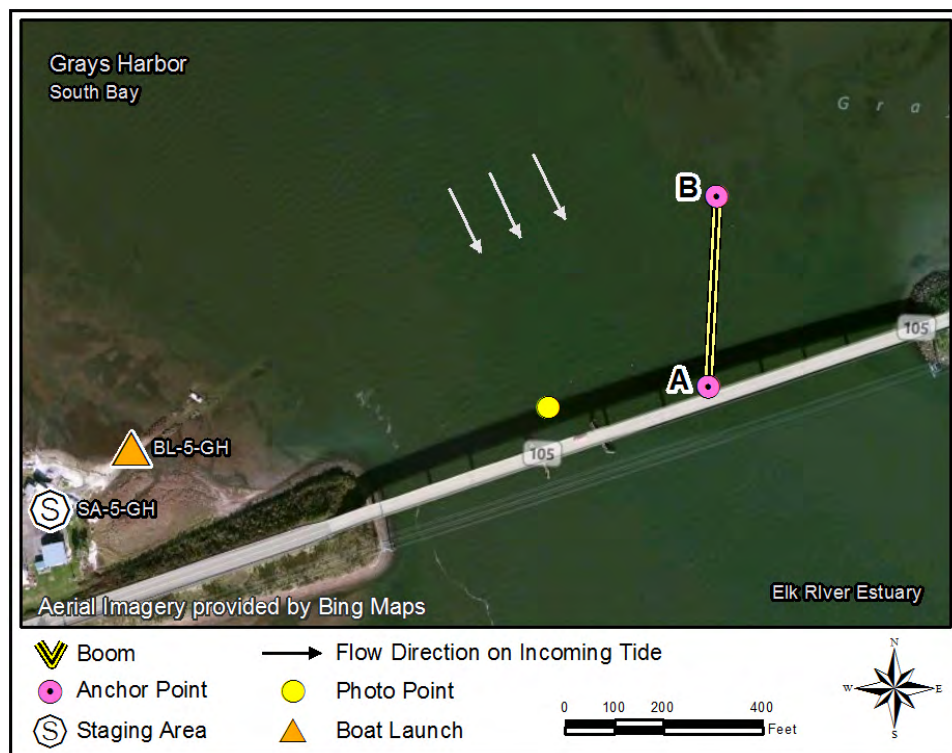
TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.

# South Bay - North Side of Hwy 105 Bridge over Elk River Estuary

GH10a

|                             |  |   |  |
|-----------------------------|--|---|--|
| <b>Position - Location:</b> | 46.86299   | -124.06817  | South Bay - Bay City   |
| <b>Strategy Objective:</b>  | Diversion  |   | Divert oil moving into Elk River Estuary towards center of bridge for collection at GH11 |
| <b>Implementation:</b>      | On north side of Hwy 105 Bridge (South Bay side of bridge) use line to secure end of 400ft length of boom to west side of 5th stanchion/support from east end of bridge near Point A (N46.86255, W124.06816). Tow boom northward into South Bay, anchoring the remaining boom end near Point B (N46.86364, W124.06817; approximately 370ft north of the bridge aligned between the 3rd & 4th stanchions from east end of bridge). Use additional anchoring systems to keep boom secure in water. |   |  |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Strong Tidal Currents  |   |  |
| <b>Field Notes:</b>         | Best implemented at slack high tide or high tide moving towards low.   |   |  |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay   |   |  |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds   |   |  |

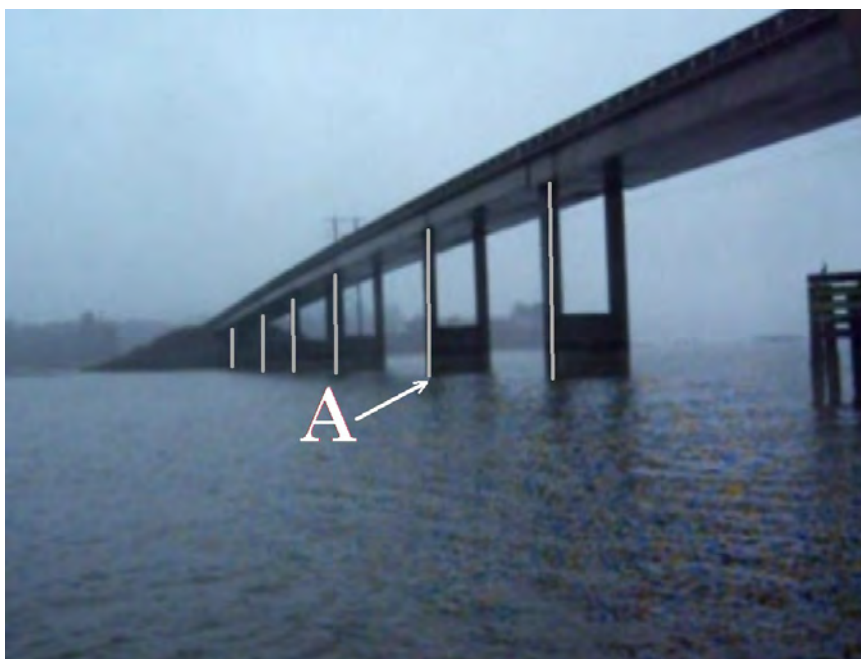


## Recommended Equipment

|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B2 (Contractor Boom) or equivalent                |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 6   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 500 | Feet | Line - 1/2" poly line                                    |
|     |      |  |
|     |      |  |
|     |      |  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |



GH10a Photo: On north side of Hwy105 Bridge looking east towards eastern end of bridge. Anchor Point A shown (5th support stanchion from east end).



## SiteContact

Brady's Oysters (Staging Area)  
 3714 Oyster Place E  
 Aberdeen, WA 98520  
 (360) 268 5518  
 brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
 3714 Oyster Place E  
 Aberdeen, WA 98520

## DrivingDirections

TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

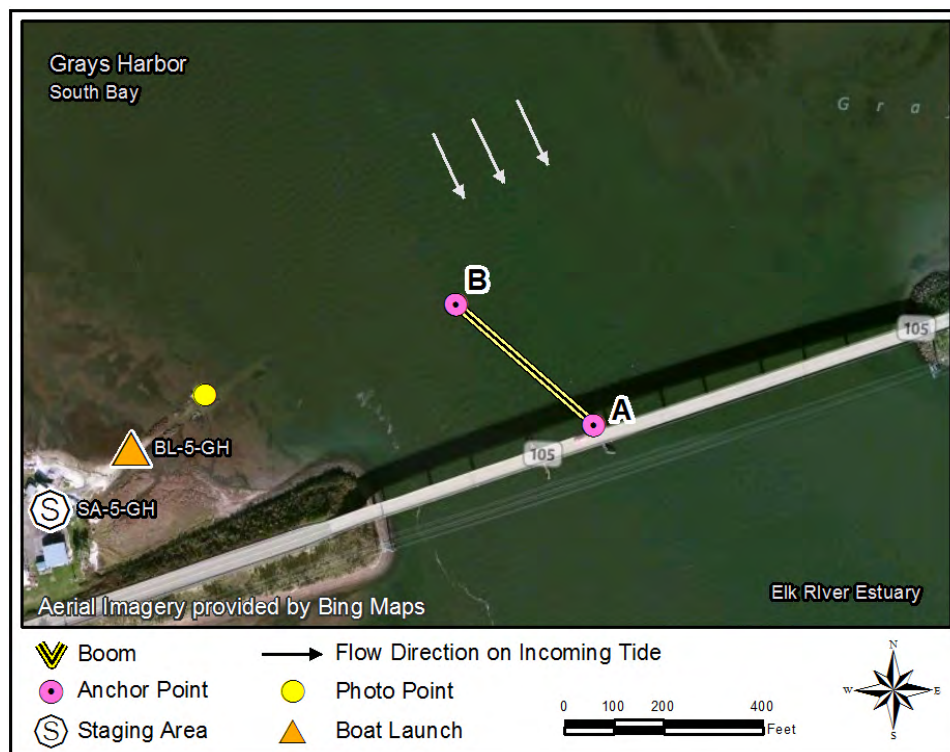
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.



# South Bay - North Side of Hwy 105 Bridge over Elk River Estuary

GH10b

|                             |  |   |  |
|-----------------------------|--|---|--|
| <b>Position - Location:</b> | 46.86266   | -124.06952  | South Bay - Bay City   |
| <b>Strategy Objective:</b>  | Diversion  |   | Divert oil moving into Elk River Estuary towards center of bridge for collection at GH11 |
| <b>Implementation:</b>      | On north side of Hwy 105 Bridge (South Bay side of bridge) use line to secure end of 400ft length of boom to east side of 5th stanchion/support from west end of bridge near Point A (N46.86234, W124.06893; opposite side of same stanchion for eastern side of bridge fender system). Tow boom northward into South Bay, anchoring the remaining boom end near Point B (N46.86302, W124.07018; approximately 320ft north of the bridge aligned between the 3rd & 4th stanchions from west end of bridge). Use additional anchoring systems to keep boom secure in water. |   |  |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Strong Tidal Currents  |   |  |
| <b>Field Notes:</b>         | Best implemented at slack high tide or high tide moving towards low.   |   |  |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay   |   |  |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds   |   |  |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B2 (Contractor Boom) or equivalent                |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 6   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 500 | Feet | Line - 1/2" poly line                                    |
|     |      |  |
|     |      |  |
|     |      |  |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





GH10b Photo: On north side of Hwy105 Bridge looking east towards eastern end of bridge. Anchor Point A shown (5th support stanchion from west end of bridge; 7th stanchion from eastern end of bridge).

## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520



## DrivingDirections

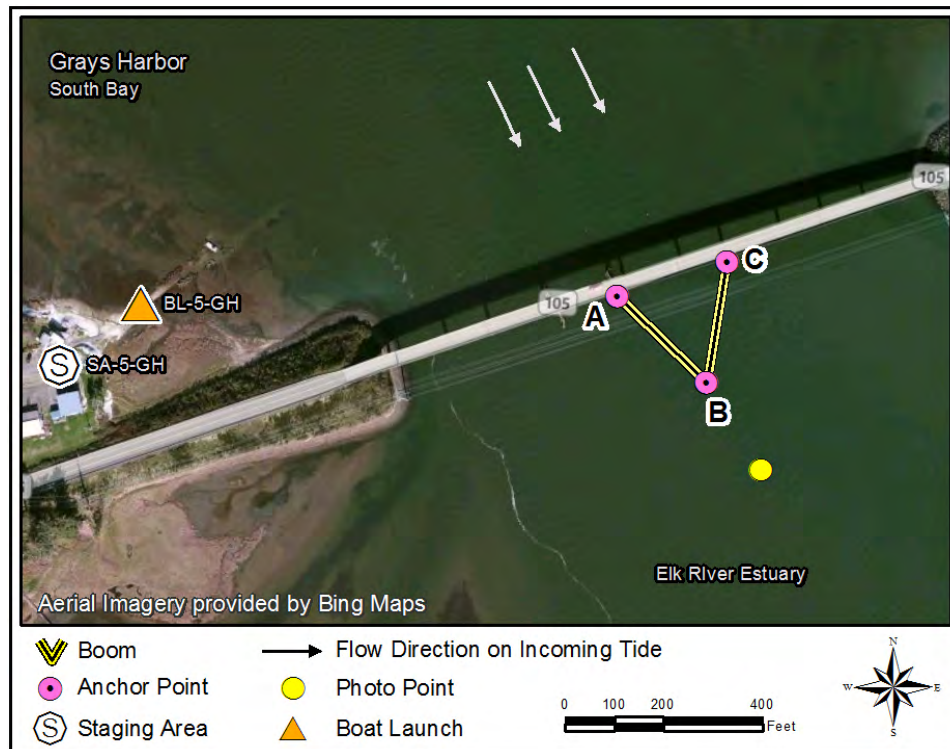
TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.

# South Bay - South Side of Hwy 105 Bridge over Elk River Estuary

GH11

|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Position - Location:</b> | 46.86203  | -124.06827  | South Bay - Bay City  |
| <b>Strategy Objective:</b>  | Exclusion, Collection   |   | Keep oil out of the Elk River Estuary; collect oil moving into estuary south of Hwy105 Bridge |
| <b>Implementation:</b>      | On south side of Hwy 105 Bridge (Elk River Estuary side of bridge) secure end of 500ft length of boom to SW corner of western side of bridge fender system near Point A (N46.86227, W124.06896; west side of 5th stanchion/support from west end of bridge). Secure remaining boom end to east side of bridge support stanchion near Point C (N46.86248, W124.06809; 7th stanchion from west end of bridge). Tow center-point of boom south (into Elk River Estuary) anchoring it near Point B: (N46.86182, W124.06820). Use additional anchoring systems to keep boom secure in water. *Use sorbent & snare boom within collection pocket. |   |   |
| <b>Staging Area:</b>        | Off-Site:   | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Rocky & Unstable Shorelines; Strong Tidal Currents  |   |   |
| <b>Field Notes:</b>         | Best implemented during slack tide or tide moving towards high. *Collect oil using sorbent and snare boom within collection pocket until on-water recovery (with storage) at strategy location is available.  |   |   |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay N46.86203W124.06827  |   |   |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds  |   |   |

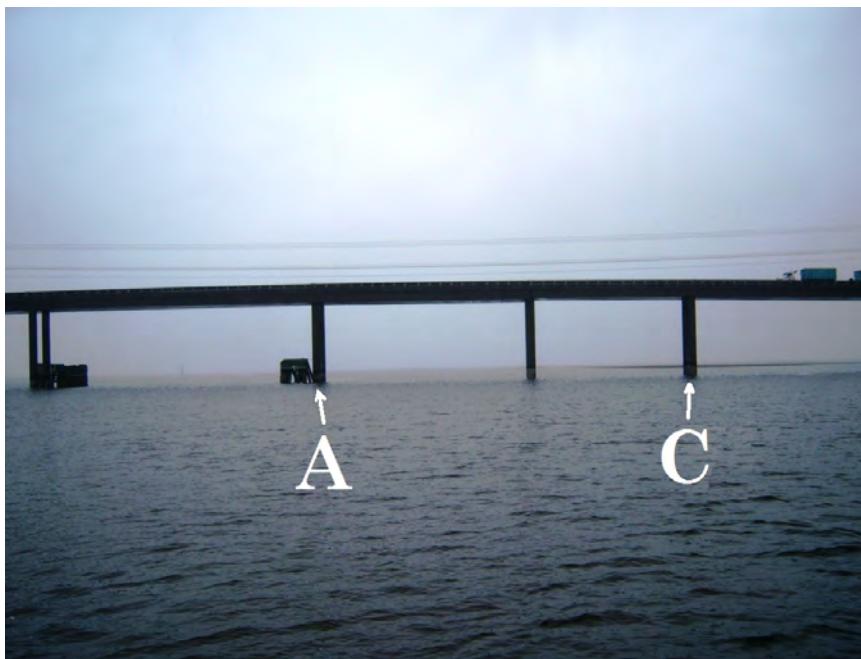


## Recommended Equipment

|     |      |  |
|-----|------|--|
| 500 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 500 | Feet | Boom - Sorbent   |
| 500 | Feet | Boom - Snare (Pom-Poms)                                  |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 500 | Feet | Line - 1/2" poly line                                    |
| 1   | Unit | On-water Skimmer (nearshore) with Storage                |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



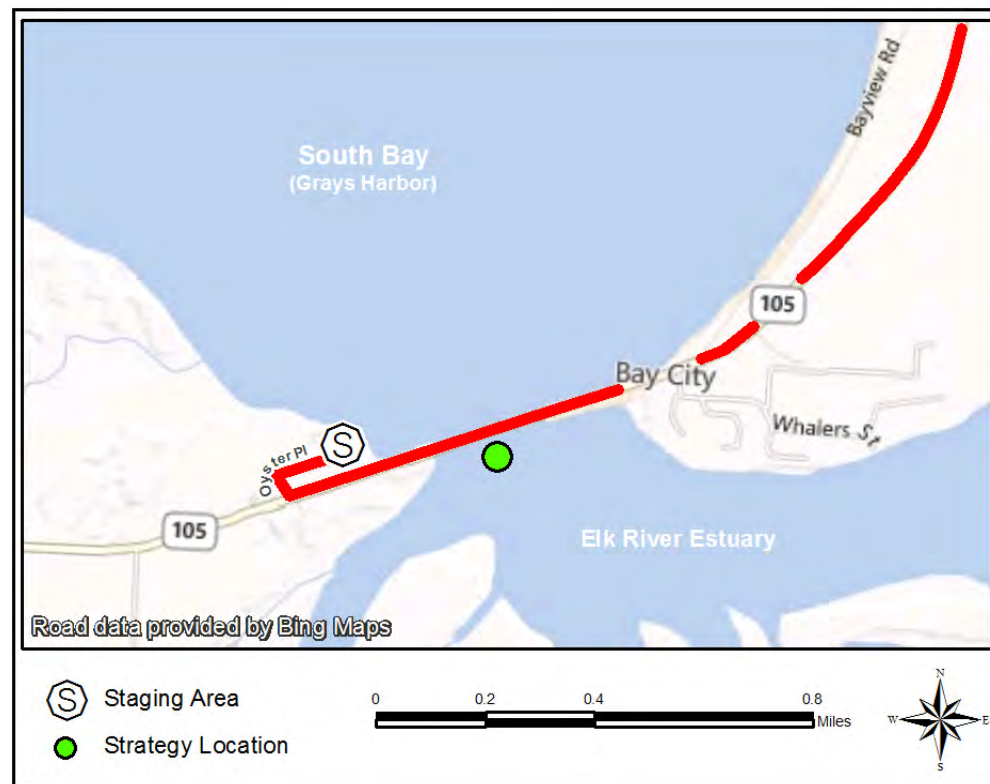
GH11 Photo: On Elk River Estuary near strategy location on south side of Hwy105 bridge, looking north towards bridge. Anchor Points A & C are shown.

## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520



## DrivingDirections

TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

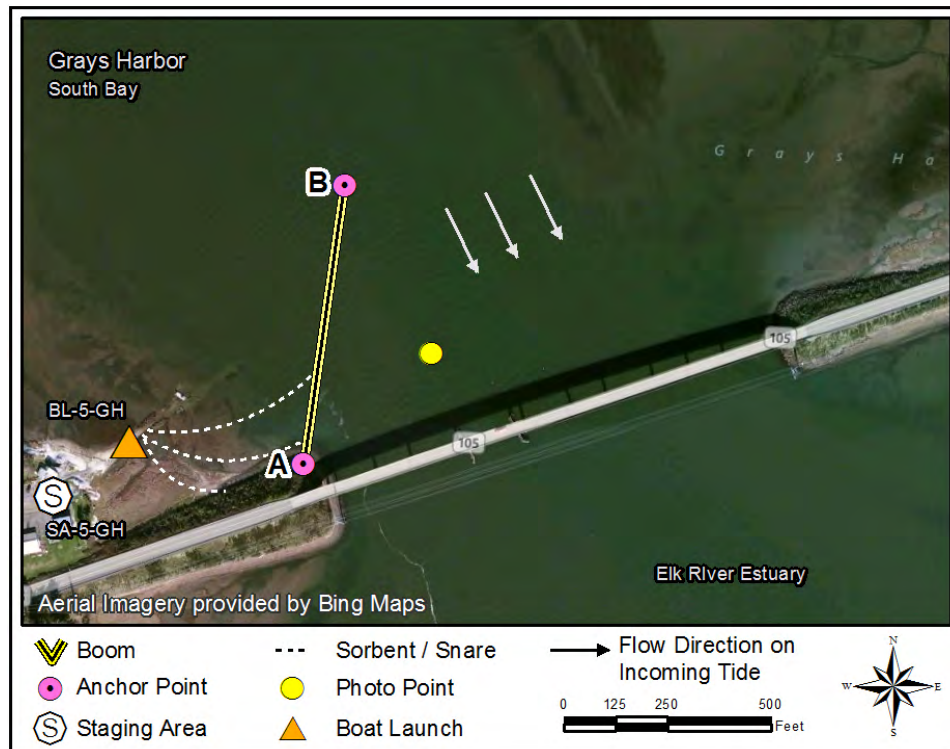
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.



## South Bay - Hwy 105 Bridge over Elk River Estuary (NW Corner)

GH12

|                             |  |   |           |
|-----------------------------|--|---|-----------|
| <b>Position - Location:</b> | 46.86288   | -124.07086  | South Bay |
| <b>Strategy Objective:</b>  | Collection   | Collect oil in South Bay before it moves into the Elk River Estuary                             |           |
| <b>Implementation:</b>      | From NW corner of Hwy105 Bridge over Elk River Estuary, secure end of 700ft length of boom to shore near Point A (N46.86202, W124.07102) above high water mark. Use workboat to tow boom north from shore, out into South Bay, anchoring the remaining boom end near Point B (N46.86388, W124.07074). Boom angle and Point B anchoring point may need to be modified based on actual conditions. Use additional anchoring systems to keep boom secure in water. Use shoreside anchoring posts or existing structures to secure boom to shore. Run multiple lines of sorbent and snare boom from shore to boom line to collect oil. |   |           |
| <b>Staging Area:</b>        | Off-Site:  | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |           |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Rocky, RipRap, & Unstable Shorelines; Strong Tidal Currents  |   |           |
| <b>Field Notes:</b>         | Best implemented at slack high tide or high tide moving towards low. Collect oil using sorbent and snare boom; vac truck and on-water recovery would be very difficult to set up and maintain at this location (Point A).  |   |           |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay   |   |           |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds   |   |           |



### Recommended Equipment

|      |      |  |
|------|------|--|
| 700  | Feet | Boom - B2 (Contractor Boom) or equivalent                      |
| 1000 | Feet | Boom - Sorbent   |
| 1000 | Feet | Boom - Snare (Pom-Poms)  |
| 1    | Each | Workboat(s) - of adequate size for type & amount of boom       |
| 14   | Each | Anchoring System(s) - (anchor, lines, floats)                  |
| 3    | Each | Anchoring Post(s) - (shoreside) with (1) Anchoring Post Driver |
| 1    | Each | Towing Bridal(s) - (appropriately sized for boom)              |
| 500  | Feet | Line - 3/8" poly line  |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





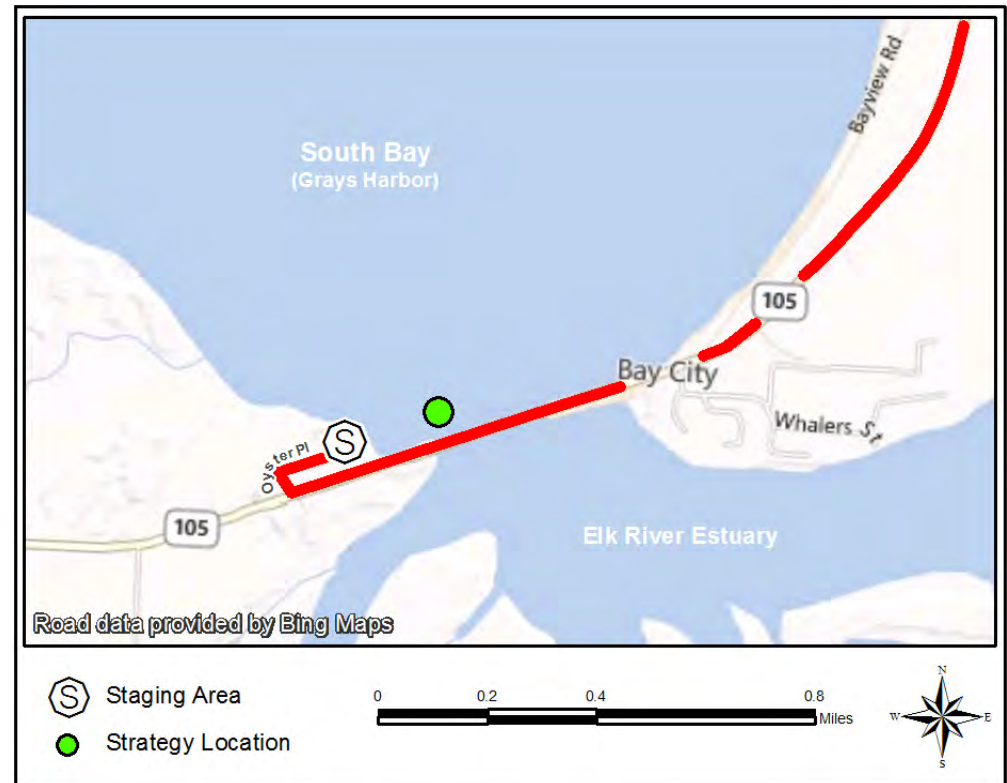
GH12 Photo: On north side of Hwy105 Bridge looking SSW towards NW corner of bridge and general location of strategy's shorside anchor point (Point "A").

## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520



## DrivingDirections

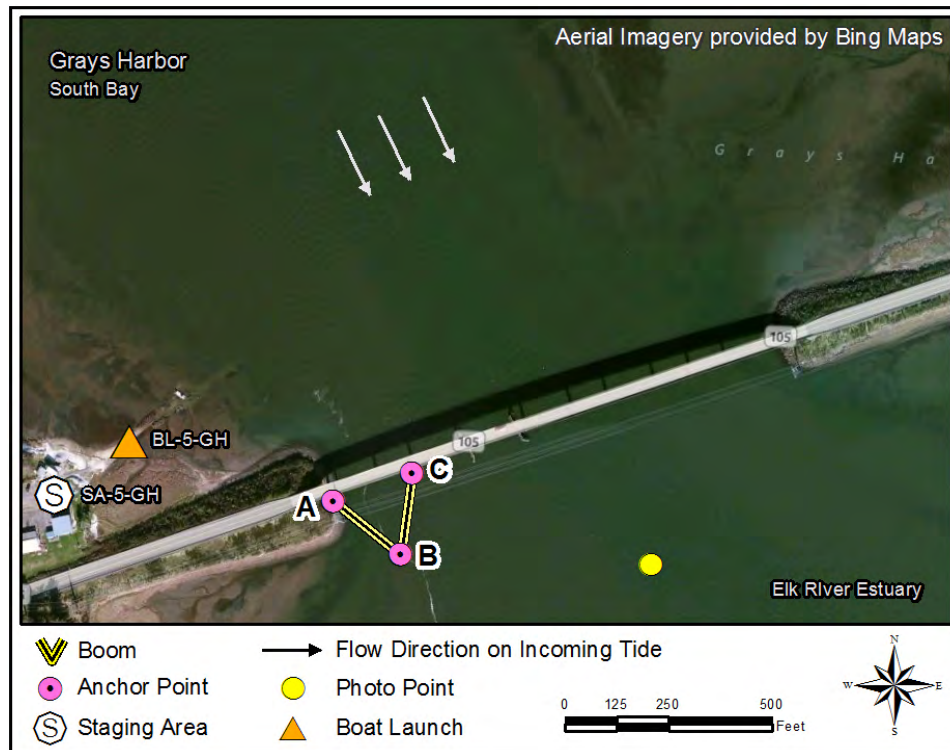
TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.

## South Bay - SW Corner of Hwy 105 Bridge over Elk River Estuary

GH13

|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Position - Location:</b> | 46.86168  | -124.07024  | South Bay - Bay City  |
| <b>Strategy Objective:</b>  | Exclusion, Collection   |   | Keep oil out of the Elk River Estuary; collect oil moving into estuary south of Hwy105 Bridge |
| <b>Implementation:</b>      | At SW corner of Hwy 105 Bridge (Elk River Estuary side of bridge) secure end of 400ft length of boom to shore at base of the bridge near Point A (N46.86178, W124.07073). Secure remaining boom end to east side of bridge support stanchion near Point C (N46.86199, W124.06995, 3rd stanchion from west end of bridge). Tow approximate center-point of boom south (into Elk River Estuary) anchoring it near Point B (N46.86145, W124.07004; ~180ft from bridge). Use additional anchoring systems to keep boom secure in water. Use sorbent and snare boom within collection pocket until nearshore on-water recovery is available. |   |   |
| <b>Staging Area:</b>        | Off-Site:   | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Rocky, RipRap, & Unstable Shorelines; Strong Tidal Currents   |   |   |
| <b>Field Notes:</b>         | Best implemented during slack tide or tide moving towards high. Collect oil using sorbent and snare boom within collection pocket until on-water recovery (with storage) at strategy location is available.   |   |   |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay  |   |   |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds  |   |   |

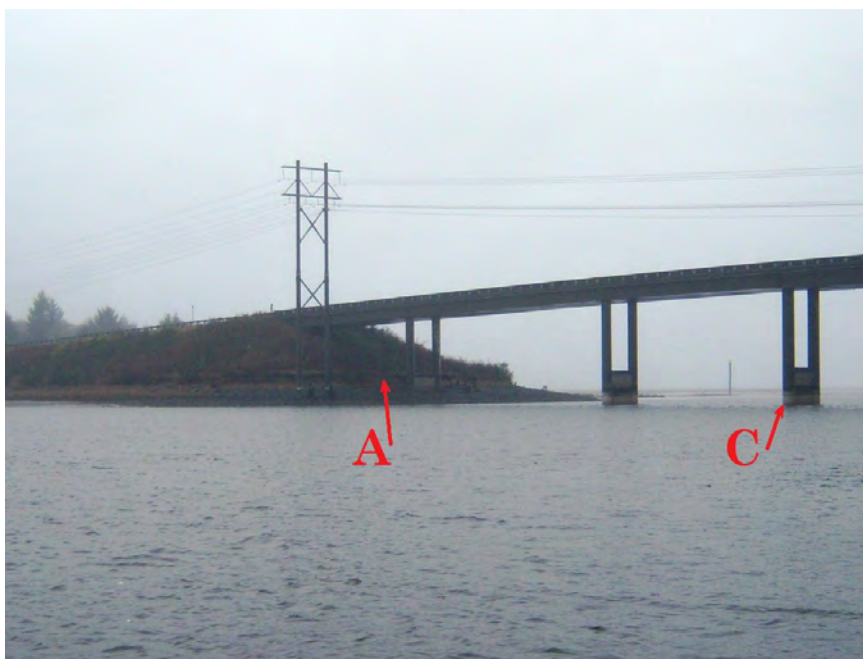


### Recommended Equipment

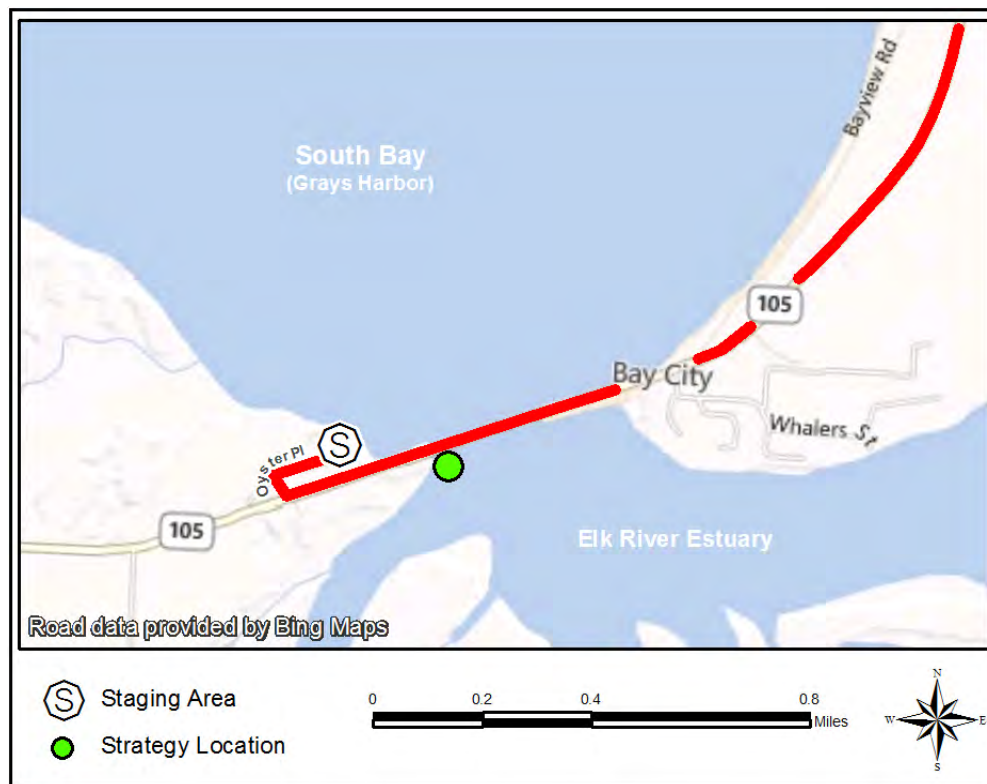
|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 400 | Feet | Boom - Sorbent   |
| 400 | Feet | Boom - Snare (Pom-Poms)                                  |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 500 | Feet | Line - 1/2" poly line                                    |
| 1   | Unit | On-water Skimmer (nearshore) with Storage                |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



GH13 Photo: On Elk River Estuary south of Hwy105 bridge, looking west towards SW corner of bridge and strategy location. Anchor Points A & C are shown.



## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520

## DrivingDirections

TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

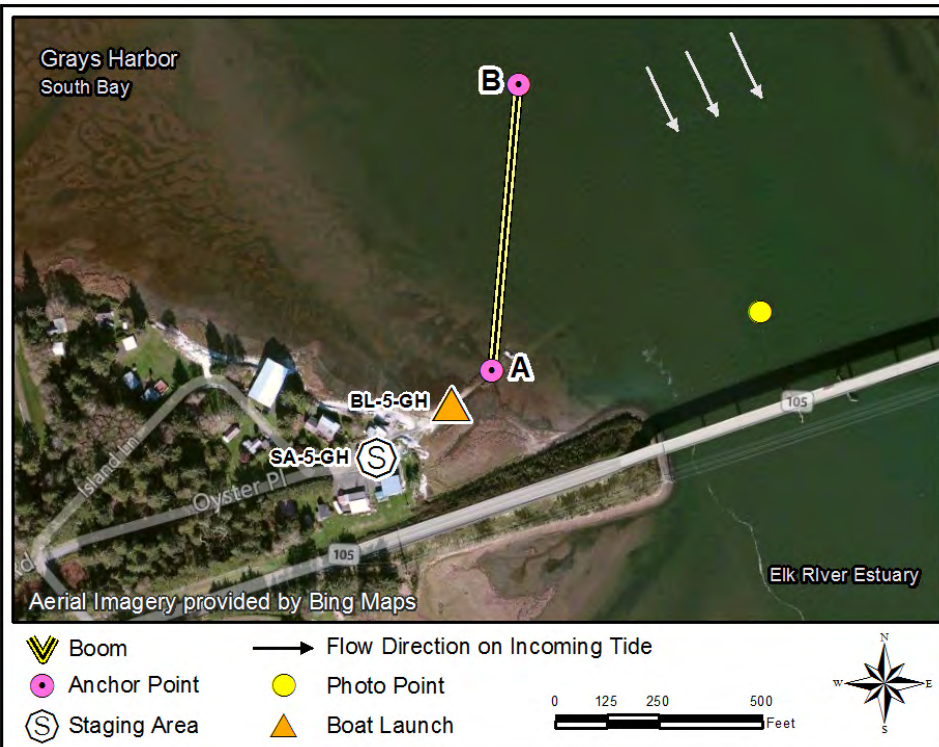
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.



## South Bay - Brady's Oysters (Hwy 105 / Elk River Bridge)

GH14

|                             |  |   |           |
|-----------------------------|--|---|-----------|
| <b>Position - Location:</b> | 46.86324   | -124.0723   | South Bay |
| <b>Strategy Objective:</b>  | Collection   | Collect oil in South Bay before it moves into the Elk River Estuary                             |           |
| <b>Implementation:</b>      | From north side of boat ramp at Brady’s Oysters (BL-5-GH) above high water mark, secure end of 700ft length of boom to shore near Point A (N46.86231, W124.07238). Use workboat to tow boom north from shore, out into South Bay, anchoring the remaining boom end near Point B (N46.86422, W124.07226). Boom angle and Point B anchoring point may need to be modified based on actual conditions. Use additional anchoring systems to keep boom secure in water. Use shoreside anchoring posts or existing structures to secure boom to shore. Vac truck collection at shoreside anchor point (Point A). |   |           |
| <b>Staging Area:</b>        | On-Site:   | Stage at Brady's Seafoods (SA-5-GH). Use boat launch at Bradys (BL-5-GH) or Westport (BL-X3-GH) |           |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Traffic Hazard (along Hwy105); Rocky & Unstable Shorelines; Strong Tidal Currents   |   |           |
| <b>Field Notes:</b>         | Best implemented at slack high tide or high tide moving towards low.   |   |           |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay   |   |           |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds   |   |           |



| Recommended Equipment |      |  |
|-----------------------|------|--|
| 700                   | Feet | Boom - B2 (Contractor Boom) or equivalent                |
| 1                     | Each | Workboat(s) - of adequate size for type & amount of boom |
| 14                    | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 3                     | Each | Anchoring Post(s) - (shoreside)                          |
| 1                     | Each | Anchoring Post Driver(s)                                 |
| 1                     | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2                     | Each | Heaving Line(s)  |
| 1                     | Each | Vac Truck(s)   |
| Recommended Personnel |      |  |
| 1                     |      | Supervisor(s)  |
| 4                     |      | Laborer(s)   |
| 1                     |      | Boat Operator(s)   |





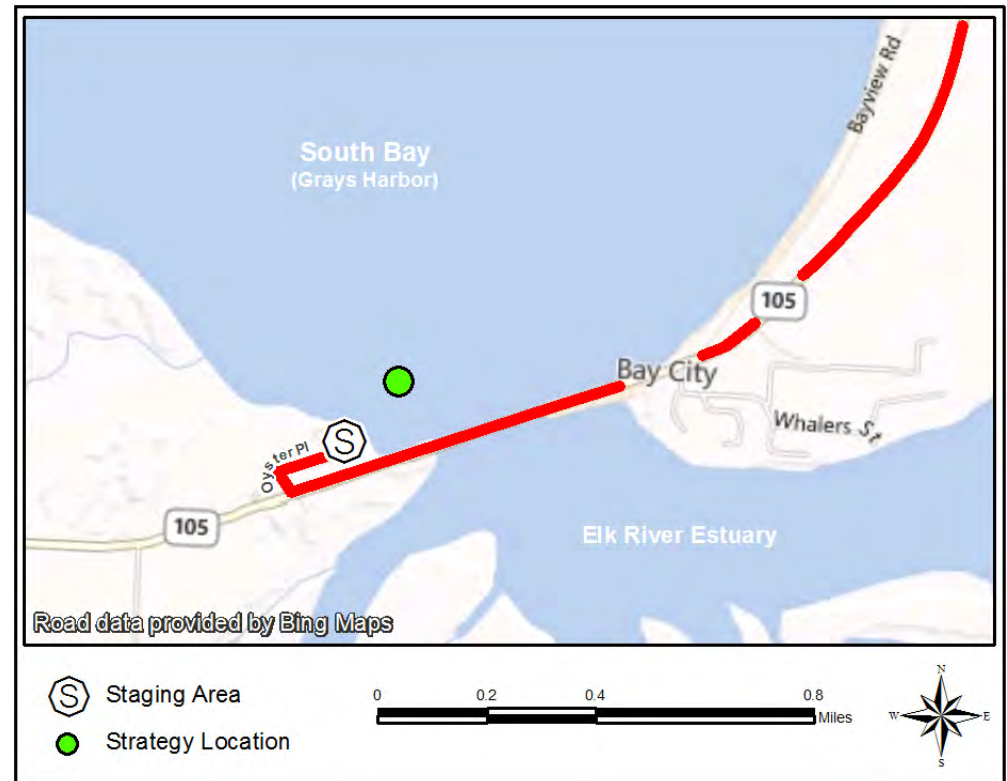
GH14 Photo: On north side of Hwy105 Bridge looking NW towards Brady's Oysters facility and general location of strategy's shorside anchor point (Point "A").

## SiteContact

Brady's Oysters (Staging Area)  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

## NearestAddress

STAGING AREA & BOAT LAUNCH:  
3714 Oyster Place E  
Aberdeen, WA 98520



## DrivingDirections

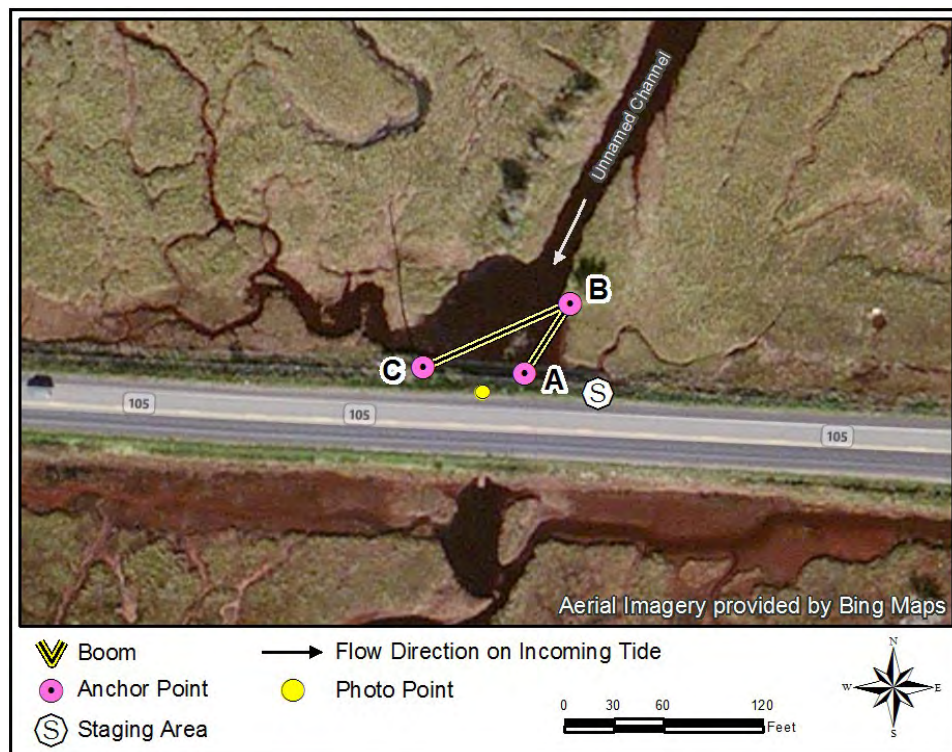
TO STAGING AREA & BOAT LAUNCH: (SA-5-GH & BL-5-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner.

## South Bay - Hwy 105 - West of Laidlaw Island

GH15

|                             |  |   |  |
|-----------------------------|--|---|--|
| <b>Position - Location:</b> | 46.85895   | -124.08453  | South Bay                                      |
| <b>Strategy Objective:</b>  | Exclusion  |   | Keep oil out of marsh on south side of Hwy 105 |
| <b>Implementation:</b>      | Secure end of 150ft length of boom to shore along Hwy105 near Point A (N46.85892, W124.08440; about 30ft east of outfall/culvert). Secure remaining boom end to shore along Hwy105 near Point C (N46.85892, W124.08465; about 30ft west of culvert). Secure a line to boom ~50ft from end at Point A. From Point B (N46.85904, W124.08430) pull boom into place using line, forming a boom pocket around the culvert. Within the pocket, deploy multiple lines of sorbent boom along shore, adjacent to highway, in front of culvert. Use shoreside anchoring posts to secure boom to shore. |   |  |
| <b>Staging Area:</b>        | On-Site:   | Stage on shoulder of Hwy105 (west bound lane); follow WADOT work zone traffic control guidelines. |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Muddy & Unstable Creek Banks; Culvert Danger  |   |  |
| <b>Field Notes:</b>         | Best implemented at middle to low outgoing tide. Temporary use of roadway (lane and shoulder) is required to implement this strategy; follow WADOT work zone traffic control guidelines. Water volume inflow and outflow to/from culvert can be significant.   |   |  |
| <b>Watercourse:</b>         | Bay - Grays Harbor - South Bay - Unnamed Channel   |   |  |
| <b>Resources at Risk:</b>   | Saltmarsh, Waterfowl, and Shorebirds   |   |  |



### Recommended Equipment

|     |      |                                      |
|-----|------|--------------------------------------|
| 150 | Feet | Boom - B3 (River Boom) or equivalent |
| 150 | Feet | Boom - Sorbent                       |
| 9   | Each | Anchoring Post(s) - (shoreside)      |
| 2   | Each | Anchoring Post Driver(s)             |
| 1   | Each | Heaving Line(s)                      |
| 200 | Feet | Line - 1/2" poly line                |
|     |      |                                      |
|     |      |                                      |

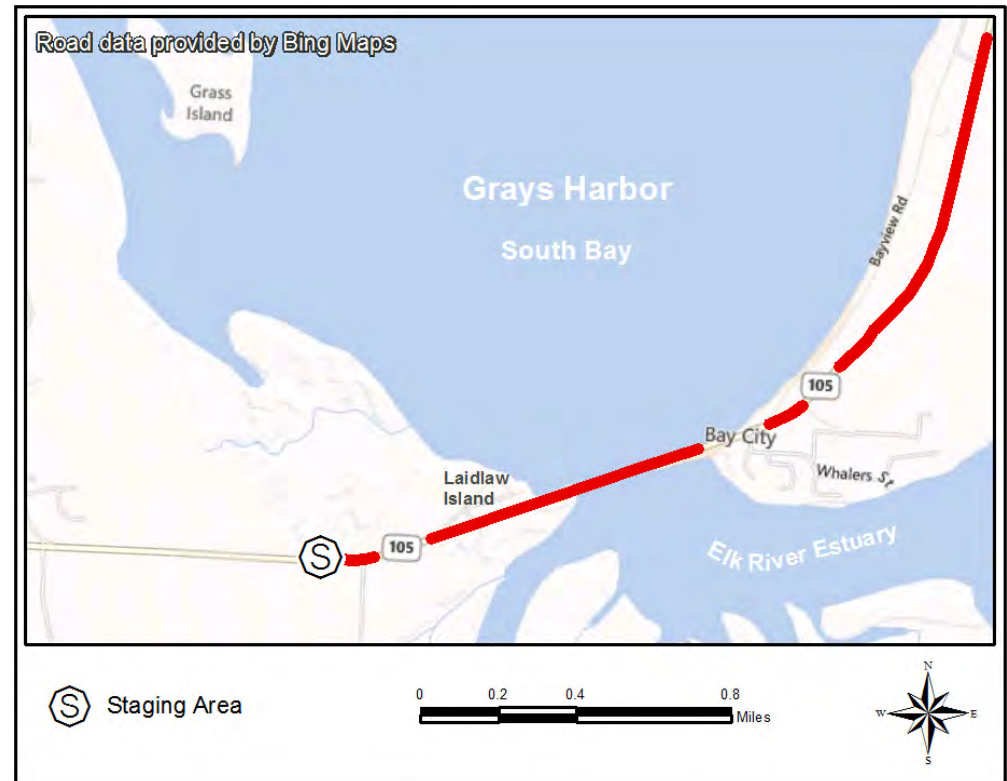
### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |





GH15 Photo: At strategy location along north side of Hwy105, looking NNW towards culvert during incoming tide. Suction into culvert is evident.



## SiteContact

No Information

## NearestAddress

Hwy 105  
Mile Post 31.4

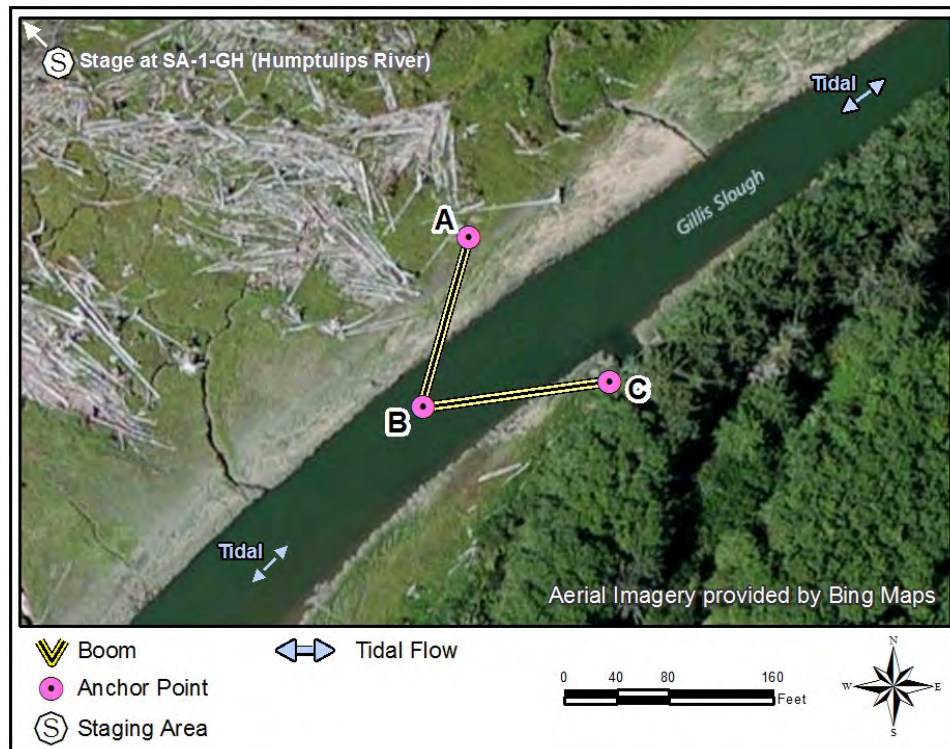
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 17.2 miles, pulling off onto the shoulder of the roadway to stage equipment. Temporary use of roadway (westbound lane and shoulder) is required to implement this strategy; Notify Grays Harbor County Dispatch at (360) 533-8765 and follow WADOT work zone traffic control guidelines.

## North Bay - Gillis Slough (Mouth)

GILS-0.0

|                             |   |  |   |
|-----------------------------|---|--|---|
| <b>Position - Location:</b> | 47.03950  | -124.05007   | Grays Harbor - North Bay                    |
| <b>Strategy Objective:</b>  | Exclusion   |  | Keep oil in North Bay out of Gillis Slough. |
| <b>Implementation:</b>      | Launch workboat fm WDFW boat ramp (SA-1-GH/BL-1-GH) and transport 300ft boom downstream into North Bay, then across shallows & WSW to site location near mouth of Gillis Slough. Secure boom end to shore near Point A (N47.03983, W124.05011) on north side of slough (slough right). Secure remaining boom end on bank of slough left near Point C (inland & downstream of small cut). Form chevron by anchoring boom in middle of slough near Point B. Use shoreside anchoring posts or trees to secure boom to shore. Use additional anchoring systems to keep boom secure in slough. |  |   |
| <b>Staging Area:</b>        | Off-Site:   | WDFW Water Access Point off Hwy 109 before Humptulips River Bridge (SA-1-GH & BL-1-GH) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Heavy Brush Along River Banks; Submerged Obstructions in River & Floating Debris  |  |   |
| <b>Field Notes:</b>         | High Tide Only. Area is very shallow, muddy, with obstructions so airboat use is highly recommended. Tidally influenced area; ensure boom ends are set above the highest high water marks on river banks during implementation.   |  |   |
| <b>Watercourse:</b>         | Slough - Gillis Slough  |  |   |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |  |   |



### Recommended Equipment

|     |      |   |
|-----|------|---|
| 300 | Feet | Boom - B3 (River Boom) or equivalent              |
| 1   | Each | Workboat(s) - Airboat Recommended                 |
| 5   | Each | Anchoring System(s) - (anchor, lines, floats)     |
| 6   | Each | Anchoring Post(s) - (shoreside)                   |
| 2   | Each | Anchoring Post Driver(s)                          |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom) |
| 1   | Each | Hand saw(s)                                       |
| 300 | Feet | Line - 3/8" poly line                             |

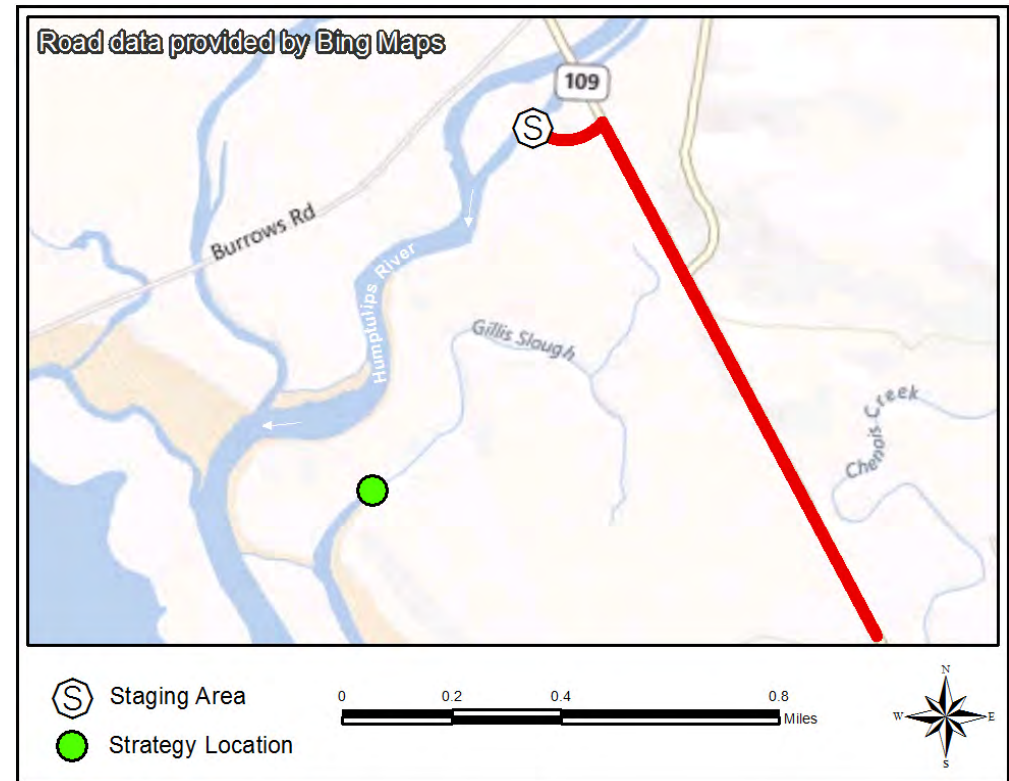
### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





GILS-0.0 Photo: Aerial photo on right side of Gillis Slough (slough right) looking east and down towards strategy location and slough left.



## SiteContact

Property owners on left side of slough:  
 Grays Harbor Audubon Society  
 (360) 289-5048  
 arnold6.martin@comcast.net  
 www.ghas.org/contact.php

## NearestAddress

Staging Area:  
 1349 Highway 109  
 Hoquiam, WA 98550

## DrivingDirections

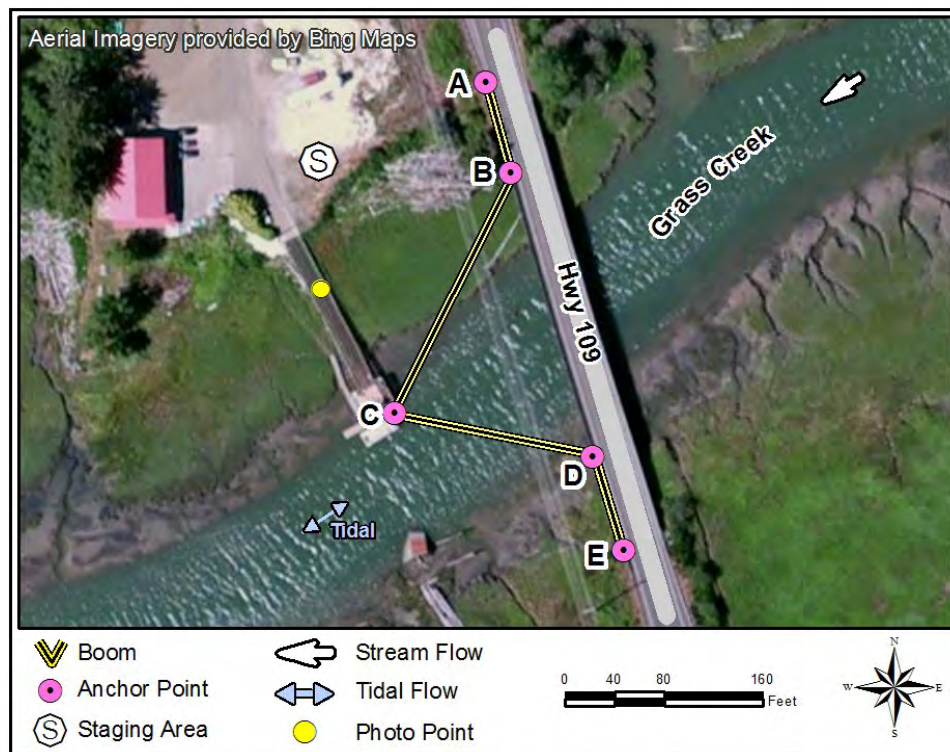
STAGING AREA & BOAT LAUNCH: (SA-1-GH & BL-1-GH)

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area adjacent to the river.

## North Bay - Grass Creek

GRSC-0.1

|                             |  |  |                              |
|-----------------------------|--|--|------------------------------|
| <b>Position - Location:</b> | 47.00406   | -124.002112  | Grays Harbor - North Bay     |
| <b>Strategy Objective:</b>  | Exclusion  |  | Keep oil out of Grass Creek. |
| <b>Implementation:</b>      | Deploy 550ft of boom from dock at Lytle Seafoods, west of Hwy 109 Bridge. From end of dock at Point C, use workboat and lines to bring 300ft of boom to NW side of Hwy 109 Bridge on creek right. Secure boom (with float and line) to bridge near Point B (N47.00463, W124.00206) and set boom end on shore above high tide mark near Point A (~75ft north of Point B). From Point C, use workboat and lines to bring remaining 250ft boom across to creek left, securing it to SW side of bridge near Point D (N47.00395, W124.00173). Bring remaining boom end south along Hwy 109, securing it above high tide mark near Point E (~75ft from Point D). |  |                              |
| <b>Staging Area:</b>        | On-Site:   | Stage at Lytle Seafoods in parking area after checking in with property owner. |                              |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Brush/Heavy Vegetation; Logs & Debris in Creek near Hwy 109 Bridge  |  |                              |
| <b>Field Notes:</b>         | Notify private property owner in advance of staging & strategy deployment; Call (360) 580-9043. Launch workboat from 28th Street Boat Ramp/Hoquiam (BL-2-GH) or airboat fm WDFW Access on Humptulips River (BL-1-GH). Best implemented at/near high tide.  |  |                              |
| <b>Watercourse:</b>         | Creek - Grass Creek  |  |                              |
| <b>Resources at Risk:</b>   | Sensitive Nesting Sites, Waterfowl, Shorebirds, Marshes, and Wetlands.   |  |                              |



### Recommended Equipment

|     |      |  |
|-----|------|--|
| 550 | Feet | Boom - B2 (Contractor Boom) or equivalent                |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 5   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 8   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 500 | Feet | Line - 1/2" poly line                                    |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





GRSC-0.1 Photo: On dock at Lytle Seafoods on creek right, looking upstream towards creek left and SW corner of Hwy 109 bridge (Points D & E).



## SiteContact

Lytle Seafoods Oyster Shack  
(360) 580-9043 - cell  
(360) 538-2654

## NearestAddress

742 Washington Hwy 109  
Hoquiam, WA 98550

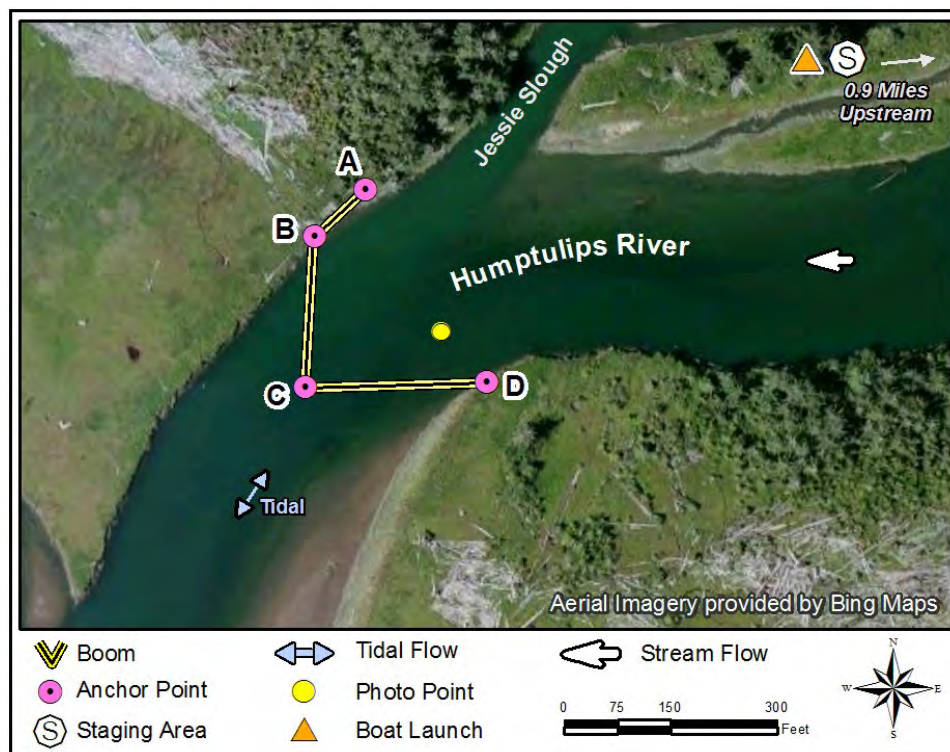
## DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 6.7 Miles
- ⑤ After crossing the Grass Creek Bridge, turn left onto Rock View Lane (first left after bridge)
- ⑥ Take immediate left onto drive for Lytle Seafoods Oyster Shack. Check in with property owner and then stage in parking area near dock.

# North Bay - Humptulips River at Jessie Slough

HMPR-0.0

|                             |  |  |  |
|-----------------------------|--|--|--|
| <b>Position - Location:</b> | 47.04085   | -124.05502   | Grays Harbor - North Bay                           |
| <b>Strategy Objective:</b>  | Exclusion  |  | Keep oil in North Bay out of the Humptulips River. |
| <b>Implementation:</b>      | Use workboat to transport 600ft boom downstream 0.9 Miles fm WDFW boat ramp (SA-1-GH/BL-1-GH). Secure boom end to bank on river right where Jessie Slough meets the Humptulips near Point A (N47.04148, W124.05493). Then deploy boom SW along bank on river right for ~100ft securing it to shore near Point B. Secure remaining boom end to shore on river left near Point D (N47.04075, W124.05423). Form chevron by anchoring boom in middle of river near Point C. Use shoreside anchoring posts or trees to secure boom to river banks. Use additional anchoring systems to keep boom secure in river. Debris in river vry likely. |  |  |
| <b>Staging Area:</b>        | Off-Site:  | WDFW Water Access Point off Hwy 109 before Humptulips River Bridge (SA-1-GH) |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Heavy Brush Along River Banks; Submerged Obstructions in River & Floating Debris   |  |  |
| <b>Field Notes:</b>         | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. River flows from Oct through June may reduce chance of oil movement upstream from North Bay.  |  |  |
| <b>Watercourse:</b>         | River - Humptulips River   |  |  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands   |  |  |



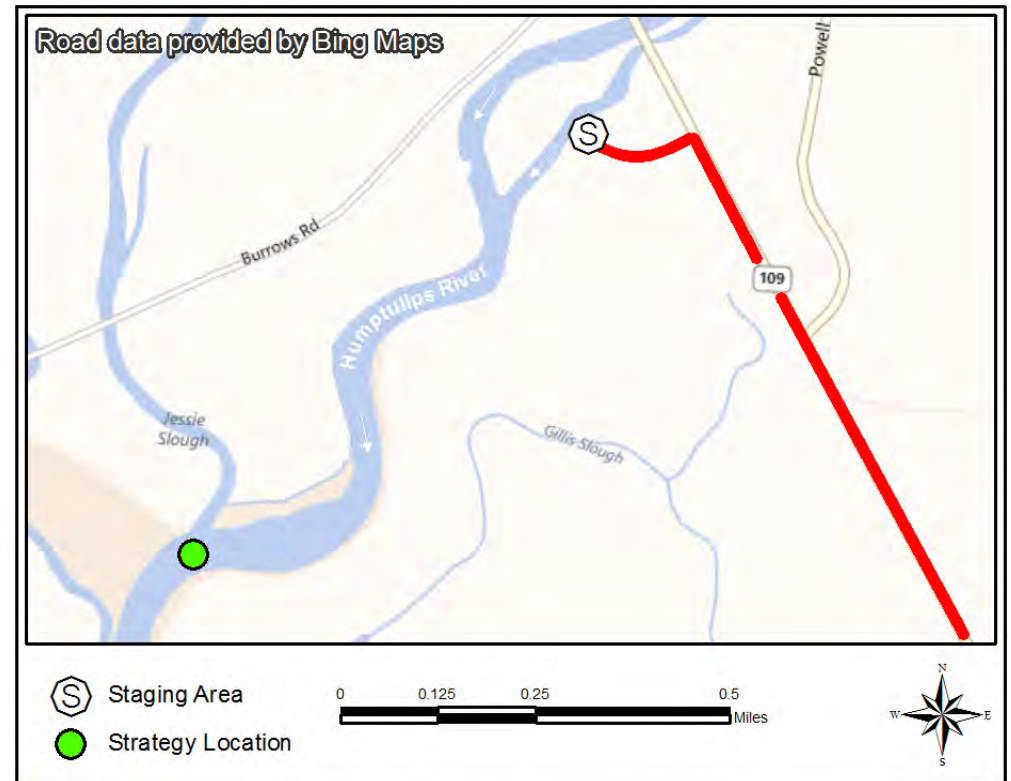
| Recommended Equipment |      |   |
|-----------------------|------|---|
| 600                   | Feet | Boom - B3 (River Boom) or equivalent              |
| 1                     | Each | Workboat(s) - Airboat Recommended                 |
| 8                     | Each | Anchoring System(s) - (anchor, lines, floats)     |
| 9                     | Each | Anchoring Post(s) - (shoreside)                   |
| 2                     | Each | Anchoring Post Driver(s)                          |
| 1                     | Each | Towing Bridal(s) - (appropriately sized for boom) |
| 2                     | Each | Heaving Line(s)                                   |
|                       |      |   |

| Recommended Personnel |                  |
|-----------------------|------------------|
| 1                     | Supervisor(s)    |
| 4                     | Laborer(s)       |
| 1                     | Boat Operator(s) |





HMPR-0.0 Photo: Near mouth of Humptulips River into North Bay, looking south towards river left and location of recommended shoreside anchor Point D.



## SiteContact

No Information

## NearestAddress

Staging Area:  
1349 Highway 109  
Hoquiam, WA 98550

## DrivingDirections

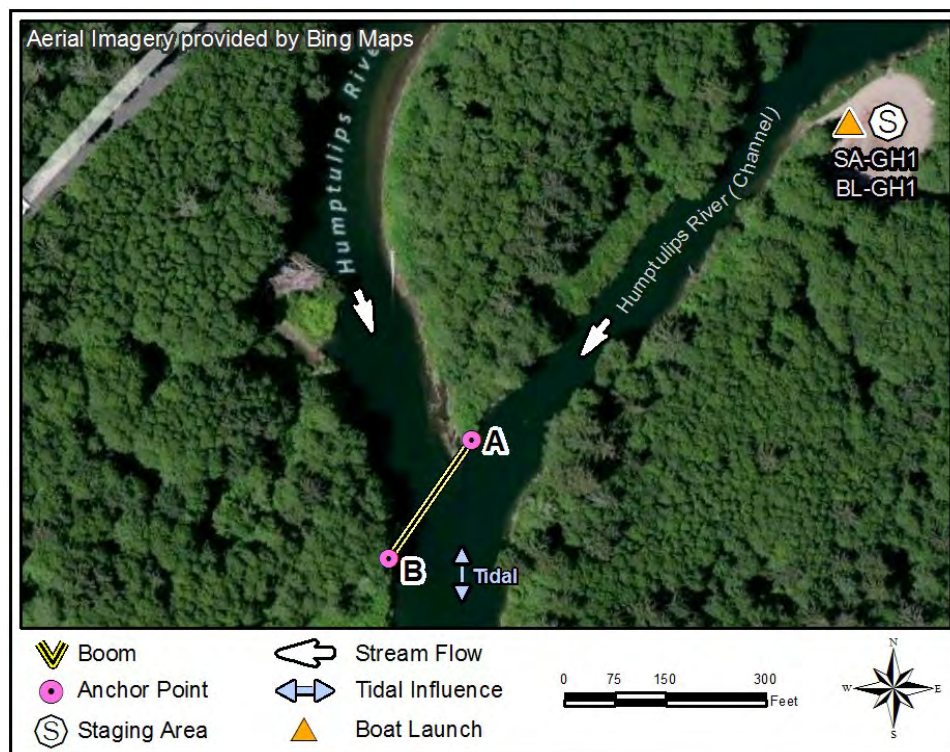
STAGING AREA & BOAT LAUNCH: (SA-1-GH & BL-1-GH)

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area adjacent to the river.

# North Bay - Humptulips River

HMPR-0.75

|                             |   |  |  |
|-----------------------------|---|--|--|
| <b>Position - Location:</b> | 47.04770  | -124.046674  | Grays Harbor - North Bay   |
| <b>Strategy Objective:</b>  | Diversion, Collection   |  | Divert oil into channel during flood tide; Collect oil moving downstream from Hwy 109 Bridge |
| <b>Implementation:</b>      | Using workboat, transport 300ft boom downstream fm WDFW boat ramp (SA-1-GH / BL-1-GH). Secure one end of the boom to bank at south end of unnamed channel island near Point A (N47.04801, W124.04639). Bring remaining boom end downstream & across to river right, securing it to the bank near Point B (about 250ft downstream from the southernmost extent of the island). Use anchoring systems to keep boom secure in river. Use shoreside anchoring posts or trees to secure boom to river banks. Debris in river may limit strategy's effectiveness. |  |  |
| <b>Staging Area:</b>        | Off-Site:   | WDFW Water Access Point off Hwy 109 before Humptulips River Bridge (SA-1-GH) |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Heavy Brush Along River Banks; Submerged Obstructions in River & Floating Debris  |  |  |
| <b>Field Notes:</b>         | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle.   |  |  |
| <b>Watercourse:</b>         | River - Humptulips River  |  |  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |  |  |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 300 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - Airboat Recommended                        |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 1   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 1   | Each | Skimmer (appropriately sized) - if collecting oil        |
| 1   | Each | On-Water Storage (for recovered oil) - if collection oil |

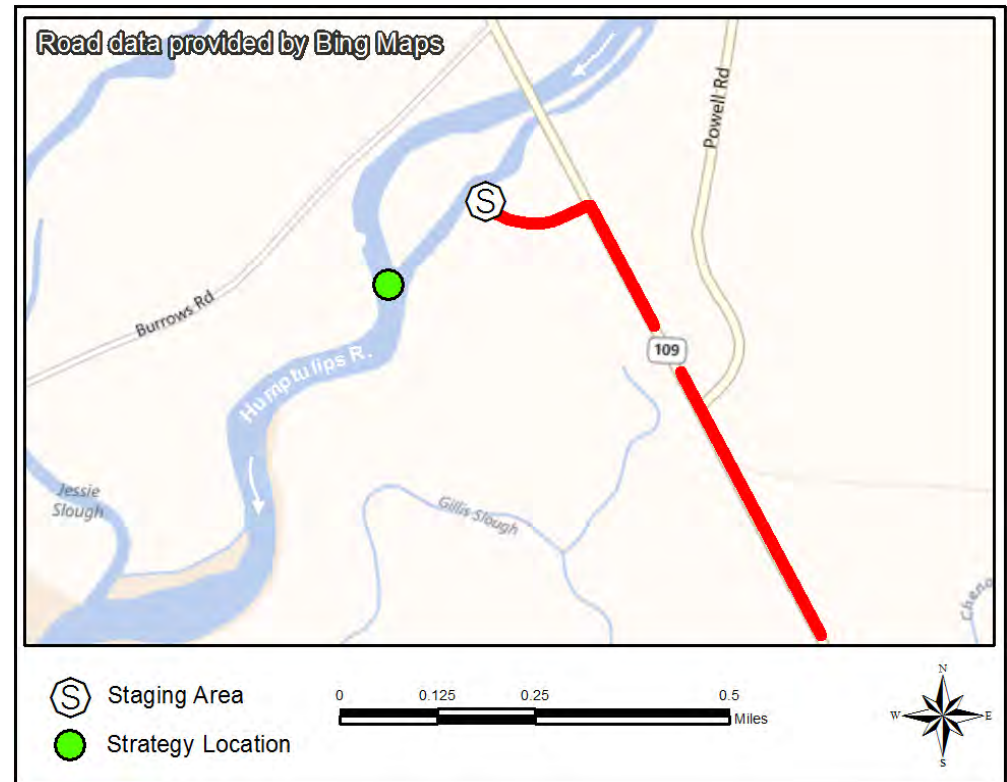
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





HMPR-0.75 Photo: Aerial photo on river right looking east and down towards the strategy location where the Humptulips River meets the river channel.



## SiteContact

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

## NearestAddress

Staging Area:  
1349 Highway 109  
Hoquiam, WA 98550

## DrivingDirections

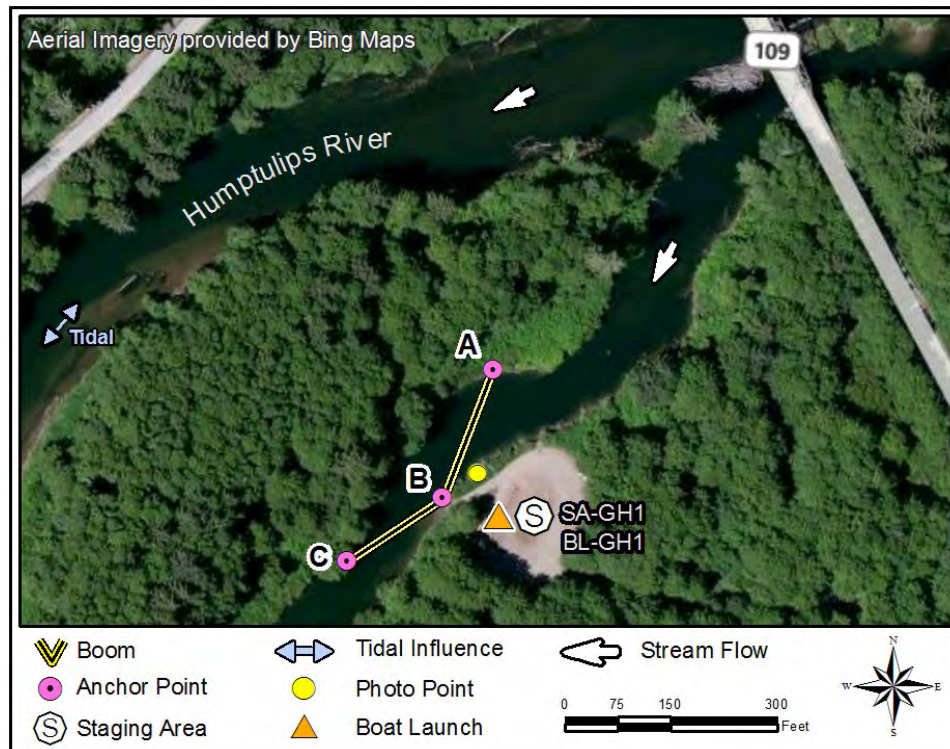
STAGING AREA & BOAT LAUNCH: (SA-1-GH & BL-1-GH)

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area adjacent to the river.

## North Bay - Humptulips River (WDFW Access)

HMPR-0.9

|                             |  |  |                          |
|-----------------------------|--|--|--------------------------|
| <b>Position - Location:</b> | 47.04938   | -124.04449   | Grays Harbor - North Bay |
| <b>Strategy Objective:</b>  | Collection   | Collect oil moving up or down the Humptulips River, channel right, downstream of Hwy 109 |                          |
| <b>Implementation:</b>      | Using work boat, deploy ~200ft of boom upstream from boat ramp at WDFW Water Access Point Morley (SA-1-GH / BL-1-GH) and secure to bank on right side of channel near Point A (~170ft upstream of boat ramp). Secure boom to shore at boat ramp on left side of channel near Point B. Deploy ~165ft of boom downstream from boat ramp and secure to right side of channel near Point C (~130ft downstream from boat ramp). Use anchors and lines to keep boom secure in channel. Use shoreside anchoring posts or trees to secure boom to river banks. Debris in river channel may limit the effectiveness of this strategy. |  |                          |
| <b>Staging Area:</b>        | On-Site:   | WDFW Water Access Point off Hwy 109 before Humptulips River Bridge (SA-1-GH)             |                          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Heavy Brush Along River Banks; Submerged Obstructions in River & Floating Debris   |  |                          |
| <b>Field Notes:</b>         | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle.  |  |                          |
| <b>Watercourse:</b>         | River - Humptulips River - Channel on River Left   |  |                          |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands   |  |                          |



### Recommended Equipment

|     |      |   |
|-----|------|---|
| 400 | Feet | Boom - B3 (River Boom) or equivalent          |
| 1   | Each | Workboat(s) - Airboat Recommended             |
| 9   | Each | Anchoring Post(s) - (shoreside)               |
| 2   | Each | Anchoring Post Driver(s)                      |
| 500 | Feet | Line - 3/8" poly line                         |
| 1   | Each | Heaving Line(s)                               |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats) |
| 1   | Each | Vac Truck(s)                                  |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





HMPR-0.9 Photo: At WDFW Water Access Point on Humptulips River, looking NNE and upstream on right side of channel towards Hwy 109 Bridge.



## SiteContact

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

## NearestAddress

1349 Washington 109  
Highway 109  
Hoquiam, WA 98550

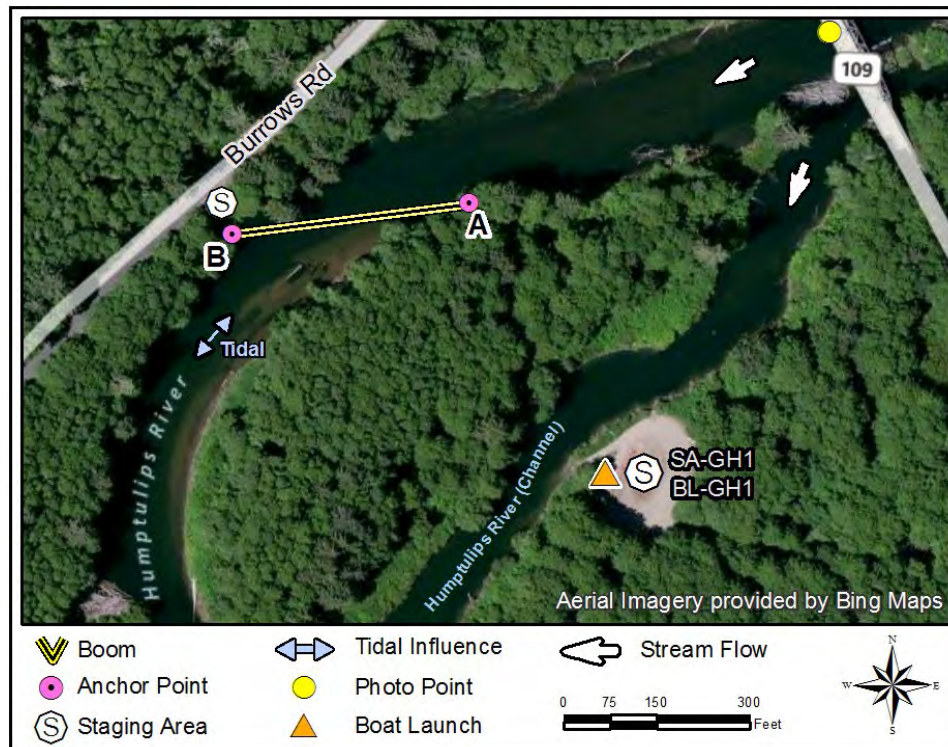
## DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area adjacent to the river.

# North Bay - Humptulips River (Downstream of Hwy 109 Bridge)

HMPR-0.95

|                             |  |  |   |
|-----------------------------|--|--|---|
| <b>Position - Location:</b> | 47.05041   | -124.04607   | Grays Harbor - North Bay  |
| <b>Strategy Objective:</b>  | Collection   |  | Collect oil on the Humptulips River moving downstream from the Hwy 109 Bridge |
| <b>Implementation:</b>      | Using workboat, transport 400ft boom fm WDFW boat ramp (SA-1-GH/BL-1-GH) downstream around south end of channel island & upriver ~1200ft to site. Secure boom end to bank on river left near Point A (N47.05042, W124.04541). Bring remaining end of boom downstream & across to river right, securing it to bank near Point B (~350ft downstream from Point A). Use anchoring systems to keep boom secure in river. Use shoreside anchoring posts or trees to secure boom to river banks. Small onsite staging area off Burrows Rd can be used for vac-truck or oil collection storage. Debris in river may limit the effectiveness of this strategy. |  |   |
| <b>Staging Area:</b>        | Off-Site:  | WDFW Water Access Point (SA-1-GH) and small pull-off on Burrows Rd (0.2 Miles SW of Hwy109 after bridge) |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Heavy Brush Along River Banks; Submerged Obstructions in River & Floating Debris   |  |   |
| <b>Field Notes:</b>         | This portion of the river is tidally influenced. Ensure boom ends are set above the highest high water marks on river banks during implementation. Boom angle may need to be adjusted during peak stream-flow periods in flood & ebb tidal cycle.  |  |   |
| <b>Watercourse:</b>         | River - Humptulips River   |  |   |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands   |  |   |



## Recommended Equipment

|     |      |   |
|-----|------|---|
| 400 | Feet | Boom - B3 (River Boom) or equivalent              |
| 1   | Each | Workboat(s) - Airboat Recommended                 |
| 7   | Each | Anchoring System(s) - (anchor, lines, floats)     |
| 6   | Each | Anchoring Post(s) - (shoreside)                   |
| 2   | Each | Anchoring Post Driver(s)                          |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom) |
| 2   | Each | Heaving Line(s)                                   |
| 1   | Each | Vac Truck(s)                                      |

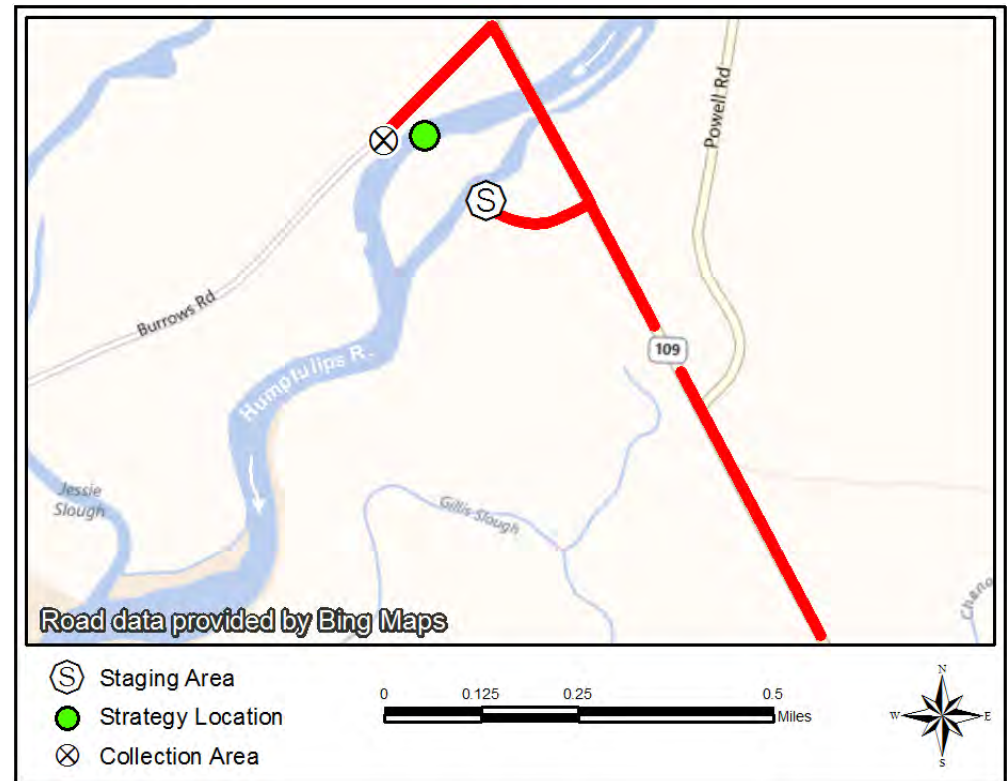
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





HMPR-0.95 Photo: Looking WSW and downstream on the Humptulips River from the Hwy 109 bridge towards the strategy location.



## SiteContact

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

## NearestAddress

Staging Area:  
1349 Highway 109  
Hoquiam, WA 98550

## DrivingDirections

### STAGING AREA & BOAT LAUNCH: (SA-1-GH & BL-1-GH)

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area adjacent to the river.

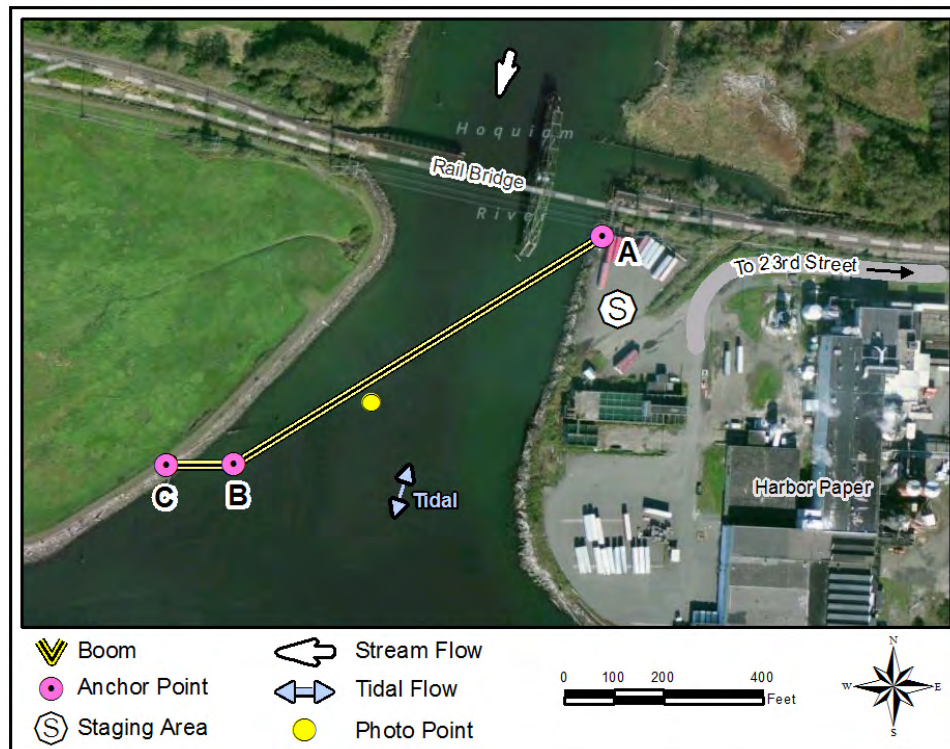
### Collection Area off Burrows Road:

- ① Take first left after crossing the Hwy 109 bridge over the Humptulips River
- ② 0.2 miles down on left is small pullout that can be used for staging a vac-truck or oil storage

# Hoquiam River (Mouth)

HOQR-0.0

|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Position - Location:</b> | 46.97087  | -123.8775   | Hoquiam   |
| <b>Strategy Objective:</b>  | Exclusion, Collection   |   | Keep oil out of Hoquiam River; Collect oil entering river from Grays Harbor (Hoquiam Reach) |
| <b>Implementation:</b>      | On east side of river (river left) immediately downstream of railroad bridge, secure end of 1000ft length of boom to bank near Point A (back lot of Harbor Paper near N46.97163, W123.875996). Use workboat to tow boom downstream and across to river right, around and through pilings, to shore near Point C (N46.97027, W123.87942). Secure boom to piling near Point B (~130ft away from Point C). Use additional lines and anchoring systems to keep boom secure in mouth of river. Use shoreside anchoring posts or existing structures to secure boom ends to shore. Use vacuum truck on river left (near Point A) to collect oil on incoming tide. |   |   |
| <b>Staging Area:</b>        | On-Site:  | Stage on east side of river in back lot of Harbor Paper facility near railroad bridge |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Rocky River Banks; Rail & Bridge Hazard; may have Submerged Pilings near shore at high tide  |   |   |
| <b>Field Notes:</b>         | Best implemented during slack tide. Notify Harbor Paper before staging & strategy deployment; Call (888) 676-6528 x5201. Launch workboat from 28th Street Boat Ramp/Hoquiam (BL-2-GH). Tidally influenced area - ensure boom set above high water marks.  |   |   |
| <b>Watercourse:</b>         | River - Hoquiam River   |   |   |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |   |   |



## Recommended Equipment

|      |      |  |
|------|------|--|
| 1000 | Feet | Boom - B3 (Contractor Boom) or equivalent                |
| 1    | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8    | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6    | Each | Anchoring Post(s) - (shoreside)                          |
| 2    | Each | Anchoring Post Driver(s)                                 |
| 1    | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2    | Each | Heaving Line(s)  |
| 1    | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





HOQR-0.0 Photo: On the Hoquiam River (near the mouth) south of the railroad bridge, looking downstream towards Points B & C on river right.



## SiteContact

Harbor Paper  
(888) 676-6528 x5201

## NearestAddress

801 23rd Street  
Hoquiam, WA 98550

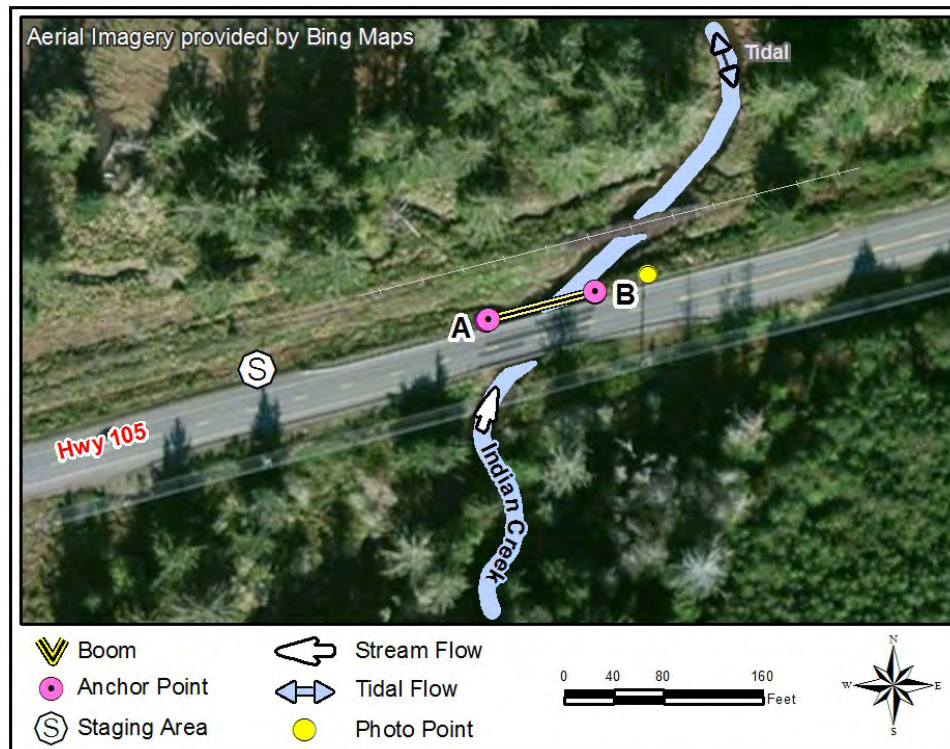
## DrivingDirections

- ① Cross over Wishkah River Bridge in Aberdeen and continue west (Hwy 12 & Hwy 101 merge together)
- ② After ~3.3 Miles turn left onto 22nd Street
- ③ After ~0.2 Miles turn left onto Bay Avenue
- ④ After ~350ft turn right onto 23rd Street
- ⑤ Take first right after railroad tracks. Follow road back towards river.  
Notify Harbor Paper and then stage in back lot of facility near railroad bridge

## South Channel - Indian Creek at Hwy 105 (MP 43)

INDC-0.1

|                             |  |   |  |
|-----------------------------|--|---|--|
| <b>Position - Location:</b> | 46.93594   | -123.897245   | Grays Harbor - South Channel   |
| <b>Strategy Objective:</b>  | Exclusion  |   | Prevent oil from migrating past Hwy 105 Bridge on Indian Creek during incoming tide. |
| <b>Implementation:</b>      | Secure end of 100ft length of boom to bank near northwest corner of Hwy 105 Bridge over Indian Creek at Point A (N46.93591, W123.89747). Use heaving line and 200ft length of line to transport remaining end of boom across to creek right (east side of creek) and secure to shore near Point B (N46.93598, W123.89713). Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. Back hard boom with sorbent and snare booms as needed for added protection. |   |  |
| <b>Staging Area:</b>        | On-Site:   | Stage on shoulder, west side of bridge past end of guardrail. |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Debris & Heavy Brush Along Creek Banks, Muddy & Unstable Creek Banks  |   |  |
| <b>Field Notes:</b>         | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Temporary use of roadway (shoulder) may be required to implement this strategy; follow WADOT work zone traffic control guidelines.   |   |  |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Indian Creek  |   |  |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl   |   |  |



### Recommended Equipment

|     |      |                                      |
|-----|------|--------------------------------------|
| 100 | Feet | Boom - B3 (River Boom) or equivalent |
| 100 | Feet | Boom - Sorbent                       |
| 100 | Feet | Boom - Snare (Pom-Poms)              |
| 8   | Each | Anchoring Post(s) - (shoreside)      |
| 2   | Each | Anchoring Post Driver(s)             |
| 1   | Each | Heaving Line(s)                      |
| 200 | Feet | Line - 1/2" poly line                |
|     |      |                                      |

### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |





INDC-0.1 Photo: On creek right of Indian Creek near NE corner of Hwy 105 Bridge, looking across north side of bridge to creek left (Anchor Point A). Overgrown vegetation and very muddy creek banks.

## SiteContact

No Information

## NearestAddress

Hwy 105 - Mile Post 43  
West of Aberdeen



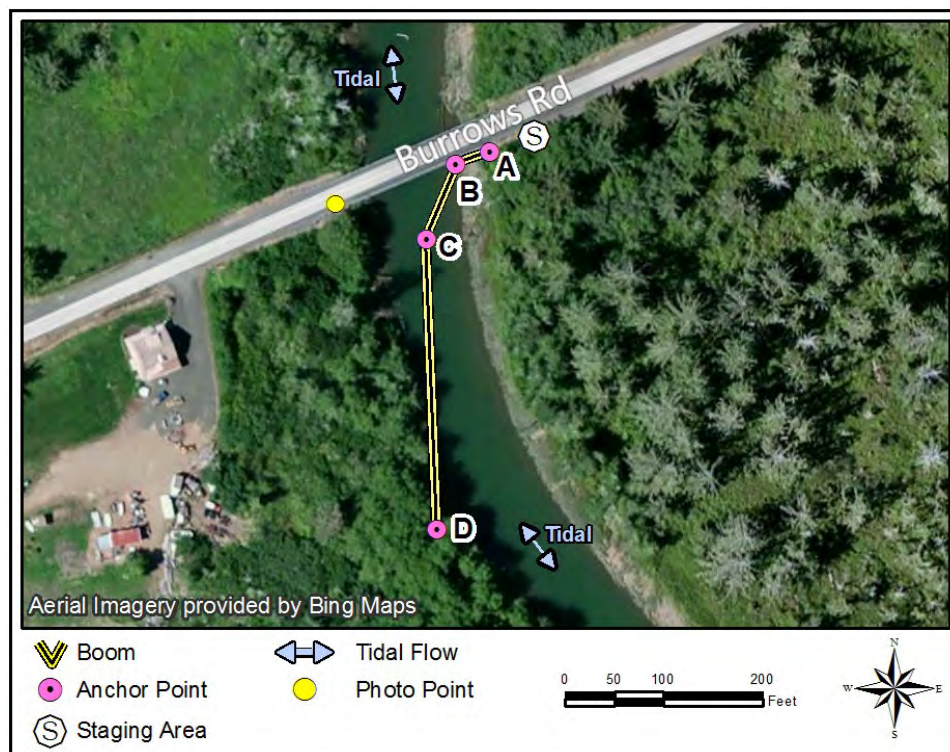
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 5.8 miles, pulling over to the shoulder just after crossing bridge over creek near Hwy 105 MP43. Stage on shoulder of highway, immediately west of guardrail on west side of creek (creek left). Ensure WADOT work zone traffic control guidelines are followed.

## North Bay - Jessie Slough

JESS-0.35

|                             |   |
|-----------------------------|---|
| <b>Position - Location:</b> | 47.04525   -124.056861   Grays Harbor - North Bay   |
| <b>Strategy Objective:</b>  | Exclusion, Collection      Keep oil out of Jessie Slough; Collect oil moving up into the slough from North Bay  |
| <b>Implementation:</b>      | Secure end of 400ft length of boom to shore on slough left, downstream/eastern side of Burrows Road Bridge over Jessie Slough (Point A). Use hand-launch workboat to guide full extent of boom out fm shore & downstream to the western side of Jessie Slough (Point D) and secure to shore. Then secure boom to bridge at Point B (~40ft from Point A) and use "bank-to-bank" line system or anchor to keep boom in place near Point C (~80ft from Point B & 65ft downstream of bridge). Use additional lines and anchors to keep boom secure in slough. Use shoreside anchoring posts, the bridge, or trees to secure boom ends to shore. |
| <b>Staging Area:</b>        | On-Site:      Stage along sholder of Burrows Road; small pulloff area near SE corner of bridge.   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Roadway Hazard; Debris & Heavy Brush Along Banks of Slough   |
| <b>Field Notes:</b>         | Tidally influenced location - ensure boom ends are set above the highest high water marks along shore. Temporary use of roadway (one lane) may be required to implement strategy; at minimum follow WADOT work zone traffic control guidelines.   |
| <b>Watercourse:</b>         | Slough - Jessie Slough  |
| <b>Resources at Risk:</b>   | Salmon, Steelhead, Waterfowl, and Wetlands  |



### Recommended Equipment

|     |      |   |
|-----|------|---|
| 400 | Feet | Boom - B3 (River Boom) or equivalent          |
| 1   | Each | Workboat(s) - (hand-launch)                   |
| 6   | Each | Anchoring Post(s) - (shoreside)               |
| 2   | Each | Anchoring Post Driver(s)                      |
| 500 | Feet | Line - 3/8" poly line                         |
| 1   | Each | Heaving Line(s)                               |
| 3   | Each | Anchoring System(s) - (anchor, lines, floats) |
| 1   | Each | Vac Truck(s)                                  |

### Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





JESS-0.35 Photo: At southwest corner of Burrows Road Bridge over Jessie Slough (downstream side of bridge on slough right) looking ENE and across to eastern side of slough (slough left).

## SiteContact

No Information

## NearestAddress

133 Burrows Rd  
Hoquiam, WA 98550



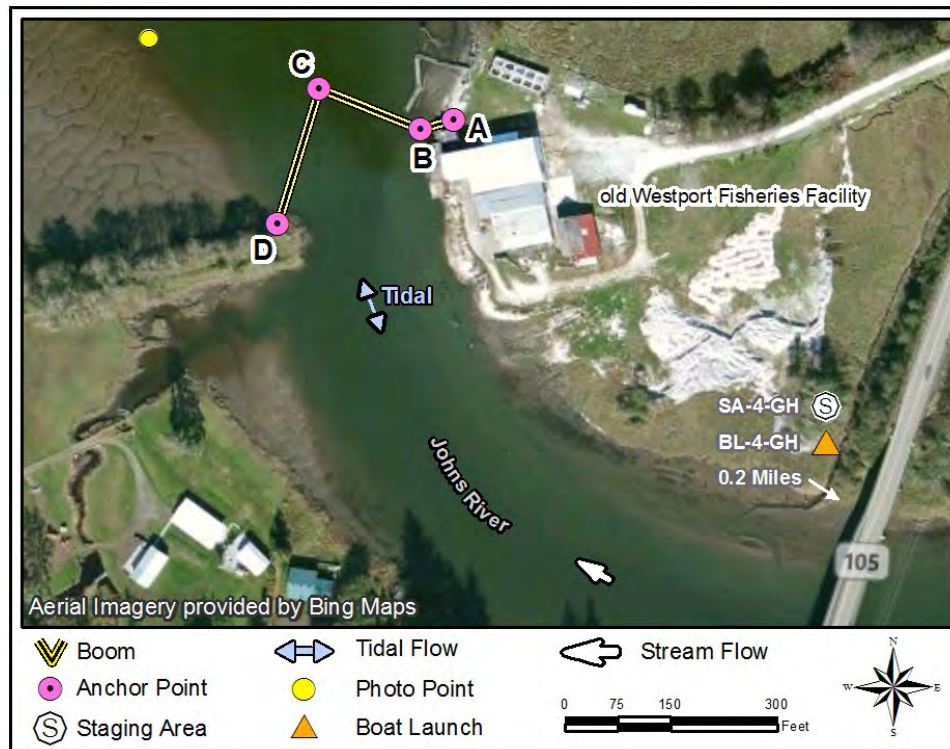
## DrivingDirections

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.4 Miles
- ⑤ After crossing the Humptulips River Bridge, turn left onto Burrows Rd (first left after bridge)
- ⑥ Travel on Burrows Rd for 0.8 Miles (first bridge); stage at small pulloff area near SE corner of bridge

# Markham - Johns River (Downstream of Hwy 105 Bridge)

JHNR-0.0a

|                             |  |   |         |
|-----------------------------|--|---|---------|
| <b>Position - Location:</b> | 46.90176   | -124.002202   | Markham |
| <b>Strategy Objective:</b>  | Exclusion  | Prevent oil from entering Johns River during incoming tide.   |         |
| <b>Implementation:</b>      | On east side of mouth of Johns River (river right), secure end of 400ft length of boom to inside pocket of dock at old Westport Fisheries facility near Point A (N46.90182, W124.00155). Extend boom west ~50ft, along north side of dock, securing it to corner of dock near Point B (N46.90178, W124.00174). Use workboat to tow boom out from Point B across mouth of river, securing the remaining boom end near Point D (N46.90139, W124.00252). Form chevron by pulling tension on boom (~150ft from Point B, ~200ft from Point D), anchoring it in mid-channel near Point C (N46.90192, W124.00232; ~150ft north of small peninsula on river left). |   |         |
| <b>Staging Area:</b>        | Off-Site:  | Stage at WDFW River Access Point for Johns River (SA-4-GH). Use boat launch at same location (BL-4-GH). |         |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; muddy banks with overgrown vegetation or debris; Unstable Dock  |   |         |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Use additional anchoring systems to keep boom secure in river. Use anchoring posts or existing structures to secure boom to banks.  |   |         |
| <b>Watercourse:</b>         | River (with tidal influence) - Johns River   |   |         |
| <b>Resources at Risk:</b>   | Salt Marsh, Shorebirds, Waterfowl, and Salmon  |   |         |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 400 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 4   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 200 | Feet | Line - 1/2" poly line                                    |

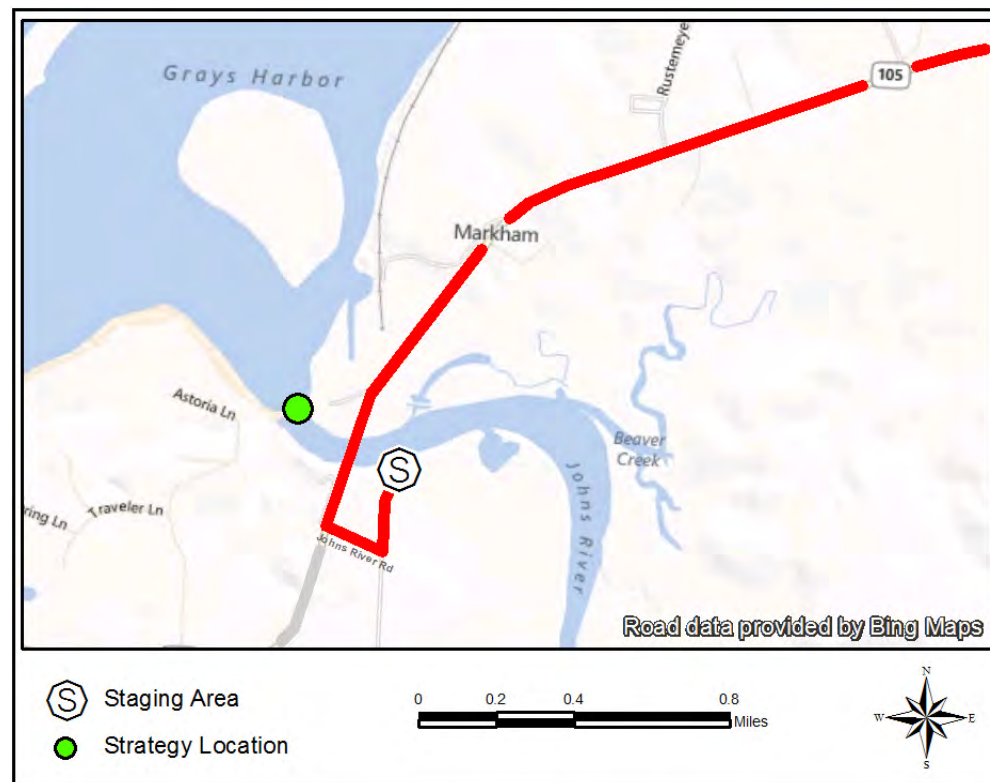
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





JHNR-0.0a Photo: On Grays Harbor looking SSE towards mouth of Johns River and old Westport Fisheries facility on river right (left side of photo).



## SiteContact

No Information

## NearestAddress

1504 SR 105  
Aberdeen, WA 98520

## DrivingDirections

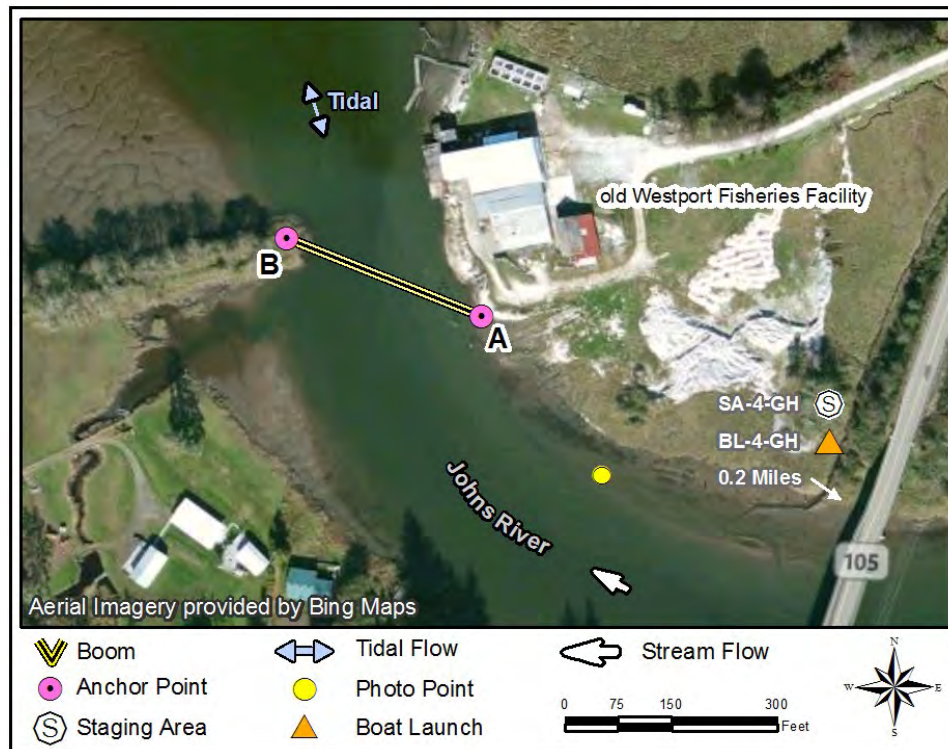
TO STAGING AREA & BOAT LAUNCH: (SA-4-GH & BL-4-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 11.5 miles, turning left onto Johns River Road, ~0.2 miles after the bridge over Johns River
- ⑤ Travel on Johns River Road ~0.1 miles, staying left at the "Y" and turning left onto Game Farm Road after the "Y" intersection.
- ⑥ Travel on Game Farm Road ~0.1 miles, turning right into WDFW River access point for Johns River. Stage equipment in parking area.

# Markham - Johns River (Downstream of Hwy 105 Bridge)

JHNR-0.0b

|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Position - Location:</b> | 46.90121  | -124.001906   | Markham   |
| <b>Strategy Objective:</b>  | Exclusion   |   | Prevent oil from migrating up Johns River during incoming tide. |
| <b>Implementation:</b>      | On west side of Johns River (river right), near SW corner of old Westport Fisheries facility (~150ft upstream of small peninsula on river left), anchor end of 300ft length of boom to shore near Point A (N46.90107, W124.00135). Use workboat to tow boom out across river and downstream, anchoring boom end on river left near Point B (N46.90134, W124.00246; east end of small peninsula). Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom ends to shore above high water marks. |   |   |
| <b>Staging Area:</b>        | Off-Site:   | Stage at WDFW River Access Point for Johns River (SA-4-GH). Use boat launch at same location (BL-4-GH). |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; muddy banks with overgrown vegetation or debris  |   |   |
| <b>Field Notes:</b>         | Best implemented at slack high tide.  |   |   |
| <b>Watercourse:</b>         | River (with tidal influence) - Johns River  |   |   |
| <b>Resources at Risk:</b>   | Salt Marsh, Shorebirds, Waterfowl, and Salmon   |   |   |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 300 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 3   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
|     |      |  |

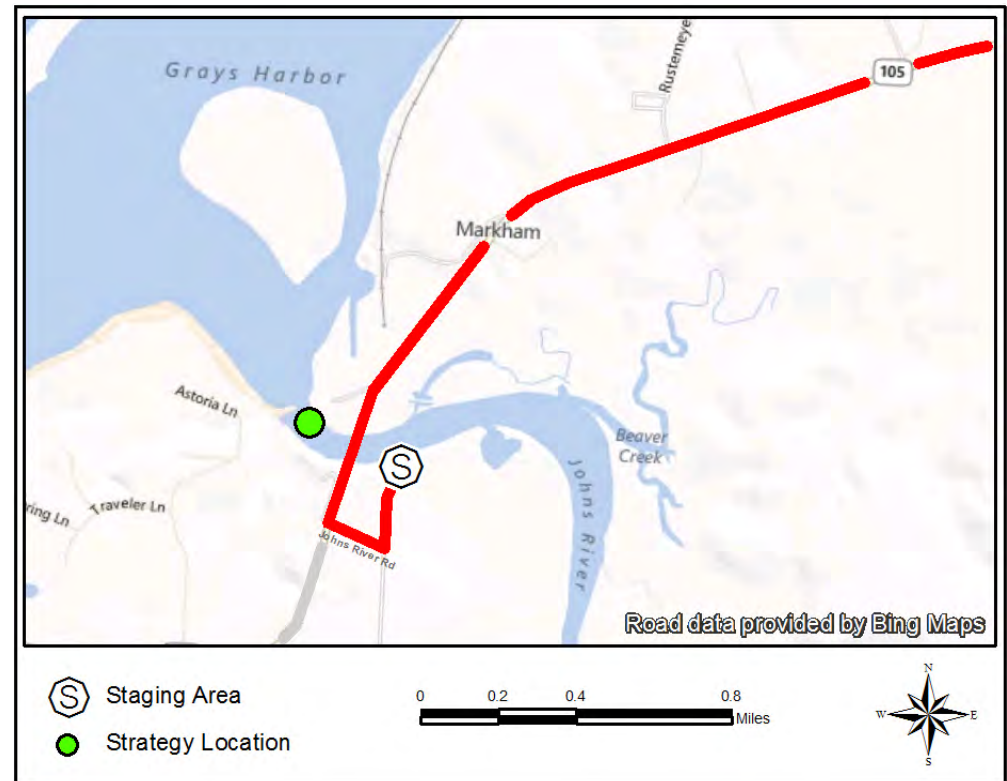
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 3 | Laborer(s)       |
| 1 | Boat Operator(s) |





JHNR-0.0b Photo: On Johns River looking downstream (NNW) towards mouth of river and old Westport Fisheries facility on river right (right side of photo).



## SiteContact

No Information

## NearestAddress

1504 SR 105  
Aberdeen, WA 98520

## DrivingDirections

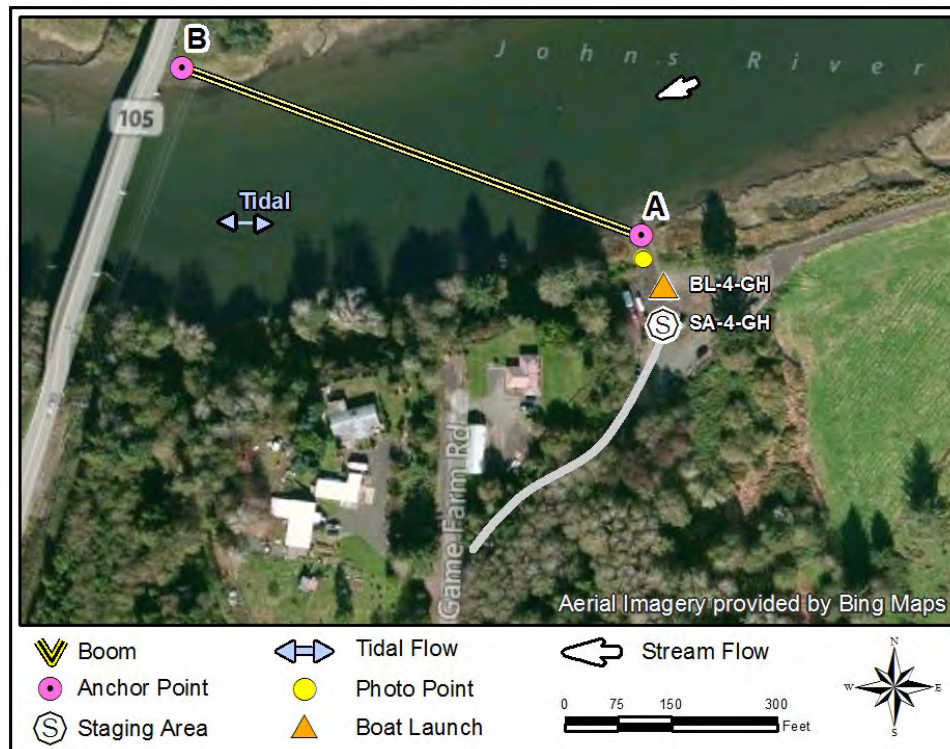
TO STAGING AREA & BOAT LAUNCH: (SA-4-GH & BL-4-GH)

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 11.5 miles, turning left onto Johns River Road, ~0.2 miles after the bridge over Johns River
- ⑤ Travel on Johns River Road ~0.1 miles, staying left at the "Y" and turning left onto Game Farm Road after the "Y" intersection.
- ⑥ Travel on Game Farm Road ~0.1 miles, turning right into WDFW River access point for Johns River. Stage equipment in parking area.

# Markham - Johns River (Upstream of Hwy 105 Bridge from Boat Launch)

JHNR-0.3

|                             |   |   |  |
|-----------------------------|---|---|--|
| <b>Position - Location:</b> | 46.90008  | -123.997601   | Markham  |
| <b>Strategy Objective:</b>  | Exclusion, Collection   |   | Prevent oil from migrating up Wishkah River on incoming tide; collect any oil moving upstream. |
| <b>Implementation:</b>      | On south side of Johns River (river left) on downstream side of boat ramp at WDFW River Access (BL-4-GH), anchor end of 700ft length of boom to shore near Point A (N46.89983, W123.99628). Use workboat to tow remaining boom end out across river and downstream, anchoring it on river right on NE side (upstream side) of the Hwy105 Bridge near Point B (N46.90040, W123.99891). Use anchoring systems to keep boom secure in river. Use shoreside anchoring posts or existing structures to secure boom to river banks above high water marks. Use vac truck at boat ramp (Point A) to recover collected oil. |   |  |
| <b>Staging Area:</b>        | On-Site:  | Stage at WDFW River Access Point for Johns River (SA-4-GH). Use boat launch at same location (BL-4-GH). |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; muddy banks with overgrown vegetation or debris  |   |  |
| <b>Field Notes:</b>         | Best implemented at slack high tide moving towards low.   |   |  |
| <b>Watercourse:</b>         | River (with tidal influence) - Johns River  |   |  |
| <b>Resources at Risk:</b>   | Salt Marsh,Shorebirds, Waterfowl, and Salmon  |   |  |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 700 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 9   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 2   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s)   |

## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |



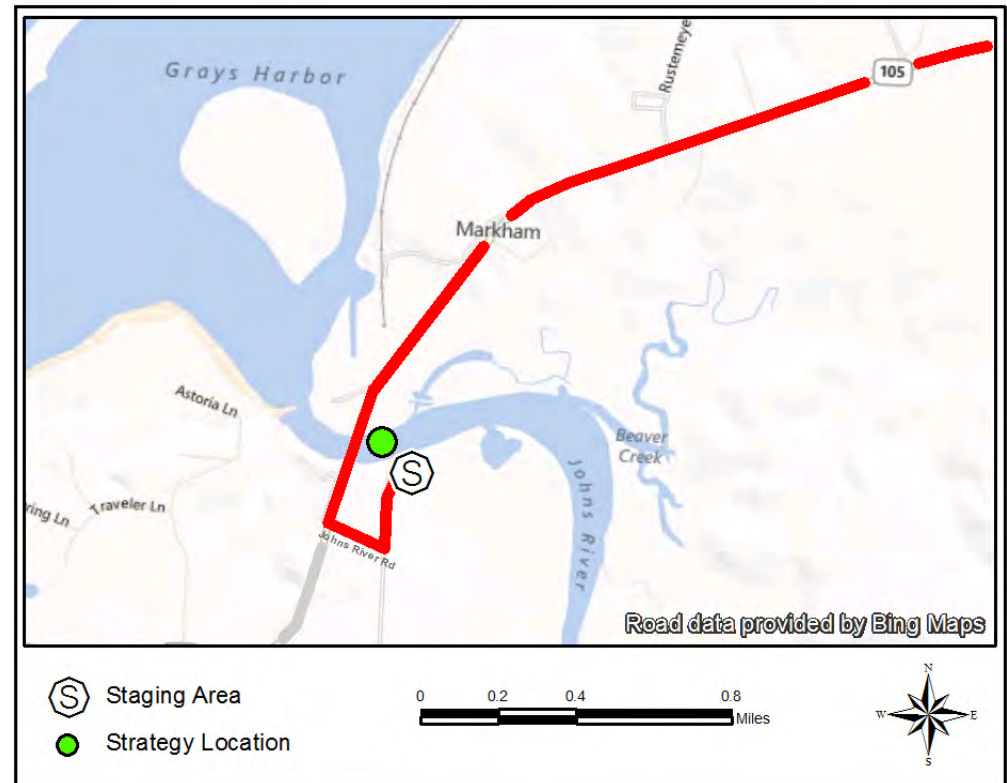
JHNR-0.3 Photo: On river left of Johns River at Anchor Point "A" on downstream side of boat ramp at WDFW River Access Point for Johns River, looking downstream towards Hwy109 Bridge.

### SiteContact

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

### NearestAddress

24 Game Farm Road  
Aberdeen, WA 98520



### DrivingDirections

TO STAGING AREA & BOAT LAUNCH: (SA-4-GH & BL-4-GH)

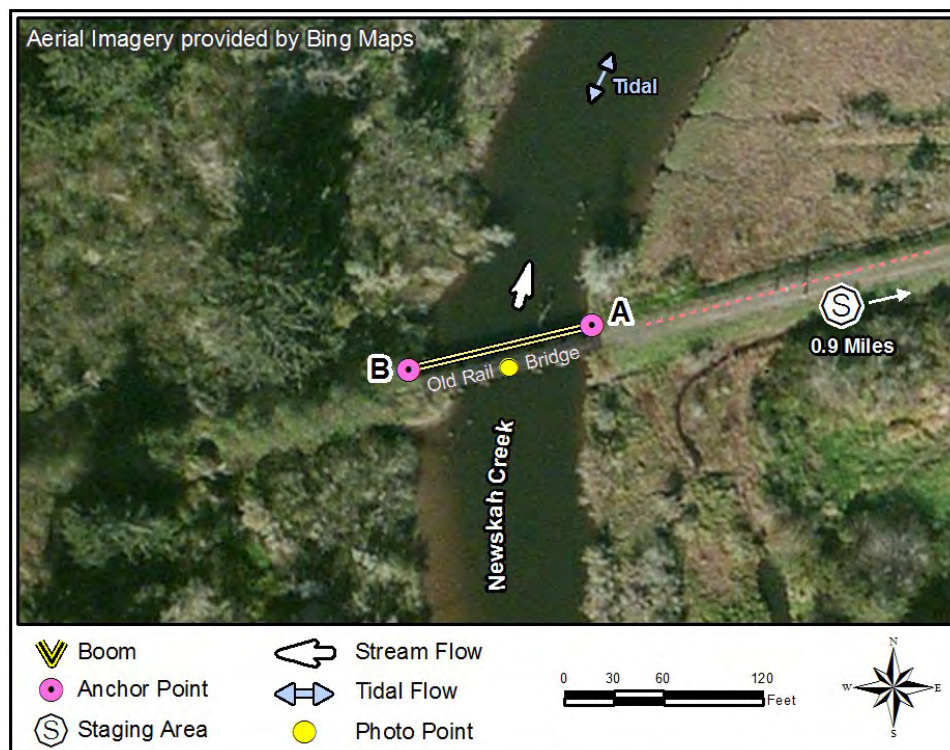
- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 11.5 miles, turning left onto Johns River Road, ~0.2 miles after the bridge over Johns River
- ⑤ Travel on Johns River Road ~0.1 miles, staying left at the "Y" and turning left onto Game Farm Road after the "Y" intersection.
- ⑥ Travel on Game Farm Road ~0.1 miles, turning right into WDFW River access point for Johns River. Stage equipment in parking area.



## South Aberdeen - Newskah Creek

NSKC-0.2

|                             |   |  |   |
|-----------------------------|---|--|---|
| <b>Position - Location:</b> | 46.95015  | -123.851573  | Aberdeen  |
| <b>Strategy Objective:</b>  | Exclusion   |  | Keep oil out of Newskah Creek upstream of old railroad bridge |
| <b>Implementation:</b>      | Secure end of ~150ft length of boom to bank near northeast corner of old railroad bridge over Newskah Creek at Point A (N46.95022, W123.85137). Place plywood sheets across deck of old rail bridge so the opposite side of the creek can be safely accessed. Use line to bring remaining end of boom across creek, securing it near Point B (N46.95013, W123.85181). Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. For added protection, deploy multiple lines of sorbent and snare boom across creek, in front of and behind hard boom. |  |   |
| <b>Staging Area:</b>        | Off-Site:   | Use Bishop Athletic Complex Parking Lot (SA-B-GH), ~0.5 miles to the SW from strategy site |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Debris & Brush Along Creek Banks, Muddy & Unstable Creek Banks; Old Railroad Bridge  |  |   |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Access site through Bishop Athletic Complex in South Aberdeen; call Aberdeen Parks (360-537-3229) or Aberdeen Fire Department (360-533-8765) if gate is locked. Transport equipment to site using ATV and trailer.   |  |   |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Newskah Creek  |  |   |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl  |  |   |



### Recommended Equipment

|     |      |  |
|-----|------|--|
| 150 | Feet | Boom - B3 (River Boom) or equivalent                 |
| 200 | Feet | Boom - Sorbent                                       |
| 200 | Feet | Boom - Snare (Pom-Poms)                              |
| 10  | Each | Anchoring Post(s) - (shoreside) and (2) Post Drivers |
| 2   | Each | Heaving Line(s)                                      |
| 200 | Feet | Line - 1/2" poly line                                |
| 3   | Each | ATV (with trailer)                                   |
| 25  | Each | Plywood sheets (4ft x 4ft)                           |

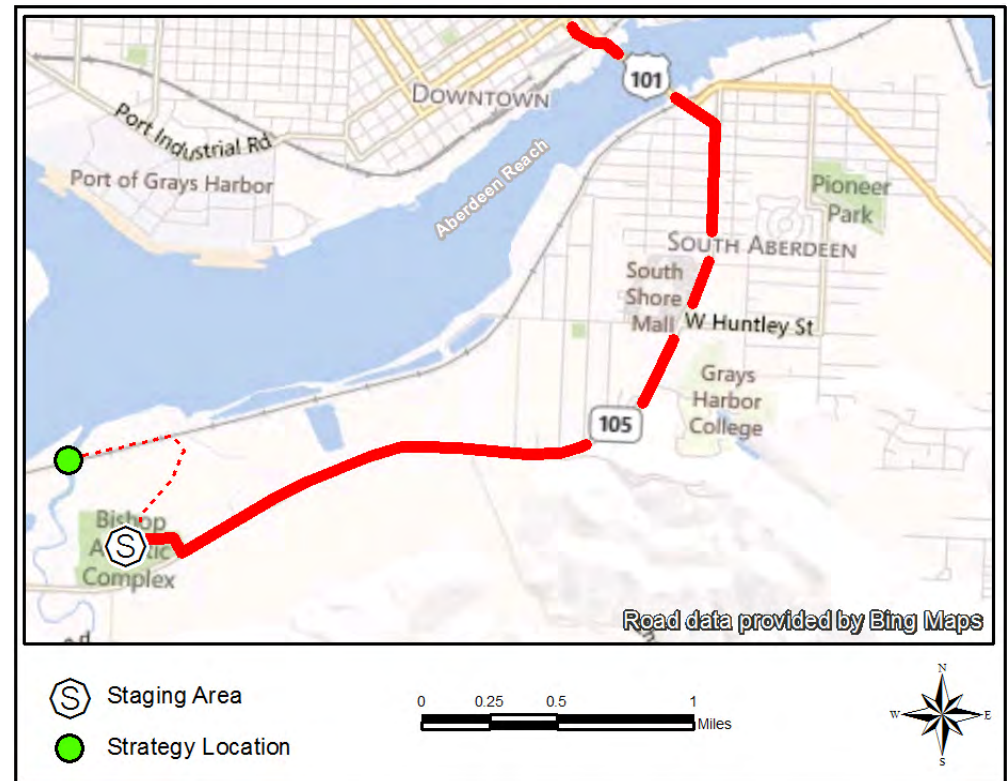
### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |





NSKC-0.2 Photo: At strategy location on Newkah Creek looking downstream from the old railroad bridge.



## SiteContact

City of Aberdeen Parks Department  
200 E Market Street  
Aberdeen, WA 98520  
Ph: (360) 537-3229  
krharris@aberdeenwa.gov

## NearestAddress

144 State Route 105  
Aberdeen, WA 98520

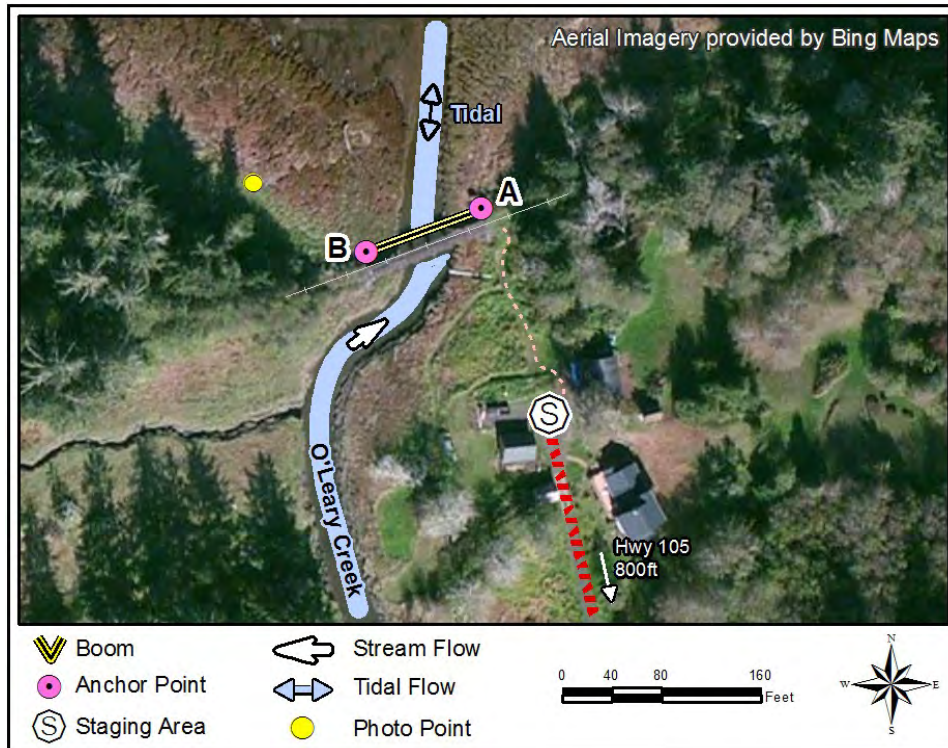
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 3.0 miles (~0.3 miles west of Hwy 105 MP46), turning right into drive leading to Bishop Athletic Complex. Coordinate use of parking lot for staging by contacting the Aberdeen Parks Department at (360) 537-3229 or (after hours) the Aberdeen Fire Department through Grays Harbor County Dispatch at (360) 533-8765.
- ⑤ Use ATV and trailer to transport equipment to strategy location (0.9 miles NW) using the trail NE of the parking lot, adjacent to the baseball field fence. Trail tracks to the NE for ~0.5 miles but turns west immediately before the walking bridge (over Charley Creek) and continues on to Newkah Creek.

# South Arbor - O'Leary Creek (Mouth)

OLRC-0.0

|                             |   |   |  |
|-----------------------------|---|---|--|
| <b>Position - Location:</b> | 46.92098  | -123.957861   | Grays Harbor - South Channel - South Arbor   |
| <b>Strategy Objective:</b>  | Exclusion   |   | Prevent oil from migrating past old railroad bridge on O'Leary Creek during incoming tide. |
| <b>Implementation:</b>      | Secure end of 100ft length of boom to bank on creek right near northeast corner of old railroad bridge over O'Leary Creek at Point A (N46.92107, W123.95775). Use old railroad bridge to access creek left (use caution) and pull remaining boom end across to west side of creek (creek left) using line. Secure boom end to shore near Point B (N46.92096, W123.95812) on north side of bridge. Deploy multiple lines of sorbent and snare booms on upstream and downstream sides of the bridge for added protection. Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. |   |  |
| <b>Staging Area:</b>        | On-Site:  | Coordinate with Property Owner on use of home parking area for staging (as close to old railroad bridge as possible). |  |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Bridge Crossing Hazard; Brush Along Creek Banks, Muddy & Unstable Creek Banks  |   |  |
| <b>Field Notes:</b>         | Private Property - Check with property owner before implementation. Tidally influenced location; ensure boom ends are set above the highest high water marks on creek banks.  |   |  |
| <b>Watercourse:</b>         | Creek (with tidal influence) - O'Leary Creek  |   |  |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl  |   |  |



| Recommended Equipment |      |                                      |
|-----------------------|------|--------------------------------------|
| 100                   | Feet | Boom - B3 (River Boom) or equivalent |
| 200                   | Feet | Boom - Sorbent                       |
| 200                   | Feet | Boom - Snare (Pom-Poms)              |
| 12                    | Each | Anchoring Post(s) - (shoreside)      |
| 2                     | Each | Anchoring Post Driver(s)             |
| 2                     | Each | Heaving Line(s)                      |
| 200                   | Feet | Line - 1/2" poly line                |
|                       |      |                                      |

| Recommended Personnel |               |
|-----------------------|---------------|
| 1                     | Supervisor(s) |
| 3                     | Laborer(s)    |
|                       |               |





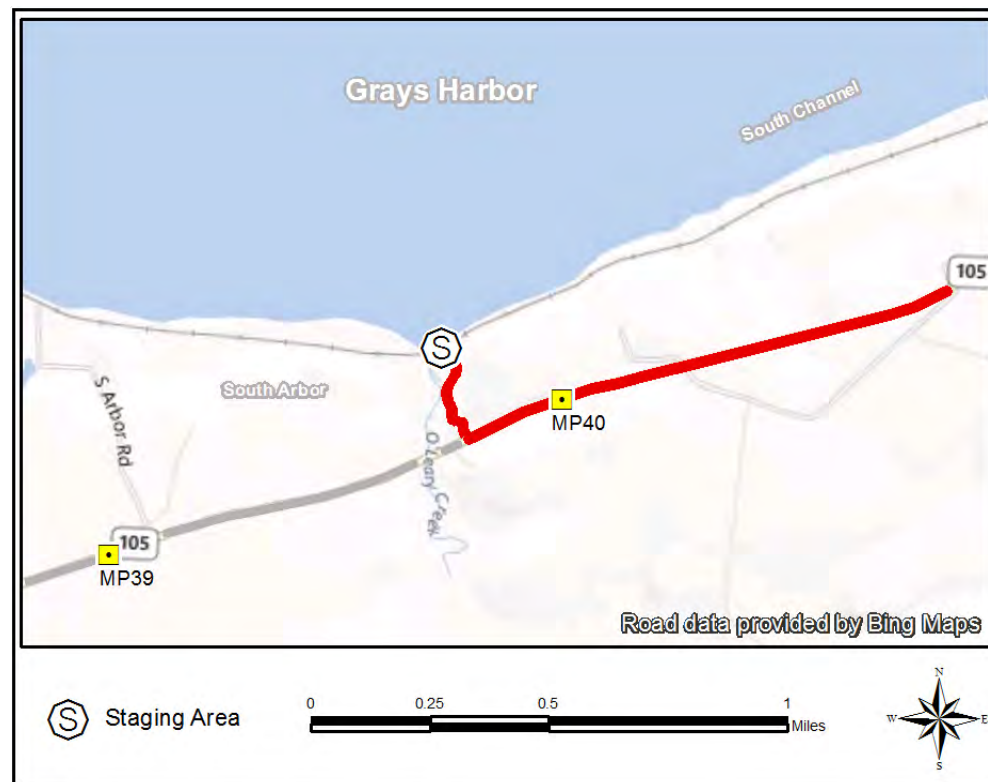
OLRC-0.0 Photo: On creek left of O'Leary Creek downstream of old railroad bridge, looking upstream and across to creek left and north side of bridge. Very muddy creek banks.

## SiteContact

Private Property Owner  
(360) 648-2476  
rd@olearycreek.com  
ldotorg@olearycreek.com

## NearestAddress

1128 State Route 105  
Aberdeen, WA 98520



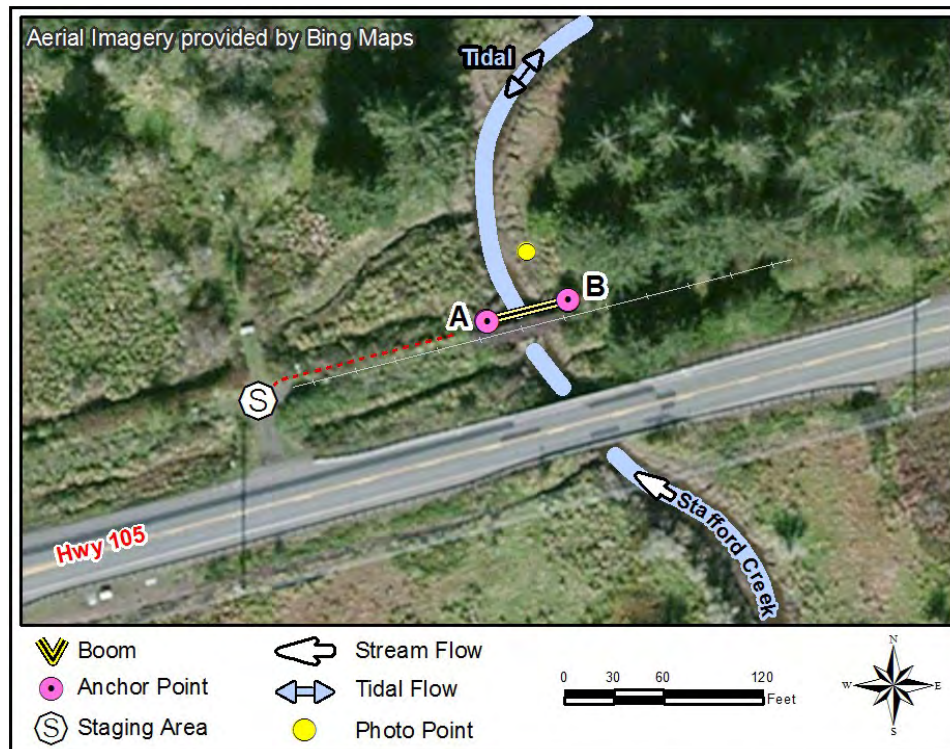
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 8.8 miles turning right onto private roadway ~0.2 miles past Hwy 105 MP40
- ⑤ Follow private drive north for 800ft and coordinate staging and boom deployment with property owner. Trail from home leads ~150ft north to old railroad bridge on creek right.

## South Channel - Stafford Creek at Hwy 105 (~MP 42.5)

STFC-0.1

|                             |  |  |   |
|-----------------------------|--|--|---|
| <b>Position - Location:</b> | 46.93374   | -123.908232  | Grays Harbor - South Channel  |
| <b>Strategy Objective:</b>  | Exclusion  |  | Prevent oil from migrating past old railroad bridge on Stafford Creek during incoming tide. |
| <b>Implementation:</b>      | Secure end of 50ft length of boom to bank near northwest corner of old railroad bridge (downstream from Hwy 105 Bridge) over Stafford Creek at Point A (N46.93375, W123.90836). Use heaving line and 200ft length of line to transport remaining end of boom across to creek right (east side of creek) and secure to shore near Point B (N46.93379, W123.90817). Use shoreside anchoring posts, the bridge, or trees to secure boom ends to creek banks. Back hard boom with sorbent and snare booms as needed for added protection. Use caution if transiting the old railroad bridge for access to river right. |  |   |
| <b>Staging Area:</b>        | On-Site:   | Stage in old dirt/gravel driveway (off highway shoulder) on west side of bridge past end of guardrail. |   |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard; Bridge Crossing Hazard; Brush Along Creek Banks, Muddy & Unstable Creek Banks   |  |   |
| <b>Field Notes:</b>         | Tidally influenced location - ensure boom ends are set above the highest high water marks on creek banks. Follow WADOT work zone traffic control guidelines if staging any equipment (including vehicles) on the side of Hwy 105.  |  |   |
| <b>Watercourse:</b>         | Creek (with tidal influence) - Stafford Creek  |  |   |
| <b>Resources at Risk:</b>   | Wetlands, Sea Run Cutthroat, Salmon, and Waterfowl   |  |   |



### Recommended Equipment

|     |      |   |
|-----|------|---|
| 50  | Feet | Boom - B3 (River Boom) or equivalent            |
| 100 | Feet | Boom - Sorbent                                  |
| 100 | Feet | Boom - Snare (Pom-Poms)                         |
| 8   | Each | Anchoring Post(s) - (shoreside)                 |
| 2   | Each | Anchoring Post Driver(s)                        |
| 2   | Each | Heaving Line(s)                                 |
| 200 | Feet | Line - 1/2" poly line                           |
| 1   | Each | Machete(s) - (or other vegetation cutting tool) |

### Recommended Personnel

|   |               |
|---|---------------|
| 1 | Supervisor(s) |
| 3 | Laborer(s)    |
|   |               |





STFC-0.1 Photo: On creek right of Stafford Creek downstream of old railroad bridge, looking across to creek left and north side of bridge. Very muddy creek banks.

## SiteContact

No Information

## NearestAddress

Hwy 105 - Mile Post 42.5  
West of Aberdeen



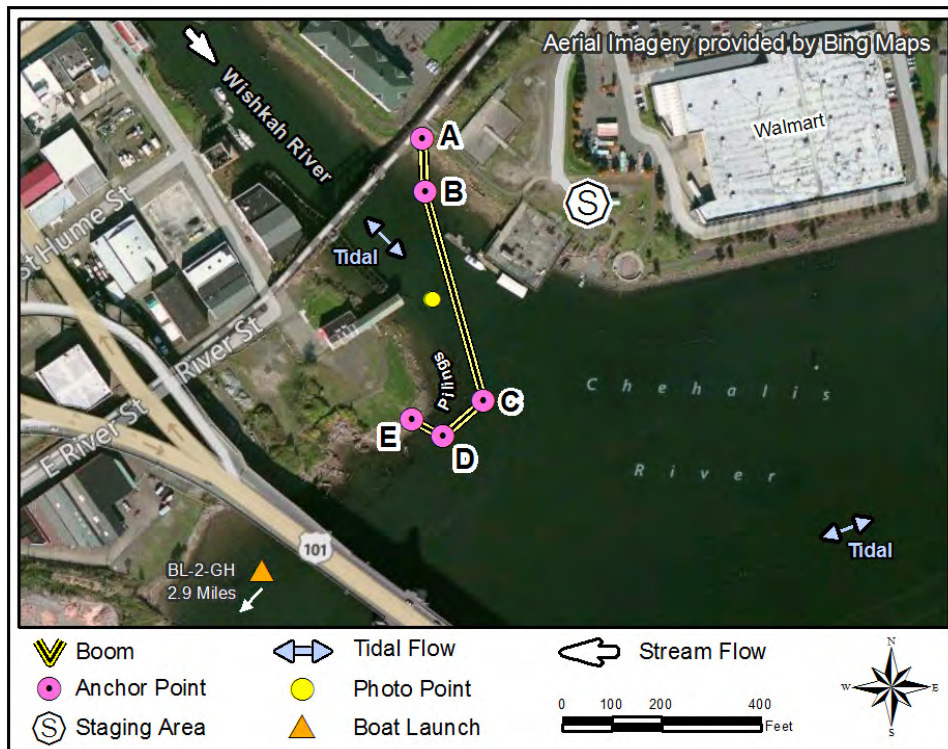
## DrivingDirections

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 6.3 miles, pulling over to the shoulder and into dirt/gravel driveway just after crossing bridge over creek near Hwy 105 MP42.5. Stage in driveway (off the shoulder of highway), immediately west of guardrail on west side of creek (creek left). At end of short drivewat, follow trail east ~140ft to old railroad bridge.

# Aberdeen - Wishkah River (Mouth)

WSHR-0.0

|                             |  |  |          |
|-----------------------------|--|--|----------|
| <b>Position - Location:</b> | 46.97424   | -123.809248  | Aberdeen |
| <b>Strategy Objective:</b>  | Exclusion Prevent oil from entering Wishkah River on incoming tide.  |  |          |
| <b>Implementation:</b>      | On east side of Wishkah River (river left) near downstream side of railroad bridge, secure 750ft length of boom to shore near Point A (N46.97517, W123.80958); workboat should be able navigate between or around pilings at Point B at high slack tide. Pull boom out from shore and downstream, around pilings near mouth of river at Points C & D. Secure boom end to shore near Point E (N46.97362, W123.80958). Use anchor posts or existing structures to secure boom ends to shore. Use anchoring systems or tie off to pilings to keep boom secure in river. |  |          |
| <b>Staging Area:</b>        | Off-Site:  | Stage at mouth of Wishkah River in Aberdeen (SA-A-GH). Launch Workboat from 28th Street Boat Launch (BL-2-GH). |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Pilings;  |  |          |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH), then transport boom & equipment to site from staging area immediately downstream of strategy location on river left (SA-A-GH).  |  |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Wishkah River   |  |          |
| <b>Resources at Risk:</b>   | Salmon   |  |          |



## Recommended Equipment

|     |      |  |
|-----|------|--|
| 750 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 8   | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 3   | Each | Heaving Line(s)  |
|     |      |  |

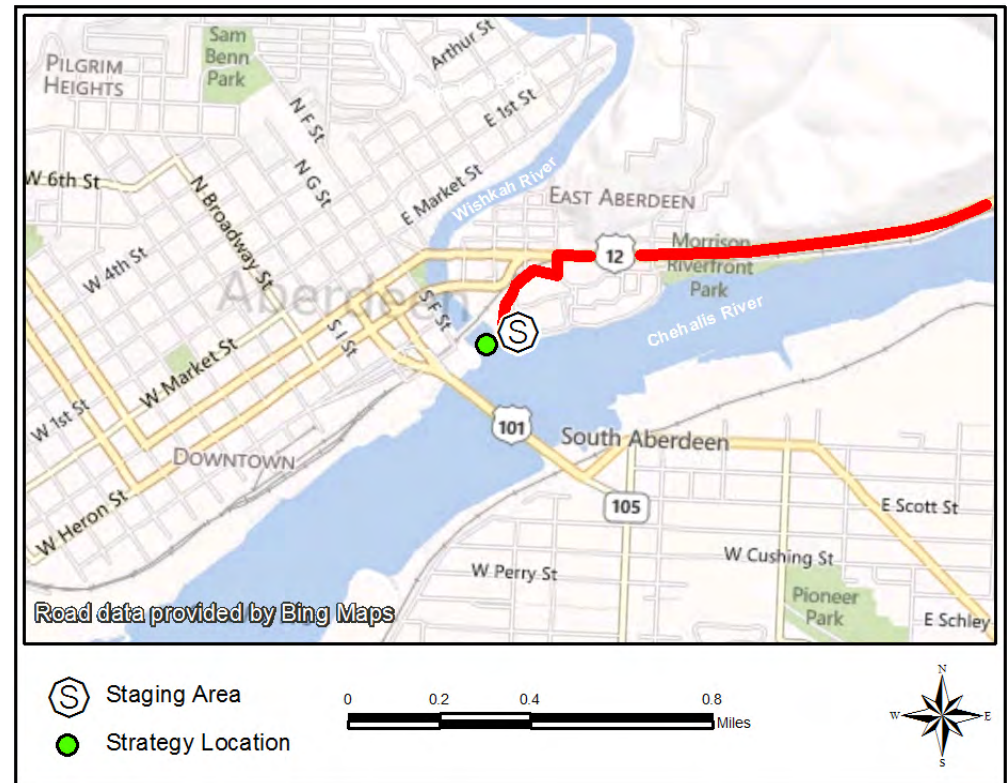
## Recommended Personnel

|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





WSHR-0.0 Photo: At mouth of Wishkah River looking upstream towards railroad bridge and river left, towards shoreside anchor point (Point A).



## SiteContact

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

## NearestAddress

Point A  
701 E Heron St, Aberdeen, WA 98520

Point E  
506 S F St, Aberdeen, WA 98520

## DrivingDirections

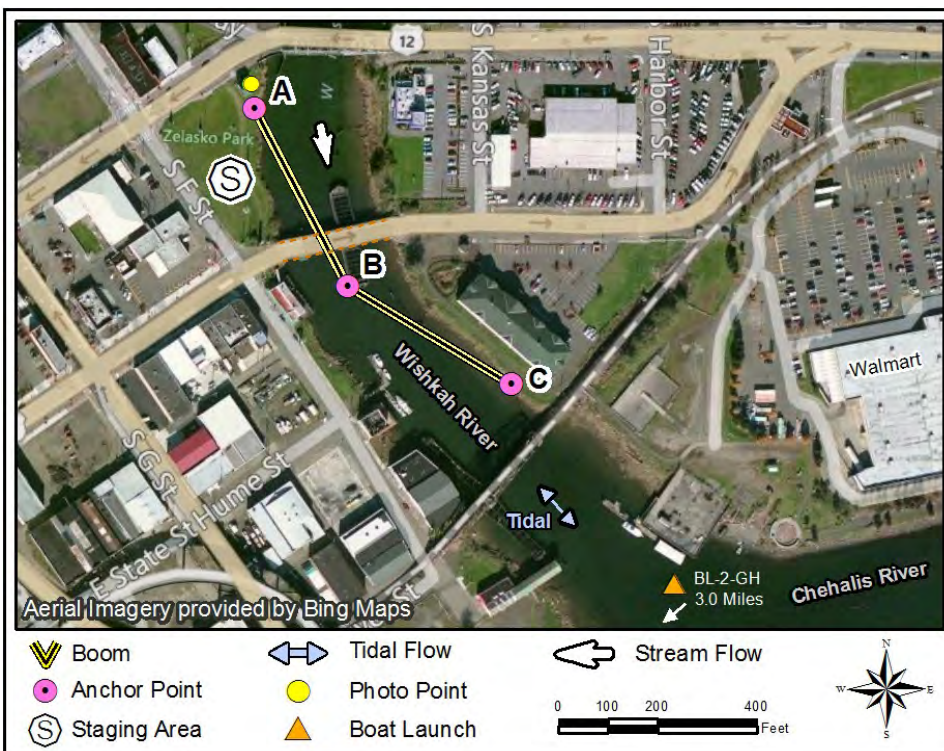
TO STAGING AREA: (SA-A-GH)

- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.

## Aberdeen - Wishkah River (Zelasko Park) WSHR-0.2

## Aberdeen - Wishkah River (Zelasko Park) WSHR-0.2

|                             |   |  |          |
|-----------------------------|---|--|----------|
| <b>Position - Location:</b> | 46.97579  | -123.811443  | Aberdeen |
| <b>Strategy Objective:</b>  | Exclusion, Collection   | Prevent oil from migrating up Wishkah River on incoming tide; collect any oil moving upstream.         |          |
| <b>Implementation:</b>      | On west side of Wishkah River (river right) downstream of Hwy 12 Bridge (westbound), secure 800ft length of boom to shore near Point A (N46.97675, W123.81230). Pull boom out from bank and downstream, under Hwy 12 Bridge (eastbound), and secure to river left near Point C (N46.97529, W123.81013, ~100ft upstream of Rail Bridge); workboat should be able to navigate between pilings at high tide. Secure boom mid-point to SW corner of support for Hwy 12 Bridge (eastbound) near Point B (N46.97579, W123.81149). Use anchoring systems to keep boom secure in river. Use shoreside anchoring posts to secure boom ends to banks. |  |          |
| <b>Staging Area:</b>        | On-Site:  | Stage on road (S F Street) adjacent to Zelasko Park or on park grounds if no street parking available. |          |
| <b>Site Safety:</b>         | Slips, Trips, Falls; Water Hazard with Floating Debris Possible; Vehicle Traffic; LOW VERTICAL BRIDGE CLEARANCES at High Tide   |  |          |
| <b>Field Notes:</b>         | Best implemented at slack high tide. Launch workboat from 28th Street Boat Launch (BL-2-GH). Vac truckk collection at Point A during incoming tide (if collecting oil).   |  |          |
| <b>Watercourse:</b>         | River (with tidal influence) - Wishkah River  |  |          |
| <b>Resources at Risk:</b>   | Salmon  |  |          |



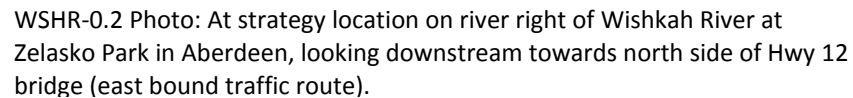
### Recommended Equipment

|     |      |  |
|-----|------|--|
| 800 | Feet | Boom - B3 (River Boom) or equivalent                     |
| 1   | Each | Workboat(s) - of adequate size for type & amount of boom |
| 10  | Each | Anchoring System(s) - (anchor, lines, floats)            |
| 6   | Each | Anchoring Post(s) - (shoreside)                          |
| 2   | Each | Anchoring Post Driver(s)                                 |
| 1   | Each | Towing Bridal(s) - (appropriately sized for boom)        |
| 3   | Each | Heaving Line(s)  |
| 1   | Each | Vac Truck(s) - if collecting oil                         |

### Recommended Personnel

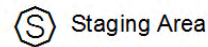
|   |                  |
|---|------------------|
| 1 | Supervisor(s)    |
| 4 | Laborer(s)       |
| 1 | Boat Operator(s) |





City of Aberdeen Parks Department  
200 E Market Street  
Aberdeen, WA 98520  
Ph: (360) 537-3229  
[krharris@aberdeenwa.gov](mailto:krharris@aberdeenwa.gov)

421 E Wishkah Street  
Aberdeen, WA 98520



- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Get in the left lane before crossing Wishkah River Bridge (first bridge in Aberdeen)
- ③ Immediately after the bridge stay to the left and then turn left onto S F Street (first left after bridge)
- ④ Zelasko Park is on the left. Stage on roadway (F Street) or on park grounds if space no space available on street. Notify Aberdeen Parks Department at (360) 537-3229.

# **Appendix 4B**

## **Notification Strategy 2-Pagers**

**Notification Strategies – List**

**CHER-0.15-N**

**CHER-2.5-N**

**LKAB-0.0-N**

**WEST-0.0-N**

## South Aberdeen - Alder Creek Tidal Gates

CHER-0.15-N

|                             |   |  |              |
|-----------------------------|---|--|--------------|
| <b>Position - Location:</b> | 46.970954   | -123.804464  | Aberdeen, WA |
| <b>Strategy Objective:</b>  | Notification  | Prevent oil from entering Alder Creek at the Chehalis River by having City of Aberdeen close tidal flood gates |              |
| <b>Implementation:</b>      | Call City of Aberdeen Public Works 360-537-3241 or 360-533-5817. Ask them to close tidal flood gates for Alder Creek. |  |              |
| <b>Field Notes:</b>         | Bridge over unnamed creek has 3 gates; one on the upstream side of bridge and two on downstream side                  |  |              |
| <b>Watercourse:</b>         | Creek - Unnamed Creek   |  |              |
| <b>Resources at Risk:</b>   | General Fish and Wildlife Resources   |  |              |



### Communication Process and Action:

Call City of Aberdeen Public Works Storm Water Department at (360) 537-3241 or (360) 533-581. If no answer, call Grays Harbor County Dispatch at (360) 533-8765 and ask for a "call back" from Aberdeen Public Works Storm Water Department or the Aberdeen Fire Department if Public Works is unavailable.

Explain the situation regarding the oil spill and ask Aberdeen Public Works (or the Fire Department) to close all tidal gates for Alder Creek, located near the base of the Hwy 101 Bridge in South Aberdeen, and any other tidal gates in the area they manage, control, or operate that could be impacted by a spill into Grays Harbor. Ask them to periodically monitor the (closed) gates and report back to you if they see any sheen or oil collecting on the upstream during periods of high tide.

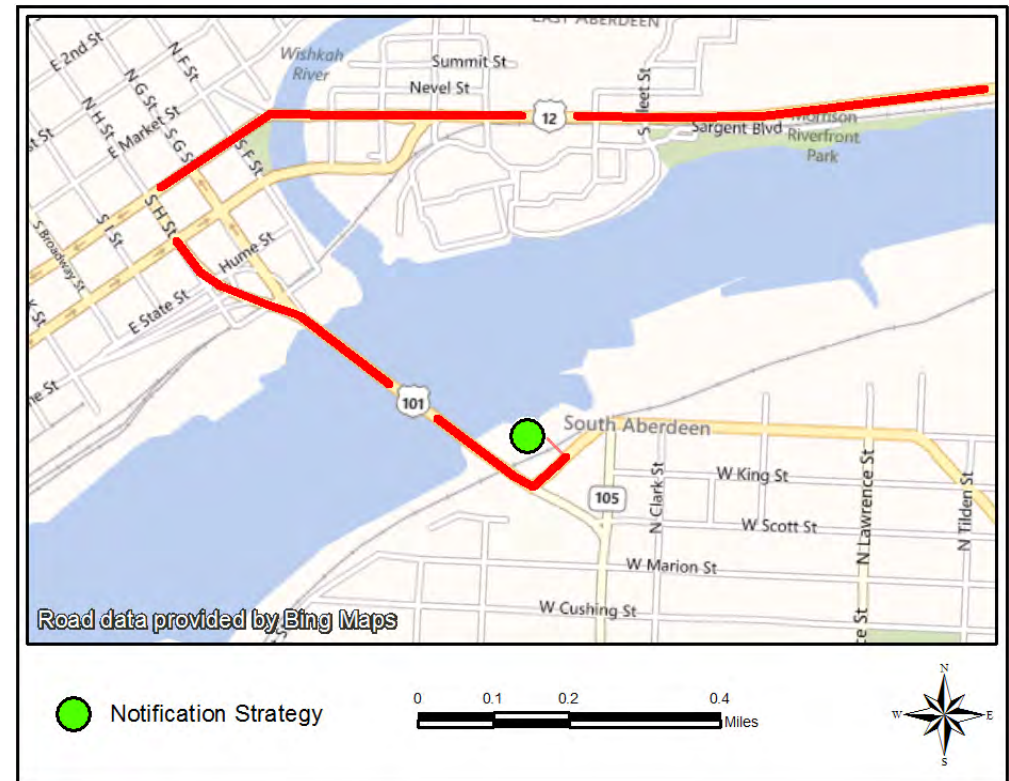
If the tidal gates are not working properly, cannot be closed, or sheen or oil is collecting on the upstream side of the gates at high tide, ensure hard boom backed by sorbent boom is deployed on the downstream/Grays Harbor side of the effected gates as soon as possible.

Note: The walking bridge over Alder Creek has three gates; one on upstream side of bridge and two on the downstream side. The gate on the upstream side of the bridge is powered. The gates on the downstream (Grays Harbor) side of the bridge open and close manually.





CHER-0.15-N Photo: Looking SW towards strategy location and walking bridge (with tidal flood gates below it).



## Site Contact Information:

City of Aberdeen Public Works  
Stormwater Department  
360-537-3241 or 360-533-5817  
rsangder@aberdeenwa.gov

## NearestAddress:

217 N. Boone Street  
Aberdeen, WA 98520

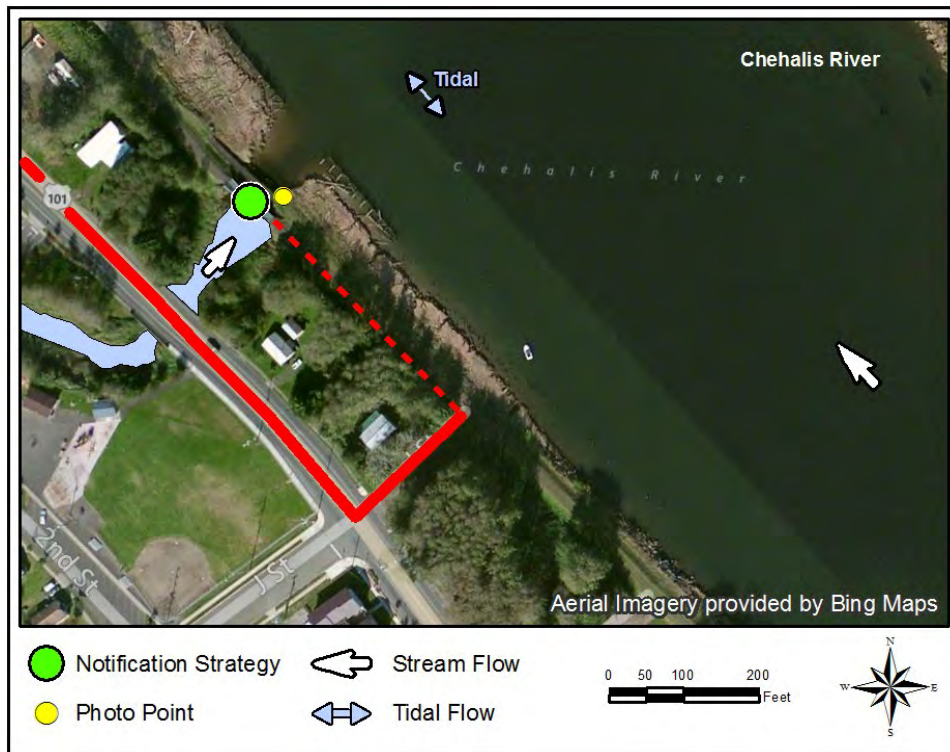
## DrivingDirections:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ Strategy location is immediately on your left after the turn. Park on side of road or in nearby parking lot and walk to bridge that contains the tidal gates over Alder Creek.

# Cosmopolis - Mill Creek Flood Gates on Chehalis River

CHER-2.5-N

|                             |  |   |                |
|-----------------------------|--|---|----------------|
| <b>Position - Location:</b> | 46.96039   | -123.775562   | Cosmopolis, WA |
| <b>Strategy Objective:</b>  | Notification   | Prevent oil from entering Mill Creek at the Chehalis River by having City of Cosmopolis close flood gates |                |
| <b>Implementation:</b>      | Call City of Cosmopolis Public Works (360) 533-4280 or (360) 580-6227. Ask them to close gates on both sides of bridge over creek. |   |                |
| <b>Field Notes:</b>         | Bridge over creek (near Dewitt Park & Chehalis River) has 6 gates; three on upstream side of bridge and three on downstream side   |   |                |
| <b>Watercourse:</b>         | Creek - Mill Creek   |   |                |
| <b>Resources at Risk:</b>   | General Fish and Wildlife Resources, Sensitive Resources   |   |                |



## Communication Process and Action:

Call City of Cosmopolis Public Works (360) 533-4280 or (360) 580-6227.

If no answer, call Cosmopolis Fire Department at (360) 532-6429 or call Grays Harbor County Dispatch at (360) 533-8765 and ask for a "call back" from the Cosmopolis Fire Department.

Explain the situation regarding the oil spill and ask Public Works (or the Fire Department) to close all six tidal gates at the Mill Creek walking bridge near Dewitt Park. Ask them to periodically monitor the closed gates and report back to you if they see any sheen or oil collecting on the upstream side of the gates (primarily during periods of high tide).

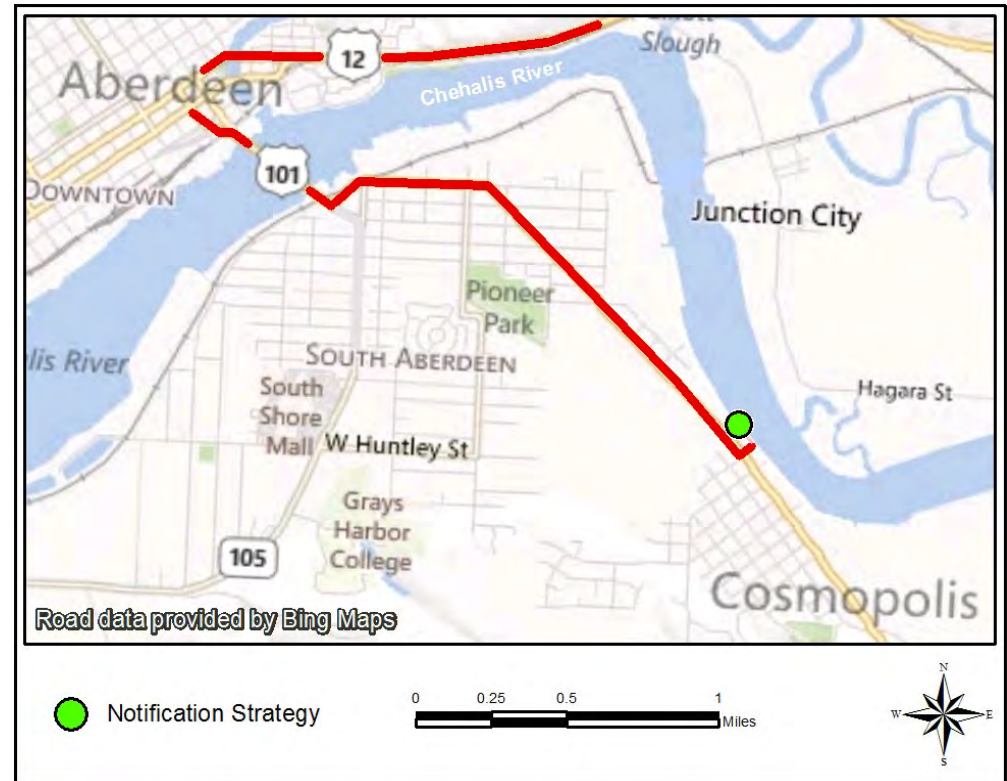
Note: The walking bridge over Mill Creek has six gates; three on upstream side of bridge and three on the downstream side. The gates on the downstream side of the bridge are powered. The gates on the upstream side open and close manually.

Note: If the tidal gates are not working properly, cannot be closed, or sheen or oil is collecting on the upstream side of the gates, ensure ~100ft section of B-3 river boom and sorbents are deployed in front of the downstream (Chehalis River) side of the gates.





CHER-2.5-N Photo: On Mill Creek (creek right) at old railroad bridge. Looking upstream at powered flood gates on downstream side of walking bridge.



## Site Contact Information:

City of Cosmopolis - Public Works  
1300 1st Street, Cosmopolis, WA 98537  
(360) 533-4280  
(360) 580-6227 cell

## NearestAddress:

505 1st Street  
Cosmopolis, WA 98537

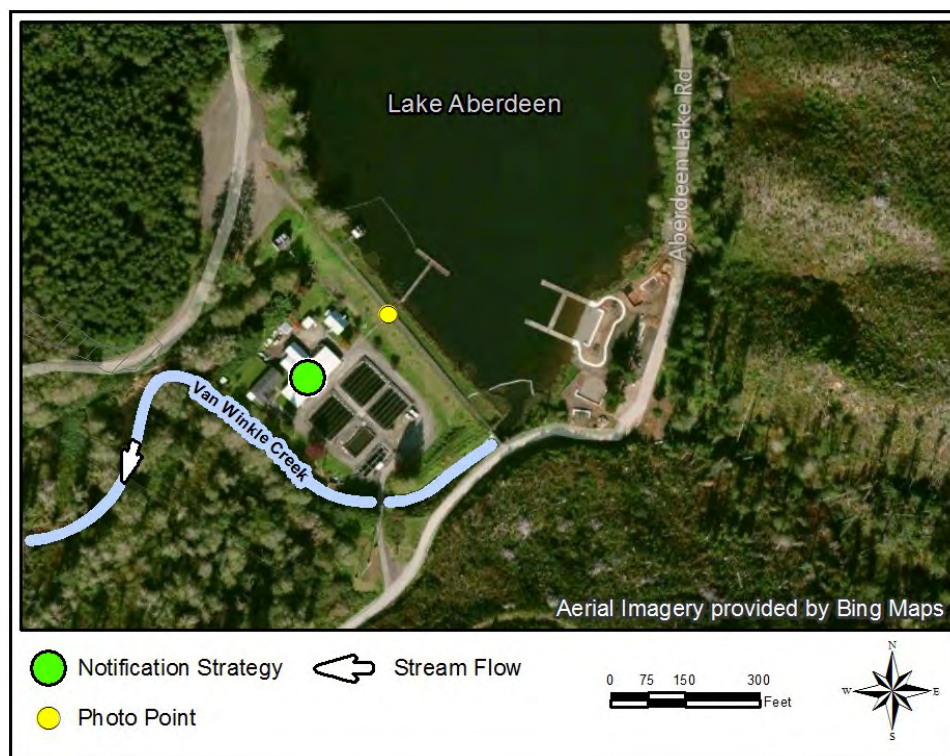
## DrivingDirections:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 1.7 miles before turning left onto "J" Street in Cosmopolis.
- ⑥ Park at end of road and follow trail (on top of the embankment) NNW 400ft to bridge. Tidal gates are built into bridge.

# Lake Aberdeen Fish Hatchery (WDFW)

LKAB-0.0-N

|                             |  |  |              |
|-----------------------------|--|--|--------------|
| <b>Position - Location:</b> | 46.98016   | -123.74282   | Aberdeen, WA |
| <b>Strategy Objective:</b>  | Notification   | Inform WDFW hatchery of oil spill in area so release of fish won't coincide with ongoing spill response efforts. |              |
| <b>Implementation:</b>      | Notify WDFW Lake Aberdeen Hatchery of oil spill. Call: (360) 533-1663, (360) 532-3686, or (360) 589-1296 |  |              |
| <b>Field Notes:</b>         | Hatchery release locations include Van Winkle Creek at Lake Aberdeen and the Wynoochee River             |  |              |
| <b>Watercourse:</b>         | Lake - Lake Aberdeen   |  |              |
| <b>Resources at Risk:</b>   | Chinook Salmon, Coho Salmon, Steelhead   |  |              |



## Communication Process and Action:

Call Washington Department of Fish & Wildlife Lake Aberdeen Hatchery and explain the situation regarding the oil spill. The following numbers (in order) can be used until someone for the hatchery is reached:

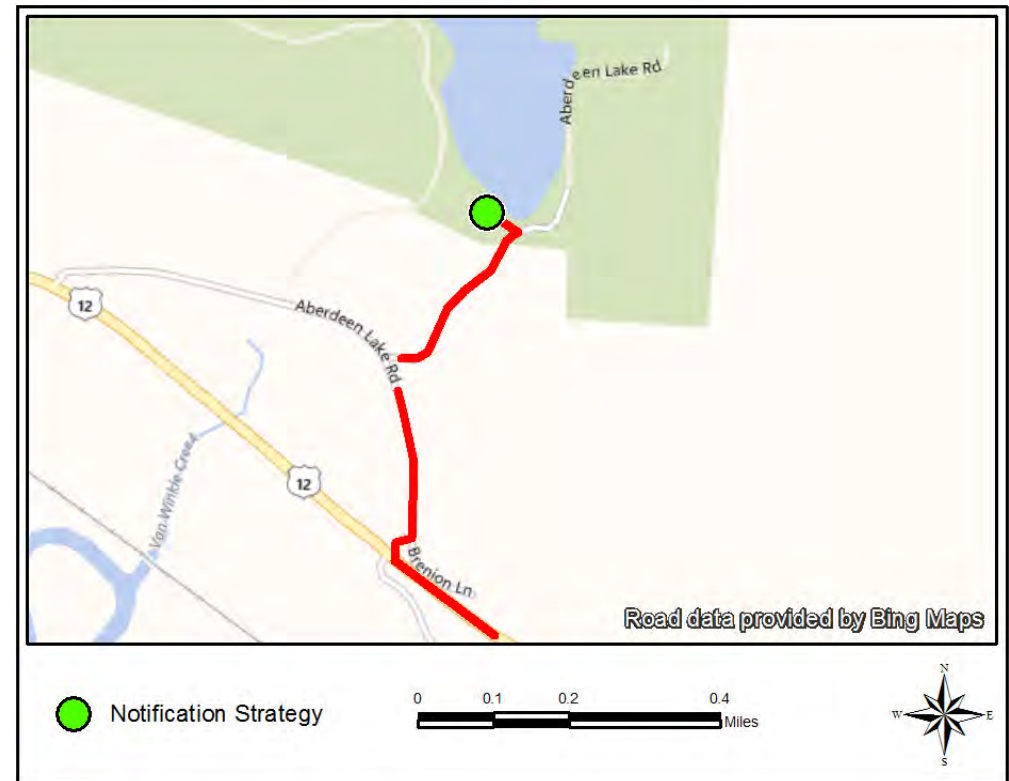
1. (360) 533-1663 - Hatchery
2. (360) 532-3686
3. (360) 589-1296 - FHS4/Cell
4. (360) 581-9109 - FHS3
5. (360) 580-2912 - FHS2

Note: WDFW will make the decision whether or not the scheduled release of fish from the hatchery should be delayed because of the spill. Release locations include Van Winkle Creek at Lake Aberdeen and the Wynoochee River. Van Winkle Creek drains into Elliot Slough which is connected to the Chehalis River in Aberdeen near Junction City. The Wynoochee River drains into the Chehalis River near Montesano.





LKAB-0.0-N Photo: Looking SW from Lake Aberdeen towards WDFW Fish Hatchery.



## Site Contact Information:

Washington Dept. of Fish & Wildlife  
Lake Aberdeen Hatchery  
4203 Lake Aberdeen Rd, Aberdeen, WA  
(360) 533-1663

## NearestAddress:

4203 Lake Aberdeen Rd  
Aberdeen, WA 98520

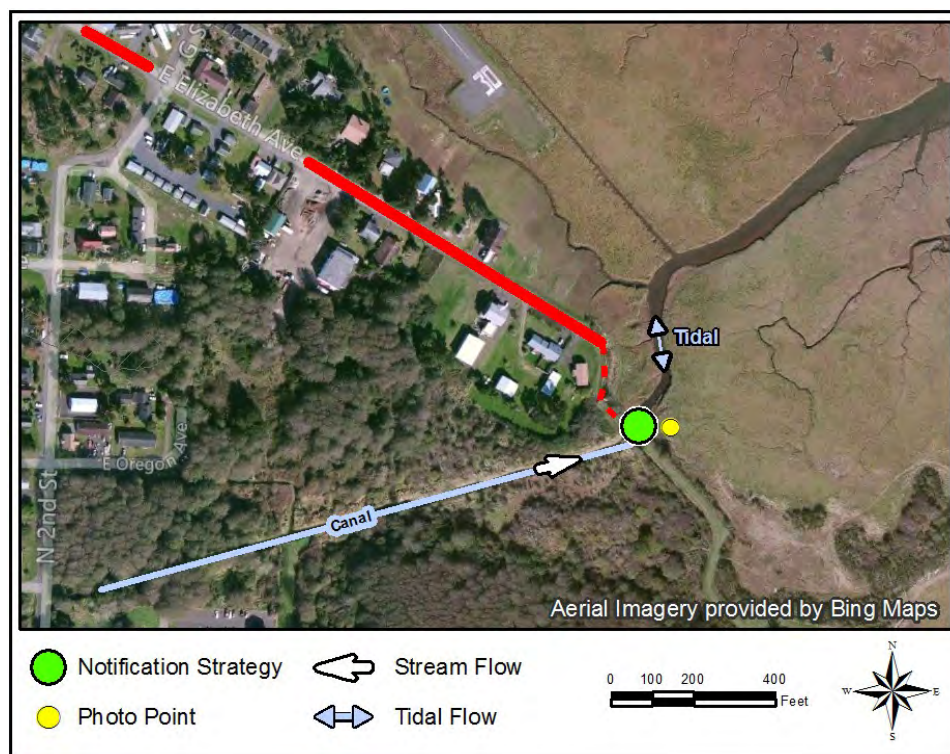
## DrivingDirections:

- ① Travel on Hwy 12 towards Aberdeen/Hoquiam from Montesano
- ② From the Wynoochee River Bridge (1st bridge west of Montesano) travel on Hwy 12 for 4.8 miles
- ③ Take a right and exit Hwy 12 (Exit is about ~1.5 miles down the road from the 7-11 store)
- ④ Take a left at the stop sign onto Aberdeen Lake Rd/Central Park Drive
- ⑤ After 0.2 miles, turn right onto Aberdeen Lake Road
- ⑥ After 0.2 miles, turn left (slight left) across bridge over Van Winkle Creek and into parking area for the WDFW Lake Aberdeen Hatchery.

# Westport Tidal Gate

WEST-0.0-N

|                             |  |  |              |
|-----------------------------|--|--|--------------|
| <b>Position - Location:</b> | 46.89253   | -124.09612   | Westport, WA |
| <b>Strategy Objective:</b>  | Notification   | Prevent oil from entering unnamed canal near the end of E Elizabeth Avenue in Westport |              |
| <b>Implementation:</b>      | Call City of Westport Street Department at (360) 268-9091 or (360) 581-5772. Ask them to verify that gates are working properly. |  |              |
| <b>Field Notes:</b>         | Canal has earthened berm with two tidal flood gates that (mechanically) close as the tide rises.                                 |  |              |
| <b>Watercourse:</b>         | Canal - Unnamed Canal  |  |              |
| <b>Resources at Risk:</b>   | General Fish and Wildlife Resources  |  |              |



## Communication Process and Action:

Call City of Westport Street Department at (360) 268-9091 or (360) 581-5772. Explain the situation regarding the oil spill and them to verify that the tidal flood gates are working properly. Ask them to periodically monitor the gates and report back to you if they see any sheen or oil collecting on the upstream side of the gates (primarily during periods of high tide).

Note: If the tidal gates are not working properly, cannot be closed, or sheen or oil is collecting on the upstream side of the gates, ensure ~100ft section of B-3 river boom and sorbents are deployed in front of the downstream (Grays Harbor) side of the gates.





WEST-0.0-N Photo: Looking west toward Grays Harbor side of tidal flood gates located past the end of E Elizabeth Avenue in Westport. Gates are normally closed at high tide.

## Site Contact Information:

Westport Street Department  
505 N. 1st Street, Westport, WA 98595  
(360) 268-9091  
streetdept@ci.westport.wa.us

## NearestAddress:

819 Elizabeth Avenue E  
Westport, WA 98595



## DrivingDirections:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 17.9 miles, turning right onto Montesano Street S (towards Westport)
- ⑤ Travel on Montesano Street S for 2.6 miles, turning right onto E Elizabeth Avenue
- ⑥ Travel on E Elizabeth Avenue 0.4 miles to the end of the road; follow trail 250ft to the strategy location.

# **Appendix 4C**

## **Staging Area 2-Pagers**



**Staging Area – List**

|                |                |                |                 |
|----------------|----------------|----------------|-----------------|
| <b>SA-1-GH</b> | <b>SA-3-GH</b> | <b>SA-5-GH</b> | <b>SA-B-GH</b>  |
| <b>SA-2-GH</b> | <b>SA-4-GH</b> | <b>SA-A-GH</b> | <b>SA-X3-GH</b> |

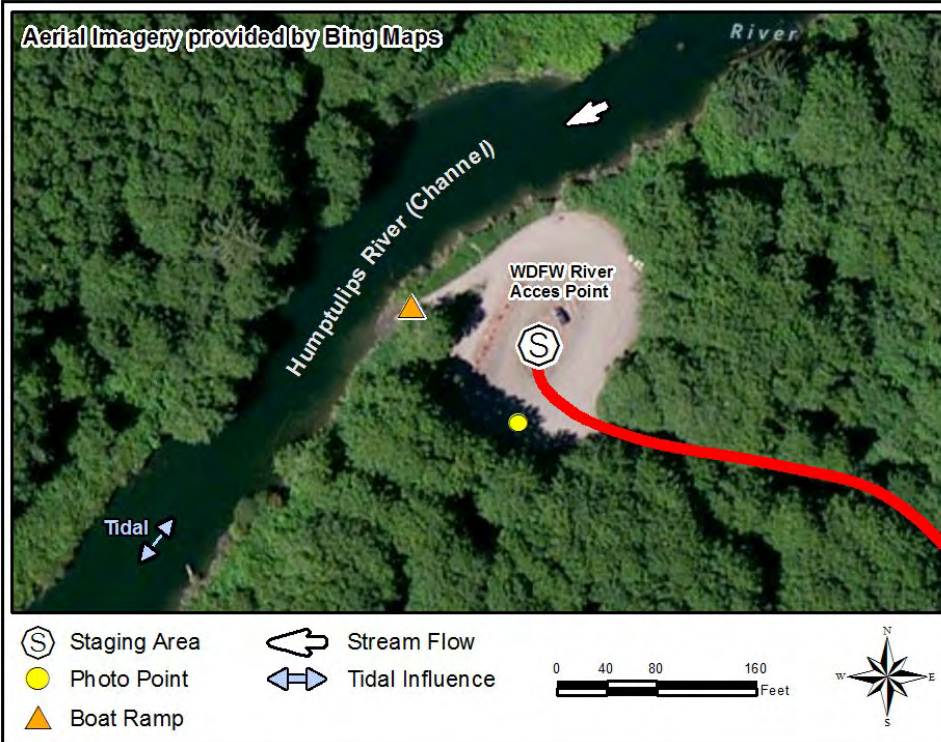
# North Bay - Humptulips River - WDFW Water Access Site (Morley)

SA-1-GH

## Staging Area

**Position - Location:** 47.04924 -124.04407 North Bay (Grays Harbor)

**Comments:** This staging area is located at the Washington Department of Fish and Wildlife (WDFW) Water Access Site "Morley" on the Humptulips River. Discovery Pass Required unless other arrangements have been made with WDFW.



## Location Information:

| Asset               | Type/Status | Amount/Number       |
|---------------------|-------------|---------------------|
| Boat Ramp           | Yes         | 1                   |
| Boat Ramp Type      | Concrete    |                     |
| Boat Dock           | No          |                     |
| Restrooms           | Yes         | 1 (vault)           |
| Power               | No          |                     |
| Water               | No          |                     |
| Parking (car)       | Yes         | ~10 (Not Marked)    |
| Parking (trailer)   | Yes         | ~8 (Not Marked)     |
| Waste Disposal      | No          |                     |
| Telephones          | No          |                     |
| Cell Phone Coverage | Unknown     |                     |
| Estimated Lot Size  | SqFt        | 24,000              |
| Lot Cover (primary) | Dirt/Gravel | 40%                 |
| Covered Spaces      | No          |                     |
| User Fee            | No          | Discover Pass Req'd |

## GRP Response Strategies Served:

GILS-0.0, HMPR-0.0, HMPR-0.75, HMPR-0.9, HMPR-0.95

## Staging Area



SA-1-GH Photo: Looking north across parking/staging area from south end of lot at WDFW Water Access Site "Morley" at the Humptulips River.



## Site Contact Information:

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

## NearestAddress:

1349 Washington 109  
Highway 109  
Hoquiam, WA 98550

## DrivingDirections:

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area adjacent to the river.



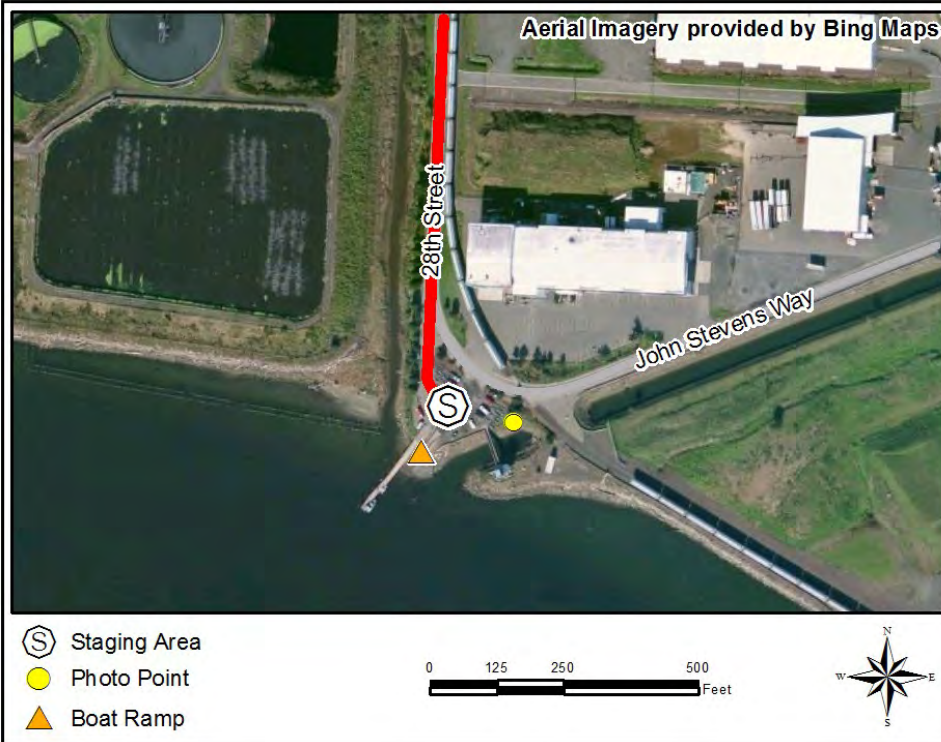
# Hoquiam - 28th Street Boat Launch (Parking Area)

SA-2-GH

## Staging Area

**Position - Location:** 46.96778 -123.86006 Hoquiam

**Comments:** Notify the Port of Grays Harbor (Property Owner) before staging equipment at this location; call (360) 533-9528.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                |                      |
| Boat Ramp Type      | Concrete           |                      |
| Boat Dock           | Yes                | 1                    |
| Restrooms           | Yes                | Honey Bucket         |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~8 (Not Marked)      |
| Parking (trailer)   | Yes                | ~3 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Yes                |                      |
| Estimated Lot Size  | SqFt               | 17,500               |
| Lot Cover (primary) | Gravel             | 100%                 |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 |                      |

## GRP Response Strategies Served:

GH4

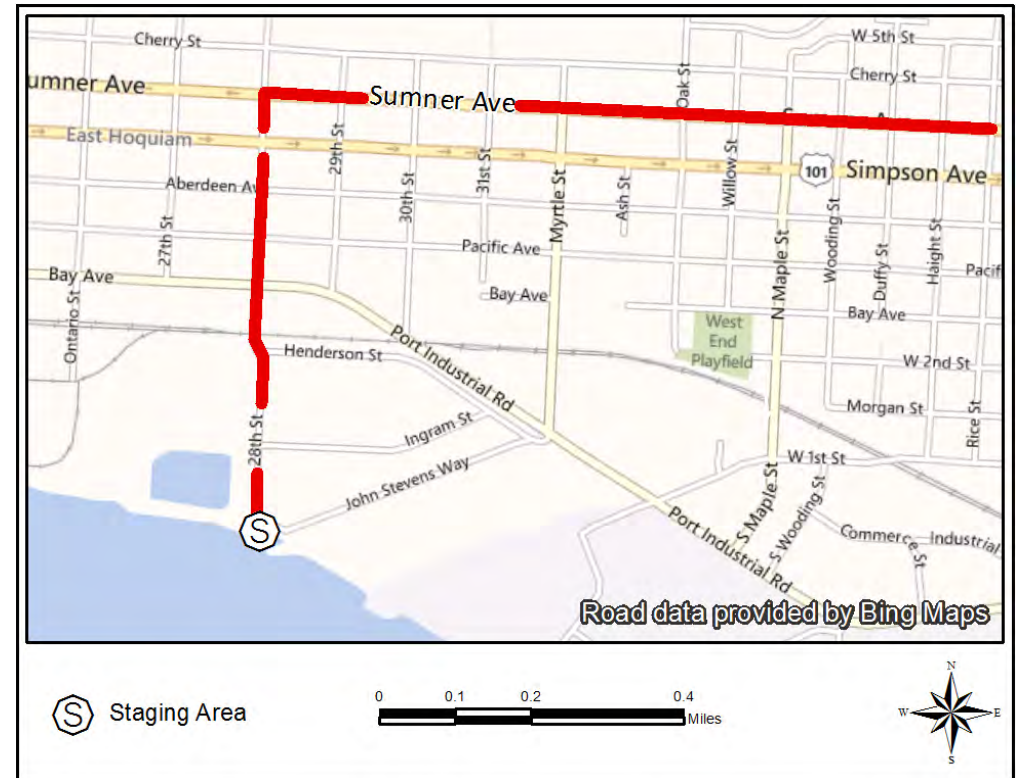
# Hoquiam - 28th Street Boat Launch (Parking Area)

SA-2-GH

## Staging Area



SA-2-GH Photo: Looking west towards parking/staging area from bridge that leads to tower, across small inlet, on east side of lot.



## Site Contact Information:

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

## Nearest Address:

718 28th Street  
Hoquiam, WA 98550

## Driving Directions:

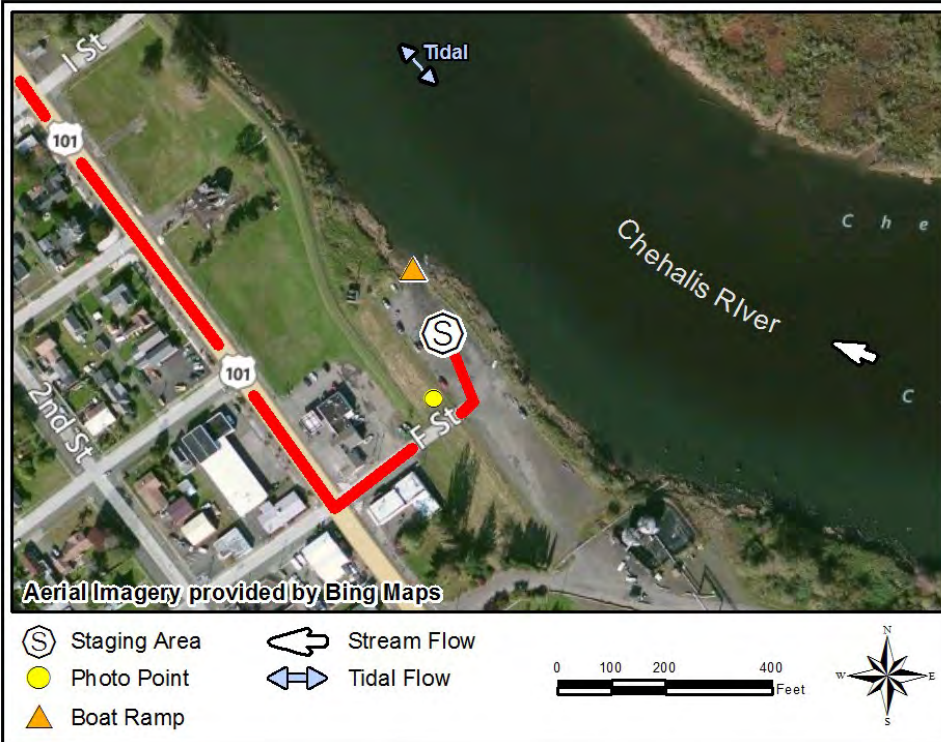
- ① Cross over Wishkah River Bridge (first bridge) in Aberdeen & continue west Hwy 12 /Hwy 101 North
- ② After ~2.6 Miles turn left onto 28th Street
- ③ Stay on 28th Street for 0.5 miles, staying to the right after crossing the railroad tracks. Stage in parking lot for boat launch.

# Cosmopolis - Chehalis River Boat Launch (Parking Area)

SA-3-GH

## Staging Area

|                             |  |            |            |
|-----------------------------|--|------------|------------|
| <b>Position - Location:</b> | 46.95721   | -123.77086 | Cosmopolis |
| <b>Comments:</b>            | Ensure property owner (Cosmo Specialty Fibers) is notified before staging equipment at this location; call (360) 500-4604. |            |            |



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Asphalt/Gravel     |                      |
| Boat Dock           | No                 |                      |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~10+ (Not Marked)    |
| Parking (trailer)   | Yes                | ~10+ (Not Marked)    |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Yes                |                      |
| Estimated Lot Size  | SqFt               | 65,000               |
| Lot Cover (primary) | Dirt/Gravel        | 100%                 |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 | Private Property     |

## GRP Response Strategies Served:

CHER-1.4, CHER-2.6, CHER-2.7, CHER-2.8, CHER-3.0, CHER-3.5



# Cosmopolis - Chehalis River Boat Launch (Parking Area)

SA-3-GH

## Staging Area



SA-3-GH Photo: Looking NW towards parking/staging area from SE side of lot near "F" Street in Cosmopolis. Chehalis River in background.



## Site Contact Information:

Cosmo Specialty Fibers  
Shift Supervisor  
(360) 500-4604

## Nearest Address:

1101 1st Street  
Cosmopolis, WA 98537

## Driving Directions:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. Stage in parking area near boat ramp. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.



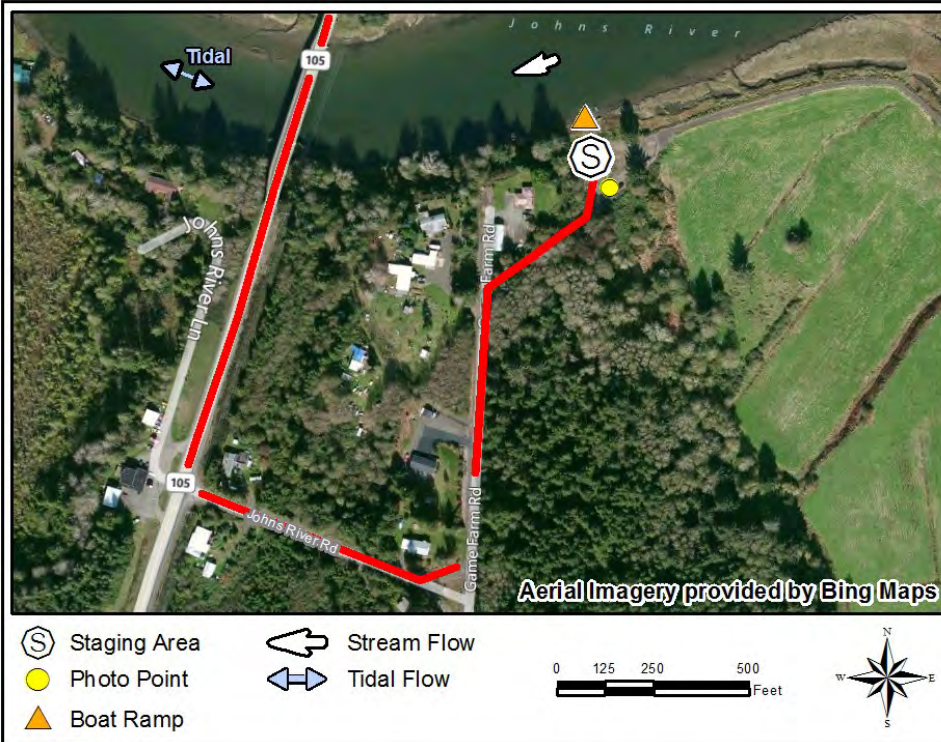
# Markham - Johns River Boat Launch (Parking Area)

SA-4-GH

## Staging Area

**Position - Location:** 46.89947 -123.99611 Markham

**Comments:** Located at Washington Department of Fish and Wildlife (WDFW) Water Access Site on Johns River. Discovery Pass Required unless other arrangements have been made with WDFW.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Concrete           | ~5.5° slope          |
| Boat Dock           | No                 |                      |
| Restrooms           | Yes                | 1 (vault)            |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~10 (Not Marked)     |
| Parking (trailer)   | Yes                | ~4 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Verizon            | 4 Bars               |
| Estimated Lot Size  | SqFt               | 22,500               |
| Lot Cover (primary) | Gravel / Grass     | 80% / 20%            |
| Covered Spaces      | No                 |                      |
| User Fee            | Yes                | Discovery Pass Req'd |

## GRP Response Strategies Served:

JHNR-0.0a, JHNR-0.0b, JHNR-0.3

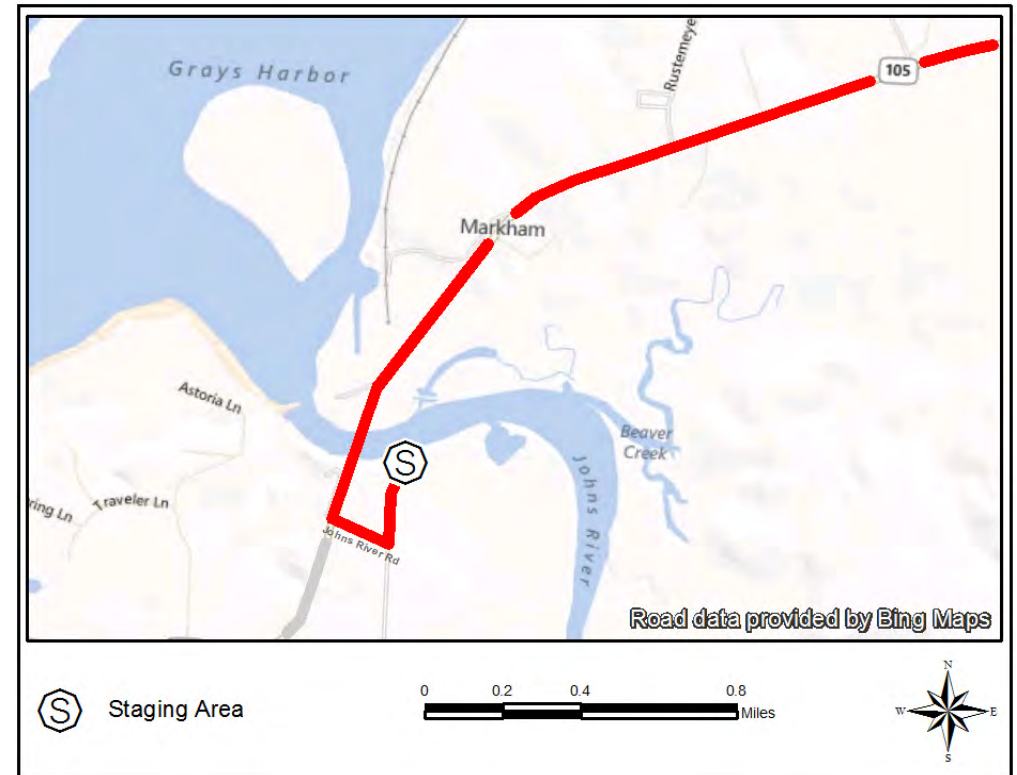
## Markham - Johns River Boat Launch (Parking Area)

SA-4-GH

### Staging Area



SA-4-GH Photo: At WDFW Johns River Boat Launch parking lot looking NE towards river.



### Site Contact Information:

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

### Nearest Address:

24 Game Farm Road  
Aberdeen, WA 98520

### Driving Directions:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 11.5 miles, turning left onto Johns River Road, ~0.2 miles after the bridge over Johns River
- ⑤ Travel on Johns River Road ~0.1 miles, staying left at the "Y" and turning left onto Game Farm Road after the "Y" intersection.
- ⑥ Travel on Game Farm Road ~0.1 miles, turning right into WDFW River access point for Johns River. Stage equipment in parking area.

## South Bay - Brady's Oysters (Hwy 105 / Elk River Bridge)

SA-5-GH

### Staging Area

**Position - Location:** 46.8616 -124.07372 South Bay (Grays Harbor)

**Comments:** Staging Area (Parking Lot) is on private property owned by Brady's Oysters. Coordinate use of parking lot with property owner.



### Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Shell              |                      |
| Boat Dock           | No                 |                      |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~8 (Not Marked)      |
| Parking (trailer)   | Yes                | ~4 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | Unknown            |                      |
| Cell Phone Coverage | Unknown            |                      |
| Estimated Lot Size  | SqFt               | 10,000               |
| Lot Cover (primary) | Dirt/Gravel/Shell  |                      |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 | Permission Req'd     |

### GRP Response Strategies Served:

GH8, GH9, GH10a, GH10b, GH11, GH12, GH13, GH14



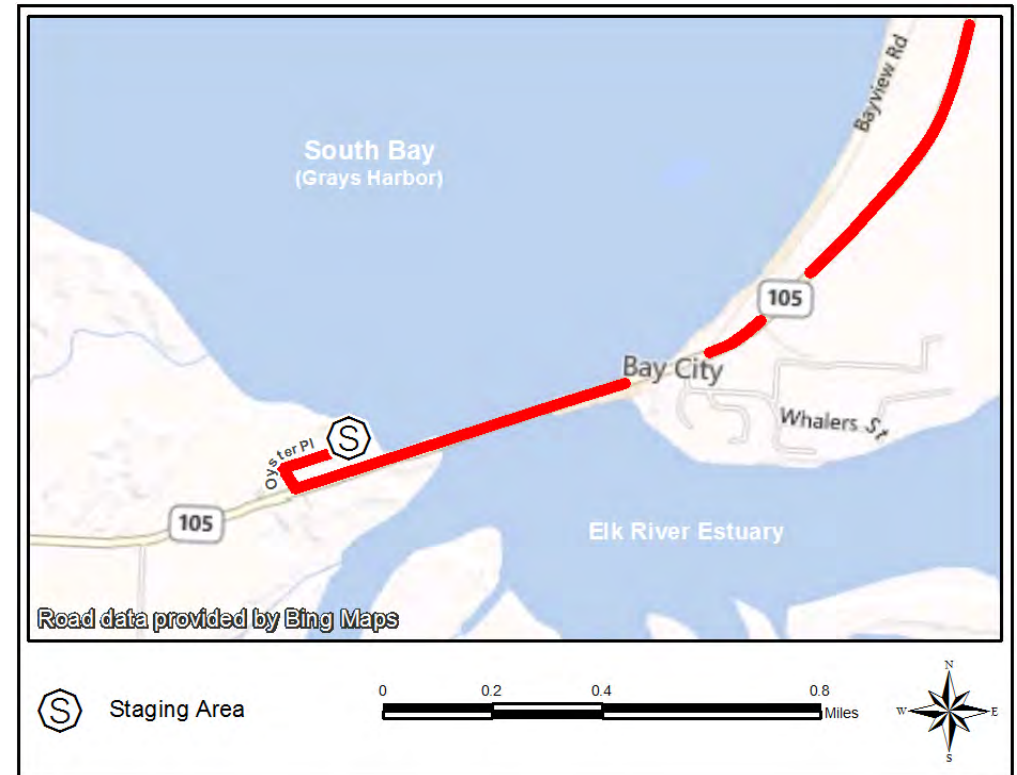
## South Bay - Brady's Oysters (Hwy 105 / Elk River Bridge)

SA-5-GH

### Staging Area



SA-5-GH Photo: At Bradys Oysters off Hwy 109 looking west towards parking lot.



### Site Contact Information:

Brady's Oysters  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysoysters.com

### Nearest Address:

3714 Oyster Place E  
Aberdeen, WA 98520

### Driving Directions:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road; stage equipment in parking area after coordinating and receiving permission from the property owner

# Aberdeen - Wishkah River

SA-A-GH

## Staging Area

**Position - Location:** 46.97486 -123.80823 Aberdeen

**Comments:** Property is owned by Port of Grays Harbor; notify before use by calling (360) 533-9528. Location entrance is gated but typically unlocked. If locked, contact the Port or Aberdeen Fire Department. Aberdeen Fire Department can be reached through Grays Harbor County Dispatch; call (360) 533-8765 and ask for Aberdeen Fire Department assistance.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | No                 | Unusable             |
| Boat Ramp Type      | N/A                | Unusable             |
| Boat Dock           | No                 |                      |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~4 (Not Marked)      |
| Parking (trailer)   | Yes                | ~2 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Unknown            |                      |
| Estimated Lot Size  | SqFt               | 30,000               |
| Lot Cover (primary) | Dirt               | 90%                  |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 |                      |

## GRP Response Strategies Served:

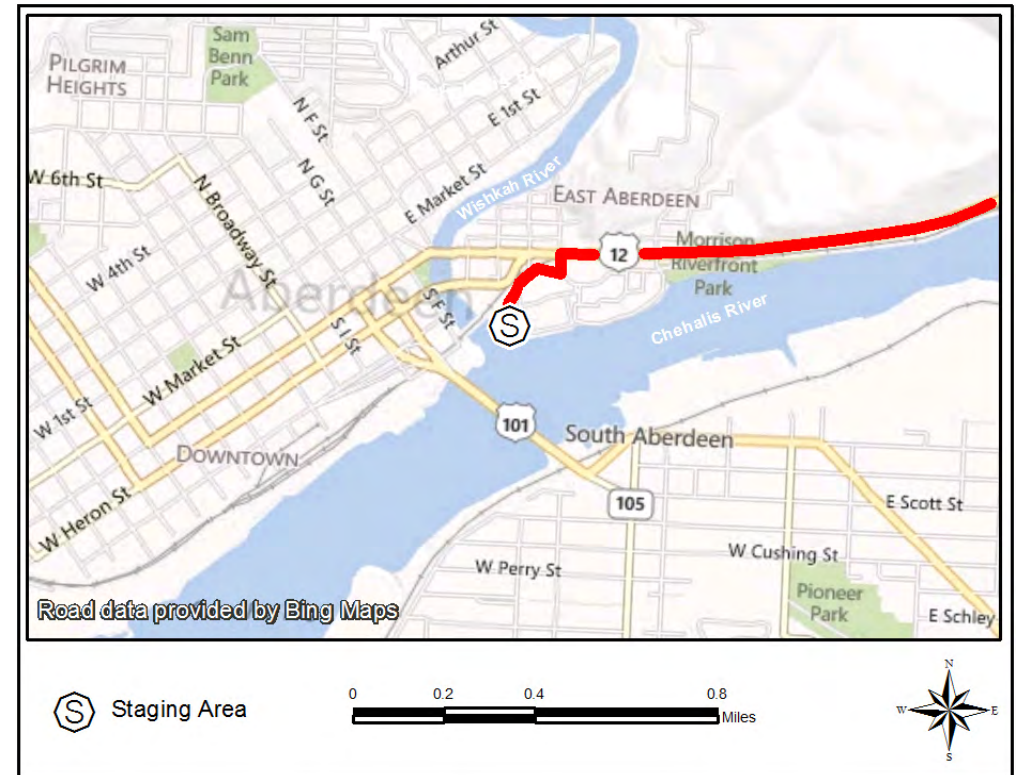
CHER-0.0, CHER-0.2, GH5, GH6, GH7, WSHR-0.0



## Staging Area



SA-A-GH Photo: View of the gated entrance to site (typically open). Follow road to location near mouth of the Wishkah River.



### Site Contact Information:

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

### Nearest Address:

913 W Heron Street  
Aberdeen, WA 98520

### Driving Directions:

- ① Enter Aberdeen from the West on Hwy 12
- ② At the second stop light, turn left onto S Chehalis Street into/towards the Walmart parking lot.
- ③ Take the first available right and follow Heron Road along the outside of the Walmart Parking Lot to the west, towards the Wishkah River and the west side of the Walmart building. Do not go back over the railroad tracks.
- ④ Along the western fenceline of the parking lot there will be a gated road (gate is typically open) that leads down towards the mouth of the Wishkah River. Take the road and stage equipment inside the fenced area as appropriate.



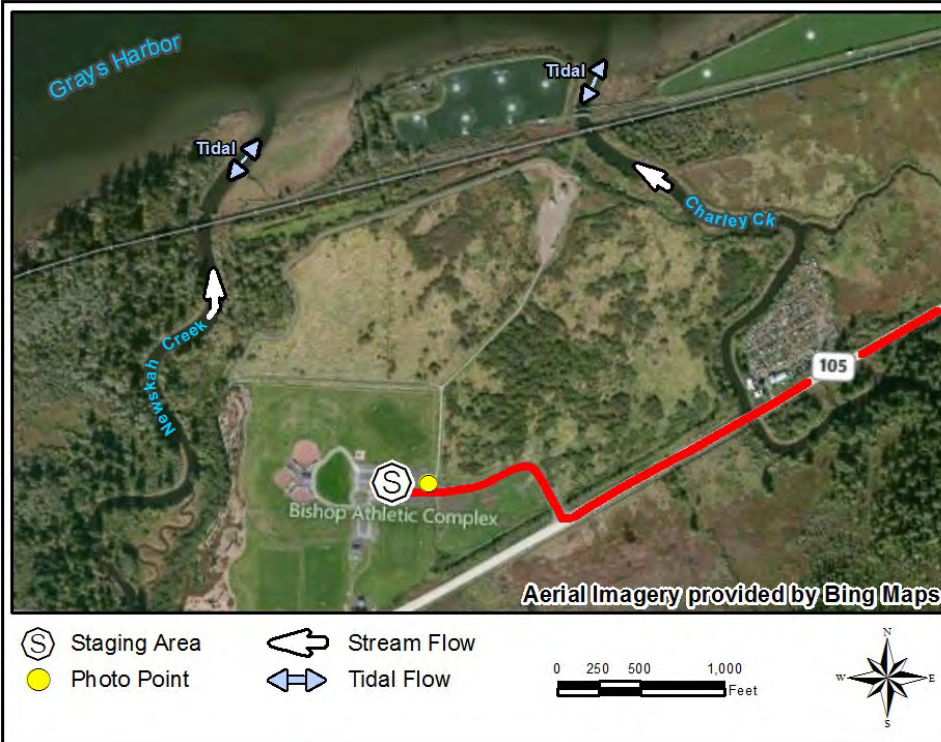
# South Aberdeen - Bishop Athletic Complex

SA-B-GH

## Staging Area

**Position - Location:** 46.94602 -123.84678 Aberdeen (South Aberdeen)

**Comments:** Complex is owned by the City of Aberdeen. Coordinate use of parking area with Aberdeen Parks and Recreation Department by calling (360) 537-3229. After hours, gate to complex may be locked; for assistance, contact Aberdeen Fire Department through Grays Harbor County Dispatch at (360) 533-8765



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | No                 |                      |
| Boat Ramp Type      | N/A                |                      |
| Boat Dock           | N/A                |                      |
| Restrooms           | Yes                |                      |
| Power               | Unknown            |                      |
| Water               | Yes                |                      |
| Parking (car)       | Yes                | ~100+ (Marked)       |
| Parking (trailer)   | Yes                | ~40+ (Unmarked)      |
| Waste Disposal      | Yes                | Trash                |
| Telephones          | Unknown            |                      |
| Cell Phone Coverage | Unknown            |                      |
| Estimated Lot Size  | SqFt               | 1,950,000            |
| Lot Cover (primary) | Grass              | 90%                  |
| Covered Spaces      | Yes                | Limited              |
| User Fee            | No                 | Coordinate w Parks   |

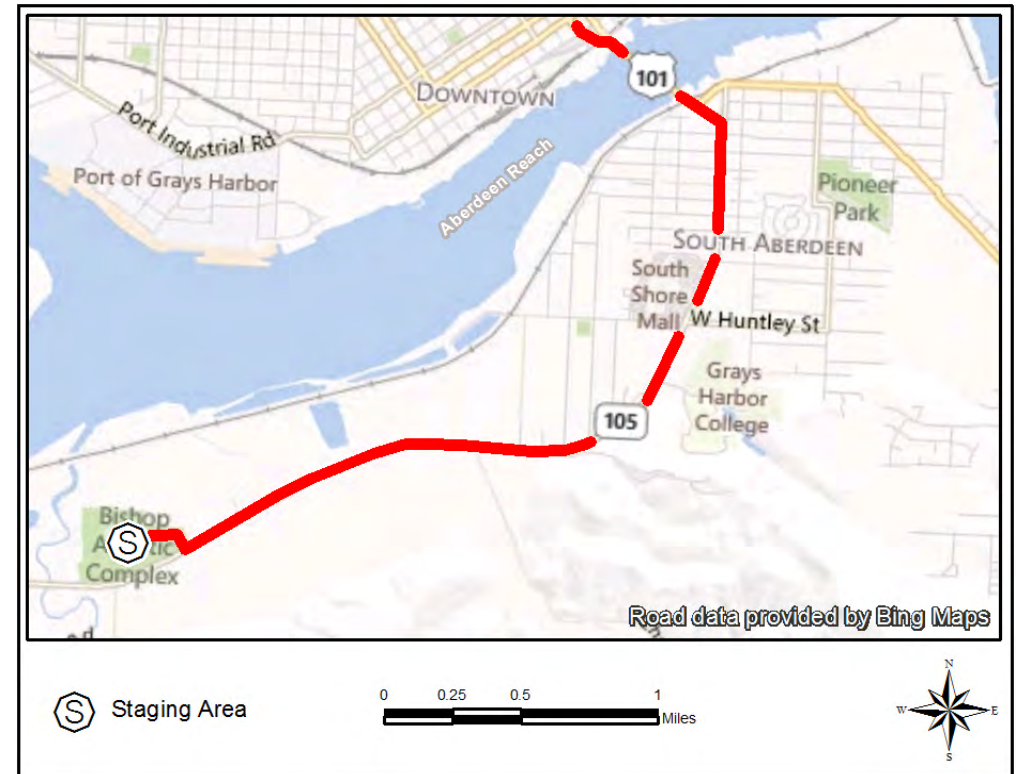
## GRP Response Strategies Served:

CHRC-0.1, NSKC-0.2

## Staging Area



SA-B-GH Photo: In parking lot of Bishop Athletic Complex looking west towards baseball fields.



## Site Contact Information:

City of Aberdeen Parks Department  
200 E Market Street  
Aberdeen, WA 98520  
Ph: (360) 537-3229  
krharris@aberndeenwa.gov

## NearestAddress:

144 State Route 105  
Aberdeen, WA 98520

## DrivingDirections:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 3.0 miles (~0.3 miles west of Hwy 105 MP46), turning right into drive leading to Bishop Athletic Complex. Coordinate use of parking lot for staging by contacting the Aberdeen Parks Department at (360) 537-3229 or (after hours) the Aberdeen Fire Department through Grays Harbor County Dispatch at (360) 533-8765.

# Westport Marina (Southeast End Parking Lot)

SA-X3-GH

## Staging Area

**Position - Location:** 46.90331 -124.10654 Westport

**Comments:** Staging Area is at SE end of Westport Marina near the Boat Launch and USCG Station. Marina is owned/operated by Port of Grays Harbor; ensure they are notified before staging equipment - Call: (360) 268-9665.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 2 Lanes              |
| Boat Ramp Type      | Concrete           |                      |
| Boat Dock           | Yes                |                      |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~40 (Marked)         |
| Parking (trailer)   | Yes                | ~ 100 (Marked)       |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Unknown            |                      |
| Estimated Lot Size  | SqFt               | 120,000              |
| Lot Cover (primary) | Dirt/Gravel        | 100%                 |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 |                      |

## GRP Response Strategies Served:

No Information



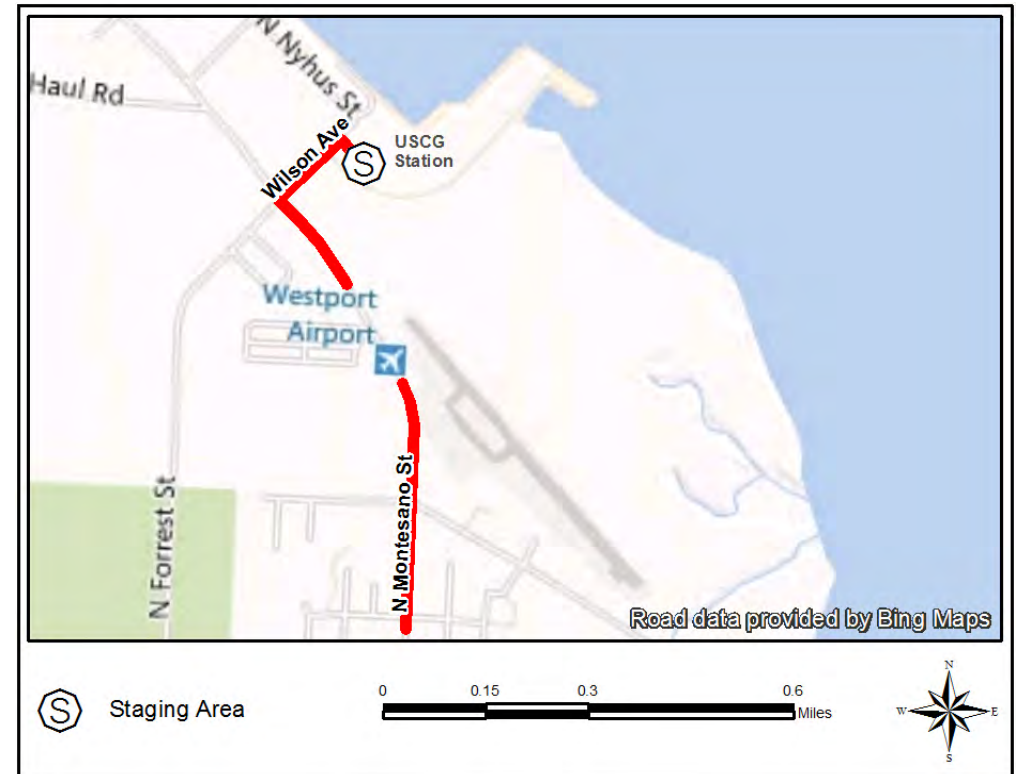
# Westport Marina (Southeast End Parking Lot)

SA-X3-GH

## Staging Area



SA-X3-GH Photo: At Staging Area at Westport Marina, looking west across parking lot towards Wilson Avenue.



### Site Contact Information:

Westport Marina (Westhaven Cove)  
Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 268-9665 or (360) 533-9528

### Nearest Address:

1900 Nyhus Street N  
Westport, WA 98595

### Driving Directions:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 17.9 miles, turning right onto Montesano Street S (towards Westport)
- ⑤ Travel on Montesano Street S for 3.1 miles, turning right onto Wilson Avenue
- ⑥ Travel on Wilson Avenue for ~0.2 miles. Large parking area on right side (SE side) of road, before boat ramp and USCg Station, is the staging area. Inform Marina or Port of Grays Harbor before staging equipment; call (360) 268-9665 or (360) 533-9528.

# **Appendix 4D**

## **Boat Launch 2-Pagers**

**Boat Launch Location – List**

|                |                |                 |                 |
|----------------|----------------|-----------------|-----------------|
| <b>BL-1-GH</b> | <b>BL-3-GH</b> | <b>BL-5-GH</b>  | <b>BL-X2-GH</b> |
| <b>BL-2-GH</b> | <b>BL-4-GH</b> | <b>BL-X1-GH</b> | <b>BL-X3-GH</b> |



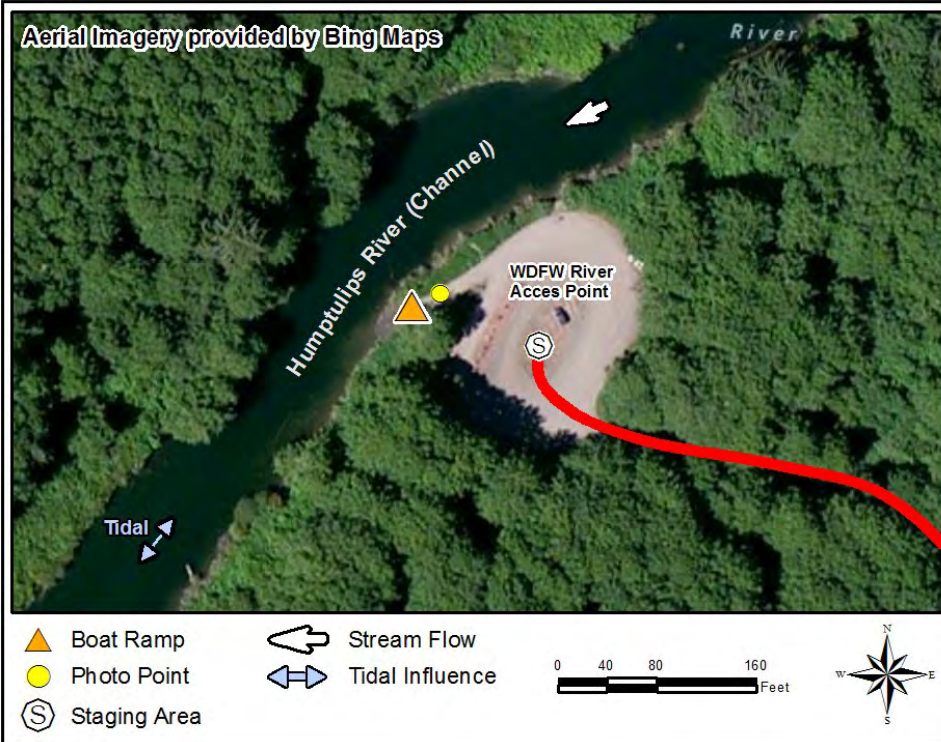
# North Bay - Humptulips River - WDFW Water Access Site (Morley)

BL-1-GH

## Boat Launch Location

**Position - Location:** 47.04935 -124.04442 North Bay (Grays Harbor)

**Comments:** AIR BOAT RECOMMENDED: Boat Launch is located at Washington Department of Fish and Wildlife (WDFW) Water Access Site "Morley" on the Humptulips River. Discovery Pass Required unless other arrangements have been made with WDFW. Underwater obstructions (dead heads, rocks) are present in the river near site and downstream - USE CAUTION. Airboat recommended.



## Location Information:

| Asset               | Type/Status | Amount/Number       |
|---------------------|-------------|---------------------|
| Boat Ramp           | Yes         | 1                   |
| Boat Ramp Type      | Concrete    |                     |
| Boat Dock           | No          |                     |
| Restrooms           | Yes         | 1 (vault)           |
| Power               | No          |                     |
| Water               | No          |                     |
| Parking (car)       | Yes         | ~10 (Not Marked)    |
| Parking (trailer)   | Yes         | ~8 (Not Marked)     |
| Waste Disposal      | No          |                     |
| Telephones          | No          |                     |
| Cell Phone Coverage | Unknown     |                     |
| Estimated Lot Size  | SqFt        | 24,000              |
| Lot Cover (primary) | Dirt/Gravel | 100%                |
| Covered Spaces      | No          |                     |
| User Fee            | No          | Discover Pass Req'd |

## GRP Response Strategies Served:

GILS-0.0, GRSC-0.1, HMPR-0.0, HMPR-0.75, HMPR-0.9, HMPR-0.95

## Boat Launch Location



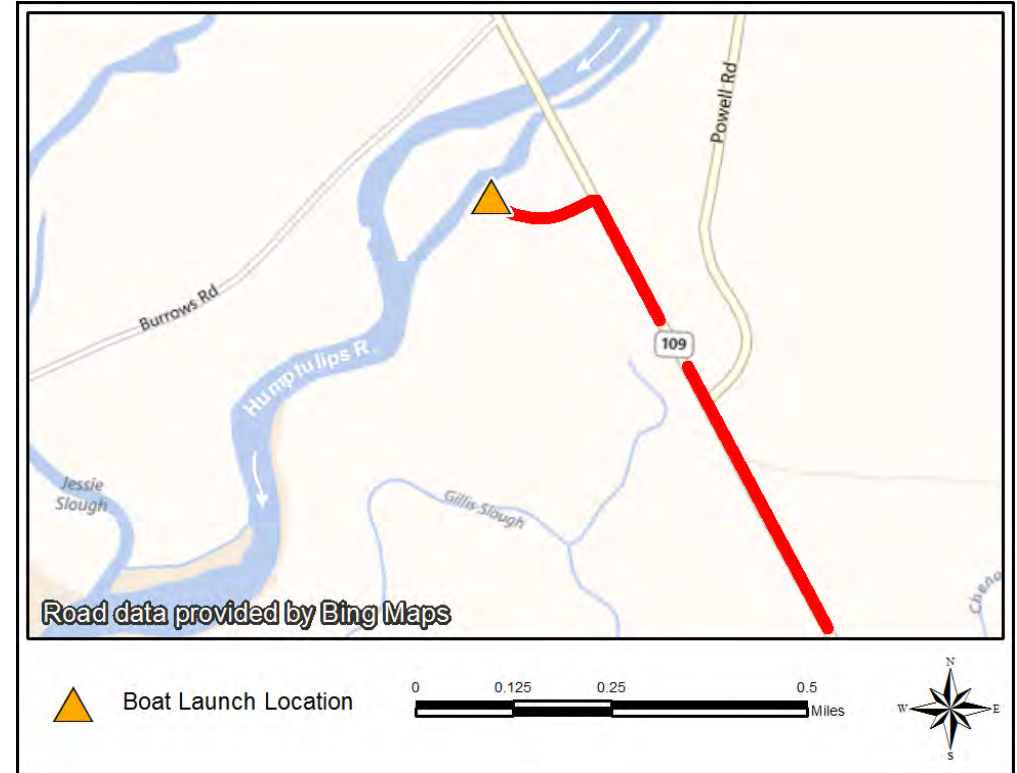
BL-1-GH Photo: At WDFW River Access Site on Humptulips River looking towards boat ramp on (left channel) channel left, and across towards (left channel) channel right.

## Site Contact Information:

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

## NearestAddress:

1349 Washington 109  
Highway 109  
Hoquiam, WA 98550



## DrivingDirections:

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Leevee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 Miles
- ④ Travel (North) on Hwy 109 for 10.2 Miles
- ⑤ About 600ft before the Humptulips River Bridge, turn left into the WDFW Water Access Point and follow road to parking area and boat ramp adjacent to the river.

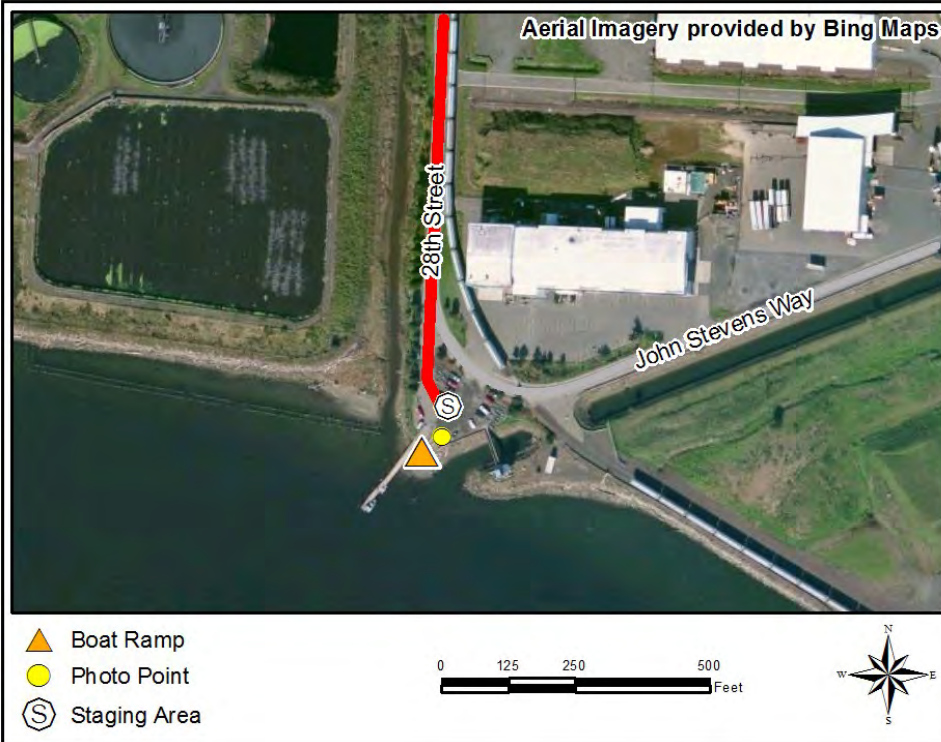
# Hoquiam - 28th Street Boat Launch

BL-2-GH

## Boat Launch Location

**Position - Location:** 46.9676 -123.86008 Hoquiam

**Comments:** Debris in Hoquiam Reach may block access to boat ramp; debris may need to be cleared before use.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Concrete           | ~8.5° slope          |
| Boat Dock           | Yes                | 1                    |
| Restrooms           | Yes                | Honey Bucket         |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~8 (Not Marked)      |
| Parking (trailer)   | Yes                | ~3 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Yes                |                      |
| Estimated Lot Size  | SqFt               | 17,500               |
| Lot Cover (primary) | Gravel             | 100%                 |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 |                      |

## GRP Response Strategies Served:

CHER-0.0, CHER-0.2, GH2, GH3, GH4, GH5, GH6, GH7, HOQR-0.0, WSHR-0.0, WSHR-0.2



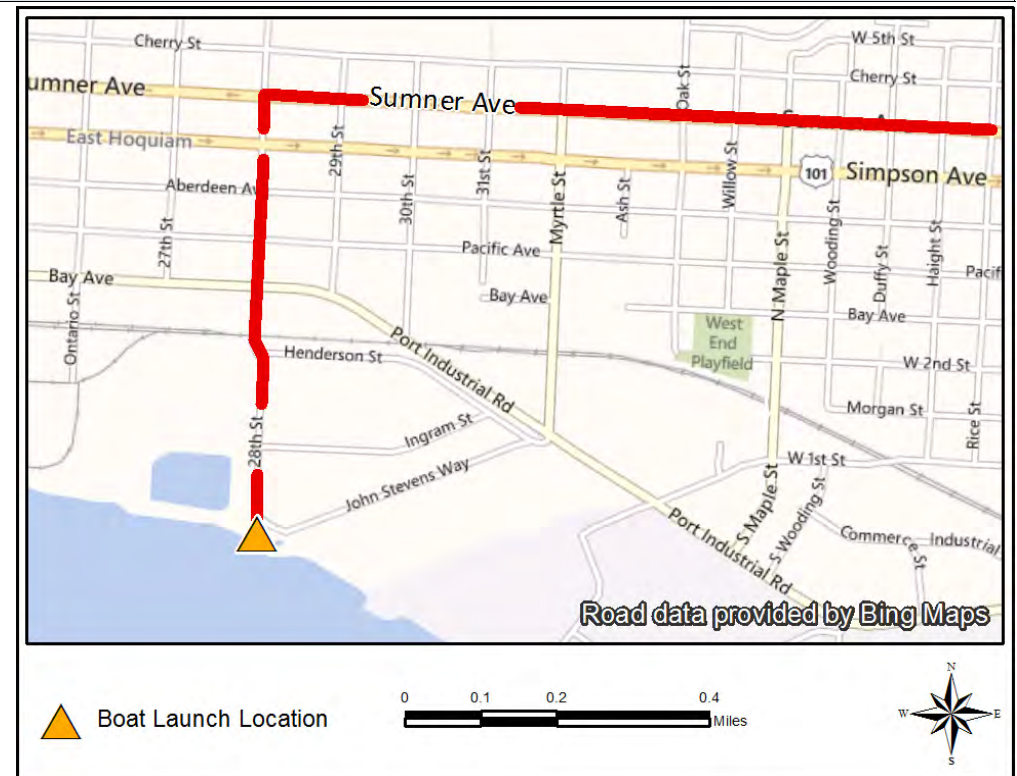
# Hoquiam - 28th Street Boat Launch

BL-2-GH

## Boat Launch Location



BL-2-GH Photo: At 28th Street Boat Launch in Hoquiam, looking towards ramp, dock, and Hoquiam Reach (Grays Harbor).



## Site Contact Information:

Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 533-9528

## Nearest Address:

718 28th Street  
Hoquiam, WA 98550

## Driving Directions:

- ① Cross over Wishkah River Bridge (first bridge) in Aberdeen & continue west Hwy 12 /Hwy 101 North
- ② After ~2.6 Miles turn left onto 28th Street
- ③ Stay on 28th Street for 0.5 miles, staying to the right after crossing the railroad tracks.  
Boat launch is at end roadway at far end of parking lot.

# Cosmopolis - Chehalis River Boat Launch

BL-3-GH

## Boat Launch Location

**Position - Location:** 46.95774 -123.77129 Cosmopolis

**Comments:** Owner of boat ramp and parking area is Cosmo Specialty Fibers; call 360-500-4604 if needed.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Asphalt/Gravel     | ~7° slope            |
| Boat Dock           | No                 |                      |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~10+ (Not Marked)    |
| Parking (trailer)   | Yes                | ~10+ (Not Marked)    |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Yes                |                      |
| Estimated Lot Size  | SqFt               | 65,000               |
| Lot Cover (primary) | Dirt/Gravel        | 100%                 |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 | Private Property     |

## GRP Response Strategies Served:

CHER-0.7a, CHER-0.7b, CHER-1.25a, CHER-1.25b, CHER-1.4, CHER-1.7a, CHER-1.7b, CHER-2.0a, CHER-2.0b, CHER-2.6, CHER-2.7, CHER-2.8, CHER-3.0, CHER-3.5



# Cosmopolis - Chehalis River Boat Launch

BL-3-GH

## Boat Launch Location



BL-3-GH Photo: At boat ramp on river left of the Chehalis River, looking towards end of ramp and across towards river right.



## Site Contact Information:

Cosmo Specialty Fibers  
Shift Supervisor  
(360) 500-4604

## Nearest Address:

1101 1st Street  
Cosmopolis, WA 98537

## Driving Directions:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South).
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the middle or left lane of bridge.
- ④ Turn left at first stop light immediately after bridge to stay on Hwy 101 South towards Cosmopolis
- ⑤ After turn, travel on Hwy 101 South for 2.0 miles before turning left onto "F" Street in Cosmopolis.
- ⑥ Follow "F" Street (~300ft) into boat ramp parking area. If gate is chained or locked, contact Cosmo Specialty Fibers for access; call (360) 500-4604.



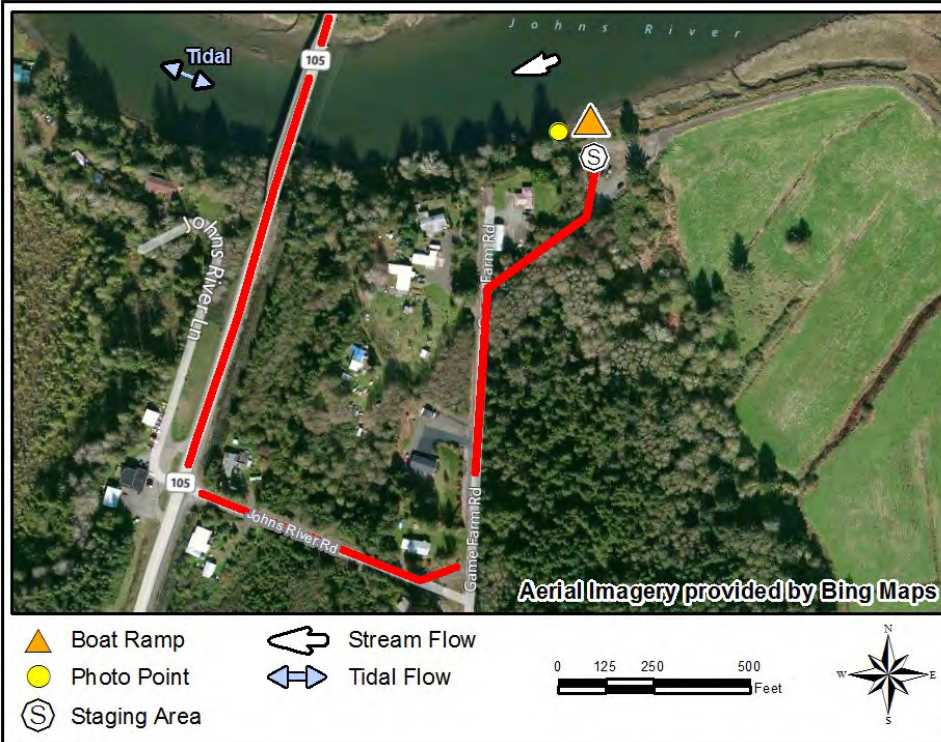
# Markham - Johns River Boat Launch

BL-4-GH

## Boat Launch Location

**Position - Location:** 46.89979 -123.99624 Markham

**Comments:** Located at Washington Department of Fish and Wildlife (WDFW) Water Access Site on Johns River. Discovery Pass Required unless other arrangements have been made with WDFW. Submerged debris and obstructions (dead heads, old piliings) are present in the river near this location and downstream - USE CAUTION.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Concrete           | ~5.5° slope          |
| Boat Dock           | No                 |                      |
| Restrooms           | Yes                | 1 (vault)            |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~10 (Not Marked)     |
| Parking (trailer)   | Yes                | ~4 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Verizon            | 4 Bars               |
| Estimated Lot Size  | SqFt               | 22,500               |
| Lot Cover (primary) | Gravel / Grass     | 80% / 20%            |
| Covered Spaces      | No                 |                      |
| User Fee            | Yes                | Discover Pass Req'd  |

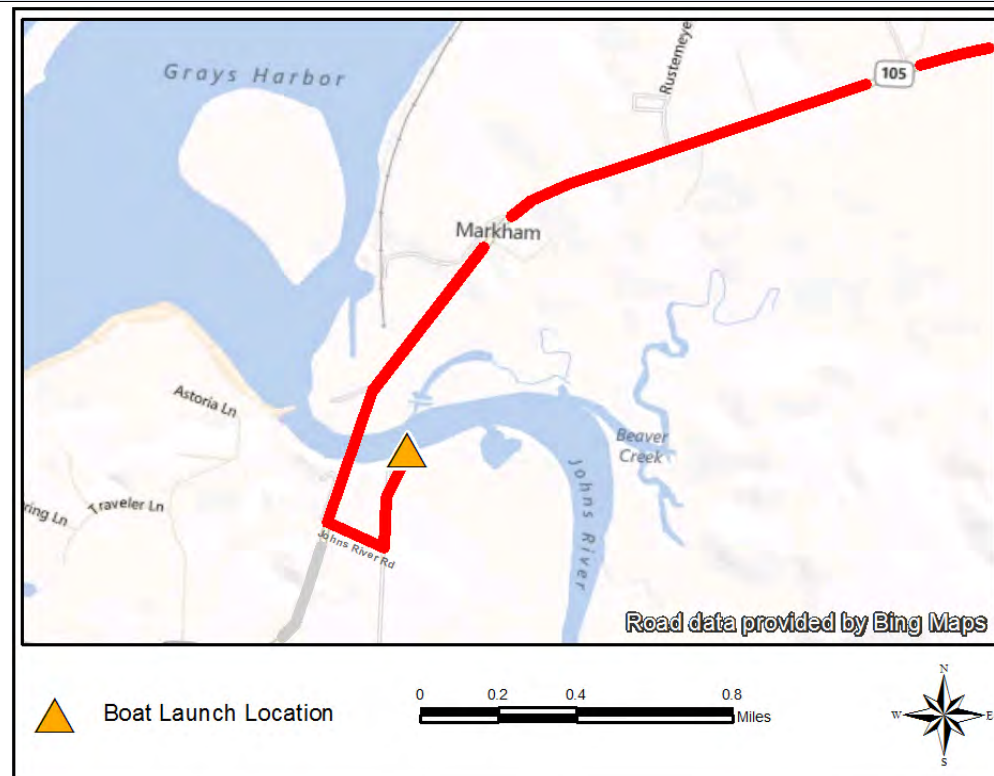
## GRP Response Strategies Served:

JHNR-0.0a, JHNR-0.0b, JHNR-0.3

## Boat Launch Location



BL-4-GH Photo: At WDFW River Access Point on Johns River looking towards boat ramp on river left, and across towards river right.



## Site Contact Information:

WDFW Region 6  
48 Devonshire Road  
Montesano, WA 98563  
Ph: (360) 249-4628  
TeamMontesano@dfw.wa.gov

## NearestAddress:

24 Game Farm Road  
Aberdeen, WA 98520

## DrivingDirections:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 11.5 miles, turning left onto Johns River Road, ~0.2 miles after the bridge over Johns River
- ⑤ Travel on Johns River Road ~0.1 miles, staying left at the "Y" and turning left onto Game Farm Road after the "Y" intersection.
- ⑥ Travel on Game Farm Road ~0.1 miles, turning right into WDFW River access point for Johns River. Boat launch is on the far side of parking lot towards river

# South Bay - Brady's Oysters Boat Launch (Hwy 105 / Elk River Bridge)

BL-5-GH

## Boat Launch Location

**Position - Location:** 46.86222 -124.07248 South Bay (Grays Harbor)

**Comments:** Boat Ramp is on private property owned by Brady's Oysters. Coordinate use of ramp and parking with property owner. Boat ramp base is made of shell, which extends some distance into South Bay on the north side of the Hwy 105 Bridge. Ramp might be usable during any tidal period, depending on the size of the vessel being launched. Alternative boat ramp is Westport Marina (BL-X1-GH).



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      | Shell              |                      |
| Boat Dock           | No                 |                      |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~8 (Not Marked)      |
| Parking (trailer)   | Yes                | ~4 (Not Marked)      |
| Waste Disposal      | No                 |                      |
| Telephones          | Unknown            |                      |
| Cell Phone Coverage | Unknown            |                      |
| Estimated Lot Size  | SqFt               | 10,000               |
| Lot Cover (primary) | Dirt/Gravel/Shell  |                      |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 | Permission Req'd     |

## GRP Response Strategies Served:

GH8, GH9, GH10a, GH10b, GH11, GH12, GH13, GH14



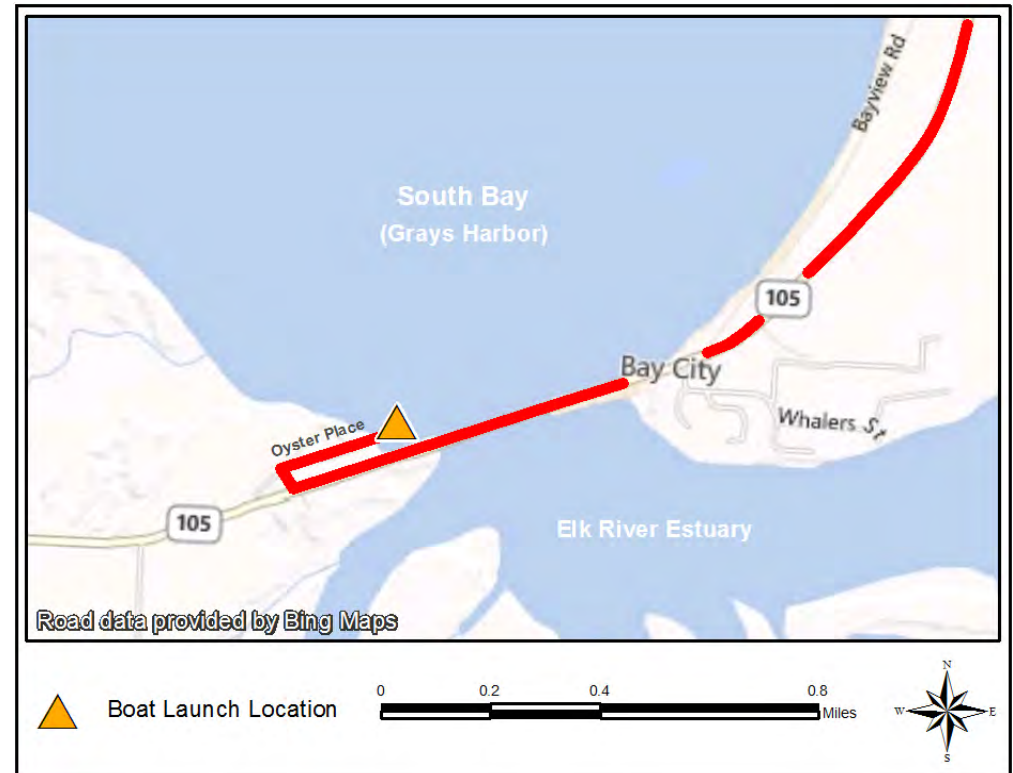
## South Bay - Brady's Oysters Boat Launch (Hwy 105 / Elk River Bridge)

BL-5-GH

### Boat Launch Location



BL-5-GH Photo: At Brady's Oyster boat ramp on NW side of Hwy 105 Bridge over Elk River (Estuary) looking NE from ramp into South Bay (Grays Harbor)



### Site Contact Information:

Brady's Oysters  
3714 Oyster Place E  
Aberdeen, WA 98520  
(360) 268 5518  
brady@bradysysters.com

### Nearest Address:

3714 Oyster Place E  
Aberdeen, WA 98520

### Driving Directions:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport & Raymond
- ④ Travel on Hwy 105 for 16.8 miles, turning right onto Oyster Place E, ~0.2 miles after the bridge over the Elk River Estuary
- ⑤ Stay to the right to remain on Oyster Place and travel ~0.2 miles to Brady's Oysters at end of road. Boat ramp is on South Bay side of Brady's Oysters. Notify Brady's before using boat ramp, leave voice mail if necessary.

# Ocean Shores - Quinault Marina

BL-X1-GH

## Boat Launch Location

|                             |   |            |              |
|-----------------------------|---|------------|--------------|
| <b>Position - Location:</b> | 46.94816  | -124.12972 | Ocean Shores |
| <b>Comments:</b>            | DO NOT USE THIS BOAT LAUNCH AT LOW TIDE. Boat launch and marina are primarily a mud flat at low tide. Boat ramp might be used to launch workboat at high tide, or middle tide, depending on the size and draft of the vessel. |            |              |



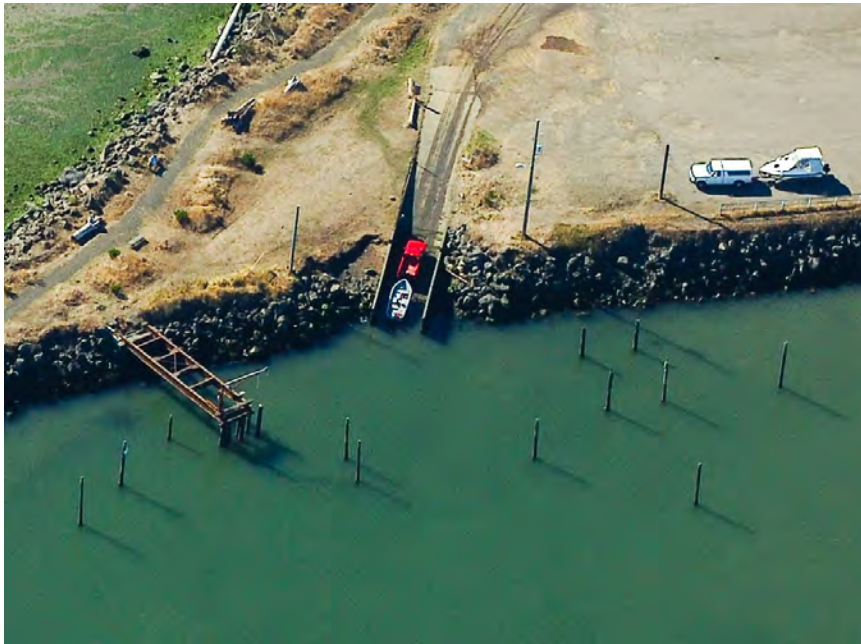
## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 1                    |
| Boat Ramp Type      |                    |                      |
| Boat Dock           | No                 | Docks Nearby         |
| Restrooms           | Unknown            |                      |
| Power               | Unknown            |                      |
| Water               | Unknown            |                      |
| Parking (car)       | Yes                | ~15 unmarked         |
| Parking (trailer)   | Yes                | ~10 unmarked         |
| Waste Disposal      | Unknown            | No Information       |
| Telephones          | Unknown            | No Information       |
| Cell Phone Coverage | Unknown            | No Information       |
| Estimated Lot Size  | SqFt               | 68,000               |
| Lot Cover (primary) | Gravel             |                      |
| Covered Spaces      | No                 |                      |
| User Fee            | Unknown            |                      |

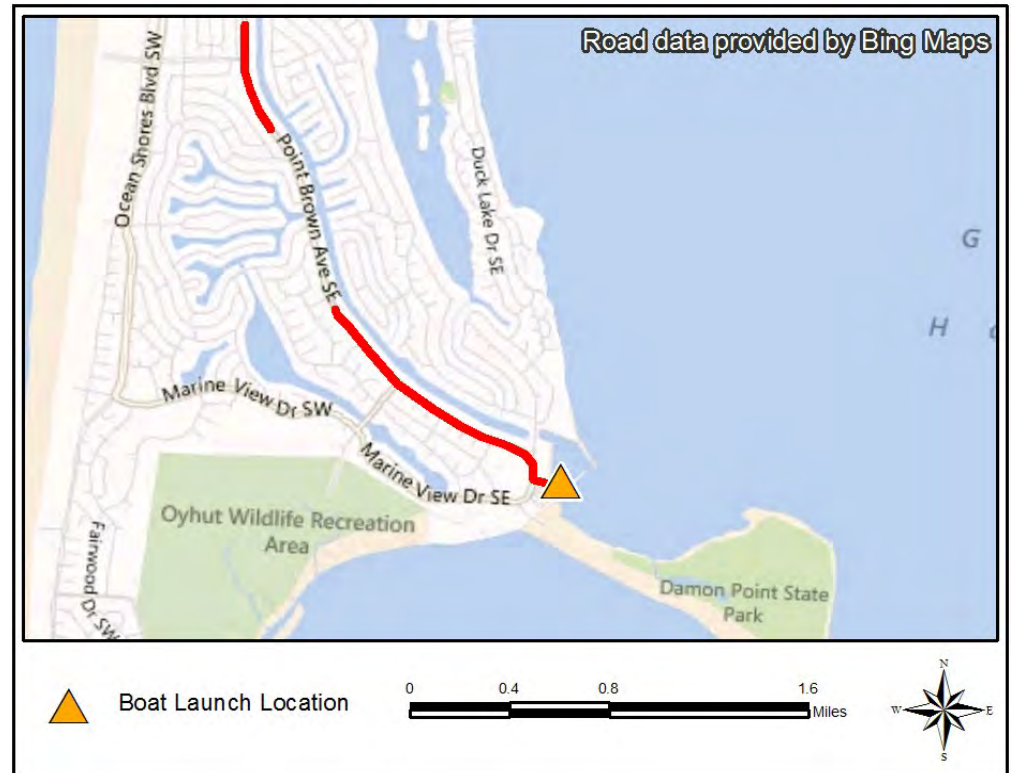
## GRP Response Strategies Served:

No Information

## Boat Launch Location



BL-X1-GH Photo: Aerial view of boat launch looking SW from location over Quinault Marina



## Site Contact Information:

Quinault Marina  
Tom Mail (Camp Host)  
(360) 289-4789  
(360) 580-2123

## Nearest Address:

1056 Discovery Ave SE  
Ocean Shores, WA 98569

## Driving Directions:

- ① Stay on Hwy 101 (North) in Aberdeen
- ② After crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River (into Hoquiam) turn right onto Levee St / Hwy 101
- ③ Stay in the left lane and then turn left onto Emerson Ave / Hwy 109 in 0.1 miles
- ④ Travel (North) on Hwy 109 for 16.1 miles, turning left onto State Route (SR) 115 towards Ocean Shores
- ⑤ After 1.9 miles, SR 115 will curve to the right and become Damon Road. 0.4 miles beyond curve, stay on SR 115 by turning left onto Point Brown Avenue NE.
- ⑥ Continue south on SR 115 for 5.2 miles (staying straight through any turning circles encountered), and then turn right onto Discovery Avenue SE; Quinault Marina will be on your left hand side ~500ft down the road. Boat Launch is on the SE side of the marina.



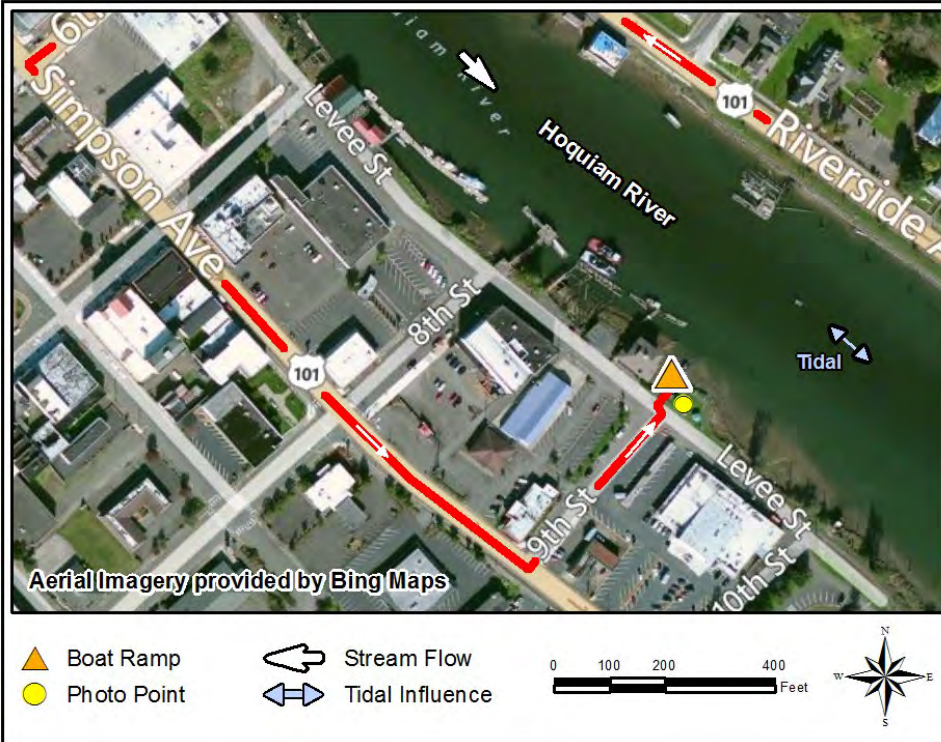
# Hoquiam - 9th Street Boat Launch (Hoquiam River)

BL-X2-GH

## Boat Launch Location

**Position - Location:** 46.97725 -123.88154 Hoquiam

**Comments:** DO NOT USE THIS BOAT LAUNCH AT LOW TIDE. Ramp is muddy and rocky at low tide, and a large hole exists at the end of the ramp. Boat ramp might be used to launch workboat at high tide, or middle tide, depending on the size and draft of the vessel. Limited parking at site (on street only).



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u>  |
|---------------------|--------------------|-----------------------|
| Boat Ramp           | Yes                | 1                     |
| Boat Ramp Type      | Dirt/Gravel        | ~8° slope             |
| Boat Dock           | No                 |                       |
| Restrooms           | No                 |                       |
| Power               | No                 |                       |
| Water               | No                 |                       |
| Parking (car)       | Yes                | 10 spaces (on street) |
| Parking (trailer)   | Yes                | 3 spaces (on street)  |
| Waste Disposal      | Yes                | Trash Cans            |
| Telephones          | No                 |                       |
| Cell Phone Coverage | Verizon            | 4 Bars                |
| Estimated Lot Size  | SqFt               | 5,500                 |
| Lot Cover (primary) | Grass / Gravel     | 70% / 30%             |
| Covered Spaces      | Yes                | 100 SqFt (2x50 SqFt)  |
| User Fee            | No                 |                       |

## GRP Response Strategies Served:

No Information

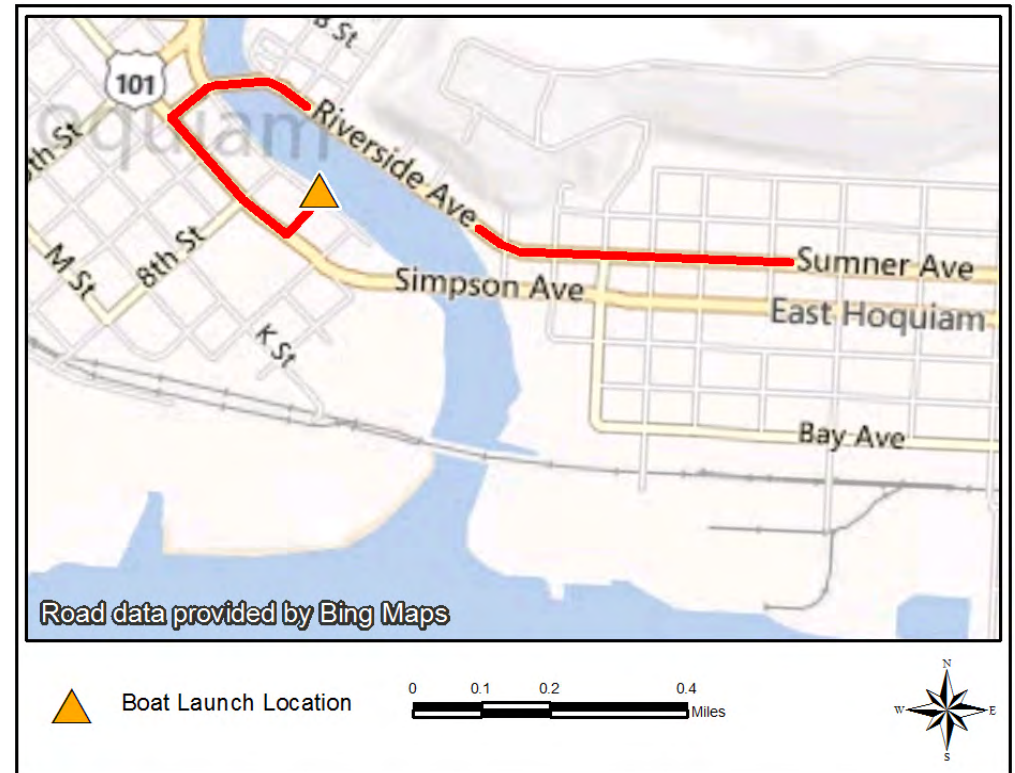
# Hoquiam - 9th Street Boat Launch (Hoquiam River)

BL-X2-GH

## Boat Launch Location



BL-X2-GH Photo: At boat launch on Hoquiam River, looking NW toward base of ramp on river right and upstream towards river left.



## Site Contact Information:

City of Hoquiam  
609 8th Street  
Hoquiam, WA 98550

## Nearest Address:

827 Levee Street  
Hoquiam, WA 98550

## Driving Directions:

- ① Stay on Hwy 101 (North) in Aberdeen
- ② Get in the left lane before crossing the Hwy 101 / Riverside Ave bridge over the Hoquiam River
- ③ Immediately after crossing bridge, stay straight onto 6th Street (in Hoquiam)
- ④ At the first light, turn left onto Simpson Avenue
- ⑤ Travel south on Simpson Avenue for ~0.2 miles (3 blocks) and turn left on 9th Street
- ⑥ Boat launch is at the end of the road, towards the left. Park on the street.



# Westport Marina Boat Launch

BL-X3-GH

## Boat Launch Location

**Position - Location:** 46.90408 -124.10603 Westport

**Comments:** Boat Launch is at SE end of Westport Marina near the USCG Station. Westport Marina and Boat Launch are owned/operated by Port of Grays Harbor.



## Location Information:

| <u>Asset</u>        | <u>Type/Status</u> | <u>Amount/Number</u> |
|---------------------|--------------------|----------------------|
| Boat Ramp           | Yes                | 2 Lanes              |
| Boat Ramp Type      | Concrete           |                      |
| Boat Dock           | Yes                | 2                    |
| Restrooms           | No                 |                      |
| Power               | No                 |                      |
| Water               | No                 |                      |
| Parking (car)       | Yes                | ~40 marked           |
| Parking (trailer)   | Yes                | ~100 marked          |
| Waste Disposal      | No                 |                      |
| Telephones          | No                 |                      |
| Cell Phone Coverage | Unknown            |                      |
| Estimated Lot Size  | SqFt               | 120,000              |
| Lot Cover (primary) | Dirt/Gravel        | 100%                 |
| Covered Spaces      | No                 |                      |
| User Fee            | No                 |                      |

## GRP Response Strategies Served:

No Information



## Boat Launch Location



BL-X3-GH Photo: At Westport Marina public boat launch looking NE towards ramp, docks, and Grays Harbor.



## Site Contact Information:

Westport Marina (Westhaven Cove)  
Port of Grays Harbor  
111 S. Wooding Street  
Aberdeen, WA 98520  
(360) 268-9665 or (360) 533-9528

## NearestAddress:

1900 Nyhus Street N  
Westport, WA 98595

## DrivingDirections:

- ① Enter Aberdeen from west on Hwy 12 and follow signs for Hwy 101 South towards Westport & Raymond
- ② Cross Wishkah River Bridge (first bridge in Aberdeen), stay in left lane, and travel on Hwy 12 for 0.2 miles before turning left onto South "H" Street (Hwy 101 South)
- ③ Travel on Hwy 101 South, over the South Aberdeen Bridge, staying in the right lane to remain on Hwy 105 towards Westport
- ④ Travel on Hwy 105 for 17.9 miles, turning right onto Montesano Street S (towards Westport)
- ⑤ Travel on Montesano Street S for 3.1 miles, turning right onto Wilson Avenue
- ⑥ Travel on Wilson Avenue for 0.2 miles to the end of the road; boat launch located at end of road.

# **Grays Harbor Geographic Response Plan**

## **Chapter 5 – Shoreline Countermeasures**

### **5.1 - Chapter Overview**

Shoreline countermeasure processes continue to evolve, reflecting increasingly efficient treatment techniques. Response organizations and agencies must identify shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and resolve problems as the treatment progresses.

This chapter serves as a tool for countermeasure contingency planning and implementation for shorelines within the Grays Harbor GRP area. It contains shoreline-type maps, and oil countermeasure matrices for very light oils, light oils, medium oils, and heavy oils. The shoreline type for a specific area can be compared to the matrix for the particular oil spilled to determine (in general) what response cleanup actions are appropriate. The Northwest Area Shoreline Countermeasures Manual (NWACP Section 9420) provides detailed information on shoreline countermeasures and should be consulted during any oil spill response.

### **5.2 - Oil Countermeasure Matrices**

Appendix 5A contains oil countermeasure matrices for very light oils, light oils, medium oils, and heavy oils. Each matrix provides general guidance on the removal of oil from shoreline substrates. They must be used in conjunction with the Northwest Area Shoreline Countermeasures Manual (NWACP Section 9420) plus field observations and scientific advice. The countermeasures listed in the matrices are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques. The Federal On-Scene Coordinator (FOSC), or the state OSC operating with the FOSC's authorization, has the responsibility and authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is

based on the degree of oil contamination, shoreline type, and the presence of sensitive resources.

### **5.3 - Shoreline Type Maps and Photographs**

Shoreline type maps for Grays Harbor are provided in Appendix 5B of this document. A list of shoreline codes and types is provided below. Additional information on shoreline type classifications can be found in the [Shoreline Assessment Job Aid](#) and in Environmental Sensitivity Index (ESI) Maps. Both are available on the National Oceanographic and Atmospheric Administration's website at <http://archive.orr.noaa.gov>.

#### Shoreline Codes and Types:

- 1** - Exposed rock shores and vertical, hard man-made structures
- 2** - Exposed wave-cut platforms
- 3** - Fine to medium grained sand beaches and steep
- 4** - Course grained sand beaches
- 5** - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material
- 6A** - Gravel beaches - pebbles to cobble
- 6B** - Gravel beaches - cobbles to boulders
- 6C** - Exposed rip rap
- 7** - Exposed tidal flat
- 8A** - Sheltered vertical rock shores and vertical, hard man-made structures (seawalls, docks)
- 8B** - Sheltered rubble slope
- 9A** - Sheltered sand and mud flats
- 9B** - Sheltered vegetated low bank
- 10** - Marshes



## Shoreline Countermeasures Matrices: Table 5A-1

# Very Light Oils

## Jet fuels, Gasoline

- Highly volatile (should all evaporate within 1-2 days)
- High concentration of toxic (soluble) compounds
- Localized, severe impacts to water column and shoreline resources
- Duration of impact is a function of the resource recovery rate
- No dispersion necessary

### Shoreline Type Codes

**1** - Exposed rock shores and vertical, hard man-made structures

**2** - Exposed wave-cut platforms

**3** - Fine to medium grained sand beaches and steep

**4** - Course grained sand beaches

**5** - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material

**6A** - Gravel beaches - pebbles to cobble

**6B** - Gravel beaches - cobbles to boulders

**6C** - Exposed rip rap

**7** - Exposed tidal flat

**8A** - Sheltered vertical rock shores and vertical, hard man-made structures (seawalls, docks)

**8B** - Sheltered rubble slope

**9A** - Sheltered sand and mud flats

**9B** - Sheltered vegetated low bank

**10** - Marshes

| Countermeasures for <u>Very Light Oils</u>      |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
|---|---|---|---|---|---|----|----|----|---|----|----|----|----|----|
| Shoreline Type →                                | 1 | 2 | 3 | 4 | 5 | 6A | 6B | 6C | 7 | 8A | 8B | 9A | 9B | 10 |
| <b>CONVENTIONAL METHODS</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| No action                                       | R | R | R | R | R | R  | R  | R  | R | R  | R  | R  | R  | R  |
| Manual removal of oil                           |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Passive collection of oil                       |   |   | C | C | C | C  | C  | C  |   |    |    |    |    |    |
| Oiled debris removal                            | C | C | C | C | C | C  | C  | C  | C | C  | C  | C  | C  | C  |
| Trenching/recovery wells                        |   |   | C | C | C |    |    |    |   |    |    |    |    |    |
| Oiled sediment removal                          |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Ambient water flooding (deluge)                 |   |   |   |   |   |    |    |    |   |    |    |    |    | C  |
| Ambient water flush <50 psi                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Ambient water flush <100 psi                    |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Warm water flush <90°F                          |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Hot water flush >90°F                           |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Vacuum removal of oil                           |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Sediment reworking                              |   |   | C | C | C | C  |    |    |   |    |    |    |    |    |
| Sediment Removal - cleaning - replacement       |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Cutting oiled vegetation                        |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| <b>ALTERNATIVE METHODS*</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| In-situ burning on shore                        |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Chemical stabilization, protection, or cleaning |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Nutrient enhancement                            |   |   |   |   |   |    |    |    |   |    |    |    |    |    |
| Microbial addition                              |   |   |   |   |   |    |    |    |   |    |    |    |    |    |

**R = Recommend** (May be Preferred Alternative)

**C = Conditional** (Refer to Northwest Area Shoreline Countermeasures Manual – [NWACP Section 9420](#))

**Items not marked** "R" or "C" are not applicable or not generally recommended

Labels marked \* Required to follow approved process defined in [National Contingency Plan](#) and [NW Area Contingency Plan](#)

Permit Requirements: See [NWACP Section 9401](#) - Northwest Area Contingency Plan Permit Summary Table

*This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire [Northwest Area Shoreline Countermeasures Manual](#) in the NW Area Contingency Plan plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC), or the state OSC operating with the FOSC's authorization, has the responsibility for and the authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is based on the degree of oil contamination, shoreline type, and the presence of sensitive resources.*

## Shoreline Countermeasures Matrices: Table 5A-2

## Light Oils

Diesel, No. 2 Fuel Oils,  
Light Crude Oils

- Moderately volatile; will leave residue (up to 1/3 of spilled amount)
- Moderate concentrations of toxic (soluble) compounds
- Long-term contamination of intertidal resources possible
- Potential for subtidal impacts (dissolution, mixing, sorption onto suspended sediments)
- No dispersion necessary
- Cleanup can be very effective

## Shoreline Type Codes

- 1 - Exposed rock shores and vertical, hard man-made structures  
 2 - Exposed wave-cut platforms  
 3 - Fine to medium grained sand beaches and steep  
 4 - Course grained sand beaches  
 5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material  
 6A - Gravel beaches - pebbles to cobble  
 6B - Gravel beaches - cobbles to boulders

- 6C - Exposed rip rap  
 7 - Exposed tidal flat  
 8A - Sheltered vertical rock shores and vertical, hard man-made structures (seawalls, docks)  
 8B - Sheltered rubble slope  
 9A - Sheltered sand and mud flats  
 9B - Sheltered vegetated low bank  
 10 - Marshes

| Countermeasures for <u>Light Oils</u>           |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
|---|---|---|---|---|---|----|----|----|---|----|----|----|----|----|--|
| Shoreline Type →                                | 1 | 2 | 3 | 4 | 5 | 6A | 6B | 6C | 7 | 8A | 8B | 9A | 9B | 10 |  |
| <b>CONVENTIONAL METHODS</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| No action                                       | R | R | C | C | C | C  | C  | C  | R | C  | C  | R  | C  | R  |  |
| Manual removal of oil                           |   |   | C | C | C | C  | C  | C  |   | R  | R  |    | C  |    |  |
| Passive collection of oil                       | C | R | R | R | R | R  | R  | R  | C | R  | R  | C  | R  | R  |  |
| Oiled debris removal                            | C | C | R | R | R | R  | R  | R  | C | R  | R  | C  | C  | C  |  |
| Trenching/recovery wells                        |   |   | C | C | C |    |    |    |   |    |    |    |    |    |  |
| Oiled sediment removal                          |   |   | C | C | C | C  |    |    |   |    |    |    |    |    |  |
| Ambient water flooding (deluge)                 |   |   | C | C | C | R  | R  | R  |   |    | C  |    |    | C  |  |
| Ambient water flush <50 psi                     |   | C |   |   | C | C  | C  | C  |   | R  | C  |    |    | C  |  |
| Ambient water flush <100 psi                    |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Warm water flush <90°F                          |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Hot water flush >90°F                           |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Vacuum removal of oil                           |   |   |   |   |   |    | C  | C  |   |    |    |    |    | C  |  |
| Sediment reworking                              |   |   | C | C | C | C  |    |    |   |    |    |    |    |    |  |
| Sediment Removal - cleaning - replacement       |   |   | C | C | C |    |    |    |   |    |    |    |    |    |  |
| Cutting oiled vegetation                        |   |   |   |   |   |    | C  | C  |   | C  | C  |    | C  | C  |  |
| <b>ALTERNATIVE METHODS*</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| In-situ burning on shore                        |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Chemical stabilization, protection, or cleaning |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Nutrient enhancement                            |   |   | C | C | C | C  | C  | C  |   |    |    |    |    | C  |  |
| Microbial addition                              |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |

**R = Recommend** (May be Preferred Alternative)

**C = Conditional** (Refer to Northwest Area Shoreline Countermeasures Manual – [NWACP Section 9420](#))

**Items not marked** “R” or “C” are not applicable or not generally recommended

Labels marked \* Required to follow approved process defined in [National Contingency Plan](#) and [NW Area Contingency Plan](#)  
 Permit Requirements: See [NWACP Section 9401](#) - Northwest Area Contingency Plan Permit Summary Table

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## Shoreline Countermeasures Matrices: Table 5A-3

# Medium Oils

## Most Crude Oils & Some Heavily Weathered Light Crude Oils

- About 1/3 will evaporate within 24 hours
- Maximum water-soluble fraction is 10-100 parts per million (ppm)
- Oil contamination of intertidal areas can be severe and long-term
- Impact to waterfowl and fur-bearing mammals can be severe
- Chemical dispersion is an option within 1-2 days
- Cleanup most effective if conducted quickly

### Shoreline Type Codes

- 1 - Exposed rock shores and vertical, hard man-made structures
- 2 - Exposed wave-cut platforms
- 3 - Fine to medium grained sand beaches and steep
- 4 - Course grained sand beaches
- 5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material
- 6A - Gravel beaches - pebbles to cobble
- 6B - Gravel beaches - cobbles to boulders

- 6C - Exposed rip rap
- 7 - Exposed tidal flat
- 8A - Sheltered vertical rock shores and vertical, hard man-made structures (seawalls, docks)
- 8B - Sheltered rubble slope
- 9A - Sheltered sand and mud flats
- 9B - Sheltered vegetated low bank
- 10 - Marshes

| Countermeasures for Medium Oils                 |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
|---|---|---|---|---|---|----|----|----|---|----|----|----|----|----|--|
| Shoreline Type →                                | 1 | 2 | 3 | 4 | 5 | 6A | 6B | 6C | 7 | 8A | 8B | 9A | 9B | 10 |  |
| <b>CONVENTIONAL METHODS</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| No action                                       | C | C | C | C | C | C  | C  | C  | R | C  | C  | R  | C  | R  |  |
| Manual removal of oil                           | C | R | R | R | R | C  | C  | C  |   | R  | R  |    | C  | C  |  |
| Passive collection of oil                       | R | R | R | R | R | R  | R  | R  | C | R  | R  | R  | R  | R  |  |
| Oiled debris removal                            | C | R | R | R | R | R  | R  | R  | C | R  | R  | C  | R  | C  |  |
| Trenching/recovery wells                        |   |   | C | C | C |    |    |    |   |    |    |    |    |    |  |
| Oiled sediment removal                          |   |   | C | C | C | C  |    |    |   |    |    |    | C  |    |  |
| Ambient water flooding (deluge)                 |   |   | C | C | C | R  | R  | R  |   | R  | R  |    | C  | C  |  |
| Ambient water flush <50 psi                     | C | C |   |   | C | R  | C  | R  |   | R  | R  |    | C  | C  |  |
| Ambient water flush <100 psi                    | C | C |   |   |   |    | C  | C  |   | C  |    |    |    |    |  |
| Warm water flush <90°F                          | C |   |   |   |   |    | C  | C  |   | C  |    |    |    |    |  |
| Hot water flush >90°F                           | C |   |   |   |   |    |    |    |   | C  |    |    |    |    |  |
| Vacuum removal of oil                           | C | C | R | R |   | C  | R  | R  |   | C  | C  |    | C  | C  |  |
| Sediment reworking                              |   |   | C | C | C | C  |    |    |   |    |    |    |    |    |  |
| Sediment Removal - cleaning - replacement       |   |   | C | C | C | C  |    | C  |   |    | C  |    |    |    |  |
| Cutting oiled vegetation                        |   |   |   |   |   |    | C  | C  |   | C  | C  |    | C  | C  |  |
| <b>ALTERNATIVE METHODS*</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| In-situ burning on shore                        |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Chemical stabilization, protection, or cleaning |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Nutrient enhancement                            |   |   | C | C | C | C  | C  | C  |   |    | C  |    |    | C  |  |
| Microbial addition                              |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |

**R = Recommend** (May be Preferred Alternative)

**C = Conditional** (Refer to Northwest Area Shoreline Countermeasures Manual – [NWACP Section 9420](#))

**Items not marked** "R" or "C" are not applicable or not generally recommended

Labels marked \* Required to follow approved process defined in [National Contingency Plan](#) and [NW Area Contingency Plan](#)  
Permit Requirements: See [NWACP Section 9401](#) - Northwest Area Contingency Plan Permit Summary Table

*This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire [Northwest Area Shoreline Countermeasures Manual](#) in the NW Area Contingency Plan plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC), or the state OSC operating with the FOSC's authorization, has the responsibility for and the authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is based on the degree of oil contamination, shoreline type, and the presence of sensitive resources.*



## Shoreline Countermeasures Matrices: Table 5A-4

# Heavy Oils

**Crude Oils, Intermediate Fuel Oils,  
Bunker C, Heavily Weathered  
Medium Crude Oils**

- Heavy oils with little or no evaporation or dissolution
- Water-soluble fraction likely to be <10 ppm
- Heavy contamination of intertidal areas likely
- Severe impacts to waterfowl and fur-bearing mammals (coating and ingestion)
- Long-term contamination to sediments possible
- Weathers very slowly
- Dispersion seldom effective
- Shoreline cleanup difficult under all conditions

## Shoreline Type Codes

- 1 - Exposed rock shores and vertical, hard man-made structures  
2 - Exposed wave-cut platforms  
3 - Fine to medium grained sand beaches and steep  
4 - Course grained sand beaches  
5 - Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material  
6A - Gravel beaches - pebbles to cobble  
6B - Gravel beaches - cobbles to boulders

- 6C - Exposed rip rap  
7 - Exposed tidal flat  
8A - Sheltered vertical rock shores and vertical, hard man-made structures (seawalls, docks)  
8B - Sheltered rubble slope  
9A - Sheltered sand and mud flats  
9B - Sheltered vegetated low bank  
10 - Marshes

| Countermeasures for <u>Medium Oils</u>          |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
|---|---|---|---|---|---|----|----|----|---|----|----|----|----|----|--|
| Shoreline Type →                                | 1 | 2 | 3 | 4 | 5 | 6A | 6B | 6C | 7 | 8A | 8B | 9A | 9B | 10 |  |
| <b>CONVENTIONAL METHODS</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| No action                                       | C | C | C | C | C | C  | C  | C  | R | C  | C  | R  | C  | R  |  |
| Manual removal of oil                           | C | R | R | R | R | C  | C  | C  |   | R  | R  |    | C  | C  |  |
| Passive collection of oil                       | R | R | R | R | R | R  | R  | R  | C | R  | R  | R  | R  | R  |  |
| Oiled debris removal                            | C | R | R | R | R | R  | R  | R  | C | R  | R  | C  | R  | C  |  |
| Trenching/recovery wells                        |   |   | C | C | C |    |    |    |   |    |    |    |    |    |  |
| Oiled sediment removal                          |   |   | C | C | C | C  |    |    |   |    |    |    | C  |    |  |
| Ambient water flooding (deluge)                 |   |   | C | C | C | R  | R  | R  |   | R  | R  |    | C  | C  |  |
| Ambient water flush <50 psi                     | C | C |   |   | C | R  | C  | R  |   | R  | R  |    | C  | C  |  |
| Ambient water flush <100 psi                    | C | C |   |   |   |    | C  | C  |   | C  |    |    |    |    |  |
| Warm water flush <90°F                          | C |   |   |   |   |    | C  | C  |   | C  |    |    |    |    |  |
| Hot water flush >90°F                           | C |   |   |   |   |    |    |    |   | C  |    |    |    |    |  |
| Vacuum removal of oil                           | C | C | R | R |   | C  | R  | R  |   | C  | C  |    | C  | C  |  |
| Sediment reworking                              |   |   | C | C | C | C  |    |    |   |    |    |    |    |    |  |
| Sediment Removal - cleaning - replacement       |   |   | C | C | C | C  |    | C  |   |    | C  |    |    |    |  |
| Cutting oiled vegetation                        |   |   |   |   |   |    | C  | C  |   | C  | C  |    | C  | C  |  |
| <b>ALTERNATIVE METHODS*</b>                     |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| In-situ burning on shore                        |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Chemical stabilization, protection, or cleaning |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |
| Nutrient enhancement                            |   |   | C | C | C | C  | C  | C  |   |    | C  |    |    | C  |  |
| Microbial addition                              |   |   |   |   |   |    |    |    |   |    |    |    |    |    |  |

**R = Recommend** (May be Preferred Alternative)

**C = Conditional** (Refer to Northwest Area Shoreline Countermeasures Manual – [NWACP Section 9420](#))

**Items not marked** “R” or “C” are not applicable or not generally recommended

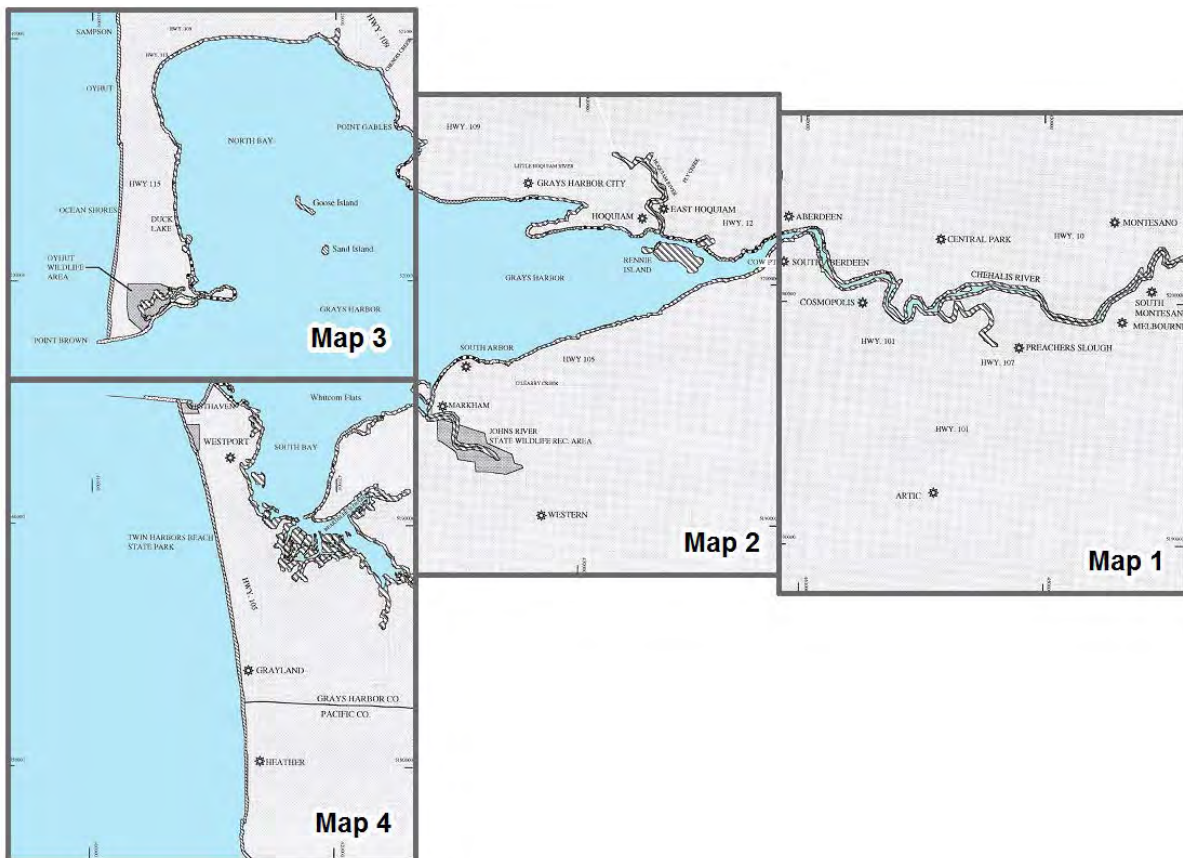
**Labels marked \*** Required to follow approved process defined in [National Contingency Plan](#) and [NW Area Contingency Plan](#)  
Permit Requirements: See [NWACP Section 9401](#) - Northwest Area Contingency Plan Permit Summary Table

*This countermeasure advisability **matrix is only a general guide for removal of oil from shoreline** substrates. It must be used in conjunction with the entire [Northwest Area Shoreline Countermeasures Manual](#) in the NW Area Contingency Plan plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC), or the state OSC operating with the FOSC's authorization, has the responsibility for and the authority to determine which countermeasure(s) are appropriate for various situations encountered. Selection of countermeasures is based on the degree of oil contamination, shoreline type, and the presence of sensitive resources.*

# Grays Harbor Geographic Response Plan

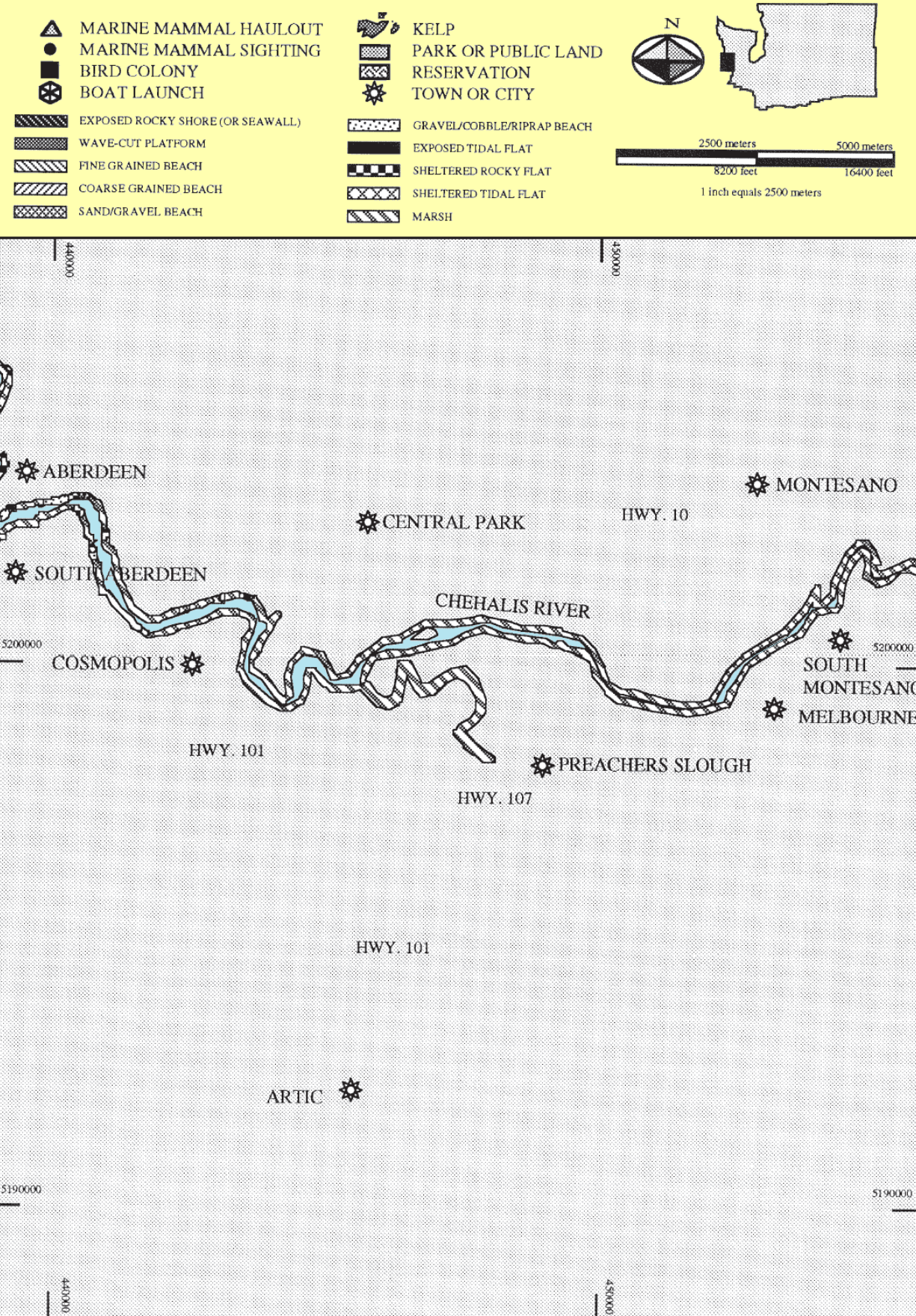
## Appendix 5B

### - Shoreline Type Maps -



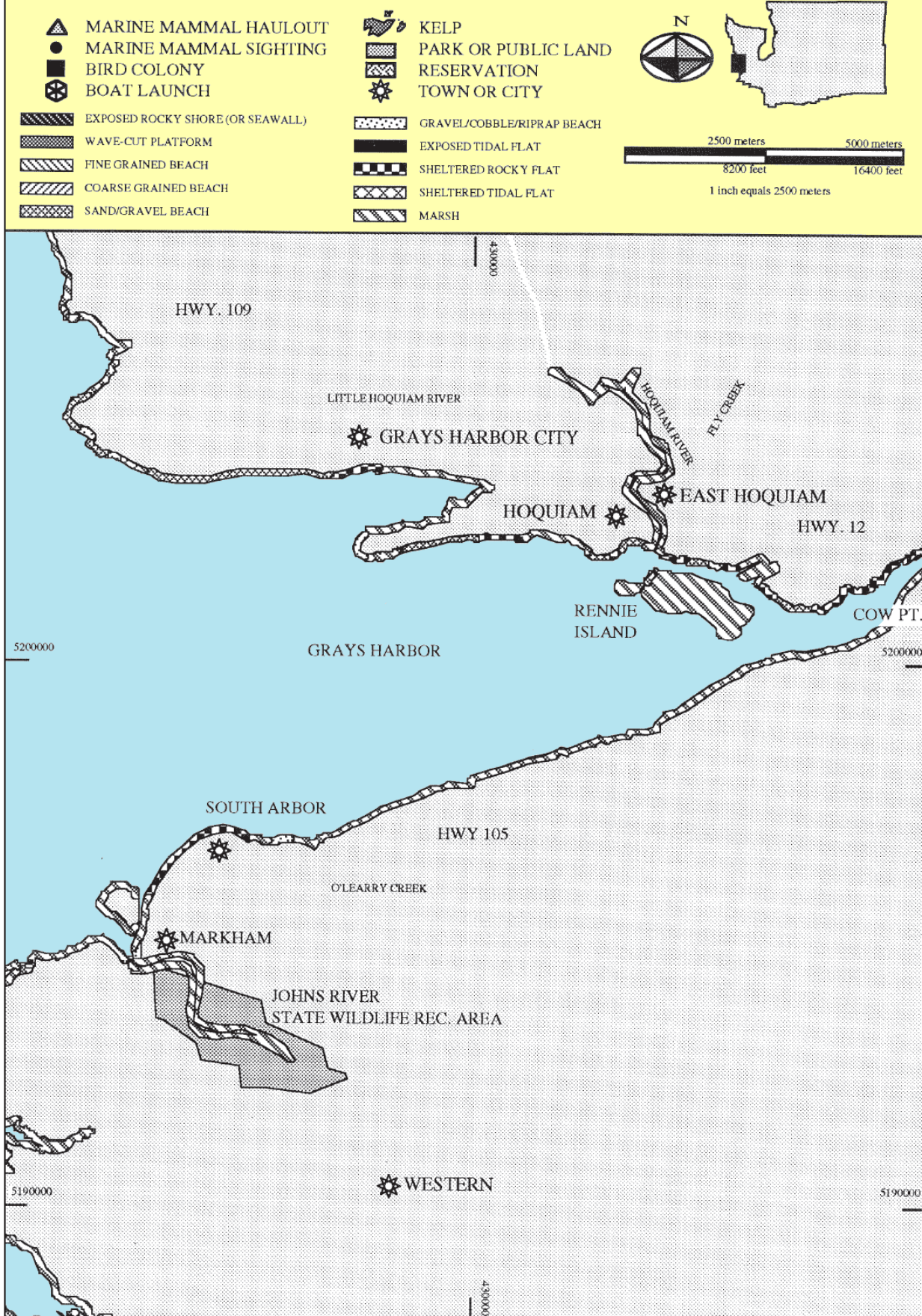


# MAP 1 - CHEHALIS RIVER

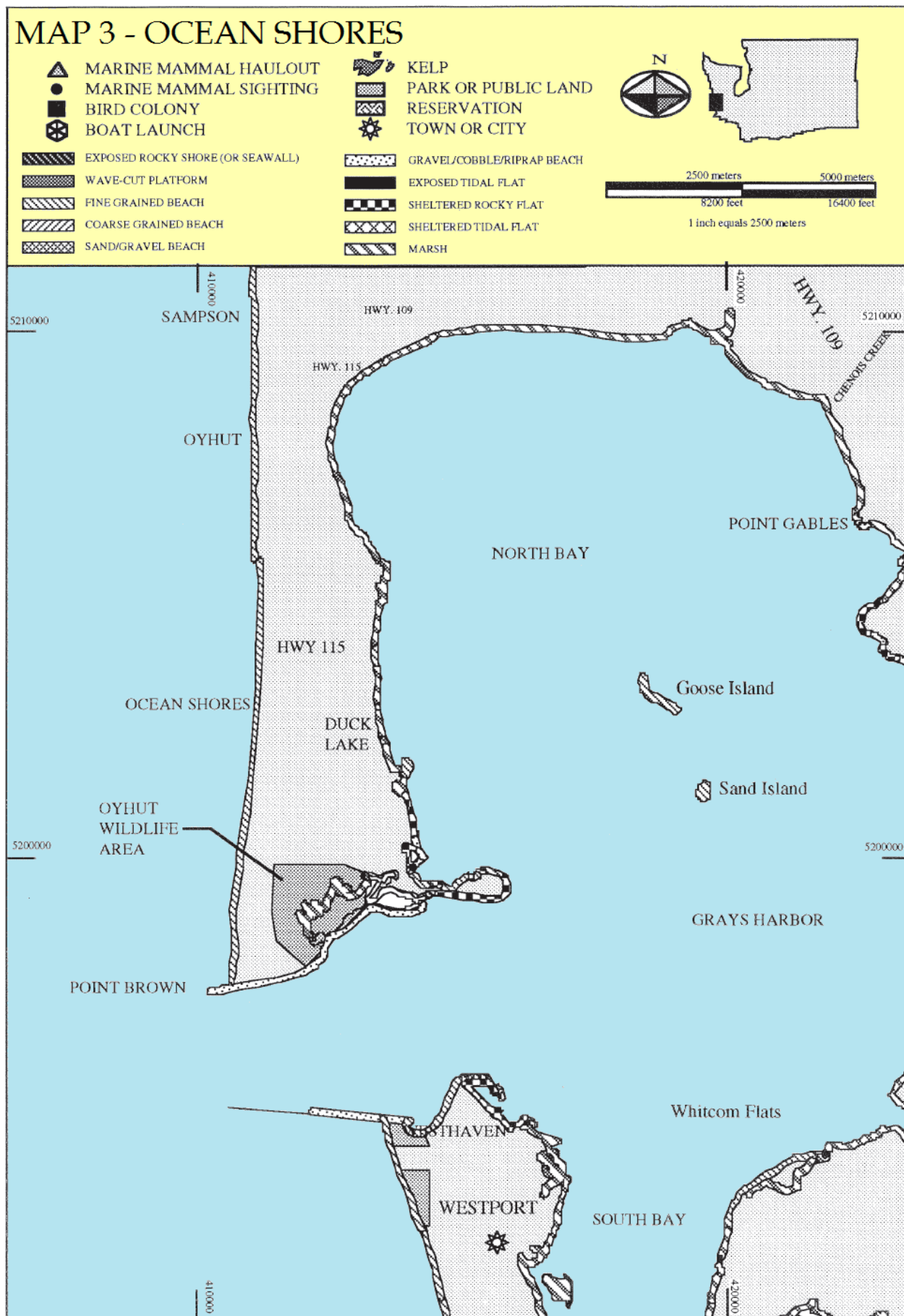


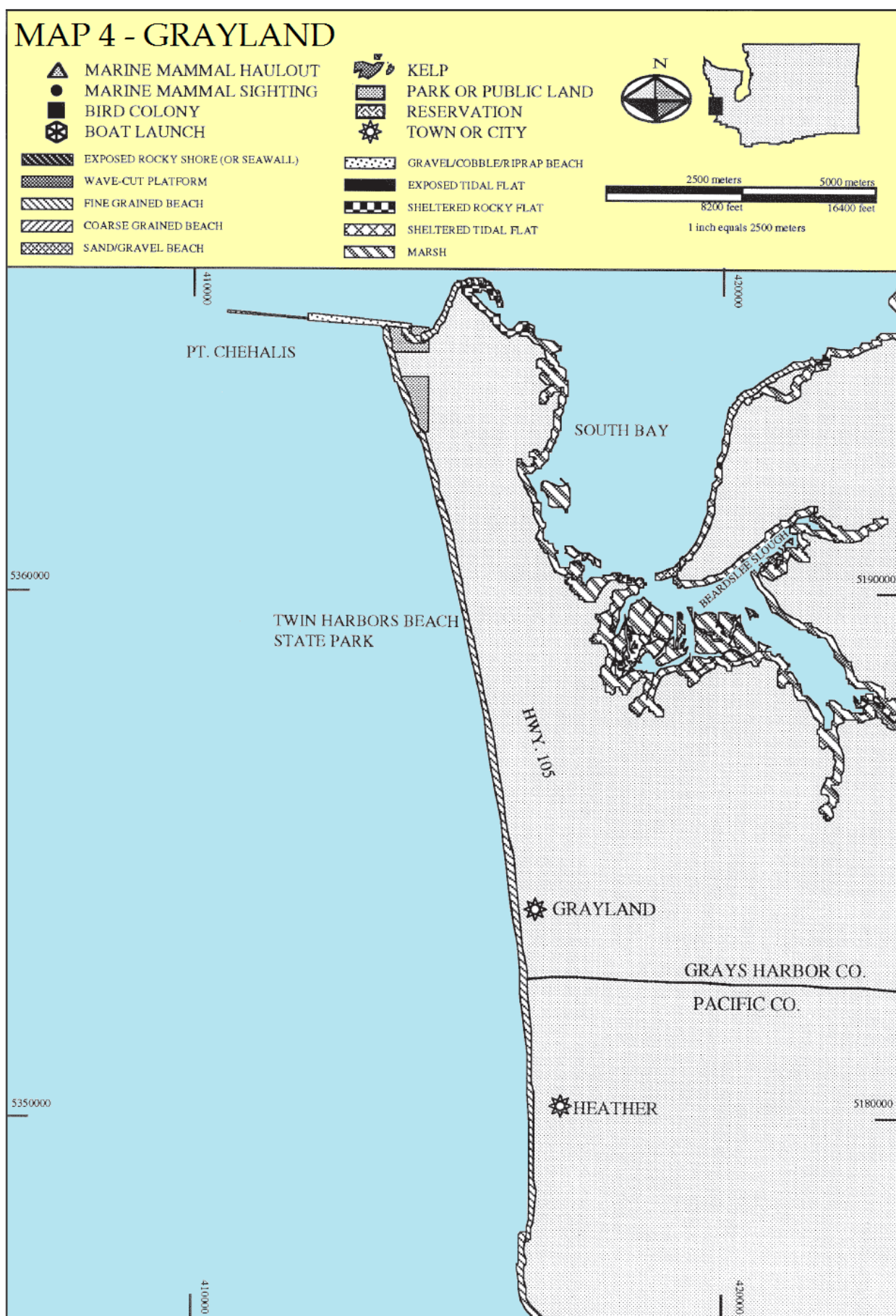


## MAP 2 - HOQUIAM











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# Grays Harbor Geographic Response Plan

## Chapter 6 – Resources at Risk

### 6.1 – Chapter Introduction

This chapter provides a summary of natural, cultural, and economic resources at risk in the Grays Harbor 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 the discovery of 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 is located 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 resource-at-risk “context” to responders, clean-up workers, and others during the initial phase of a spill response in the GRP area.
- Briefing responders and incident command staff that may be unfamiliar with sensitive resource concerns in the GRP area.
- Providing background information for personnel involved in media presentations and public outreach during a spill incident.

## 6.2 - Natural Resources at Risk – Summary

**Sensitive species that may occur within this area, at some time of year, include the following federal and state listed species.** In addition to Grays Harbor, the area covered includes the outer beaches and marine waters of the Pacific Coast that fall within the boundaries of this GRP. The following designations apply:

- Federal Endangered (FE)
- Federal Threatened (FT)
- Federal Candidate (FC)
- Federal Species of Concern (FCo)
- State Endangered (SE)
- State Threatened (ST)
- State Candidate (SC)
- State Sensitive (SS)

### ***Birds:***

- Marbled Murrelet [FT/ST]
- Snowy Plover [FT/SE]
- Streaked Horned Lark [FC/SE]
- Brown Pelican [FCo/SE]
- Bald Eagle [FCo/SS]
- Peregrine Falcon [FCo/SS]
- Common Loon [SS]
- Common Murre [SC]
- Western Grebe [SC]
- Brant's Cormorant [SC]
- Cassin's Auklet [FCo/SC]
- Northern Goshawk [FCo/SC]

### ***Mammals:***

- Southern Resident Killer Whale [FE/SE]
- Steller Sea Lion [ST]
- Gray Whale [SS]

### ***Fish:***

- Bull trout [FT/SC]
- Pacific herring [FCo/SC]



***Fish: (continued)***

- Pacific lamprey [FCo]
- River lamprey [FCo]
- Coastal Cutthroat trout [FCo]
- Green Sturgeon [FCo]

***Reptile:***

- Green Sea Turtle [FT/ST]
- Leatherback Sea Turtle [FE/SE]
- Loggerhead Sea Turtle [FE/ST]

**6.2.1 - General Resource Concerns****6.2.1a - Habitats:**

- ***Intertidal and Shallow Subtidal Mud/Sand Flats:*** Much of the bay is composed of intertidal and shallow subtidal mud/sand flats. These habitats are rich in benthic and epibenthic organisms, creating important foraging areas for salmon, crabs, fishes, and shorebirds.
- ***Eelgrass:*** Extensive eelgrass beds in the bay serve as important nursery and foraging areas for crab, salmonids, other fishes, and waterfowl.
- ***Oyster Beds/Reefs:*** Oyster beds/reefs and surface deposits of shell fragments from oysters and soft-shell clams support high densities of crabs, epibenthic invertebrates and fishes.
- ***Native Salt Marsh:*** Extensive areas of salt marsh fringe the bay. Salt marshes support a diverse array of birds, insect, and fish and wildlife species.
- ***Rivers and Smaller Tributary Streams:*** Several rivers and smaller tributary streams flow into this estuary. These serve as important salmon migration routes and spawning areas, and provide important rearing habitat for juveniles of the species.
- ***Nearshore Waters:*** Nutrient rich nearshore waters (from the shoreline out to 20m depth) sustain a highly productive food web that includes fish, seabirds and marine mammals.

- **Offshore Waters:** Offshore waters (between 20 m and 200 m depth) of the region seasonally support extremely large numbers of seabirds. These waters are important to marine fish and support both resident and migrating marine mammals. Regional and localized oceanographic conditions can greatly influence the temporal distribution and abundance of these resources.
- **Outer Sand Beaches:** Outer sand beaches provide critical habitat for razor clams and for the vast numbers of shorebirds that stop over to feed to and rest on the outer coast and its estuaries during the spring and fall migration.
- **Stream Mouths on Outer Beaches:** Stream mouths on the outer beaches are concentration areas for a variety of wildlife.

#### 6.2.1b – Fish

- **Juvenile salmonids:** The estuary is important nursery and foraging area for juvenile salmonids including stocks of coastal cutthroat trout; winter and summer steelhead; fall, spring, and summer chinook; fall chum and coho.
- **Herring:** Herring spawning areas occur in eelgrass beds at several locations within the estuary.
- **Marine Fish:** The estuary provides important habitat for a number of marine fish, including juvenile English sole and lingcod, white and green sturgeon, and starry flounder.
- **Dungeness Crab:** The estuary is a major nursery area for juvenile stages of Dungeness crab population. Crabs that rear in this bay contribute significantly to the adult population along the outer coast and to the coastal crab fishery.
- **Oyster Culture:** Portions of the estuary are under active commercial oyster culture. While much of tidelands and oysters are privately owned, commercial oyster beds provide much the same habitat benefits to native fish and shellfish as do natural beds.
- **Clams:** Eastern soft-shell clams, horse clams, Manila clams and cockles are found at various locations throughout the estuary.

### 6.2.1c – Wildlife

- ***Migratory Shorebird Site of Hemispheric Importance:*** Grays Harbor is listed as a site of hemispheric importance by the Western Hemisphere Shorebird Reserve Network, supporting up to 1 million birds during the spring migration, as well as large numbers of fall-migrating and wintering shorebirds.
- ***Red Knot:*** Grays Harbor is very important to one subspecies of Red Knot (*Calidris canutus roselaari*). It is believed that the majority of the population of this subspecies uses Grays Harbor as a feeding/resting area during their annual migration between Alaska and Central/South America. More Red Knots have been observed in Grays Harbor than elsewhere along the flyway.
- ***Snowy Plover [FT/SE]:*** The Oyhut/Damon Point area is one of only 3 nesting areas in Washington for the federally threatened Snowy Plover.
- ***Brown Pelican [SE]:*** Large concentrations of Brown Pelicans feed and roost in the bay from mid-to-late summer.
- ***Waterfowl Concentrations:*** Waterfowl concentrations occur from fall through spring, especially in North Bay.
- ***Seabirds and Marine Waterfowl:*** The waters at the entrance to Grays Harbor are a regular feeding area for migrating and resident seabirds and marine waterfowl. The South jetty is a favorite roosting site for many species of marine birds and those shorebirds that rely on rocky habitats.
- ***Bald Eagles:*** Bald Eagles nest throughout the region and forage throughout the bay.
- ***Peregrine Falcons:*** Peregrine Falcons are common during peak shorebird abundance in spring.
- ***Harbor Seals:*** Grays Harbor is home to thousands of harbor seals from mid-spring through early fall, and is one of the largest seal pupping areas in the state. Pupping occurs throughout the bay with concentrations around Sand Island and in North Bay.



- **Gray Whales:** Migrating Gray Whales commonly feed in the bay during the northward migration from ~ March through June. Occasional resident grays may also be seen, especially around the mouth of the bay.

### 6.2.2 Specific Geographic Areas of Concern

**1) Ocean Beaches:** Resources along beaches and nearshore include shorebirds, marine fish, and aquatic habitat. Areas of concern include:

- Ocean City
- Ocean Shores
- Westport
- Cohasset Beach
- Grayland

**2) Grays Harbor Entrance:** Significant concentration area for feeding seabirds. Migrating gray whales frequently feed just inside entrance to bay. Jetties are heavily used as roosting areas for Brown Pelicans [SE] and other seabirds, as well as some

**3) Oyhut/Damon Point:** Snowy Plover nesting area. Concentration area for waterfowl and shorebirds. Saltmarsh habitat. [WDFW Wildlife Area \(Oyhut\)](#).

**4) North Bay:** Waterfowl and shorebird concentrations. Extensive eelgrass beds and a major harbor seal pupping area. Areas of concern in North Bay also include:

- Campbell Slough and mudflats near channel
- Chenois Creek and mudflats near channel
- Goose Island
- Grass Creek and mudflats near channel
- Humptulips River and mudflats near channel (including East Channel)
- Oyhut Sink Channel mudflats

**5) South Bay and Elk River Estuary:** Concentrations of waterfowl and shorebirds from fall through spring. Area includes saltmarsh, eelgrass, and herring spawning areas. South Bay also includes:

- Bottle Beach (including [Bottle Beach State Park](#)) - Significant shorebird concentrations may be present on or near the mudflats at Bottle Beach, especially during spring & fall migrations.
- Grass Island
- South Bay Marsh
- Elk River Estuary
- Extensive mudflats along Elk River Channel

**6) North Channel**

- Whitcomb Flats
- Sand Islands

**7) Johns River: WDFW Wildlife Area.** Salt marsh habitat. Birds that make use of Johns River are mostly ducks, geese, shorebirds, and a nesting Caspian tern colony. Crows, great blue herons, hummingbirds, robins, warblers, goldfinches, swallows, snipe, gulls, and many other small birds abound, along with forest grouse and band-tailed pigeon. Streams support whitefish, trout, and salmon.

**8) Bowerman Basin & Mini Moon Island:**

- Bowerman Basin: To protect crucial shorebird habitat, Congress authorized the establishment of [Grays Harbor National Wildlife Refuge](#) in 1988. Managed by the U.S. Fish and Wildlife Service (USFS) as part of the National Wildlife Refuge System, the Grays Harbor Refuge encompasses about 1500 acres of intertidal mudflats, salt marsh, and uplands including the basin. This area provides critical feeding habitat for both migrating and overwintering shorebirds. The refuge (along with the entire Grays Harbor estuary) is listed as a site of hemispheric importance by the Western Hemisphere Shorebird Reserve Network.
- Mini Moon Island: Significant shorebird concentrations present on or near the mudflats of Mini Moon Island, especially during spring & fall migrations.

**9) Chehalis River:** Estuary and wetland habitats support a diversity of wildlife, from big and small game species to songbirds, as well as native fish populations.

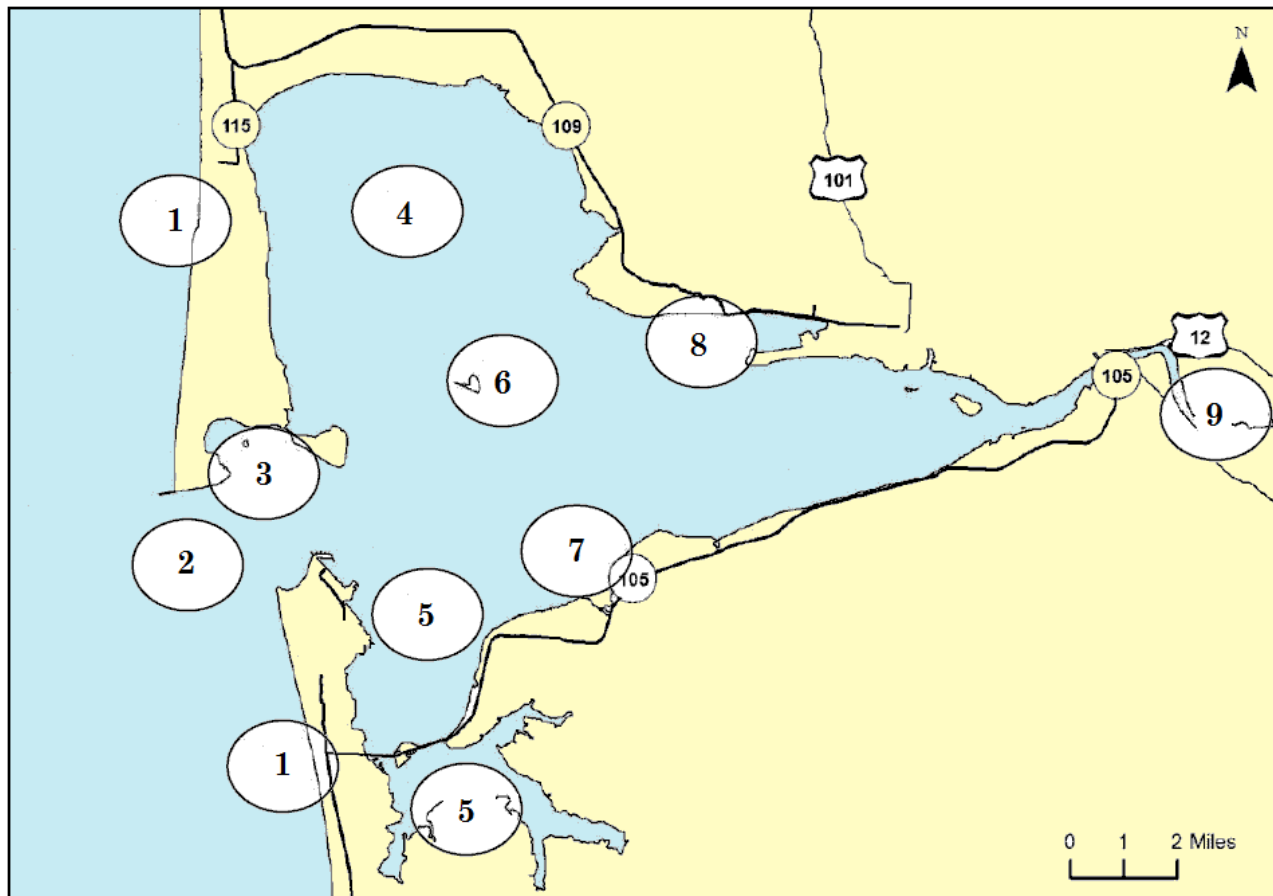


Figure 6.1: Map of Geographic Areas of Concern

### 6.3 - Cultural Resources at Risk - Summary

Culturally sensitive sites are present within this GRP area. Due to the 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 Archeology 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 Quinault Indian Nation, Chehalis Confederated Tribes, and Shoalwater Bay Tribe



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.

**6.3.1 - Discovery of Human Skeletal Remains:** Any human remains, burial sites, or burial-related materials that are discovered during a spill response must be treated with respect at all times.

- 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 human skeletal remains have been discovered.
- The Incident Commander is responsible for taking appropriate steps to protect the discovery. The immediate area of discovery should be flagged. Vehicles and equipment must not be permitted to traverse the discovery site. In no case should further disturbance be performed prior to consultation with WDAHP. Exposed human remains should not be left unattended.
- The Incident Commander (or representative) must immediately report the discovery to WDAHP, local law enforcement (with jurisdiction), and the local coroner (with jurisdiction). The coroner (or medical examiner) will determine whether the discovery site is a crime scene or human burial.
- If the remains are determined to be non-Native American, or connected with criminal activity, local law enforcement will take charge of the discovery site and remains.
- If the remains are determined to be Native American, not related to a crime scene, a tribal archaeologist, state archaeologist, and the Incident Commander will confer on a treatment plan for the remains.

**6.3.2 - 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.

The *Secretary of the Interior's Standards for Archaeological Documentation* must be followed; including provisions for research design, reporting, and curation of recovered material and samples. The particular data recovery measures applied to any given historic property will depend on the development of research questions, and the design of excavation strategies to acquire the data needed to answer those questions. Field notes, maps, plans, profiles, and photographs will document the process. The final report will follow style guidelines of the professional archaeological journal *American Antiquity*; it will synthesize the data collected and address the research questions posed.

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

## 6.4 - Economic Resources at Risk – Summary

Socio-economically 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.

1. Critical infrastructure: Many residential areas are situated on or near the waterfront and draw drinking water from wells or springs on-site. No power-generating dams are located in the immediate vicinity of Grays Harbor.
2. Water Dependent Commercial Areas: Grays Harbor is an active commercial port in the foreign and domestic trade. Large commercial ships including tankers, bulk cargo



carriers, and roll-on/roll-off vessels visit Grays Harbor regularly and rely on port facilities to load and off-load cargo. Grays Harbor also supports a large commercial fishing and shellfish/aquaculture industry. A fish hatchery on Lake Aberdeen. Several marinas are also located throughout the area.

*Maps of commercial shellfish growing areas are available online at the Washington Department of Health's website at <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/GrowingAreas/AnnualReports.aspx>*

3. **Water Dependent Recreational Areas:** Water dependent recreation contributes to the economy of Grays Harbor by promoting tourism. The Grays Harbor area is home to five Washington State Parks and a number of recreational beaches, including ocean beaches. The area has a National Wildlife Refuge and two state wildlife recreation areas. Boating, sport fishing, and boat charters are all active and valuable recreational industries in the area. Bird watching is another valuable part of local tourism; many people from outside the region travel to Grays Harbor each year to view sea birds and shorebirds in their natural habitat, and to see the spring migration of hundreds of thousands of birds that stop each year at the Grays Harbor National Wildlife Refuge (Bowerman Basin). The refuge is a Western Hemisphere Shorebird Reserve Network Site; one of only eight similar sites in the Western Hemisphere.

*Maps of recreational shellfish areas are available online at the Washington Department of Health's website at <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/RecreationalShellfish.aspx>.*

## **6.5 - General information**

**6.5.1 - Flight restriction zones:** Flight restriction zones may be recommended by the Environmental Unit (Planning Section) for the purpose of 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.

**6.5.2 - 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 \(NWACP Section 9311\)](#).

**6.5.3 - 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 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 at Risk  
December 2013

## Grays Harbor Geographic Response Plan Socio-Economic Resources at Risk

### A. Critical Infrastructure

| A1 - Drinking Water Intakes |                  |          |         |       |
|-----------------------------|------------------|----------|---------|-------|
| Name or General Location    | Location/Address | Lat/Long | Contact | Phone |
| No Information              |                  |          |         |       |
|                             |                  |          |         |       |
|                             |                  |          |         |       |

| A2 - Energy/Power Generation Water Intakes <i>(Lock &amp; Dams Included)</i> |                  |          |         |       |
|--|------------------|----------|---------|-------|
| Name or General Location   | Location/Address | Lat/Long | Contact | Phone |
| No Information   |                  |          |         |       |
|  |                  |          |         |       |
|  |                  |          |         |       |

| A3 - Federal or State Water Projects or Irrigation Channels for Agriculture |   |                   |              |  |
|---|---|-------------------|--------------|--|
| Name or General Location  | Location/Address                            | Lat/Long          | Contact      | Phone  |
| WA Dept. of Ecology WQ Improvement Project                                  | Grays Harbor Area<br>WRIA 22 Lower Chehalis | 46.963, -124.0432 | Dave Rountry | 360-407-6276<br><a href="mailto:David.Rountry@ecy.wa.gov">David.Rountry@ecy.wa.gov</a> |

**Appendix - 6A**

List of Economic Resources at Risk  
December 2013

**B. Water Dependent Commercial Areas**

| B1 - Industrial Intakes         |                  |                    |                      |   |
|---------------------------------|------------------|--------------------|----------------------|---|
| Name or General Location        | Location/Address | Lat/Long           | Contact              | Phone   |
| Brady's Oysters Well #1         | Aberdeen, WA     | 46.8589, -124.0710 | Kristi Ballo         | 360-268-0077;<br><a href="mailto:ballos@comcast.net">ballos@comcast.net</a>       |
| Classic Hi-Crop Well #1         | Westport, WA     | 46.8667, -124.0564 | John Cowan           | 360-268-0565;<br><a href="mailto:jscowan1@comcast.net">jscowan1@comcast.net</a>   |
| Lytle Seafoods Well #1          | Hoquiam, WA      | 47.0045, -124.0030 | Kathy and Mike Lytle | 360-538-2654;<br><a href="mailto:kmlytle@comcast.net">kmlytle@comcast.net</a>     |
| Ocean Spray Cranberries Well #1 | Aberdeen, WA     | 46.9032, -123.9979 | Glen Piehl           | 360-648-2552;<br><a href="mailto:gpiehl@oceanspray.com">gpiehl@oceanspray.com</a> |
| Ocean Spray Cranberries Well #6 | Aberdeen, WA     | 46.9060; -123.9976 | Glen Piehl           | 360-648-2552<br><a href="mailto:gpiehl@oceanspray.com">gpiehl@oceanspray.com</a>  |

| B2 - Agricultural Irrigation Intakes |                  |          |         |       |
|--------------------------------------|------------------|----------|---------|-------|
| Name or General Location             | Location/Address | Lat/Long | Contact | Phone |
| No Information                       |                  |          |         |       |
|                                      |                  |          |         |       |
|                                      |                  |          |         |       |

| B3 - Aquaculture         |                  |          |         |       |
|--------------------------|------------------|----------|---------|-------|
| Name or General Location | Location/Address | Lat/Long | Contact | Phone |
| See Section B5 (below)   |                  |          |         |       |
|                          |                  |          |         |       |
|                          |                  |          |         |       |

**Appendix - 6A**

List of Economic Resources at Risk  
December 2013

| <b>B4 - Marinas</b>                     |                                      |                    |                |              |
|---|--------------------------------------|--------------------|----------------|--------------|
| <b>Name or General Location</b>         | <b>Location/Address</b>              | <b>Lat/Long</b>    | <b>Contact</b> | <b>Phone</b> |
| Westport Marina<br>Port of Grays Harbor | 326 E. Lamb Street<br>Westport, WA   | 46.9070, -124.1110 | Marina Manager | 360-268-9665 |
| Ocean Shores Marina                     | Discovery Avenue<br>Ocean Shores, WA | 46.9489, -124.1311 | Manager        | 360-289-0414 |

| <b>B5 - Commercial Fishing and Shellfish Harvest Areas</b> |   |                    |                |  |
|--|---|--------------------|----------------|--|
| <b>Name or General Location</b>                            | <b>Location/Address</b>                         | <b>Lat/Long</b>    | <b>Contact</b> | <b>Phone</b>   |
| Coast Seafoods Co.<br>(North Bay)                          | P.O. Box 1124<br>South Bend, WA 98586           | 47.0132, -124.1412 | Greg Dale      | 707-442-2947<br><a href="mailto:gregd@coastkumo.com">gregd@coastkumo.com</a> |
| Grass Creek Oyster Co.<br>(North Bay)                      | 1975 Lakemoor Lane SW<br>Olympia, WA 98512-5542 | 46.9763, -124.0301 | Jerry Swan     | 360-754-9312<br><a href="mailto:jswan1@prodigy.net">jswan1@prodigy.net</a>   |
| Lone Tree Oyster Co.<br>(North Bay)                        | 209 Burrows Road<br>Hoquiam, WA 98550           | 47.0077, -124.0791 | Don Harders    | 360-538-1348<br><a href="mailto:dcharders@gmail.com">dcharders@gmail.com</a> |
| Nagles Chenois Creek Oyster Co.<br>(North Bay)             | 131 Beacon Hill Drive<br>Hoquiam, WA 98550      | 47.0077, -124.0791 | Ron Young      | 360-532-7246;<br><a href="mailto:roncarole9@msn.com">roncarole9@msn.com</a>  |
| Aquatic Harvest Inc.                                       | 2214 State Route 105<br>Aberdeen, WA 98520      | 46.8780, -124.0645 | Todd Guedon    | 360-648-2233   |
| Brady's Oysters Inc.                                       | 3714 Oyster Place<br>Aberdeen, WA 98520         | 46.8628, -124.0723 | Kristi Ballo   | 360-268-0077<br><a href="mailto:ballos@comcast.net">ballos@comcast.net</a>   |
| Coast Seafoods Co.   | PO Box 1124<br>South Bend, WA 98586             | 46.9143, -124.0519 | Greg Dale      | 707-442-2947<br><a href="mailto:gregd@coastkumo.com">gregd@coastkumo.com</a> |
| Grays Harbor Oyster  | 43 Race Lane<br>Aberdeen, WA 98520              | 46.8790, -124.0776 | Roger Johnson  | 360-648-2464<br><a href="mailto:sboyster@yahoo.com">sboyster@yahoo.com</a>   |

**Appendix - 6A**

List of Economic Resources at Risk  
December 2013

| <b>B5 - Commercial Fishing and Shellfish Harvest Areas (continued)</b> |  |                    |                     |              |
|--|--|--------------------|---------------------|--------------|
| <b>Name or General Location</b>  | <b>Location/Address</b>                    | <b>Lat/Long</b>    | <b>Contact</b>      | <b>Phone</b> |
| Hatton Brothers Oyster Co.   | 2422 Evergreen Place<br>Grayland, WA 98547 | 46.8944, -124.0480 | J. Hatton, Owner    | 360-267-5432 |
| Markham Oyster Inc.  | 20 Old Westport Road<br>Aberdeen, WA 98520 | 46.9093, -124.0415 | Markham Oyster Inc. | 360-581-6421 |

| <b>B6 - Fish Hatcheries (Federal, State, and Private)</b> |  |                   |                       |              |
|---|--|-------------------|-----------------------|--------------|
| <b>Name or General Location</b>                           | <b>Location/Address</b>                        | <b>Lat/Long</b>   | <b>Contact</b>        | <b>Phone</b> |
| Humtuplups Salmon Hatchery                                | 1704 Kirkpatrick Road<br>Humtuplups, WA        | 47.2334,-123.9887 | WDFW<br>Jeremy Parker | 360-987-2215 |
| Lake Aberdeen Fish Hatchery                               | 4203 Aberdeen Lake Road<br>Aberdeen, WA, 98520 | 46.9800,-123.7427 | WDFW<br>Ken Isaacson  | 360-533-1663 |

| <b>B7 - Specially Designated Residential, Commercial, &amp; Industrial Areas (Includes Floating Homes &amp; Live Aboard Marinas)</b> |                         |                 |                |              |
|--|-------------------------|-----------------|----------------|--------------|
| <b>Name or General Location</b>  | <b>Location/Address</b> | <b>Lat/Long</b> | <b>Contact</b> | <b>Phone</b> |
| No Information   |                         |                 |                |              |
|  |                         |                 |                |              |
|  |                         |                 |                |              |

**C. Water Dependent Recreational Areas**

| <b>C1 - Boating Areas</b>       |  |                |
|---------------------------------|--|----------------|
| <b>Name or General Location</b> | <b>Lat/Long (Approximate Center Point)</b> | <b>Remarks</b> |
| Entire GRP Area / All Seasons   |  |                |
|                                 |  |                |
|                                 |  |                |



**Appendix - 6A**

List of Economic Resources at Risk  
December 2013

| <b>C2 – Public Recreation Areas</b>                                     |  |                     |                                |   |
|---|--|---------------------|--------------------------------|---|
| <b>Name or General Location</b>   | <b>Location/Address</b>                            | <b>Lat/Long</b>     | <b>Contact</b>                 | <b>Phone</b>  |
| Oyhut Wildlife Recreation Area  | Tonquin Ave. SW<br>Ocean Shores, WA                | 46.9469 , -124.1495 | WDFW<br>Jim Gerchak<br>Manager | 360-533-5676  |
| U.S. Fish and Wildlife Service<br>Grays Harbor National Wildlife Refuge | WA-109<br>Hoquiam, WA                              | 46.9781, -123.9442  | Glynnis Nakai<br>Doug Roster   | 360-753-9467<br><a href="http://www.fws.gov/refuge/grays_harbor/">http://www.fws.gov/refuge/grays_harbor/</a> |
| Johns River<br>State Wildlife Area                                      | SR-105 between<br>Aberdeen, WA and<br>Westport, WA | 46.8942, -123.9846  | WDFW<br>Jim Gerchak<br>Manager | 360-533-5676  |

| <b>C3 – Sport Fishing Areas</b> |                                 |
|---------------------------------|---------------------------------|
| <b>Name or General Location</b> | <b>General Location/Remarks</b> |
| Entire GRP Area / All Seasons   |                                 |
|                                 |                                 |
|                                 |                                 |

| <b>C4 – Parks &amp; Beaches (National, State, &amp; Local)</b> |  |  |                        |   |
|--|--|--|------------------------|---|
| <b>Name or General Location</b>                                | <b>Location/Address</b>                | <b>Waterbody</b>                       | <b>Contact</b>         | <b>Phone</b>  |
| Ocean City State Park  | 148 SR- 15<br>Hoquiam, WA              | Pacific Ocean                          | Washington State Parks | 360-902-8844;<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |
| Twin Harbors Beach State Park                                  | 3120 SR-105<br>Grayland, WA            | South Bay<br>Pacific Ocean             | Washington State Parks | 360-902-8844;<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |
| Westport Light State Park                                      | Ocean Avenue<br>Westport, WA           | Pacific Ocean<br>Mouth of Grays Harbor | Washington State Parks | 360-902-8844;<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |
| Westhaven State Park   | State Park Access Road<br>Westport, WA | Pacific Ocean<br>Mouth of Grays Harbor | Washington State Parks | 360-902-8844;<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |

**Appendix - 6A**

List of Economic Resources at Risk

December 2013

**C4 – Parks & Beaches** (National, State, & Local) (continued)

| <b>Name or General Location</b> | <b>Location/Address</b>    | <b>Waterbody</b>        | <b>Contact</b>              | <b>Phone</b> |
|---------------------------------|----------------------------|-------------------------|-----------------------------|--------------|
| Bishop Athletic Complex         | 230 SR-105<br>Aberdeen, WA | Mouth of Chehalis River | Aberdeen Parks & Recreation | 360-537-3230 |

**C5 – National Seashore Recreation Areas**

| <b>Name or General Location</b> | <b>Lat/Long</b> (Approximate Center Point) | <b>Remarks</b> |
|---------------------------------|--|----------------|
| No Information                  |  |                |
|                                 |  |                |
|                                 |  |                |

**C6 – National River Reach** (Designated as Recreational)

| <b>Name or General Location</b> | <b>Lat/Long</b> (Approximate Center Point) | <b>Remarks</b> |
|---------------------------------|--|----------------|
| No Information                  |  |                |
|                                 |  |                |
|                                 |  |                |

# Grays Harbor Geographic Response Plan

## Chapter 7 – Logistics

### 7.1 Chapter Introduction:

The logistical information contained in this chapter is meant to aid the response community during the initial phase of an oil spill. It may be particularly useful as the initial response transitions into a unified command. The information provided is not and should not be considered the “universe” of everything available to support a response. Additional and more current information may be found in area telephone directories, online resources, newspaper advertisements, and other media sources. The lack of information under certain categories in this chapter does not mean no logistical resources exist; only that information regarding those resources was not found or verified before updating this chapter. Chapter 5000 of the Northwest Area Contingency Plan (NWACP) also contains valuable logistical information. The NWACP is available online at <http://www.rrt10nwac.com>.

Information on Staging Areas and Boat Launch Locations can be found in Chapter 4 of this plan (see attachments 4C & 4D). Contact information for federal, state, tribal, and local agencies can be found on the “Spill Response Contact Sheet” located near the beginning of this plan. Detailed response resource information can be found on the Western Region Resource List (WRRL). The WRRL is available online at <http://www.wrri.us>.

We value your comments. To report outdated information, or recommend additional logistical resources, please submit comments using the information provided in Appendix “C” of this plan or online at <http://www.rrt10nwac.com/Comment>, or email [GRPs@ecy.wa.gov](mailto:GRPs@ecy.wa.gov).

### 7.2 List of Logistical Resources:

This chapter contains information on the following logistical resources:

- Aircraft Support - Helicopters & Fixed Wing
- Airports & Air Fields
- Ambulance Services (Air & Ground)
- Boat Cleaning
- Command Posts (Fixed & Mobile)

- Communications
- Cultural Resource Support
- Environmental & Conservation Organizations
- Fire Departments
- Food Services/Catering
- Hospitals & Medical Centers
- Hotels/Motels, Berthing Accommodations
- Marinas, Ports, Docks
- Military Bases/Installations
- Office Equipment Supply & Rental
- Oil Spill Response Contractors
- Outdoor Recreation Groups, Companies, & Organizations
- Park Facilities
- Rental Equipment - Industrial/Commercial
- Response Equipment Cache Locations
- River Guides
- Security Services
- Support Personnel - Local/Emergency
- Tribal Resources
- Transportation
- Wildlife Support
- Wildlife Equipment Owners

### 7.3 Logistical Resource Details:

| Aircraft Support - Helicopters & Fixed Wing    |  |   |   |
|--|--|---|---|
| City/Location                                  | Name/Information   | Address   | Contact & Other Information   |
| Olympia, WA<br><i>Olympia Regional Airport</i> | NW Helicopters<br><i>Helicopter &amp; Flight Staff</i>         | 1000 85 <sup>th</sup> Avenue SE<br>Olympia, WA    | 24-Hour: 360-754-7200   |
| Olympia, WA<br><i>Olympia Regional Airport</i> | Washington State Patrol<br><i>FLIR Fixed Wing</i>              | 2502 112 <sup>th</sup> Street East<br>Tacoma, WA  | 360-753-6173 (Direct to Hangar)<br>360-239-2509   |
| Renton, WA<br><i>Renton Airport</i>            | WorldWind Helicopters<br><i>4-Seat Helicopter &amp; Others</i> | 800 W Perimeter Road<br>Suite A<br>Renton, WA     | Office Phone/Director of Operations:<br>425-271-8441<br><a href="http://www.wwheli.com">http://www.wwheli.com</a> |
| Seattle, WA<br><i>Boeing Field</i>             | Classic Helicopter Corp.<br><i>Helicopter</i>                  | Boeing Field<br>Seattle, WA                       | Office Phone: 206-767-0515<br>(answering service after hours)   |
| Seattle, WA<br><i>Boeing Field</i>             | King County Sherriff's Office<br><i>FLIR Helicopter</i>        | 516 3 <sup>rd</sup> Avenue # W-150<br>Seattle, WA | Dispatch: 206-296-3311  |



| Airports & Air Fields |                                      |   |   |
|-----------------------|--------------------------------------|---|---|
| City/Location         | Name                                 | Address   | Contact & Other Information   |
| Hoquiam, WA           | Bowerman Airport (HQM)               | 1380 Airport Way<br>Hoquiam, WA   | Port of Grays Harbor: 360-533-9528<br><a href="http://www.airnav.com/airport/HQM">http://www.airnav.com/airport/HQM</a>   |
| Ocean Shores, WA      | Ocean Shores Municipal Airport (W04) | 498 Duck Lake Drive NE<br>(Next to North Bay Park)<br>Ocean Shores, WA                    | Airport Manager: 360-581-2708<br><a href="http://www.osgov.com/airport.html">http://www.osgov.com/airport.html</a><br><a href="http://www.airnav.com/airport/W04">http://www.airnav.com/airport/W04</a> |
| Westport, WA          | Westport Airport (14S)               | N. Montesano Street<br>(between Wilson Avenue<br>and Elizabeth Avenue E)<br>West Port, WA | City Administrator: 360-268-0131<br><a href="http://www.airnav.com/airport/14S">http://www.airnav.com/airport/14S</a>   |

| Ambulance Services (Air & Ground) |                                    |  |  |
|-----------------------------------|------------------------------------|--|--|
| City/Location                     | Company Name                       | Address  | Contact & Other Information  |
| Aberdeen, WA                      | Aberdeen<br>Fire Department EMS    | 200 E Market Street<br>Aberdeen, WA                            | Fire Chief:<br>360-537-3262<br><a href="http://aberdeenwa.gov/fire/ems.php">http://aberdeenwa.gov/fire/ems.php</a>                         |
| Aberdeen, WA                      | Grays Harbor<br>Fire District 2    | District HQ Station 31<br>6317 Olympic Highway<br>Aberdeen, WA | Station Phone:<br>360-532-6050<br><a href="http://www.ghfd2.org/">http://www.ghfd2.org/</a>  |
| Elma, WA                          | Grays Harbor<br>Fire District 5    | HQ Station 51<br>428 Stamper Road<br>Elma, WA                  | District Chief:<br>360-482-3143<br><a href="http://www.ghfd5.org/">http://www.ghfd5.org/</a>   |
| Hoquiam, WA                       | City of Hoquiam<br>Fire Department | 609 8th Street<br>Hoquiam WA                                   | Fire Chief:<br>360-637-6042<br><a href="http://cityofhoquiam.com/fire/">http://cityofhoquiam.com/fire/</a>                                 |
| Montesano, WA                     | Montesano<br>Fire Department       | 310 E. Pioneer Avenue<br>Montesano, WA                         | Non-Emergency:<br>360-249-4851<br><a href="http://www.montesano.us">http://www.montesano.us</a>  |
| Ocean Shores, WA                  | Ocean Shores<br>Fire & Ambulance   | 585 Pt. Brown Avenue NW<br>Ocean Shores, WA                    | Business Office:<br>360-289-3611<br><a href="http://www.osgov.com/publicsafety.html">http://www.osgov.com/publicsafety.html</a>            |
| Westport, WA                      | South Beach<br>EMS                 | 170 W. Spokane Avenue<br>Westport, WA                          | Director:<br>360-268-9832<br>director_sba@comcast.net<br><a href="http://www.ghems.org/contacts.php">http://www.ghems.org/contacts.php</a> |

| Boat Cleaning |                     |                                   |                              |
|---------------|---------------------|-----------------------------------|------------------------------|
| City/Location | Name                | Address                           | Contact & Other Information  |
| Aberdeen, WA  | Cowlitz Clean Sweep | 181 Willow Street<br>Aberdeen, WA | 360-532-4309<br>888-423-6316 |

| <b>Boat Cleaning (continued)</b> |                           |  |  |
|----------------------------------|---------------------------|--|--|
| <b>City/Location</b>             | <b>Name</b>               | <b>Address</b>   | <b>Contact &amp; Other Information</b> |
| Aberdeen, WA                     | Evergreen Environmental   | 601 W. State Street<br>Aberdeen, WA                        | 360-533-6141                           |
| Seattle, WA                      | Global Diving and Salvage | 3840 W Marginal Way SW<br>Seattle, WA                      | 206-623-0621 (Office)                  |
| Seattle, WA                      | NRCES                     | 9520 10 <sup>th</sup> Avenue S<br>Suite 150<br>Seattle, WA | 206-607-3000                           |

| <b>Command Posts (Fixed &amp; Mobile)</b> |                        |  |  |
|---|------------------------|--|--|
| <b>City/Location</b>                      | <b>Name</b>            | <b>Address</b>                               | <b>Contact &amp; Other Information</b>       |
| Hoquiam, WA                               | Econo Lodge            | 910 Simpson Avenue<br>Hoquiam, WA            | 360-532-8161                                 |
| Ocean Shores, WA                          | Shilo Inn Suites Hotel | 707 Ocean Shores Blvd NW<br>Ocean Shores, WA | 360-289-4600<br>Ask for Banquet Reservations |

| <b>Communications</b> |                                   |                                       |  |
|-----------------------|-----------------------------------|---------------------------------------|--|
| <b>City/Location</b>  | <b>Name</b>                       | <b>Address</b>                        | <b>Contact &amp; Other Information</b>   |
| Aberdeen, WA          | Day Wireless Systems              | 1506 W. Wishkah<br>Aberdeen, WA       | 360-533-5857<br>Two-Way Radio Sales, Service, Rental;<br>Cell/Satellite Phones, Repeater |
| Aberdeen, WA          | Techline<br>The Technology People | 914 E Wishkah<br>Aberdeen, WA         | 360-533-0343<br>Verizon Wireless sales and support                                       |
| Hoquiam, WA           | Rey-Com, Inc.                     | 95 Chenois Valley Road<br>Hoquiam, WA | 360-538-1130<br>Data/Network Installation; Telephone<br>Service                          |

| <b>Cultural Resource Support</b> |   |  |   |
|----------------------------------|---|--|---|
| <b>City/Location</b>             | <b>Name</b>   | <b>Address</b>                                 | <b>Contact &amp; Other Information</b>  |
| Aberdeen, WA                     | Grays Harbor Historical<br>Seaport Authority  | 712 Hagara Street<br>Aberdeen, WA              | 360-532-8611<br><a href="http://www.historicalseaport.org">www.historicalseaport.org</a>                          |
| Oakville, WA                     | Confederated Tribes of<br>the Chehalis Reservation                                    | 420 Howanut Road<br>Oakville, WA               | Natural Resources:<br>360-273-5911<br><a href="mailto:cdnr@chehalis tribe.org">cdnr@chehalis tribe.org</a>        |
| Olympia, WA                      | Washington State<br>Department of<br>Archaeology and Historic<br>Preservation (WDAHP) | 1063 Capitol Way South<br>#106,<br>Olympia, WA | State Archaeologist:<br>360-586-3080, 360-586-3083<br><a href="http://www.dahp.wa.gov">http://www.dahp.wa.gov</a> |

| <b>Cultural Resource Support</b> (continued) |                       |  |   |
|--|-----------------------|--|---|
| City/Location                                | Name                  | Address                                | Contact & Other Information   |
| Taholah, WA                                  | Quinalt Indian Nation | 1214 Aalis<br>Taholah, WA              | Cultural Resource Specialist:<br>360-276-8215 Ext. 250<br><a href="http://www.quinaltindiannation.com">http://www.quinaltindiannation.com</a> |
| Tokeland, WA                                 | Shoalwater Bay Tribe  | 2373 Old Tokeland Road<br>Tokeland, WA | Environmental:<br>360-267-8225<br><a href="http://www.shoalwaterbay-nsn.gov">http://www.shoalwaterbay-nsn.gov</a>                             |

| <b>Environmental &amp; Conservation Groups</b> |  |   |   |
|--|--|---|---|
| City/Location                                  | Name   | Address   | Contact & Other Information   |
| Aberdeen, WA                                   | Chehalis Basin Partnership   | 1620 Edward P. Smith Dr.<br>Aberdeen, WA                        | Watershed Coordinator:<br>360-538-4212<br><a href="http://www.chehalisbasinpartnership.org">www.chehalisbasinpartnership.org</a>                                      |
| Greenbank, WA                                  | ORCA Network<br>(Whale Sightings and Strandings)                       | 2403 North Bluff Road<br>Greenbank WA 98253<br>(Whidbey Island) | 866-672-2638<br>360-678-3451<br><a href="mailto:info@orcanetwork.org">info@orcanetwork.org</a><br><a href="http://www.orcanetwork.org">http://www.orcanetwork.org</a> |
| Montesano, WA                                  | Grays Harbor County<br>Environmental Health                            | 100 Broadway Avenue W<br>Montesano, WA                          | 360-249-4413 (Director)<br><a href="http://www.co.grays-harbor.wa.us/info/pub_svcs/envhealth.asp">http://www.co.grays-harbor.wa.us/info/pub_svcs/envhealth.asp</a>    |
| Montesano, WA                                  | Grays Harbor County<br>Marine Resources Committee                      | 100 West Broadway, Suite 31<br>Montesano, WA                    | 360-249-4413<br><a href="http://www.co.grays-harbor.wa.us/info/pub_svcs/mrc/index.html">http://www.co.grays-harbor.wa.us/info/pub_svcs/mrc/index.html</a>             |
| Montesano, WA                                  | Grays Harbor Audubon Society   | P.O. Box 470<br>Montesano, WA 98563                             | 360-289-5048<br><a href="http://www.ghas.org">www.ghas.org</a>  |
| Olympia, WA                                    | Cascadia Research Collective<br>Marine Mammal Stranding<br>(Cetaceans) | 218 1/2 W 4th Avenue<br>Olympia, WA 98501                       | 360-791-9555<br>800-747-7329<br>360-943-7325<br><a href="http://www.cascadiaresearch.org/contactus.htm">http://www.cascadiaresearch.org/contactus.htm</a>             |

| <b>Fire Departments</b> |                          |   |                             |
|-------------------------|--------------------------|---|-----------------------------|
| City/Location           | Name                     | Address                                   | Contact & Other Information |
| Aberdeen, WA            | Aberdeen Fire Department | 700 W. Market Street<br>Aberdeen, WA      | 360-532-1254 (Office)       |
| Elma, WA                | Elma Fire Department     | 112 N. 2 <sup>nd</sup> Street<br>Elma, WA | 360-482-2812 (Office)       |
| Hoquiam, WA             | Hoquiam Fire Department  | 625 8 <sup>th</sup> Street<br>Hoquiam, WA | 360-637-6042 (Office)       |

| <b>Fire Departments (continued)</b> |                                      |   |  |
|-------------------------------------|--------------------------------------|---|--|
| <b>City/Location</b>                | <b>Name</b>                          | <b>Address</b>                                | <b>Contact &amp; Other Information</b> |
| Ocean Shores, WA                    | Ocean Shores Fire Department         | 676 Point Brown Avenue NE<br>Ocean Shores, WA | 360-289-3611 (Office)                  |
| Montesano, WA                       | City of Montesano Fire Department    | 310 Pioneer Avenue E.<br>Montesano, WA        | 360-249-4851 (Office)                  |
| Aberdeen, WA                        | Grays Harbor Fire District (GHFD) #2 | 6317 Olympic Highway<br>Aberdeen, WA          | 360-532-6050 (Office)                  |

| <b>Food Services/Catering</b> |                    |   |  |
|-------------------------------|--------------------|---|--|
| <b>City/Location</b>          | <b>Name</b>        | <b>Address</b>                                  | <b>Contact &amp; Other Information</b> |
| Aberdeen, WA                  | O'Brien's Catering | 202 West 2 <sup>nd</sup> Street<br>Aberdeen, WA | 360-533-4359                           |
| Olympia, WA                   | Bayview Catering   | 516 West 4 <sup>th</sup><br>Olympia, WA         | 360-357-8016                           |

| <b>Hospitals &amp; Medical Centers</b> |                                 |                                    |  |
|--|---------------------------------|------------------------------------|--|
| <b>City/Location</b>                   | <b>Facility Name</b>            | <b>Address</b>                     | <b>Contact &amp; Other Information</b> |
| Aberdeen, WA                           | Grays Harbor Community Hospital | 915 Anderson Drive<br>Aberdeen, WA | 360-532-8330                           |

| <b>Hotels/Motels, Berthing Accommodations</b> |                                      |                                      |  |
|---|--------------------------------------|--------------------------------------|--|
| <b>City/Location</b>                          | <b>Facility Name</b>                 | <b>Address</b>                       | <b>Contact &amp; Other Information</b> |
| Aberdeen, WA                                  | America's Best Value Inn<br>Aberdeen | 521 W. Market Street<br>Aberdeen, WA | 360-532-5210                           |
| Aberdeen, WA                                  | Central Park Motel                   | 6504 Olympic Highway<br>Aberdeen, WA | 360-533-1210                           |
| Aberdeen, WA                                  | Guesthouse Inn & Suites              | 701 E. Heron Street<br>Aberdeen, WA  | 360-537-7460                           |
| Aberdeen, WA                                  | Olympic Inn Motel                    | 616 W. Heron Street<br>Aberdeen, WA  | 360-533-4200                           |
| Elma, WA                                      | Guesthouse Inn & Suites              | 800 East Main Street<br>Elma, WA     | 360-482-6868                           |
| Hoquiam, WA                                   | EconoLodge Inn & Suites              | 910 Simpson Avenue<br>Hoquiam, WA    | 360-532-8161                           |



| <b>Hotels/Motels, Berthing Accommodations (continued)</b> |  |   |  |
|---|--|---|--|
| <b>City/Location</b>                                      | <b>Facility Name</b>                     | <b>Address</b>                                | <b>Contact &amp; Other Information</b> |
| Ocean Shores, WA  | Best Western Plus, Lighthouse Suites Inn | 491 Damon Road NW<br>Ocean Shores, WA         | 360-289-2311                           |
| Ocean Shores, WA  | Canterbury Inn                           | 643 Ocean Shores Blvd. NW<br>Ocean Shores, WA | 360-289-3317                           |
| Ocean Shores, WA  | Comfort Inn and Suites                   | 829 Ocean Shores Blvd. NW<br>Ocean Shores, WA | 360-289-9000                           |
| Ocean Shores, WA  | Days Inn Ocean Shores                    | 891 Ocean Shores Blvd.<br>Ocean Shores, WA    | 360-289-9570                           |
| Ocean Shores, WA  | Quinault Beach Resort & Casino           | 78 SR- 115<br>Ocean Shores, WA                | 360-289-9466                           |
| Ocean Shores, WA  | Ramada at Ocean Shores                   | 845 Ocean Shores Blvd. NW<br>Ocean Shores, WA | 360-289-7700                           |
| Westport, WA  | Chateau Westport                         | 710 Hancock Street<br>Westport, WA            | 360-268-9101                           |
| Westport, WA  | Glenacres Historic Inn                   | 222 North Montesano St.<br>Westport, WA       | 360-268-0958                           |

| <b>Marinas, Ports, Docks</b> |   |   |  |
|------------------------------|---|---|--|
| <b>City/Location</b>         | <b>Facility Name</b>                    | <b>Address</b>  | <b>Contact &amp; Other Information</b> |
| Aberdeen, WA                 | Port of Grays Harbor<br>Main Office     | 111 S. Wooding Street<br>Aberdeen, WA   | 360-533-9528                           |
| Aberdeen, WA                 | Port of Grays Harbor<br>Terminal #4     | 46.960939, -123.839822<br>E Terminal Way<br>Aberdeen, WA                          | 360-533-9528 (Office)                  |
| Hoquiam, WA                  | Port of Grays Harbor<br>Terminal #1     | 46.965794, -123.856988<br>1 <sup>st</sup> Street & Industrial Road<br>Hoquiam, WA | 360-533-9528 (Office)                  |
| Hoquiam, WA                  | Port of Grays Harbor<br>Terminal #2     | 46.964586, -123.853812<br>1 <sup>st</sup> Street & Industrial Road<br>Hoquiam, WA | 360-533-9528 (Office)                  |
| Hoquiam, WA                  | Port of Grays Harbor<br>Terminal #3     | 46.970092, -123.912081<br>Airport Way/Moon Island<br>Road & Paulson Road          | 360-533-9528 (Office)                  |
| Westport, WA                 | Port of Grays Harbor<br>Westport Marina | 326 E. Lamb Street,<br>Westport, WA   | 360-268-9665 (Marina Manager)          |

| Military Bases/Installations |                           |   |                             |
|------------------------------|---------------------------|---|-----------------------------|
| City/Location                | Installation Name         | Nearest Address                         | Contact & Other Information |
| Westport, WA                 | USCG Station Grays Harbor | 1600 North Nyhus Street<br>Westport, WA | 360-268-0121                |

| Office Equipment Supply & Rental |                               |   |                             |
|----------------------------------|-------------------------------|---|-----------------------------|
| City/Location                    | Name                          | Address   | Contact & Other Information |
| Aberdeen, WA                     | Aberdeen Office Equipment Co. | 322 East 1 <sup>st</sup> Street<br>Aberdeen, WA | 360-533-0352                |
| Aberdeen, WA                     | Staples                       | 1109 East Wishkah Blvd.<br>Aberdeen, WA         | 360-538-0536                |

| Oil Spill Response Contractors |                           |  |                              |
|--------------------------------|---------------------------|--|------------------------------|
| City/Location                  | Name                      | Address  | Contact & Other Information  |
| Aberdeen, WA                   | Cowlitz Clean Sweep       | 181 Willow Street<br>Aberdeen, WA                      | 360-532-4309<br>888-423-6316 |
| Aberdeen, WA                   | Evergreen Environmental   | 601 W. State Street<br>Aberdeen, WA                    | 360-533-6141                 |
| Seattle, WA                    | Global Diving and Salvage | 3840 W Marginal Way SW<br>Seattle, WA                  | 206-623-0621 (Office)        |
| Seattle, WA                    | NRCES                     | 9520 10 <sup>th</sup> Ave. S, Suite 150<br>Seattle, WA | 206-607-3000                 |

| Outdoor Recreation Groups, Companies, & Organizations |  |                                   |   |
|---|--|-----------------------------------|---|
| City/Location   | Name   | Address                           | Contact & Other Information   |
| Aberdeen, WA  | Grays Harbor<br>Historical Seaport Authority<br>(Recreational Sailing) | 712 Hagara Street<br>Aberdeen, WA | 360-532-8611  |
| Westport, WA  | Westport<br>Charter Boat Association                                   | P.O. Box 654<br>Westport, WA      | 360-268-0445 (President)<br><a href="http://charterwestport.com/">http://charterwestport.com/</a> |

| Park Facilities |  |                                     |  |
|-----------------|--|-------------------------------------|--|
| City/Location   | Name   | Address                             | Contact & Other Information  |
| Aberdeen, WA    | Bishop Athletic Complex<br>(Aberdeen Parks & Recreation) | 230 State Route 105<br>Aberdeen, WA | 360-537-3230   |
| Hoquiam, WA     | Ocean City State Park                                    | 148 SR- 15<br>Hoquiam, WA           | 360-902-8844<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |

| <b>Park Facilities (continued)</b> |                           |   |  |
|------------------------------------|---------------------------|---|--|
| <b>City/Location</b>               | <b>Name</b>               | <b>Address</b>                              | <b>Contact &amp; Other Information</b>                                 |
| Westport, WA                       | Twin Harbors State Park   | SR- 105 & S. Forrest Street<br>Westport, WA | 360-902-8844<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |
| Westport, WA                       | Westport Light State Park | Ocean Avenue<br>Westport, WA                | 360-902-8844<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |
| Westport, WA                       | Westhaven State Park      | State Park Access Road<br>Westport, WA      | 360-902-8844<br><a href="http://www.parks.wa.gov">www.parks.wa.gov</a> |

| <b>Rental Equipment - Industrial/Commercial</b> |                   |   |  |
|---|-------------------|---|--|
| <b>City/Location</b>                            | <b>Name</b>       | <b>Address</b>                              | <b>Contact &amp; Other Information</b>   |
| Aberdeen, WA                                    | Quigg Bros., Inc. | 819 W. State Street<br>Aberdeen, Washington | 360-533-1530;<br><a href="http://www.quiggbros.com/">http://www.quiggbros.com/</a> |
| Arlington, WA                                   | Rain for Rent     | 19430 59th Avenue NE<br>Arlington, WA 98223 | 360-403-3091 (24-Hour)   |
| Everett, WA                                     | BakerCorp.        | 9715 24th PL W<br>Everett, WA 98204         | 206-793-6136 (Tim Ferris)<br>425- 347-8811 (Office)                                |
| Portland, OR                                    | BakerCorp.        | 6400 S. E. 101st Ave.<br>Portland, OR 97266 | 503- 775-7211 (Office)   |
| Portland, OR                                    | Rain for Rent     | 11035 NE Marx Street<br>Portland, OR 97220  | 503-262-7246 (24-Hour)   |

| <b>Response Equipment Cache Locations</b> |  |   |  |
|---|--|---|--|
| <b>City/Location</b>                      | <b>Equipment</b>   | <b>Address</b>  | <b>Contact &amp; Other Information</b>             |
| Aberdeen, WA                              | Boom (20"- 2000')<br>PPE<br>Truck (6)<br>Vacuum Truck (5)<br>Skiff (14')<br>Vessel (24' Workboat)<br>Heavy Equipment<br>Storage<br>Personnel | 181 N. Willow<br>Aberdeen, WA                           | 888-423-6316 (CCSPNE)                              |
| Aberdeen, WA                              | Boom (20"- 2000')<br>Boom (30"- 4400')<br>Skimmer (Brush)<br>Storage (Portable Tank)<br>Workboat (32' Kvichak FRV)                           | Port of Grays Harbor<br>Industrial Road<br>Aberdeen, WA | 1-800-33-SPILL<br>NRCES, Marine Operations Manager |

| Response Equipment Cache Locations (continued)  |  |  |   |
|---|--|--|---|
| City/Location   | Equipment  | Address  | Contact & Other Information                       |
| Westport, WA  | Anchor (30lb. – four)<br>Absorbent Pad (200)<br>Absorbent Sweep (200ft.)<br>Absorbent Boom (80ft.)<br>Boom (12" skirt - 800ft.)<br>Decontamination Equip.<br>Fire Extinguisher (2)<br>First Aid<br>MSDS<br>Navigation Light Buoy (48" - five)<br>PPE | Westport Marina<br>Equipment Yard<br>326 Lamb Street<br>Westport, WA | 360-268-9665<br>Trailer #39 Port of Grays Harbor: |
| Other response equipment and locations can be found on the Western Response Resource List (WRRL) at <a href="http://www.wrri.us">http://www.wrri.us</a> . |  |  |   |

| River Guides  |   |                               |  |
|---------------|---|-------------------------------|--|
| City/Location | Name  | Areas of Operation            | Contact & Other Information  |
| Chehalis, WA  | Adam Boehm<br>21' Thor-Built  | Rivers                        | 360-219-6751   |
| Chehalis, WA  | Clancy Holt<br>Clancy's Guided Sportfishing<br>26' Alumaweld Boats (4)      | Marine and Rivers             | 360-880-0409<br>360-262-9549<br><a href="mailto:clancysfishing@localaccess.com">clancysfishing@localaccess.com</a>   |
| Olympia, WA   | Nic Norbeck<br>Chehalis River Guides<br>20' Willy Predator                  | Rivers (90%) and Marine (10%) | 360-789-6147   |
| Westport, WA  | Chuck or Jennifer Custer<br>Freedom Sportfishing<br>53' Freedom Charterboat | Marine                        | 360-268-8158<br>360-580-3856<br><a href="mailto:info@fishonfreedom.com">info@fishonfreedom.com</a><br><a href="mailto:cvfreedom@centurytel.net">cvfreedom@centurytel.net</a><br><a href="http://www.fishonfreedom.com">www.fishonfreedom.com</a> |
| Westport, WA  | David Camp<br>54' Discovery   | Marine                        | 360-268-0323<br>360-580-1290<br><a href="mailto:FishDiscovery@comcast.net">FishDiscovery@comcast.net</a><br><a href="http://www.cachalotcharters.com">www.cachalotcharters.com</a>   |
| Westport, WA  | Rhett Weber<br>48' Charterboat SLAMMER                                      | Marine                        | 360-590-0493<br>360-268-7373<br><a href="mailto:ophiodon@yahoo.com">ophiodon@yahoo.com</a>   |
| Westport, WA  | Westport Charterboat Association  | Marine                        | 360-268-0445<br>Mark Cedergreen, Exec. Director:<br><a href="http://charterwestport.com/">http://charterwestport.com/</a>  |



| Security Services |                      |                                     |                             |
|-------------------|----------------------|-------------------------------------|-----------------------------|
| City/Location     | Name                 | Address                             | Contact & Other Information |
| Aberdeen, WA      | Twin County Security | 2726 Simpson Avenue<br>Aberdeen, WA | 360-533-1259                |
| Hoquiam, WA       | Site Security 360    | 701 Cleveland Street<br>Hoquiam, WA | 206-452-5686                |

| Support Personnel - Local/Emergency |                                    |   |  |
|-------------------------------------|------------------------------------|---|--|
| City/Location                       | Name                               | Address   | Contact & Other Information  |
| Aberdeen, WA                        | Grays Harbor<br>Fire District 2    | District HQ Station 31, 6317<br>Olympic Highway<br>Aberdeen, WA | 360-532-6050 (Station Phone)<br><a href="http://www.ghfd2.org/">http://www.ghfd2.org/</a>  |
| Aberdeen, WA                        | Aberdeen Fire Department<br>EMS    | 200 E Market Street<br>Aberdeen, WA                             | 360-537-3262 (Fire Chief)<br><a href="http://aberdeenwa.gov/fire/ems.php">http://aberdeenwa.gov/fire/ems.php</a>                         |
| Elma, WA                            | Grays Harbor<br>Fire District 5    | HQ Station 51<br>428 Stamper Road<br>Elma, WA                   | 360-482-3143 (District Chief)<br><a href="http://www.ghfd5.org/">http://www.ghfd5.org/</a>   |
| Hoquiam, WA                         | City of Hoquiam Fire<br>Department | 609 8 <sup>th</sup> Street<br>Hoquiam, WA                       | 360-637-6042 (Fire Chief)<br><a href="http://cityofhoquiam.com/fire/">http://cityofhoquiam.com/fire/</a>                                 |
| Montesano, WA                       | Montesano<br>Fire Department       | 310 E. Pioneer Avenue<br>Montesano, WA                          | 360-249-4851 (Non-Emergency)<br><a href="http://www.montesano.us">http://www.montesano.us</a>  |
| Ocean Shores, WA                    | Ocean Shores<br>Fire & Ambulance   | 585 Pt. Brown Ave. NW<br>Ocean Shores, WA                       | 360-289-3611 (Business Office)<br><a href="http://www.osgov.com/publicsafety.html">http://www.osgov.com/publicsafety.html</a>            |
| Westport, WA                        | South Beach<br>EMS                 | 170 W. Spokane Avenue<br>Westport, WA                           | 360-268-9832 (Director)<br>director_sba@comcast.net<br><a href="http://www.ghems.org/contacts.php">http://www.ghems.org/contacts.php</a> |

| Tribal Resources |  |  |  |
|------------------|--|--|--|
| City/Location    | Name   | Address                                | Contact & Other Information  |
| Oakville, WA     | Confederated Tribes of the<br>Chehalis Reservation | 420 Howanut Road<br>Oakville, WA       | 360-273-5911<br><a href="http://www.chehalis tribe.org/">http://www.chehalis tribe.org/</a>                      |
| Taholah, WA      | Quinalt Indian Nation                              | 1214 Aalis Drive<br>Taholah, WA        | 360-276-8211<br><a href="http://www.quinaltindiannation.com/">http://www.quinaltindiannation.com/</a>            |
| Tokeland, WA     | Shoalwater Bay Indian Tribe                        | 2373 Old Tokeland Road<br>Tokeland, WA | Tribal Center: 360-267-6766<br><a href="http://www.shoalwaterbay-nsn.gov/">http://www.shoalwaterbay-nsn.gov/</a> |

| Transportation |                             |   |  |
|----------------|-----------------------------|---|--|
| City/Location  | Name                        | Address                                       | Contact & Other Information                          |
| Aberdeen, WA   | Harbour Taxi & Courier Inc. | 117 S. H Street,<br>Suite 103<br>Aberdeen, WA | 360-590-6060<br>Taxi, 6-seat passenger vans, 24-Hour |
| Aberdeen, WA   | Hertz Rent-A-Car, Aberdeen  | 711 East Wishkah Street<br>Aberdeen, WA       | 360-532-2854   |

| Wildlife Support  |                                |                                     |   |
|-------------------|--------------------------------|-------------------------------------|---|
| City/Location     | Name                           | Address                             | Contact & Other Information   |
| Astoria, OR       | International Bird Rescue      | 1526 Franklin Avenue<br>Astoria, OR | (888) 447-1743<br><a href="http://www.bird-rescue.org">http://www.bird-rescue.org</a> |
| Anacortes, WA     | Focus Wildlife                 | P.O. Box 944<br>Anacortes, WA       | (800) 578-3048<br><a href="http://www.focuswildlife.net">www.focuswildlife.net</a>    |
| Friday Harbor, WA | Islands' Oil Spill Association | P.O. Box 2316<br>Friday Harbor, WA  | (360) 378-5322<br><a href="http://iosaonline.org">http://iosaonline.org</a>           |

| Wildlife Equipment Owners   |   |  |  |
|-----------------------------|---|--|--|
| City/Location               | Name  | Address  | Contact & Other Information  |
| Portland, OR                | Clean Rivers Cooperative  | Mobile<br>Oiled Wildlife<br>Mobile Rehabilitation Unit | (503) 220-2040<br><a href="http://www.cleanriverscooperative.com">www.cleanriverscooperative.com</a> |
| Seattle, WA<br>(South Park) | National Response Corporation<br>Environmental Services (NRCES) | Mobile<br>Oiled Wildlife<br>Mobile Rehabilitation Unit | (800) 337-7455<br><a href="http://www.nrces.com">www.nrces.com</a>                                   |
| Everett, WA                 | Marine Spill Response<br>Corporation (MSRC)                     | Mobile<br>Oiled Wildlife<br>Mobile Rehabilitation Unit | (425) 252-1300<br><a href="http://www.msrmc.org">www.msrmc.org</a>                                   |

# Appendix A

## Protection Techniques

**Table A-1: Summary of Protection Techniques for Onshore Areas**

| Protection Technique | Description  | Minimum Logistical Requirements   | Limitations   |
|----------------------|--|---|---|
| Beach Berms          | A berm is constructed along the top of the mid-intertidal zone from sediments excavated along the downgradient side. The berm should be covered with plastic or geo-textile sheeting to minimize wave erosion. | <ul style="list-style-type: none"> <li>· Bulldozer/Motor Grader (1)</li> <li>· Equipment Operators (1)</li> <li>· Support Personnel/Workers (1)</li> <li>· Plastic or Geotextile Sheeting</li> </ul>  | <ul style="list-style-type: none"> <li>· High Wave Energy</li> <li>· Large Tidal Range</li> <li>· Strong Along Shore Currents</li> </ul>  |
| Geotextiles          | A roll of geotextile, plastic sheeting, or other impermeable material is spread along the bottom of the supra-tidal zone & fastened to the underlying logs or stakes placed in the ground.                     | <ul style="list-style-type: none"> <li>· Support Personnel/Workers (5)</li> <li>· Stakes &amp; Tie-Down Cord</li> <li>· Plastic/Geotextiles (3 meter width rolls)</li> </ul>  | <ul style="list-style-type: none"> <li>· Low Sloped shoreline</li> <li>· High spring tides</li> <li>· Large storms</li> </ul>   |
| Sorbent Barriers     | A barrier is constructed by installing two parallel lines of stakes across a channel, fastening wire mesh to the stakes & filling the space between with loose sorbents.                                       | <p><u>Per 30 Meters of Barrier:</u></p> <ul style="list-style-type: none"> <li>· Support Personnel/Workers (2)</li> <li>· Wire mesh (70 meters x 2 meters)</li> <li>· Sorbents (30 square meters)</li> <li>· Stakes (20)</li> <li>· Fasteners, Support Lines, Stakes</li> </ul> | <ul style="list-style-type: none"> <li>· Waves &gt; 25 cm (~ 9.8")</li> <li>· Currents &gt; 0.5 m/s (~ 1.6ft/s, ~1kt)</li> <li>· Tidal range &gt; 2 meters (~ 6.5ft)</li> </ul> |
| Inlet Dams           | A dam is constructed across the channel using local soil or beach sediments to exclude oil from entering channel   | <ul style="list-style-type: none"> <li>· Loader (1)</li> <li>· Equipment Operators (1)</li> <li>· Support Personnel/Workers (1+)</li> <li>· Shovels (1 for each worker)</li> </ul>  | <ul style="list-style-type: none"> <li>· Waves &gt; 25 cm (~ 9.8")</li> <li>· Tidal range exceeding dam height</li> <li>· Freshwater Outflow</li> </ul>                         |

Source: R. Miller, Clean Sound Cooperative

**Table A-2: Summary of Protection Techniques for Nearshore Areas**

| Protection Technique | Description   | Minimum Logistical Requirements  | Limitations   |
|----------------------|---|--|---|
| Containment Booming  | Boom is deployed in a "U" shape in front of the oncoming slick. The ends of the booms are anchored by work boats or drogues. The oil is contained within the "U" & prevented from reaching the shore. | <u>For 150 Meters Slick:</u><br><ul style="list-style-type: none"> <li>· Work Boats (2)</li> <li>· Boom - 280 meters (~918ft)</li> <li>· Personnel/Boat Operators (2)</li> <li>· Personnel/Boat Crew (2)</li> <li>· Personnel/Boom Tenders (4)</li> <li>· Tow lines, drogues, connectors</li> </ul>  | <ul style="list-style-type: none"> <li>· High winds</li> <li>· Swells &gt; 2 meters (~6.5ft)</li> <li>· Breaking Waves &gt; 50 cm (~19.6")</li> <li>· Currents &gt; 1.0 m/s (~ 3.3ft/s, ~2kts)</li> </ul> |
| Exclusion Booming    | Boom is deployed across or around sensitive areas & anchored in place. Approaching oil is deflected or contained by boom.   | <u>Per 300 meters of Boom:</u><br><ul style="list-style-type: none"> <li>· Work Boat (1)</li> <li>· Boom - 300 meters (~984ft)</li> <li>· Personnel/Boat Operators (1)</li> <li>· Personnel/Boat Crew (1)</li> <li>· Personnel/Boom Tenders (3)</li> <li>· Anchors (6)</li> <li>· Anchor Lines, Buoys, etc.</li> </ul>                                   | <ul style="list-style-type: none"> <li>· Currents &gt; 0.5 m/s (~ 1.6ft/s, ~1kt)</li> <li>· Breaking waves &gt; 50 cm (~19.6")</li> <li>· Water depth &gt; 20 meters (~65ft)</li> </ul>                   |
| Deflection Booming   | Boom is deployed from the shoreline away from the approaching slick & anchored or held in place with a work boat. Oil is deflected away from shoreline.   | <u>Single Boom</u><br>(0.75 m/s knot current) (~2.5ft/s)<br><ul style="list-style-type: none"> <li>· Work Boat (1)</li> <li>· Boom - 60 meters (~197ft)</li> <li>· Personnel/Boat Operators (1)</li> <li>· Personnel/Boat Crew (1)</li> <li>· Personnel/Boom Tenders (3)</li> <li>· Anchors (3)</li> <li>· Anchor Lines, Buoys, Recovery Unit</li> </ul> | <ul style="list-style-type: none"> <li>· Currents &gt; 1.0 m/s (~ 3.3ft/s, ~2kts)</li> <li>· Breaking waves &gt; 50 cm (~19.6")</li> </ul>  |
| Diversion Booming    | Boom is deployed from the shoreline at an angle towards the approaching slick & anchored or held in place with a work boat. Oil is diverted towards the shoreline for recovery.                       | <u>Single Boom</u><br>(0.75 m/s knot current) (~2.5ft/s)<br><ul style="list-style-type: none"> <li>· Work Boat (1)</li> <li>· Boom - 60 meters (~197ft)</li> <li>· Personnel/Boat Operators (1)</li> <li>· Personnel/Boat Crew (1)</li> <li>· Personnel/Boom Tenders (3)</li> <li>· Anchors (3)</li> <li>· Anchor Lines, Buoys, Recovery Unit</li> </ul> | <ul style="list-style-type: none"> <li>· Currents &gt; 1.0 m/s (~ 3.3ft/s, ~2kts)</li> <li>· Breaking waves &gt; 50 cm (~19.6")</li> </ul>  |



**Table A-2: Summary of Protection Techniques for Nearshore Areas (cont.)**

| Protection Technique | Description  | Minimum Logistical Requirements  | Limitations  |
|----------------------|--|--|--|
| Skimming             | Self-propelled skimmers work back & forth along the leading edge of a windrow to recover the oil. Booms may be deployed from the front of a skimmer in a "V" configuration to increase sweep width. Portable skimmers are placed within containment booms in the area of heaviest oil concentration. | <p><u>Self-propelled</u> (None)</p> <p><u>Towed</u></p> <ul style="list-style-type: none"> <li>· Boom - 200 meters (~656ft)</li> <li>· Work Boats (2)</li> <li>· Personnel/Boat Operators (2)</li> <li>· Personnel/Boat Crew (2)</li> <li>· Personnel/Boom Tenders (4)</li> <li>· Tow Lines, Bridles, Connectors</li> </ul> <p><u>Portable</u></p> <ul style="list-style-type: none"> <li>· Hoses - 30 meters discharge (~98ft)</li> <li>· Oil Storage - 2000 liters (~528 gal)</li> </ul> | <ul style="list-style-type: none"> <li>· High winds</li> <li>· Swells &gt; 2 m (~6.5ft)</li> <li>· Currents &gt; 1.0 m/s (~ 3.3ft/s, ~2kts)</li> <li>· Breaking waves &gt; 50 cm (~19.6")</li> </ul> |

Source: R. Miller, Clean Sound Cooperative

**Table A-3: Summary of Protection Techniques for Harbors & Bays**

Where water depth is usually greater than typical boom skirt depth

| Description  | Tactics   |
|--|---|
| Use river techniques in specific areas.<br>Current speed dependent.<br>Vessel traffic dependent. | Single diversion boom<br>Current < 2 knots use boom skirt of 12 inches if no waves.<br>Current > 2 knots use boom skirt of 6 inches or less if no waves |
| Currents over 2 knots  | Cascade boom<br>• Use short skirts, short boom lengths and sufficient overlap   |
| Currents less than 2 knots and area is large   | Encircling  |
| Sufficient room to maneuver  | Skimmers  |
| Special conditions   | Air and water jets  |
| Isolated areas   | Sorbents and pom-poms   |

Source: "Oil Spill Response in Fast Currents: A Field Guide." US Coast Guard, October 2001

**Table A-4: Summary of Protection Techniques for Rivers & Canals (Non-Tidal)**

Where water depth is greater than typical boom skirt depth and there may be tidal influence, but current always flows in the same direction.

| Description   | Tactics  |
|---|--|
| Current speed dependent<br>Vessel traffic dependant | Single diversion boom<br>Current < 2 knots: Use boom skirt of 12 inches<br>Current > 2 knots: Use boom skirt of 6 inches or less |
| Currents over 2 knots                               | Cascading diversion boom<br>Use short skirts, short boom lengths and sufficient overlap  |
| Collection areas available on both sides            | Chevron booms<br>Open for vessel traffic<br>Closed if no traffic   |
| Currents less than 2 knots and river is wide        | Single diversion boom<br>Exclusion boom for sensitive areas<br>Encircle and divert to collection area                            |
| Sufficient room to maneuver                         | Skimmers for collection  |
| No vessels available                                | Boom vane, Flow diverters  |
| Special conditions                                  | Air and water jets   |
| Isolated areas                                      | Sorbents and pom-poms  |

Source: "Oil Spill Response in Fast Currents: A Field Guide." US Coast Guard, October 2001.

**Table A-5: Summary of Protection Techniques for small Streams, Creeks, & Culverts**

Where water depth is less than boom skirt depth.

| Description               | Tactics  |
|---------------------------|--|
| Dependent upon flow rate  | Single diversion for volume greater than about 10 cubic ft/sec |
| Block for low volume flow | Sealing (Fill, Dams, Weirs)                                    |
| Design for volume         | Overflow / underflow dams                                      |
| Low flow                  | Sorbents and pom-poms  |

Source: "Oil Spill Response in Fast Currents: A Field Guide." US Coast Guard, October 2001.

**Table A-6: Fast Water Booming Techniques**  
**Current Chip Log and Maximum Boom Deflection Angle**

The table uses the time for floating debris to drift 100 feet. This is accurately determined by anchoring a line with two floating buoy markers attached at a spacing 100 feet apart. Floating debris is then thrown into the water approximately 20 feet upstream of the first buoy marker. Determine the time it takes the debris to transit the distance between the two marker buoys in seconds. This assumes that the minimum escape velocity under a boom perpendicular to the current (90 degrees) is 1.2 feet per second. The table provides an estimate of the length of boom required for deflecting oil at a specified angle for a 110-foot profile (perpendicular length) to the current. It also provides an estimate of the number of anchors or shoreline tiebacks required for that length of boom assuming anchor points are required every 50 feet.

| Time to Drift<br>100 Feet<br>(seconds) | Velocity<br>(ft/sec) | Max. Boom<br>Deflection<br>Angle<br>(degrees) | Boom for 100<br>Foot Profile to<br>Current<br>(feet) | Anchors if<br>Placed Every<br>50 Feet<br>(number) |
|--|----------------------|---|--|---|
| 6                                      | 16.7                 | 4.0   | 1,429  | 30  |
| 8                                      | 12.5                 | 5.4   | 1,071  | 22  |
| 10                                     | 10.0                 | 6.7   | 857  | 18  |
| 12                                     | 8.3                  | 8.0   | 714  | 15  |
| 14                                     | 7.1                  | 9.4   | 612  | 13  |
| 17                                     | 5.9                  | 11.4  | 504  | 11  |
| 20                                     | 5.0                  | 13.5  | 429  | 10  |
| 24                                     | 4.2                  | 16.3  | 357  | 8   |
| 30                                     | 3.3                  | 20.5  | 286  | 7   |
| 40                                     | 2.5                  | 27.8  | 214  | 5   |
| 60                                     | 1.7                  | 44.4  | 143  | 4   |
| >86                                    | <1.2                 | 90.0  | 100  | 3   |

(1 Knot = 1.16 mile/hr, 6,080 ft/hr, or 1.7 ft/sec)

**Table A-7: Current Drag Force on One-Foot Boom Profile to Current**

The major force exerted on a boom is caused by the water drag on the skirt. Wave forces can increase the drag factor by two to three times depending upon the wave height, period, and loading dynamics. Wind force is less than current and waves, but is also a factor. In high current situations, drag is sometimes increased by water piling up on the boom, causing some submergence and increased drag forces, often resulting in mooring failure. In this situation, the 100-foot section of 4 X 6 diversion boom (4-inch floatation and 6-inch draft) should take the hydrodynamic load. A replacement section 50 feet long can withstand the reduced forces with submerging. The effects of current velocity and boom draft on boom drag force can be seen in

the table. Drag increases with draft in a linear fashion, while current increased drag more dramatically (to the square of the velocity).

| Velocity (ft/sec) | Boom Drag Force (pounds) |                |                |                |
|-------------------|--------------------------|----------------|----------------|----------------|
|                   | Draft 0.5 Feet           | Draft 1.0 Feet | Draft 1.5 Feet | Draft 2.0 Feet |
| 0.8               | 0.7                      | 1.3            | 2.0            | 2.7            |
| 1.7               | 2.7                      | 5.3            | 8.0            | 10.7           |
| 2.5               | 6.0                      | 12.0           | 18.0           | 24.0           |
| 3.4               | 10.7                     | 21.3           | 32.0           | 42.6           |
| 4.2               | 16.7                     | 33.3           | 50.0           | 66.6           |
| 5.1               | 24.0                     | 48.0           | 72.0           | 95.9           |
| 5.9               | 32.6                     | 65.3           | 97.9           | 130.6          |
| 6.8               | 42.6                     | 85.3           | 127.9          | 170.6          |
| 7.6               | 54.0                     | 107.9          | 161.9          | 215.9          |
| 8.4               | 66.6                     | 133.3          | 199.9          | 266.5          |
| 9.3               | 80.6                     | 161.2          | 241.8          | 322.5          |
| 10.1              | 95.9                     | 191.9          | 287.8          | 383.8          |
| 11.0              | 112.6                    | 225.2          | 337.8          | 450.4          |
| 11.8              | 130.6                    | 261.2          | 391.8          | 522.3          |
| 12.7              | 149.9                    | 299.8          | 449.7          | 599.6          |
| 13.5              | 170.6                    | 341.1          | 511.7          | 682.2          |

**Table A-8: Approximate Safe Working Loads/Tensile Strength of New Rope**

| Rope Diameter (inches) | Manila No. 1 (3 strand) (pounds) | Nylon (3-strand) (pounds) | Polyester (3-strand) (pounds) |
|------------------------|----------------------------------|---------------------------|-------------------------------|
| 5/16                   | 200 / 1,000                      | 500 / 2,500               | 500 / 2,500                   |
| 3/8                    | 270 / 1,350                      | 700 / 3,500               | 700 / 3,500                   |
| 7/16                   |                                  | 1,140 / 5,700             |                               |
| 1/2                    | 530 / 2,650                      | 1,250 / 6,250             | 1,200 / 6,000                 |
| 5/8                    | 880 / 4,400                      | 2,100 / 10,500            | 1,950 / 9,750                 |
| 3/4                    | 1,080 / 5,400                    | 2,750 / 5,400             | 2,300 / 11,500                |



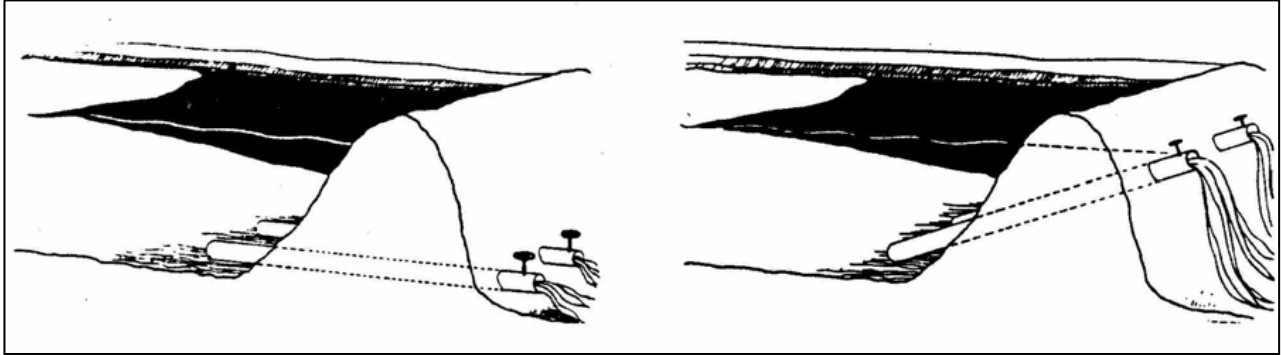
Towing load can be significant when a boom is anchored on one end and pulled against the current. Boats must have sufficient horsepower and be properly rigged to tow. Lines must be capable of withstanding the forces and the boom must have a tension member capable of high loads. If the boom is extended behind the tow boat and pulled free in the current, there is only the frictional drag along the boom. Because this drag is a function of the boat speed, proper motor size becomes a function of boom size and length, boat size, and water velocity. Although free towing drag is low, when one end of the boom is anchored to the shore, a small boat may be incapable of positioning the boom because of the high current drag exerted on the boom. The boom must be able to withstand the forces. The tension member must not become detached from the boom due to differential expansion.

Attempting to moor a boom in a straight line across a current (90 degrees) is not recommended. The result is a sag in the boom that will trap free floating oil at a point inaccessible to the shore. In swift currents, the resulting forces on moorings can cause large lines of break and present possible safety hazards. The current can be so swift that the boom may dip and become completely or partially submerged. If this happens, the boom's position should be adjusted. The total force on the mooring points will be a combination of the forces caused by current, wind, and waves.

Boom positioning is an important point. The first step is to decide where the boom should be located. It is likely that the boom will be placed on an angle to the current; therefore, the prime concern becomes the location of the upstream end. If the selected upstream location is inaccessible, a spot further upstream can be used for access and the boat and boom allowed to drift to the selected mooring site. The boom can be secured to trees, stakes, anchors, or other solid objects. Do not attach boom to vehicles of any type or size.

### **Figure A-1: Underflow Dams**

Dams can be built in shallow rivers, culverts, and inlets using hand tools or heavy machinery, as available. Pipes are used to form an underflow dam to allow water passage out while oil stays behind, as seen in first figure below. The inlet of the pipe is cut at an angle to permit a larger entrance area for the water in order to reduce the inlet velocities and the possibility of oil drawdown due to formation of vortices. Caution should be taken to prevent whirlpools from forming and pulling the oil down. Face the cut pipe opening down (or insert a 90 degree angle) to help eliminate this. This technique is effective for water bodies less than two feet deep where flow volume can be accommodated by pipe flow. This method can also be used in deep, narrow culverts.



Earth underflow dam (DOWCAR 1997).



Sandbag underflow dam

Figure A-2: Culvert block

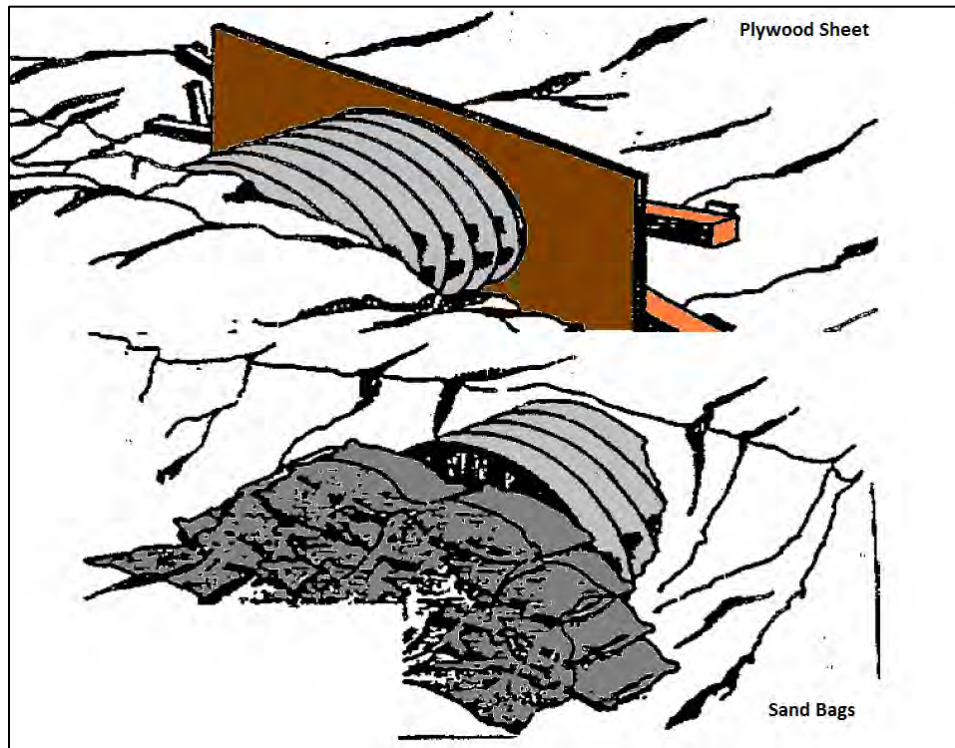
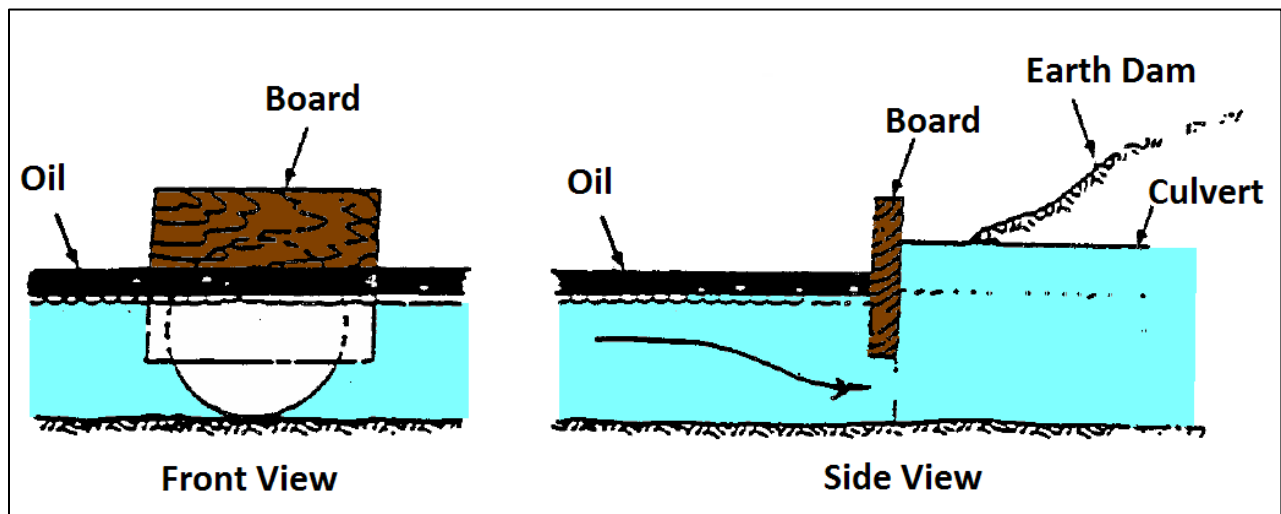


Figure A-3: Culvert weir



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## Appendix B

### Grays Harbor Geographic Response Plan – Original Contributors

#### **Federal Representatives:**

Bureau of Indian Affairs

National Marine Fisheries Service  
National Marine Mammal Laboratory  
Fisheries Management Division

National Oceanic and Atmospheric Administration  
Hazardous Materials Response Division  
Sanctuary and Reserves Division

U.S. Army Corps of Engineers

U.S. Coast Guard  
Marine Safety Office  
District Response Assist Team  
Pacific Strike Team

U.S. Environmental Protection Agency

U.S. Department of Commerce

U.S. Department of Interior

U.S. Fish and Wildlife Service

U.S. National Park Service

#### **State Representatives:**

Oregon Department of Environmental Quality

Puget Sound Water Quality Authority

Washington Department of Community Development

**State Representatives:** (continued)

Washington Department of Ecology  
Washington Department of Fish and Wildlife  
Washington Department of Natural Resources  
Washington Marine Oversight Board  
Washington Maritime Commission  
Washington Parks and Recreation Commission  
Washington Office of Archeology and Historic Preservation  
Washington Office of Marine Safety

**Industry and Response Contractors:**

Clean Sound Cooperative  
Crowley Marina  
Foss  
Global Diving and Salvage  
Island Oil Spill Association  
Marine Spill Response Corporation  
OHM  
Port Townsend Paper Co.  
Riedel Environmental  
Wildlife Rapid Response Team, Inc.

**Environmental Consulting Firms:**

Battelle Marine Sciences Lab  
Beak Consultants Inc.  
Evans-Hamilton Inc.  
Genwest Systems Inc.  
Graham and Dunn

**Environmental Advocacy Groups:**

American Oceans Campaign  
Audubon Society  
People for Puget Sound  
Sierra Club  
Trout Unlimited  
Washington Environmental Council

**Other Organizations:**

Coalition of Washington Ocean Fisherman  
Northwest Indian Fisheries Commission  
Point Defiance Aquarium  
Seattle Aquarium

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## Appendix C

### Grays Harbor - Geographic Response Plan

#### 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](mailto:GRPs@ecy.wa.gov), or forward them via U.S. Mail to the following agencies:

*United States Coast Guard*

Sector Columbia River  
Incident Management Division  
2185 SE 12th Place  
Warrenton, OR 97146

*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>.

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Warrenton, OR 97146

Washington State Department of Ecology  
Spills Program (GRPs)  
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Olympia, WA 98504-7600