WRIA 7

Geographic Response Plan

(WRIA-7 GRP)

WRIA 7

Geographic Response Plan

(WRIA-7 GRP)

July 2013

Spill Response Contact Sheet

Required Notifications for Oil Spills & Hazardous Substance Releases	
Federal Notification - National Response Center	**(800) 424-8802***
State Notification - Washington Emergency Management Division	**(800) 258-5990***

- Other Contact Numbers -

U.S. Coast Guard	
Sector Puget Sound	
- Emergency	**(206) 217-6001***
- Watchstander	**(206) 217-6002***
- Incident Management Division	(206) 217-6214
- Port & Waterways Safety	(206) 217-6042
Pacific Strike Team	(415) 883-3311

U.S. Environmental Protection Agency	
Region 10 - Spill Response	**(206) 553-1263***
Washington Ops Office	(360) 753-9083
RCRA/CERCLA Hotline	**(800) 424-9346***

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

US Navy	
Naval Station Everett	(425) 304-3202

Department of Interior	
Regional Environmental Officer	(503) 326-2494

Other Federal Agencies	
U.S. Fish & Wildlife Service (pager)	**(360) 534-9313***
U.S. Army Corps of Engineers - District	(206) 764-3400

State Patrol	
State office	(509) 891-6839
District 7 (Marysville, WA)	(360) 654-1204

Pipeline Companies, & Railroads	
BP Olympic Pipeline	**(425) 235-7736**
BNSF Railway	**(800) 832-5452***

Washington State	
Dept of Ecology	
- Headquarters (Lacey)	(360) 407-6000
- NW Regional Office (Bellevue)	(425) 649-7000
- Bellingham	(360) 715-5200
- SW Regional Office (Lacey)	(360) 407-6300
Dept of Fish and Wildlife	(360) 902-2200
- Emergency HPA Assistance	**(360) 534-8233***
Dept of Health (Shellfish)	(360) 236-3330
- After normal business hours	(360) 789-8962
Dept Archaeology & Historic Preservation	(360) 586-3065
Dept of Transportation	(360) 705-7000

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

Tribal Contacts	
Lummi Nation	(360) 384-2298
Northwest Indian Fisheries Commission	(360) 438-1180
Samish Indian Nation	
Snoqualmie Tribe	
Stillaguamish Tribe of Indians	(360) 652-7362
Suquamish Tribe	(360) 598-3311
Swinomish Indian Tribal Community	(360) 466-3163
The Tulalip Tribes	(360) 651-4000

Local Government	
King County	
Snohomish County	(425) 388-3411
City of Carnation	
City of Duvall	
City of Gold Bar	(360) 793-1101
City of Everett	(425) 257-7965
City of Marysville	(360) 363-8300
City of Monroe	(360) 794-7400
City of Snoqualmie	(425) 888-1555
City of Snohomish	(360) 568-3115

*** Contact Numbers staffed 24-hour/day**

Before you print this document:

All chapters and appendices in this plan are provided in “portrait” page orientation except Chapters 4a and 4b (PDF pp. 19-348), and the economic resources at risk listing in Appendix 6A (PDF pp. 371-376) which are provided in “landscape” page orientation.

WRIA 7
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 Water Resource Inventory Area 7 area, which includes the Snohomish, Skykomish, and Snoqualmie River Basins. 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 that float and remain floating on surface waters 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 5 provides information on shoreline types and oil spill countermeasures. Finally, Chapter 7 gives information needed to support logistics during the initial phase of a response.

Chapter 1	Introduction
Chapter 2	Site Description
Chapter 3	Reserved
Chapter 4	Response Strategies & 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.

Record of Changes

Date	Change Number	Summary of Changes	Name of Person Making Change
6/2008	WRIA7-001	Chapter 4A (Snohomish River) completed	John Williams
7/2013	WRIA7- 002	Chapters 1,2,3, 4B (Skykomish River), 5, 6, & 7 completed and added to the GRP	Scott Zimmerman Kris Grinnell Danielle Butsick

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Table of Contents

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WRIA 7
Geographic Response Plan

Chapter 1 – Introduction

Geographic Response Plans (GRPs) are intended to help the response community avoid the initial confusion that sometimes accompanies the onset of an oil spill incident. This document serves as the federal and state on-scene-coordinators orders during the initial phase of a spill response for Water Resource Inventory Area 7 (WRIA 7). This plan has been approved by the Environmental Protection Agency Region 10 and the Washington State Department of Ecology Spills Program. 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 submit comments on how the plan might be improved. Please submit comments using the information provided in Appendix "C" or online at http://www.rrt10nwac.com/Comment.

GRPs have been developed for the marine and inland waters of Washington, Oregon, and Idaho. They are prepared through the efforts and cooperation of the Washington Department of Ecology, Washington Department of Fish and Wildlife, 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 organizations, ports, and pilots. Participants identify resources that may be at risk of injury from spills, develop oil spill response strategies to reduce 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 is reviewed, modifications made as determined necessary, potentially unsafe or ineffective strategies removed, and new strategies added to the plan. Unfortunately, the dynamics of marine and inland water environments and the limitations of current 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. A responsiveness summary is generated for all public comments received but not incorporated into the final version of the updated GRP.

This GRP has been developed for WRIA 7, also known as the Snohomish River watershed. This GRP is located in Western Washington, near Everett. Its western and eastern boundaries are the Puget Sound and upper crest of the Cascade Mountain range. The Northern and Southern boundaries are irregular and are defined by the direction of water flow toward the center of this GRP area. This GRP covers a total of 1,980 square miles and is the second largest watershed draining into Puget Sound. Three large rivers exist within WRIA 7, the Skykomish, the Snoqualmie and the Snohomish Rivers. Although this GRP encompasses all three rivers, response strategies have only been developed for the Snohomish and Skykomish Rivers. Response strategies for the Snoqualmie River will be developed at a later date. Numerous streams exist within this GRP, 720 total miles of streams. The major cities in this GRP are Everett and North Bend.

An area site description and information on physical features, hydrology, river conditions, winds, climate, and risk are included in Chapter 2. Oil spill strategy descriptions, response priorities, and strategy maps are in Chapter 4 of this plan. Chapter 5 addresses shoreline countermeasures. Chapter 6 provides information on natural, cultural, and economic resources at risk from oil spills and discusses flight restriction zones, hazing, oiled wildlife, and the pre-cleaning of shorelines. Chapter 7 provides information on logistics and identifies resources in the area that might be available to support the initial phase of an oil spill response.

WRIA 7
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 an oil spill risk assessment for the area. This GRP comprises the northeastern portion of King County and the south central portion of Snohomish County. The WRIA 7 GRP is bordered by the North Central Puget Sound GRP and WRIA 6 to the west, WRIA 4 and 5 to the North, WRIA 8 to the South and WRIA 39 and 45 to the East.

WRIA 7 is located north and east of the Seattle metropolitan area. The basin is 1,978 square miles in size. Population density is greatest in the western portion of the GRP near the Puget Sound. The major cities within this GRP area are Everett and North Bend. Smaller cities include Arlington, Carnation, Duvall, Granite Falls, Gold Bar, Index, Lake Stevens, Marysville, Monroe, Mukilteo, Sammamish, Skykomish, Snohomish and Sultan**.**

Although this GRP encompasses the Snohomish River and its two major tributaries, the Snoqualmie and Skykomish Rivers, response strategies have only been developed for the Snohomish and Skykomish Rivers. Response strategies for the Snoqualmie River will be developed at a later date.

2.2 Physical Features

WRIA 7 is a diverse area that includes many types of habitat, from lowlands on the western portion to mountainous terrain on the eastern edge. Much of the land in the eastern portion of this GRP is rural. Everett, a port historically influenced by the logging trade is located in the far western portion of this geographic response plan. Land use activities within WRIA 7 include mining, agriculture, forestry, manufacturing, and commercial and urban development.

This geographic response plan area contains lakes and river systems that are biologically rich and sensitive. A wide diversity of bird, fish and mammal species inhabit this area. (Details can be found in Chapter 6)

2.3 Hydrology

This watershed includes the Snohomish River and its major tributaries; the Snoqualmie and Skykomish Rivers which originate in the Cascade Mountains. The watershed includes various smaller streams such as the Pilchuck, Sultan, Raging, and Tolt Rivers. The South Fork of the Tolt River provides about 30% of the drinking water for the greater Seattle area. The Spada Lake Reservoir on the Sultan River supplies drinking water and electricity to the city of Everett.

Precipitation is strongly influenced by the Cascade Mountains and is therefore highly variable, ranging from 30 inches per year near Puget Sound, to more than 185 inches per year at the crest of the Cascade Mountains on the eastern edge of the GRP area. Most of this precipitation arrives as snow during the winter months when water demands are the lowest, and only a fraction becomes available for human and economic uses. During the summer when the snowpack is gone there is little rain, so low stream flows are dependent on groundwater inflow. This means that groundwater and surface water are least available when water demands are the highest.

2.4 – Climate & Winds

WRIA 7 has a mild maritime influenced climate with cool, wet winters and mild summers. Winds are variable throughout the area with the western portion being affected by marine winds from Puget Sound. Wind speeds often vary by season, with the highest winds generally occurring from November through January. Wind gusts can occasionally reach 50 mph or greater.

2.5 Tides and Currents

The Snohomish River, to at least river mile 16, and the nearby sloughs are affected by the diurnal tidal cycle of Puget Sound. Tides and currents vary with seasonal runoff and lunar cycles in localized areas. Spill responders should consult tide and current tables for particular locations of interest.

2.6 - Risk Assessment

WRIA 7 is plentiful in natural, cultural, and economic resources, all at risk of injury from oil spills. Potential risks to these resources include oil pipelines, railroad corridors, and road transportation. Pipelines that transport large quantities of fuel from refineries in Northern Washington to population centers further south are a spill risk within this GRP. One large pipeline passes through the western portion of this GRP and transports refined petroleum products, mainly diesel and gasoline. This pipeline passes under many rivers, creeks, and wetlands and poses a major spill risk to the waterways in this GRP.

In somewhat the same fashion as pipelines, railroad and truck traffic pose a spill risk within WRIA 7. One of the main east–west transportation routes in Washington bisects WRIA 7. This route goes from Everett to the top of the Cascades at Stevens Pass and facilitates transportation on Highway 2 and the BNSF rail corridor. This rail line and Highway 2 cross waterways and run along the banks of waterways for the entire east-west length of the GRP. 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, other petroleum products, or hazardous materials. Presently the volume of oil transported by rail is increasing in the state of Washington, with this increased volume resulting in increased spill risk. Commercial trucks can contain hundreds to thousands of gallons of fuel and oil, especially fully loaded tank trucks.

Other potential risks include vessel incidents in the Snohomish River or Sloughs along the western edge of WRIA 7. These could involve marinas or vessels moored at marinas, including fishing, excursion, and recreational boat refueling incidents; boat or vessel groundings, allisions, or collisions. There are two dams and three hydroelectric generating facilities within this GRP. All of these facilities pose a possible oil spill risk. Land-based spills could also impact resources on or near sensitive shorelines.

2.7 – References

Municipal Research and Services Center of Washington. (2008). Water Resource Inventory Area (WRIA) Activities by County. Retrieved from http://www.mrsc.org/subjects/environment/esa/esa-what2.aspx

Snohomish County Planning & Development Services. (2006). Summary Of Shoreline Ecological Functions And Conditions In Snohomish County. Retrieved from http://www.co.snohomish.wa.us/documents/Departments/PDS/Code_Development/ShorelineInventoryFINAL.pdf

Washington Department of Ecology, Water Resources Program. (2012). Water Availability in your Watershed/WRIA. Retrieved from http://www.ecy.wa.gov/programs/wr/rights/wrpenapp_avail.html

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WRIA 7
Geographic Response Plan

Chapter 3 – (Reserved)

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WRIA 7

SNOHOMISH RIVER (SNO)

Response Strategies & Priorities

CHAPTER 4a

June 20, 2008

TABLE OF CONTENTS

4.0 GENERAL RESPONSE STRATEGIES

4.1 Chapter Overview

Geographic Response Plans (GRPs) are:

- Triggered in the first hours (usually 6-24) following an oil spill.
- Targeted at shielding sensitive resources that lie close to the reported spill source.
- Just one method to minimize spill impacts, they can occur concurrently with other efforts, including skimming.

On-site Considerations

Before deploying a GRP strategy, responders should ask:

- Are conditions safe?
- Has initial control and containment been sufficiently achieved?
- Underflow dams and culvert blocks require Emergency Hydraulic Project Approval (HPA) prior to implementation. These response tactics will reduce, interrupt, or divert the water flow of streams that can be damaging to sensitive fish life and habitat. Responders must receive Emergency HPA from the Washington State Department of Fish and Wildlife **before** using culvert blocks and underflow dams. The Hydraulic Code (RCW 75-20.11-160) provides for immediate verbal approval in emergency situations. For emergency HPA contact 360-534-8233 (24 hour pager).

During the initial GRP-response phase, responders should be aware that:

- Challenging field conditions may require them to modify strategies, and later notify the command center.
- 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.
- All strategies were designed for use with persistent, heavy oils and may not be suitable for other petroleum products or hazardous materials.

- Boom deployment may require around-the-clock tending and/or precise anchoring techniques.

After considerably more is known about the spill and surrounding area:

- Other techniques for recovery or containment (skimming, in situ burning, or dispersants) may be applied.
- GRP strategies are likely to be refined as a result of lessons learned.

Term Use in Strategy Descriptions

Deployment time - Deployment time begins when crews arrive on site with necessary equipment. Deployment time does not include transit time.

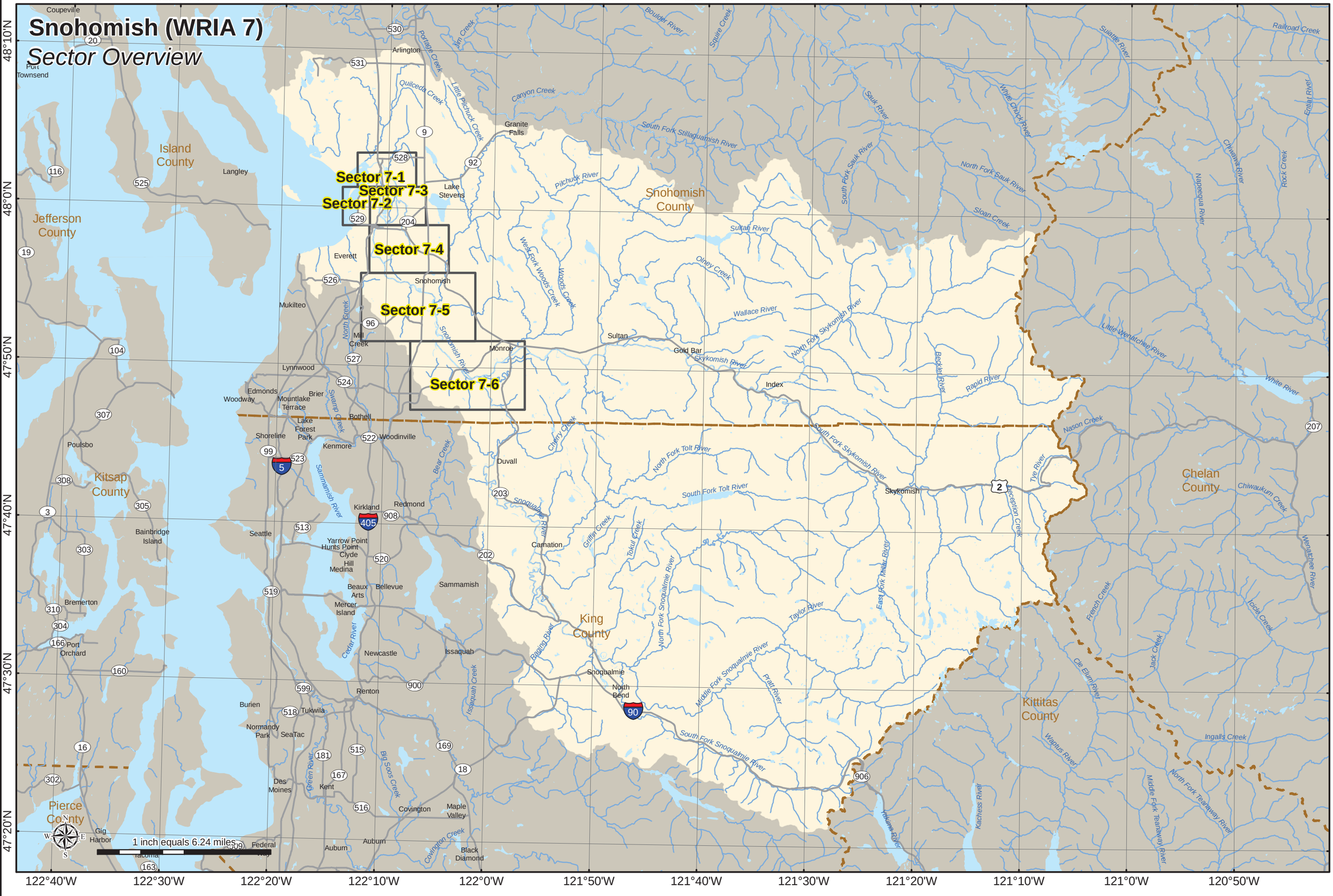
(M), (W) or (H) in site contact information – (M) indicates a mobile or pager number, (W) indicates an office phone number, and (H) indicates a home phone number.

RB and LB - Right bank (RB) and left bank (LB) indicate the side of the river when facing downstream. This does not consider tidal flows. Orientation may also be given by cardinal directions.

Strategy naming convention - Inland strategy sites are named by a 3-letter river name abbreviation, followed by the river mile (measured from the mouth of the channel). This may be followed by a strategy code if there is more than one strategy at the site, or if the strategy implementation varies based on conditions. If the strategy is condition dependant it is then followed by the condition. (e.g. SNH-1.00-a-High Tide) is the strategy for the Snohomish River at river mile 1.00, it is a conditional strategy recommended for use during high tide.

Snohomish (WRIA 7)

Sector Overview



Snohomish (WRIA 7) GRP, Version 1.00

Section 4.2 Strategy Priorities

This section describes three pieces of information to assist responders in planning the order and implementation of a response while in the field: general response priorities, river velocity data on sector and strategy maps, and a current chip-log table.

General Response Priorities

The following list provides the order of response in a the event of a spill into a riverine environment.

- Notify local public health and safety personnel.
- Source control and containment are always priority one. Mobilize response to the source of product.
- Work upstream from mouth to source. As resources become available, implement strategies from mouth of river and then upstream towards the source.

Historical River Velocity Ranges

The sector and strategy level maps contain characteristic river velocity information, where data is available, to assist responders in determining the time for a spill to travel downstream. This information is intended to provide the responder with a general understanding of seasonal conditions that could occur at that site. However actual conditions could vary significantly from those reported.

Sector level map legends display: potential distances that a spill could travel in 30 minutes under historical gaged high, average, and low flow conditions, the location of USGS gages, and ¼ mile hatch marks along each river. High, average and low flow conditions were calculated using the 10^{th} percentile, average, and 90^{th} percentile annual flows for the closest U.S. Geological Survey (USGS) gage. The USGS gage was selected based on its proximity to the site and its likelihood of providing a good representation of the main river channel flow.

Strategy level maps display historical flow information in a hydrograph and flow-velocity graph. The hydrograph displays the average monthly flow and the range of average monthly flow that has occurred at the closest USGS gage on the river. The flow-velocity graph

displays the relationship between flow and velocity that has been recorded at that gage. It should be noted that 1) flow-velocity relationships are highly variable at a single site and 2) flow and flow-velocity relationships at a site may vary significantly from these relationships in other parts of the river due to constrictions or expansions in the river, tributaries joining or diverging from the river, gradient and many other factors.

Current Chip Log

Table 4-1 presents the time for floating debris to drift 100 feet. This is most accurately determined by anchoring a line with two floating buoy markers attached at a spacing 100 feet apart. Measuring 100 feet along a straight portion of river bank may be more timely but also less accurate. 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. The table assumes that the minimum escape velocity under a boom perpendicular to the current (90 degrees) is 0.7 knots. Table 4-1 also provides an estimate of the length of boom required for deflecting oil at a specified angle for a 100-foot profile (perpendicular width) 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. (Oil Spill Response in Fast Currents, A Field Guide. U.S. Coast Guard Research and Development Center, October, 2001)

TABLE 4-1 CURRENT CHIP LOG TABLE AND MAXIMUM BOOM DEFLECTION ANGLE

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

Source: Oil Spill Response in Fast Currents, A Field Guide. U.S. Coast Guard Research and Development Center, October, 2001

4.3 Proposed Booming and Collection Sector - Maps

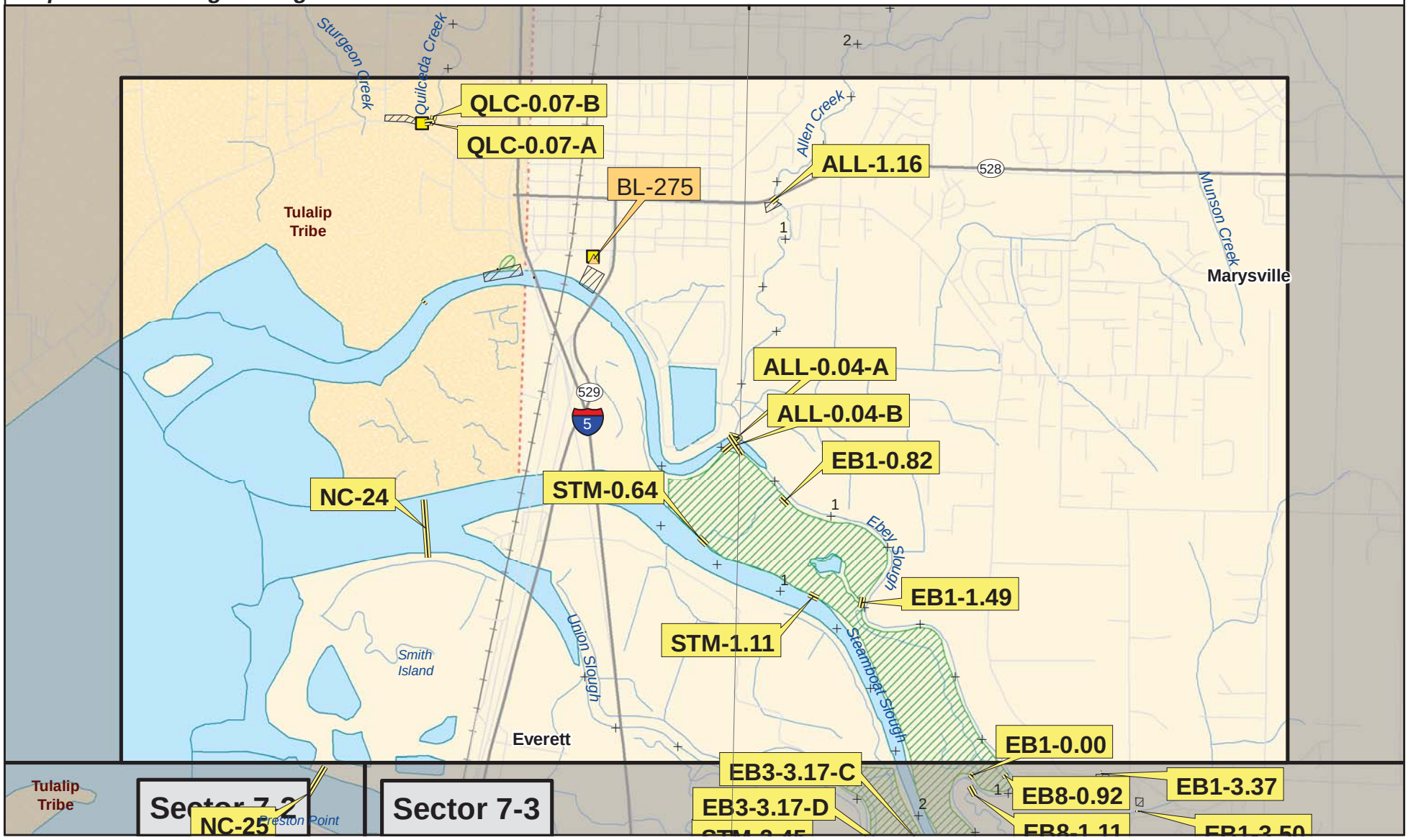
Map Sector 7-1

Marysville

Proposed Booming Strategies

30 minute estimated water travel distance:
High Flow: No Data
Low Flow: No Data
Avg. Flow: No Data

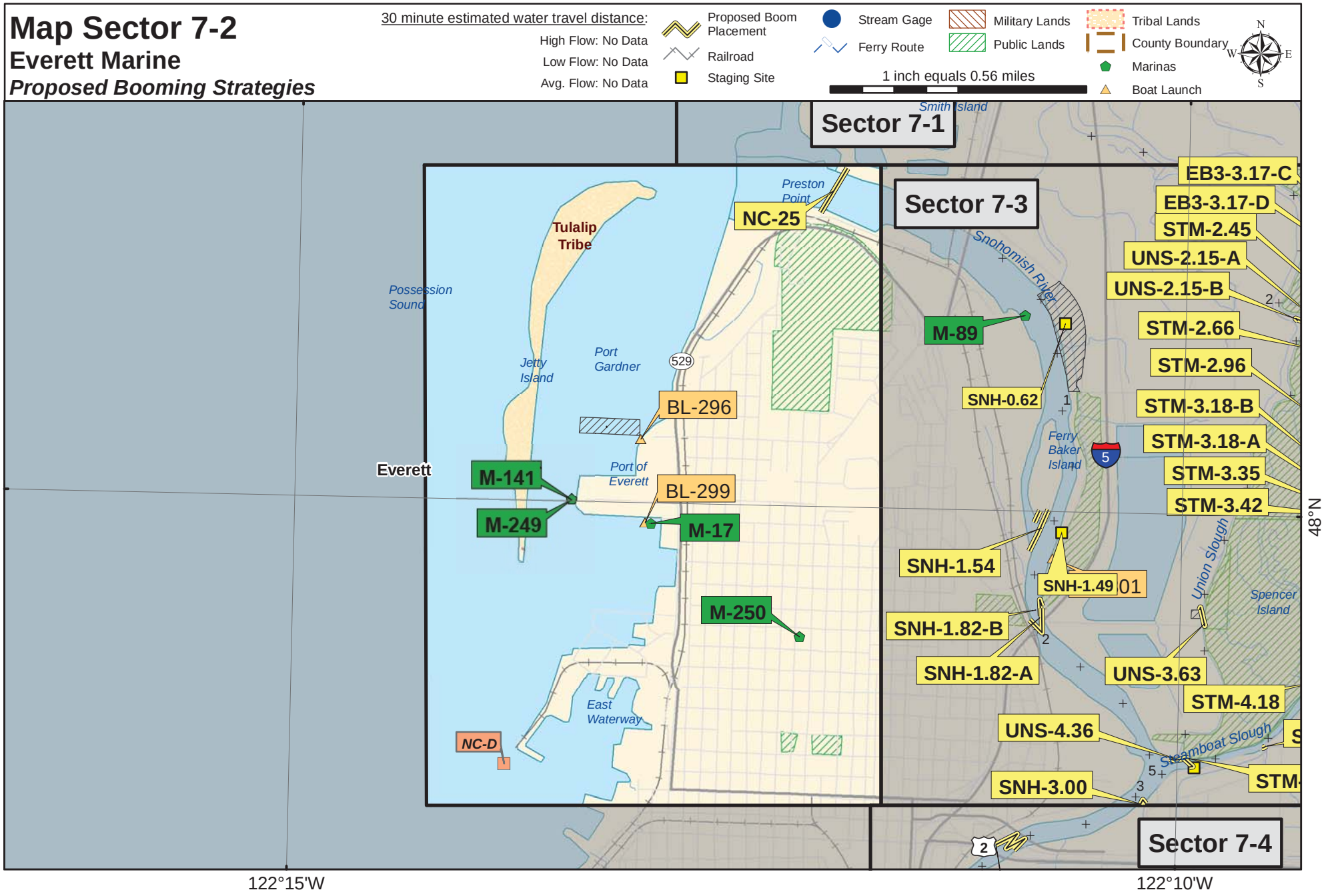
Proposed Boom Placement
Railroad
Staging Site
Stream Gage
Ferry Route
Military Lands
Public Lands
Tribal Lands
County Boundary
Marinas
Boat Launch
1 inch equals 0.50 miles



Map Sector 7-2

Everett Marine

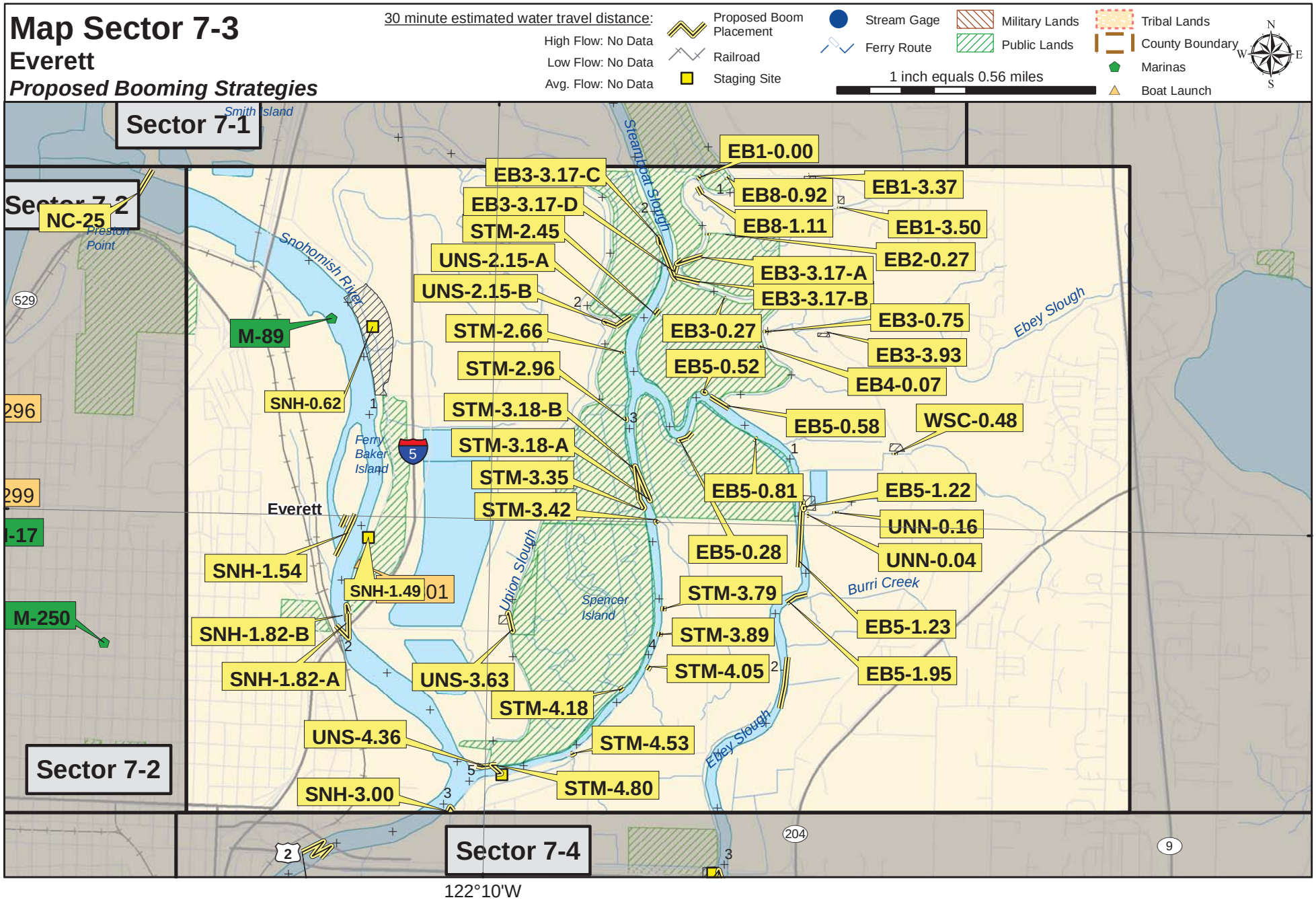
Proposed Booming Strategies



Map Sector 7-3

Everett

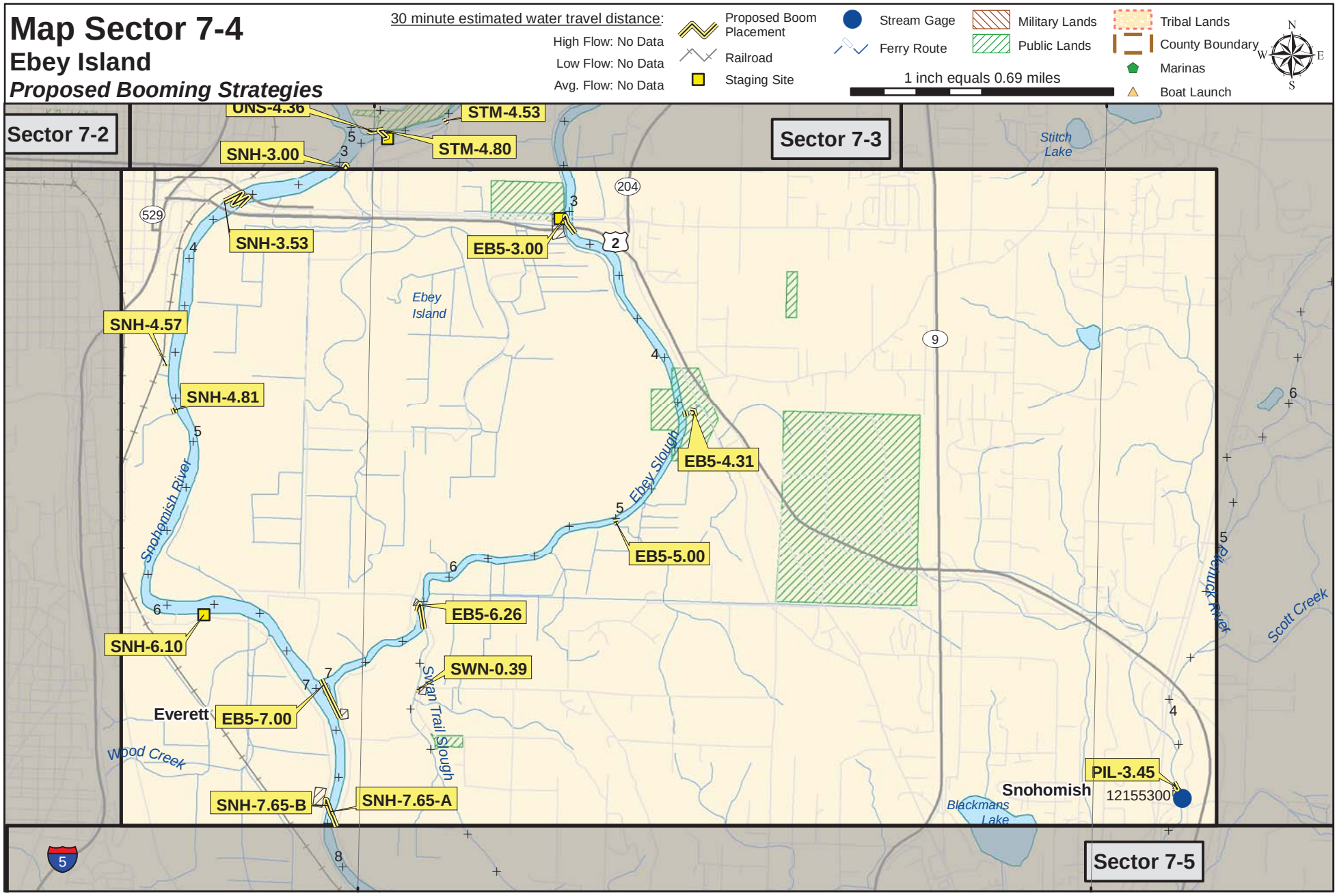
Proposed Booming Strategies

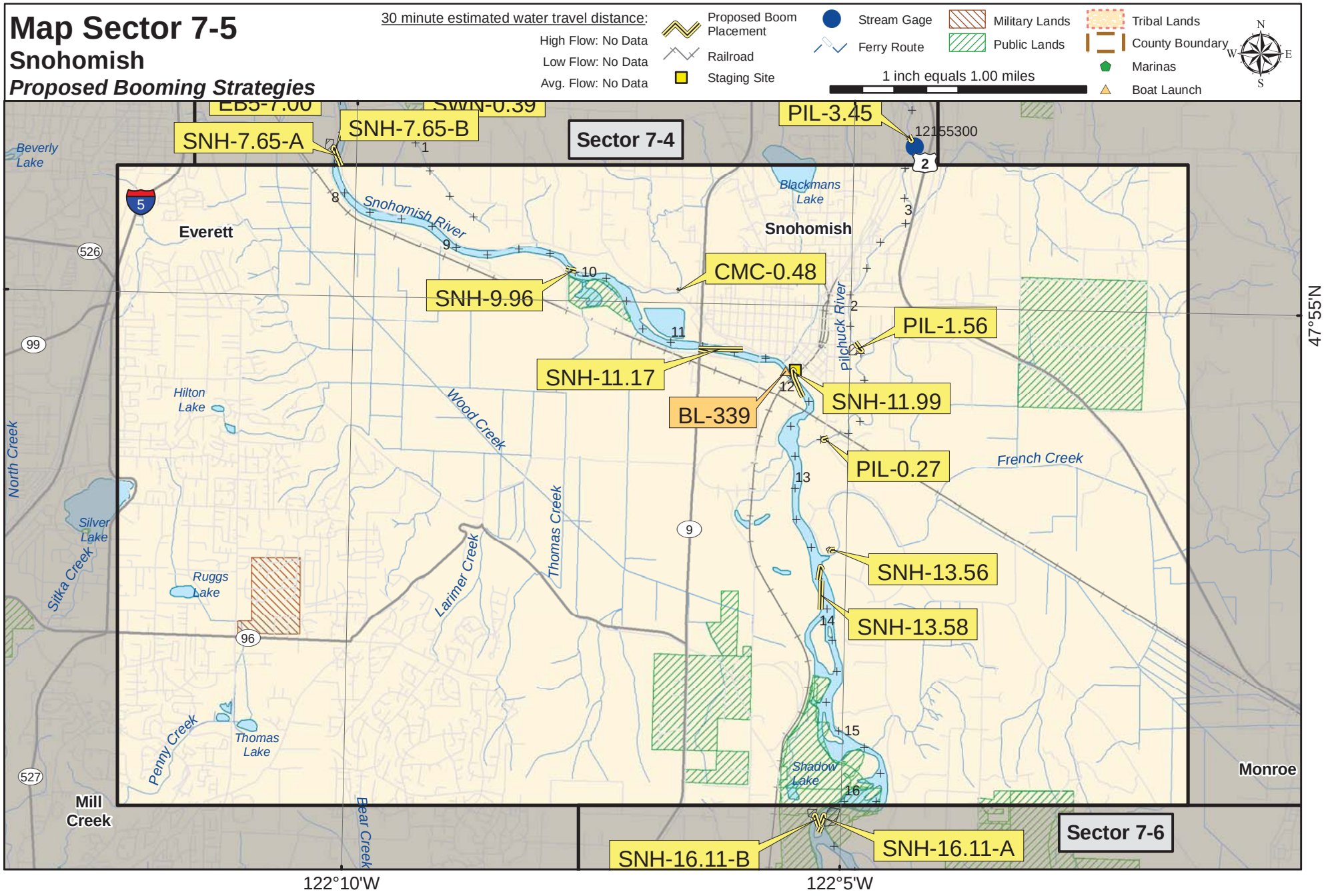


Map Sector 7-4

Ebey Island

Proposed Booming Strategies

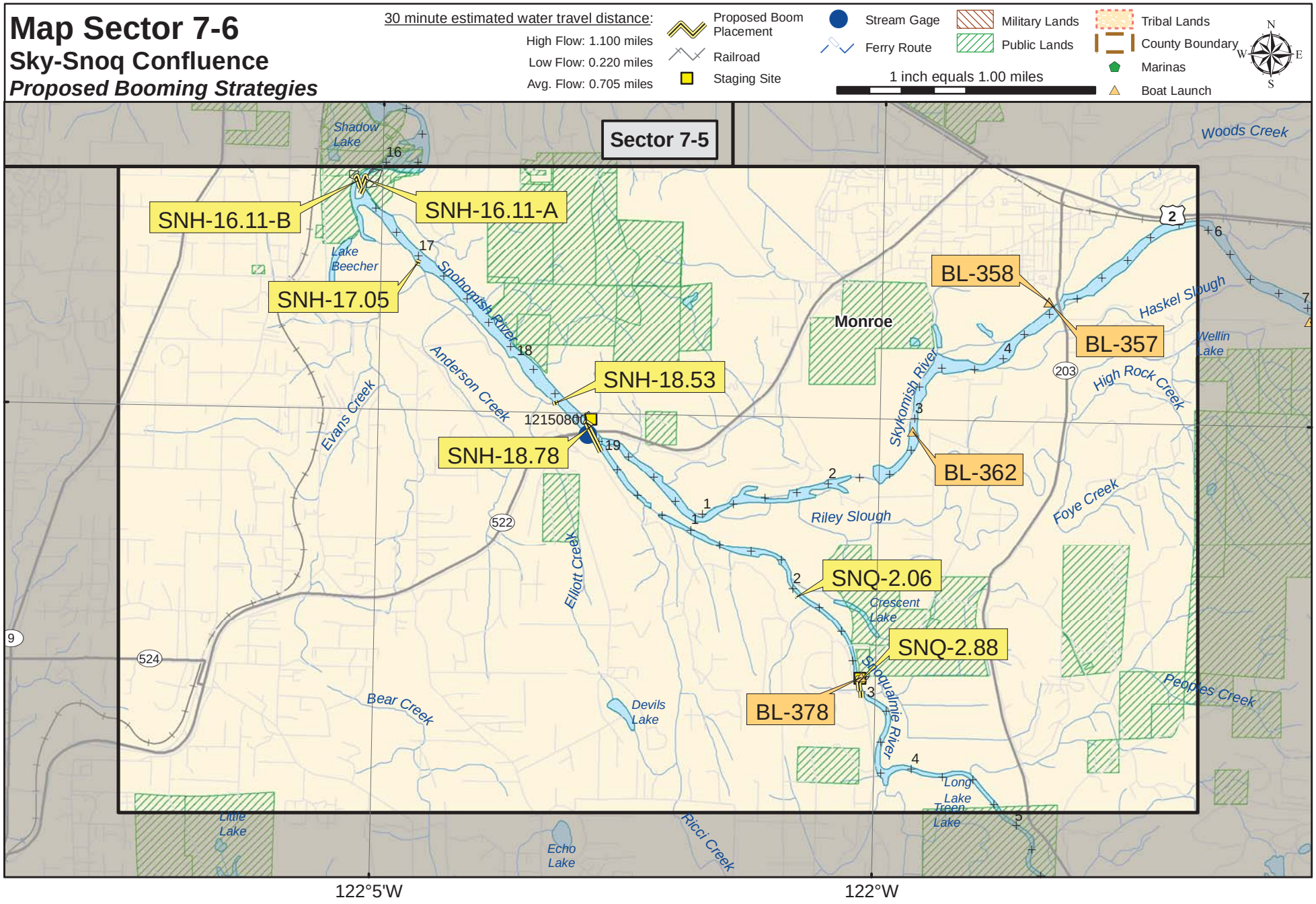



Map Sector 7-5
Snohomish
Proposed Booming Strategies
30 minute estimated water travel distance:
High Flow: No Data
Low Flow: No Data
Avg. Flow: No Data
Proposed Boom Placement
Railroad
Staging Site
Stream Gage
Ferry Route
Military Lands
Public Lands
Tribal Lands
County Boundary
Marinas
Boat Launch
1 inch equals 1.00 miles
N
S
E
W
SNH-7.65-A
SNH-7.65-B
Sector 7-4
PIL-3.45
12155300
Beverly Lake
Everett
Snohomish River
Blackmans Lake
Snohomish
CMC-0.48
SNH-9.96
PIL-1.56
Pilchuck River
SNH-11.17
BL-339
SNH-11.99
Hilton Lake
Wood Creek
North Creek
PIL-0.27
French Creek
Silver Lake
Sitka Creek
Ruggs Lake
Larimer Creek
Thomas Creek
SNH-13.56
SNH-13.58
Penny Creek
Thomas Lake
Shadow Lake
Monroe
Mill Creek
Bear Creek
SNH-16.11-B
SNH-16.11-A
Sector 7-6
47°55'N
122°10'W
122°5'W
526
99
96
9
527
5
1
2
3
8
9
10
11
12
13
14
15
16

Map Sector 7-6

Sky-Snoq Confluence

Proposed Booming Strategies



4.4 Proposed Booming and Collection Sector - Matrices

Inland Booming Strategy Sites are ordered alphabetically by a 3-letter River Name Abbreviation followed by the River Mile.

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
ALL-0.04 -A-Flood Tide	Visited and Not Tested 10/19/2006	**Allen Creek at Mouth** **N 48° 2.350' W 122° 10.004'** **map page 4-8**	Exclusion, collection - Deflect product into the mouth of Allen Creek for collection during high tide.	630ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy deflection boom across Ebey Slough. Deploy second boom across Allen Creek to prevent product from traveling too far upstream. There are good natural anchors. Culverts discharge into Allen Creek upstream of site. Small side channels near site may require lining with sorbent material.	Boat, laborers and equipment launch from NC-29 (BL-275).	shorebirds, freshwater wildlife, sensitive habitat
ALL-0.04 -B-EbbTide	Visited and Not Tested 10/19/2006	**Allen Creek at Mouth** **N 48° 2.350' W 122° 10.004'** **map page 4-8**	Exclusion, collection, deflection - Deflect product into the mouth of Allen Creek for collection during low tide.	630ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy deflection boom across Ebey Slough. Deploy second boom across Allen Creek to prevent product from traveling too far upstream. There are good natural anchors. Culverts discharge into Allen Creek upstream of site. Small side channels near site may require lining with sorbent material.	Boat, laborers and equipment launch from NC-29 (BL-275).	shorebirds, freshwater wildlife, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
ALL-1.16	Visited and Not Tested 10/19/2006	**Allen Creek at 64th St SE** **N 48° 3.091'** **W 122° 9.872'** **map page 4-8**	Collection - Contain and collect product under bridge.	150ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	Where creek widens under bridge attach one 150 ft section of river boom across channel to collect product at right bank.	Stage at site from 61st St. bridge to collect product. No boat launch at site.	waterfowl, shorebirds, sensitive habitat
CMC-0.48	Visited and Not Tested 10/17/2006	**Cemetary Creek at Riverview Rd** **N 47° 55.093'** **W 122° 6.740'** **map page 4-12**	Exclusion - Protect downstream wetland complex and exclude product from entering Snohomish River.		Block culvert in upstream end to prevent product from entering downstream wetland and eventually the Snohomish River. Creek has slow moving water. A machete is required to clear the area. Bring waders. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Staging is on the shoulder of Riverview Rd, ¼ mile west of Hwy 9	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB1-0.82	Visited and Not Tested 10/19/2006	**Ebey Slough upstream of Allen Creek Confluence #1** **N 48° 2.165'** **W 122° 9.800'** **map page 4-8**	Exclusion - Exclude product from tidal channel.	200ft B3 - River Boom, or other appropriate type	Exclude product by anchoring boom from shore to shore across the mouth parallel to Ebey Slough. Northwest of this creek (~40 yds) is another small creek that should be lined with ~50ft of sorbent boom.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat
EB1-1.49	Visited and Not Tested 10/19/2006	**Ebey Slough upstream of Allen Creek Confluence #2** **N 48° 1.821'** **W 122° 9.414'** **map page 4-8**	Exclusion - Exclude product from tidal channel.	200ft B3 - River Boom, or other appropriate type, 300ft Sorbent Boom	Exclude product by placing boom parallel to river across mouth of side channel. Also deploy sorbent boom along opposite bank to protect small back channel and side channel 450 ft to the north. There are multiple inlets in the area, each requiring 50ft sorbent boom.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB1-3.37	Visited and Not Tested 10/20/2006	**King Creek 1** **N 48° 1.304'** **W 122° 8.259'** **map page 4-10**	Collection - Collect product in King Creek.		Use sandbags with PVC or use plywood to create an underflow dam. The culvert is 3' in diameter. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Laborers and equipment go to site, no boat required. Can stage from Sunnyside Blvd or one of two roads nearby. Collect from Sunnyside.	salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB1-3.50	Visited and Not Tested 10/20/2006	**King Creek 2** **N 48° 1.215'** **W 122° 8.080'** **map page 4-10**	Collection - Collect product to protect downstream wetlands near Ebey Slough.		Implement a culvert block using plywood and straw bales and pack channel w/ sorbents. Culvert is 4 ft. x 2ft. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Laborers and equipment go to site, no boat required.	salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB2-0.27	Visited and Not Tested 10/19/2006	**Ebey Slough North of Cut to Steamboat Slough** **N 48° 1.079'** **W 122° 8.818'** **map page 4-10**	Collection - Block channel (buried culvert) with plywood and collect.	50ft Sorbent Boom	Access area by boat and cross levee. Insert plywood on upstream side of submerged culvert which conveys water through dike. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, sensitive habitat
EB3-0.27	Visited and Not Tested 10/19/2006	**Ebey Slough Southeast of Cut to Steamboat Slough** **N 48° 0.841'** **W 122° 8.722'** **map page 4-10**	Exclusion - Exclude product from LB side channels into wetlands/tidal marsh.	150ft Sorbent Boom	Access site by boat and place sorbent boom into side channel. Two additional side channels are located within 40 yards upstream and downstream of this point (N 48° 0.841' / W 122° 8.722') on the LB of Ebey Slough. Sorbent boom length includes enough for all three sites.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB3-0.75	Visited and Not Tested 10/19/2006	**Ebey Slough near Mouth of Unnamed Tributary** **N 48° 0.738'** **W 122° 8.460'** **map page 4-10**	Exclusion, collection - Exclude product in Ebey Slough from side channel and collect product from channel upstream of culvert.	50ft B3 - River Boom, or other appropriate type, 40ft Sorbent Boom	When product is in Ebey Slough during high tide, anchor river boom from shore to shore at mouth of channel, back-up with sorbent boom, and close the tide gate valve, during low tide, place sorbent boom at mouth of channel. When product is moving down side channel, install plywood underflow weir at upstream end of culvert. Place boom across channel for collection. Access site by boat. Collect product to boat or in barrels. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB3-3.17-A	Visited and Not Tested 10/19/2006	**Ebey Slough at Cut to Steamboat Slough** **N 48° 0.923'** **W 122° 9.004'** **map page 4-10**	Collection - Collection in Ebey Slough at north end of slough junction.	700ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy boom across Ebey Slough, anchoring at north point of slough junction (LB) and natural anchor on east side (RB) of Ebey Slough. Extend boom up shoreline for protection on LB. Deploy sorbent boom on downstream side for sheen control. This strategy deployed in conjunction with EBS-3.17 B,C, and D, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Stage EBS-3.17-A, B, C and D together.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), raptors, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB3-3.17-B	Visited and Not Tested 10/19/2006	**Ebey Slough at Cut to Steamboat Slough** **N 48° 0.923'** **W 122° 9.004'** **map page 4-10**	Collection - Collection in Ebey Slough at south end of slough junction.	600ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy boom across Ebey Slough, anchoring to natural anchor at south point of slough junction (RB) and natural anchor on east side (LB) of Ebey Slough. Extend boom up shoreline on LB for protection. Deploy sorbent boom on downstream side for sheen control. This strategy deployed in conjunction with EBS-3.17 A,C, and D, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Deploy A,B and D first if product is in Ebey Slough. Stage EBS-3.17-A, B, C and D together.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), raptors, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB3-3.17-C	Visited and Not Tested 10/19/2006	**Ebey Slough at Cut to Steamboat Slough** **N 48° 0.923'** **W 122° 9.004'** **map page 4-10**	Collection, deflection - Collection in Steamboat Slough.	1500ft B3 - River Boom, or other appropriate type, 400ft Sorbent Boom	Deploy boom across Steamboat Slough to prevent product from moving up/down the slough and for collection at either side. Extend boom up shoreline on LB to protect shoreline in collection area. Place sorbent boom on downstream side for sheen control. Use come-along-winches to tighten boom. Strategy will take 4-5 hours to implement. This strategy deployed in conjunction with EBS-3.17 A, B and D, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Stage EBS-3.17-A, B, C and D together.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), raptors, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB3-3.17-D	Visited and Not Tested 10/19/2006	**Ebey Slough at Cut to Steamboat Slough** **N 48° 0.923'** **W 122° 9.004'** **map page 4-10**	Exclusion, deflection - Exclusion of product in Steamboat slough to Ebey slough and vice versa.	450ft B3 - River Boom, or other appropriate type, 1000ft Sorbent Boom	Deploy boom from north point of slough junction to south point of slough junction to prevent product from moving between sloughs. Deploy sorbent boom on opposite side of boom from product, or both sides depending on movement of product. This strategy deployed in conjunction with EBS-3.17 A, B, and C depending on location of product and flow conditions, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Stage EBS-3.17-A, B, C and D together.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), raptors, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB3-3.93	Visited and Not Tested 10/20/2006	**Unnamed Tributary to Ebey Slough** **N 48° 0.719'** **W 122° 8.139'** **map page 4-10**	Collection - Collect product from creek.		Install an underflow dam at the top of the fish ladder just downstream of road culvert using sandbags and 8" PVC. At each fish ladder drop (3 of them) add 4x4 plywood underflow dam to retain in each pool. Downstream of fish ladder place 4 straw bales at alternating positions to capture any remaining product. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Laborers and equipment go to site, no boat required. There is a parking area to the south of the site.	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB4-0.07	Visited and Not Tested 10/19/2006	**Ebey Slough across from Mouth of Unnamed Tributary** **N 48° 0.663'** **W 122° 8.508'** **map page 4-10**	Exclusion - Exclude product from Ebey Island.	50ft Sorbent Boom	Access site by boat and place sorbent boom across side channel.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), sensitive habitat
EB5-0.28	Visited and Not Tested 10/19/2006	**Ebey Slough West of Split #2** **N 48° 0.312'** **W 122° 8.918'** **map page 4-10**	Exclusion - Exclude product freshwater marsh.	360ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Exclude openings into wetland by booming across the bend in the slough. Back up boom with sorbent boom (on shoreline side). Implement using 2 boats each with 2 laborers, and 4 laborers on shore. Estimated time for deployment is 1 hour. Strategy must be tended during high tide.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-0.52	Visited and Not Tested 10/19/2006	**Ebey Slough West of Split #1** **N 48° 0.490'** **W 122° 8.814'** **map page 4-10**	Exclusion - Exclude product from side channel into wetlands/tidal marsh.	50ft B3 - River Boom, or other appropriate type, 60ft Sorbent Boom	Access site by boat and deploy exclusion across mouth of side channel. Deploy sorbent boom as backup protection.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), sensitive habitat
EB5-0.58	Visited and Not Tested 10/19/2006	**Ebey Slough at Ebey Slough Split** **N 48° 0.434'** **W 122° 8.339'** **map page 4-10**	Exclusion - Exclude product from north Ebey Slough divergence.	450ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy river boom across mouth of divergence using large fir tree as west anchor and tallest piling to east. Deploy sorbent boom as backup to boom and to protect log jam. In stream anchoring is tide dependant. During low tide anchor boom using two anchors on one side. During high tide anchor boom in middle with anchor on each side of boom. Access site by boat. Potential access by levee road on east side of channel, but not confirmed.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-0.81	Visited and Not Tested 10/18/2006	**Ebey Slough East of Split** **N 48° 0.322'** **W 122° 8.533'** **map page 4-10**	Exclusion - Exclude product from emergent marsh side channel.	50ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	Deploy boom along Ebey Slough LB (western bank). Anchor shore to shore across side channel using natural anchors.	Boat, laborers and equipment launch from NC-29 staging (BL-275).	shorebirds, sensitive habitat
EB5-1.22	Visited and Not Tested 10/19/2006	**Burri Creek at Lake Stevens WWTP** **N 48° 0.064'** **W 122° 8.251'** **map page 4-10**	Collection - Collect product in Burri Creek and exclude from entering Ebey Slough.	50ft B3 - River Boom, or other appropriate type, 60ft Sorbent Boom	Deploy boom across mouth directly upstream of existing self leveling log boom at the mouth of the channel, place sorbent boom downstream of river boom.	Laborers and equipment go to site, no boat required. Stage from Lake Stevens WWTP property. Lake Stevens WWTP accessed from Sunnyside Road.	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-1.23	Visited and Not Tested 10/18/2006	**Ebey Slough at Lake Stevens WWTP** **N 48° 0.039'** **W 122° 8.262'** **map page 4-10**	Collection - Collect product from Ebey Slough.	1650ft B3 - River Boom, or other appropriate type, 60ft Sorbent Boom	Utilize an anchoring system to anchor to LB shoreline (use anchor or natural anchor). Use hand bridles to maintain anchor angle. Deploy boom at 30° angle (or appropriate angle for current) to deflect product to RB. Use in stream anchor and RB outfall location as anchor points. Hand lines can be used in place of boom deflectors. Place approximately 150 ft of boom up shoreline in collection area for shoreline protection. Collect using skimmers. Use sorbent boom where appropriate for sheen control.	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site. Lake Stevens WWTP is staffed from 6:30am to 2:30 am and access gates are open during those hours. Access to the slough is possible through the plant property, directly south of the ditch that borders the southern fence of the treatment plant.	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-1.95	Visited and Not Tested 10/18/2006	**Ebey Slough near 9th St SE** **N 47° 59.506' W 122° 8.323'** **map page 4-10**	Exclusion, collection - Exclude product from emergent marsh, or keep product in marsh if coming from Olympic Pipeline.	1200ft B3 - River Boom, or other appropriate type, 1200ft Sorbent Boom	Deploy boom along Ebey Slough eastern bank, across wetland. Recommended anchors from deadhead upstream to bank on RB	Boat, equipment, and laborers launch from SNH-1.49 staging (BL-301).	shorebirds, sensitive habitat
EB5-1.95	Visited and Not Tested 10/18/2006	**Ebey Slough near Vernon Rd SE** **N 47° 59.725' W 122° 8.258'** **map page 4-10**	Exclusion - Exclude product from emergent marsh.	540ft B3 - River Boom, or other appropriate type	Deploy boom along Ebey Slough wetland on southeastern bank. 20lb danforth is recommended to anchor apex of boom. Estimated time for deployment is 30 min. Use tree as natural anchor on the northeast end.	Boat, laborers and equipment launch from SNH-1.49 staging (BL-301).	shorebirds, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-3.00	Visited and Not Tested 10/17/2006	**Ebey Slough at Hwy 2 Bridge** **N 47° 58.690'** **W 122° 8.717'** **map page 4-11**	Collection - Collect product at river left bank (LB) just north of bridge.	825ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy from south bridge pier (second pier from west) to most north-west bridge pier and west bank. Then from east bank to S. bridge pier (second pier from west). Use hand bridle and lines to manage boom angle. Use boom for shoreline protection in collection area. Collect material and pump to Vac Truck. If incoming tide is strong, can use strategy in reverse and collect product on RB.	Can stage and launch a boat at site. Hwy 2 frontage road going east from Everett, can drive under highway on west side, park at gate. Launch boat from south side of red gate saying "no trespassing". Recommend removing boat from water at boat launch, not at site.	shorebirds, salmonids (anadromous), marine birds, raptors, sensitive habitat - Wetlands bank is nearby

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-4.31	Visited and Not Tested 10/18/2006	**Ebey Slough near Fobes Rd** **N 47° 57.819'** **W 122° 7.728'** **map page 4-11**	Exclusion, collection - Contain spills that enter side channel from Hwy 2 or exclude side channel from product in Ebey Slough.	150ft B3 - River Boom, or other appropriate type, 600ft Sorbent Boom	Stake hard boom across mouth of Hwy 2 feeder stream. Line the three fingers of the channel with sorbent boom. Jon (punt) boat or boat is recommended. Contact immediately or before entering: Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.	Boat and operator go to launch from SNH-6.10-staging, laborers and equipment go to site	shorebirds, sensitive habitat, special protection area - Snohomich Cnty wetlands restoration site.

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-5.00	Visited and Not Tested 10/18/2006	**Ebey Slough near Skipley Rd** **N 47° 57.319'** **W 122° 8.301'** **map page 4-11**	Exclusion - Exclude product from side channel.	100ft B3 - River Boom, or other appropriate type, 100ft Sorbent Boom	Anchor from shore to shore across side channel using natural anchors upstream of tide gate. Contact immediately or before entering: Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.	Boat, laborers and equipment launch from SNH-6.10-staging (Rotary Park Boat Launch).	habitat restoration/mitigation site - Snohomish Cnty wetland restoration area

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-6.26	Visited and Tested 10/17/2006	**Ebey Slough near Home Acres Rd Bridge** **N 47° 56.909'** **W 122° 9.636'** **map page 4-11**	Collection - Collect product at river left.	750ft B3 - River Boom, or other appropriate type, 675ft Sorbent Boom	Deploy boom across Ebey Slough to LB and up bank for shoreline protection. Bring boom across to anchor using paravane. Tie boom off to large maple tree just upstream of large rounded bush. Access and collection area at private deck. Deploy sorbent boom on downstream side of containment boom for sheen control. Contact immediately or before entering: Stephan and Katy Haugland, (W) 425-783-0307	Boat and operator go to SNH-6.10-staging, laborers and equipment go to site. Access point at private deck.	shorebirds, raptors

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB5-7.00	Visited and Not Tested 10/17/2006	**Ebey Slough at Divergence from Snohomish River** **N 47° 56.385'** **W 122° 10.121'** **map page 4-11**	Exclusion, collection - Exclude product from Ebey Slough during low tide, or collect during high tide (upstream flow) at Snohomish River RB.	1200ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy boom from water across entrance to Ebey Slough. Tie-off to pilings upstream of large maple tree on RB (east bank), wrap trees with rubber for protection. Use 5,800 pound winch hooked up to battery to tighten boom across Slough mouth. Use 20" contractor boom (lake boom: 8 float, 18 skirt) and snatch block. Estimated time of deployment is 2hrs. Alternatively, could boom bank to bank at Slough mouth and in chevron configuration in River and collect using a marco skimmer.	Boat, equipment, and laborers go to SNH-1.49-staging (BL-301).	waterfowl, salmonids (anadromous), raptors
EB8-0.92	Visited and Not Tested 10/19/2006	**Ebey Slough at 28th St NE** **N 48° 1.294'** **W 122° 8.711'** **map page 4-10**	Exclusion - Exclude product from wetland.	50ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	Exclude product by placing boom parallel to river across mouth of tidal creek. There is a cabin right near dike on opposite bank from strategy. Permission to access this site has been given.	Boat, equipment and laborers launch from SNH -1.49-staging (BL -301).	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
EB8-1.11	Visited and Not Tested 10/19/2006	**Ebey Slough at King Creek Mouth** **N 48° 1.233'** **W 122° 8.856'** **map page 4-10**	Exclusion - Exclude product from tidal side channel.	200ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Exclude product by placing boom parallel to river across mouth of tidal creek, anchor from shore to shore. Utilize sorbent boom for sheen control in channel. Sorbent boom length include length for using to plug small side channels on other side of Ebey Slough (requires boat to access other side).	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site.	shorebirds, sensitive habitat
PIL-0.27	Visited and Not Tested 10/17/2006	**Pilchuck River at Old Snohomish Monroe Rd** **N 47° 54.108'** **W 122° 5.245'** **map page 4-12**	Initial Containment - Collect product in Pilchuck River at river left.	210ft B3 - River Boom, or other appropriate type	Access river from the south side. Cross river using rope to pull boom upstream. Anchor boom from rock off point to eddy just downstream of path (west of bridge). Collect product to road. Pumps may be used in place of vac truck. Raft, Jon boat, or belly boat recommended. Clearing of knot weed on south bank will be required in preparation for emergency response.	Laborers and equipment go to site. Access the river at south of Lincoln Bridge on west side. Block lane of road for staging, or stage from north west side on private cattle land. Land owner has not been contacted. Get permission for access to cattle ranch.	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
PIL-1.56	Visited and Not Tested 10/17/2006	**Pilchuck River near 92nd St SE** **N 47° 54.703'** **W 122° 4.977'** **map page 4-12**	Collection - Collect product and pump with vac truck.	480ft B3 - River Boom, or other appropriate type, 60ft Sorbent Boom	Natural eddies may cause pooling just downstream of bridge and upstream of this strategy, check this option. Deploy boom from deadfall tree on LB approximately 140 yards across river almost to beach. Can walk boom across with chest waders. Extend boom approximately 20 yards up shoreline for protection. Use natural anchors. Use rope and hand bridles to maintain boom angle. No boat needed for implementation.	Laborers and equipment go to site, no boat required.	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
PIL-3.45	Visited and Not Tested 10/20/2006	**Pilchuck River at Three Lakes Rd** **N 47° 56.124'** **W 122° 4.435'** **map page 4-11**	Collection - Collection in Pilchuck River, remove product from water.	510ft B3 - River Boom, or other appropriate type	Boom from deadfall on LB to beach on RB. Extend shoreline protection back up beach to protect and aid collection. Use hand lines to control river boom. Several natural anchors along river. No boat needed for implementation. Contact immediately or before entering: Joe Carlson, American Legion, (W) 360 862-9506	Laborers and equipment go to site. Access LB via bridge and 118th Dr SE or RB from American Legion property on Three Lakes Road. Can launch a punt boat from here, but no boat launch. Gate to park may be locked call contact for access.	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
QLC-0.07 -A-Flood Tide	Visited and Not Tested 10/20/2006	**Quilceda Creek at 66th St SE** **N 48° 3.325'** **W 122° 11.535'** **map page 4-8**	Collection - Collection at RB during high tide.	405ft B3 - River Boom, or other appropriate type, 40ft Sorbent Boom	Collect product approximately 200 yards upstream of Rte 528 bridge on RB (right bank) during high tide. Anchor from shore near bridge RB to LB shore. Extend boom protection approximately 50 ft up shoreline in collection area. Place sorbent boom on downstream side of boom for sheen control. Jon boat is recommended. Exact boom placement will depend on tide.	Stage at corner of Marine Drive and 27th Ave NE in parking lot. Vac Truck for collection should be parked on bridge, one lane of traffic must be blocked. No large boat launch here.	shorebirds, sensitive habitat
QLC-0.07 -B-EbbTide	Not Visited	**Quilceda Creek at 66th St SE** **N 48° 3.325'** **W 122° 11.535'** **map page 4-8**	Collection - Collection at LB during low tide.	405ft B3 - River Boom, or other appropriate type, 40ft Sorbent Boom	Collect product upstream of Rte 528 bridge on LB (left bank) during low tide. Anchor from upstream RB to downstream LB shore near power line. Extend boom protection ~ 50 ft up shoreline in collection area. Jon boat is recommended. Exact boom placement will depend on tide.	Stage at corner of Marine Drive and 27th Ave NE in parking lot. Vac Truck for collection should be parked on bridge, one lane of traffic must be blocked. No large boat launch here.	general fish & wildlife resources, sensitive habitat, shorebirds

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-1.54	Visited and Not Tested 10/18/2006	**Snohomish River across from Langus Riverfront Park** **N 48° 0.006'** **W 122° 10.754'** **map page 4-10**	Exclusion - Exclude product from draws and islands across river from boat launch.	1050ft B3 - River Boom, or other appropriate type, 300ft Sorbent Boom	Deploy boom across draws on opposite bank from boat launch. Implement strategy from the water. Recommend using 20-lb danforths to anchor boom except at north-most bank where natural anchors are available.	Boat, laborers and equipment launch from across the river at SNH-1.49 -staging (BL-301).	shorebirds, salmonids (anadromous)
SNH-1.82 -A- EbbTide	Visited and Not Tested 10/18/2006	**Snohomish River at I-5** **N 47° 59.656'** **W 122° 10.777'** **map page 4-10**	Collection, diversion - Divert river at inside of bend to collection area at RB at low tide.	1125ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	During low tide when river velocity is high, only divert 1/3 of river width. Deploy from eastern bridge pier with bridle to paravane, to boom, to RB just upstream of rowing boathouse. Anchor using #12 SARCA. A closed chevron to a marco skimmer may be applicable at this site but would need to be tested during low flow.	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site.	shorebirds, marine mammals, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-1.82 -B-Flood Tide	Visited and Not Tested 10/20/2006	**Snohomish River at I-5** **N 47° 59.656'** **W 122° 10.777'** **map page 4-10**	Collection - Collect product in Snohomish River during high tide.	1380ft B3 - River Boom, or other appropriate type, 400ft Sorbent Boom	Deploy boom in closed chevron under bridge and attach 2 marco skimmers at V apex for product collection. Will need 2 work boats in addition to skimmers. During low tide, may be able to reverse this configuration and continue collection, but it should be tested.	Boat and operator go to (BL-301) SNH-1.49- staging, laborers and equipment go to site.	salmonids (anadromous), marine mammals

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-11.17	Visited and Not Tested 10/17/2006	**Snohomish River at State Hwy 9 Bridge** **N 47° 54.690'** **W 122° 6.527'** **map page 4-12**	Collection, diversion - Collect product on north side of Hwy 9 bridge.	1800ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy boom by boat using paravane. Anchor to rock outcrop of bridge pier on downstream end and big leaning tree (RB) as anchor on upstream end. Modify boom angle as necessary for flow and tide. Extend boom up LB for shoreline protection during collection at low tide and along RB for protection during collection during high tide. Back up boom with sorbent boom for sheen control as necessary. Recover from gravel operation on opposite (right) bank. Must close down one lane of Hwy 9 for staging. If a boat is not available a boom vane could allow boom to be installed without a boat.	Can stage from Hwy 9 bridge, must block one lane of traffic. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-11.99	Visited and Not Tested 10/17/2006	**Snohomish River at Cady Park** **N 47° 54.564'** **W 122° 5.548'** **map page 4-12**	Collection - Collect product in Snohomish River.	1670ft B3 - River Boom, or other appropriate type, 300ft Sorbent Boom	Deploy from LB to bridge pier (~1200 ft) and bridge pier to boat launch (225 ft). Extend boom back up shore at both shoreline anchor points (~ 120 ft) to collect during low and high tide. In low tide collect at boat launch. During high tide collect at from opposite shore. Install liner system to protect sandy banks. Universal skimmer may be used in place of brush skimmer. Estimated time for strategy implementation is 3hrs with a trained crew. Work area at boat launch is approximately 30 ft x 120 ft during low/middle tide. Keep boat ramp free and clear.	Cady Park has boat access and space for staging. Site has 15 parking spaces, 2 boat ramps, city does not maintain boat ramp. Work area is approximately 30 feet by 120 ft. during low/middle tide. Located at the south end of Maple Ave.	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-13.56	Visited and Not Tested 10/17/2006	**French Creek Slough at Mouth** **N 47° 53.352'** **W 122° 5.173'** **map page 4-12**	Collection - Collect product on upstream side of pump station at French Slough.	480ft B3 - River Boom, or other appropriate type, 22ft Sorbent Boom	Contact pump station to request that pumps are shut-off. Deploy sorbent boom across shutoff pumps on upstream side of pump station. Deploy river boom from RB using natural anchors to LB and up shoreline for protection. Collect using skimmer. Jon or punt boat are recommended. Contact immediately or before entering: Neil Wheeler, French Slough Flood Control, (W) 360-568-5383, (M) 425-308-9854	Boat, laborers and equipment go to site. Key to gates on pump station fence behind white tag on fence (by gate). May be desirable to access via Darlington Farm (property to north) as levee ground may be soft. No boat access for Snohomish River here.	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-13.58	Visited and Not Tested 10/17/2006	**Snohomish River at French Creek Slough** **N 47° 53.147'** **W 122° 5.243'** **map page 4-12**	Deflection, collection - Deflection of product from French Creek Slough Pump Station.	1900ft B3 - River Boom, or other appropriate type, 60ft Sorbent Boom	Deploy 1200 ft of boom as deflection from upstream oxbow to debris in river (or in stream anchor). Deploy 600 ft of boom for collection from in stream anchor to beach line. Deploy boom up shoreline for protection. Place sorbent boom downstream of boom for sheen control. 12 boom deflectors are recommended but if they are not available then do not place boom from oxbow to debris. Use in stream SARCA #12. Estimated deployment time is 3hrs with 2 boats. Jet boats are required to access site due to river rapids. Contact immediately or before entering: Neil Wheeler, French Slough Flood Control, (W) 360-568-5383, (M) 425-308-9854	Stage on Darlington Farms property. Laborers and equipment go to site. Can access from Treosti Road or through Darlington Farms. Boat and operator launch from SNH -11.99-staging (BL-339).	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-16.11-A	Visited and Not Tested 10/20/2006	**Snohomish River near Shorts School Rd (N)** **N 47° 51.518'** **W 122° 4.872'** **map page 4-13**	Collection, deflection - Cascade booms to collection site at RB.	850ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy upstream deflection boom to deflect product to collection boom, anchor using 2 SARCA and check angle based on current velocity. Deploy collection boom downstream of deflection boom to collect at RB. Boom should extend from RB beach across 1/3 to 1/2 of river (1/2 width requires ~750 ft), tie into SARCA in stream anchor. Deploy ~ 120 ft of boom along beach at collection area for shoreline protection. Use sorbent boom for sheen control on downstream side. Estimated to take 2 hours to deploy. Use in conjunction with SNH-16.11-B and A; deploy SNH-16.11-A first.	Snohomish County owns property on right and left bank. Stage from Shorts School Road on RB, from Connelly Rd. on LB. Stage equipment for 16.11 A, B, and C together. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-16.11-B	Visited and Not Tested 10/20/2006	**Snohomish River near Shorts School Rd (N)** **N 47° 51.518'** **W 122° 4.872'** **map page 4-13**	Collection - Collect product at LB.	650ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Use in stream SARCA anchor, bring boom back to shore, anchor to natural anchors. Extend boom up shoreline (~90 ft) for protection in collection area. Use lines to maintain maximum boom angle. Use sorbent boom downstream of river boom for sheen control. Use in conjunction with SNH -16.11-A to cover entire river. Could continue shoreline protection boom to exclude product at 16.11-C.	Snohomish County owns property on right and left bank. Stage from Shorts School Road on RB, from Connelly Rd. on LB. Stage equipment for 16.11 A, B, and C together. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-16.11-C	Visited and Not Tested 10/20/2006	**Snohomish River near Shorts School Rd (N)** **N 47° 51.518'** **W 122° 4.872'** **map page 4-13**	Exclusion - Exclude product from side channel at river left.	50ft B3 - River Boom, or other appropriate type, 100ft Sorbent Boom	Place hardboom across mouth of side channel (mouth is 24ft wide). Place sorbent boom as backup.	Snohomish County owns property on right and left bank. Stage from Shorts School Road on RB, from Connelly Rd. on LB. Stage equipment for 16.11 A, B, and C together. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-17.05	Visited and Not Tested 10/20/2006	**Snohomish River near Shorts School Rd (S)** **N 47° 50.990'** **W 122° 4.632'** **map page 4-13**	Exclusion - Exclude product from moving upstream into back channel.	1ft B3 - River Boom, or other appropriate type	Deploy boom across channel mouth. Exclusion may not be necessary during low tide/high flow because flow moves downstream too fast.	Boat, laborers and equipment launch from SNQ-2.88-staging (BL-378).	shorebirds
SNH-18.53	Visited and Not Tested 10/20/2006	**Snohomish River North of State Rte 522 Bridge** **N 47° 50.116'** **W 122° 3.222'** **map page 4-13**	Deflection - Deflect product away from left bank unnamed side channel.	450ft B3 - River Boom, or other appropriate type	Use trees for anchor 70 yds upstream of inlet. Depending on conditions could either place boom across left bank channel mouth, or place a deflection boom starting at the upstream natural anchor into channel at a suitable angle (35°) to deflect water away from the channel. Estimated time of implementation is one half-hour. Jet boat is required to access site.	Boat, laborers and equipment launch from SNQ-2.88-staging (BL-378).	shorebirds

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

SNH-18.78	Visited and Not Tested 10/17/2006	**Snohomish River near Old Tester Rd** **N 47° 49.964'** **W 122° 2.880'** **map page 4-13**	Collection - Collect product from Snohomish River near Route 522 bridge.	1700ft B3 - River Boom, or other appropriate type, 3600ft Sorbent Boom	Deploy hard boom from trees on southeast (left) bank upstream of bridge to intermediate bridge pier, and bridge pier to sand bar on northeast bank (approximately 1200 ft). Continue boom back upstream to protect shoreline. Use sorbent material on both sides of boom for sheen control. Maintain 45° boom angle, or suitable angle for current. Vehicles cannot access bank, so product must be pumped (15-20 ft head) using hose (~400 ft) and 3" diaphragm pump to vac trucks. Boom deflectors can be substituted for rope. May use water bladder for forming to side channels. Contact immediately or before entering: Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.	Stage at the barn on park property RB. Emergency vehicle access is at the west end of Old Tester Road. There is a very small parking area just outside the park gate, used primarily by fishermen to access the river. There is also roadside parking (primarily for fishermen) on Tester Road from near SR-522 to Old Tester Road. Laboreres and equipment got ot site. Boat and operator launch from SNQ-2.88-staging (BL-378).	habitat restoration/mitigation site - There is a restoration site near collection pt.

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

SNH-3.00	Visited and Not Tested 10/19/2006	**Deadwater Slough at Mouth** **N 47° 58.917'** **W 122° 10.189'** **map page 4-10**	Exclusion - Exclude product from Deadwater Slough.	210ft B3 - River Boom, or other appropriate type	Deploy river boom in closed chevron formation using onshore anchors (tree stump, barge). Site is near confluence of Union Slough and Steamboat Slough. Use #12 SARCA.	Laborers travel to site, boat, operator and equipment launch from SNH-1.49-staging (BL-301).	salmonids (anadromous)
SNH-3.53	Visited and Not Tested 10/20/2006	**Snohomish River at Hwy 2 Bridge** **N 47° 58.764'** **W 122° 10.998'** **map page 4-11**	Collection - Collect product using 2 Marco Skimmers	1950ft B3 - River Boom, or other appropriate type	Hook booms to 3 east bound Hwy 2 bridge piers w/ cable slings. Boom back to marco skimmers under west bound Hwy 2. Use 1050 ft boom for western skimmer and 900 ft boom for eastern skimmer. Install western skimmer first, on outside bend. Contact immediately or before entering: William Wick, Wick Towing Inc., (W) 425-252-6586	Laborers and equipment go to site. Boat and operator launch from (SNH-1.49-staging (BL-301).	salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-4.57	Visited and Not Tested 10/20/2006	**Snohomish River at Lowell-Snohomish River Rd (N#2)** **N 47° 57.982'** **W 122° 11.391'** **map page 4-11**	Exclusion - Exclude product from side channel.	50ft B3 - River Boom, or other appropriate type, 40ft Sorbent Boom	Place hard boom across side channel. Use line to connect boom to natural anchors. Pack side channel with sorbent boom as back-up. Check during max current.	Boat, laborers and equipment launch from SNH-6.10-staging.	shorebirds
SNH-4.81	Visited and Not Tested 10/20/2006	**Snohomish River at Lowell-Snohomish River Rd (N#1)** **N 47° 57.772'** **W 122° 11.306'** **map page 4-11**	Exclusion - Keep product from entering Snohomish River.	150ft B3 - River Boom, or other appropriate type, 150ft Sorbent Boom	Place hard boom across side channel. Use line to connect boom to natural anchors. Pack side channel with sorbent boom as back-up. Strategy should be tended due to tidal flux and obstacles.	Boat, equipment and laborers travel to site by boat from from SNH-6.10-staging.	shorebirds

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-7.65 -A-Low Flow	Visited and Not Tested 10/17/2006	**Snohomish River at Lowell-Snohomish River Rd S** **N 47° 55.994'** **W 122° 10.263'** **map page 4-11**	Collection, diversion - Divert the full river width and collect at LB.	2100ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	When there is low current velocity deploy boom across the full river width, from beach area to opposite bank telephone post nr red bldg (approximately 2000 ft of boom). Use skimmer to collect product to Vac Truck. Place 100ft of boom along LB for protection at collection area. Use sorbent boom for sheen control on downstream side.	Staging area on beach. Must access staging area via locked gate. Laboreres and equipment go to site. Boat and operator launch from SNH-6.1-staging.	waterfowl, salmonids (anadromous)
SNH-7.65 -B-High Flow	Visited and Not Tested 10/17/2006	**Snohomish River at Lowell-Snohomish River Rd S** **N 47° 55.994'** **W 122° 10.263'** **map page 4-11**	Collection, diversion - Divert approximately 1/3 of the river width and collect at LB.	700ft B3 - River Boom, or other appropriate type, 300ft Sorbent Boom	When there is high current velocity take 1/3 of the river width (should capture majority of product due to location on outside river bend). Deploy boom from beach area to in stream SARCA anchor. Use skimmer to collect product to Vac Truck. Place 100ft of boom along LB for protection at collection area. Use sorbent boom for sheen control on downstream side.	Staging area on beach. Must access staging area via locked gate. Laboreres and equipment go to site. Boat and operator launch from SNH-6.1-staging.	salmonids (anadromous), waterfowl

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNH-9.96	Visited and Not Tested 10/17/2006	**Larimer Creek near Fiddlers Bluff Rd** **N 47° 55.213'** **W 122° 7.830'** **map page 4-12**	Exclusion - Exclude product from wetland/open water complex.	350ft B3 - River Boom, or other appropriate type	Exclude the wetland complex by deploying an exclusion boom across each opening (openings are approximately 250 ft and 100ft). Booms can be deployed by boat, or from the bank on Fiddler Bluff Rd. Booms should be anchored in the middle of the channel openings to maintain shape - wider opening (west) may require 2 anchors. Estimated time for strategy deployment is 1 hour. Site is most threatened during incoming tide when river flows into wetland. Punt boat is reccommended.	Laboreres and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).	shorebirds, salmonids (anadromous), sensitive habitat - freshwater wetland, ~5 acres
SNQ-2.06 -High Flow	Visited and Not Tested 10/20/2006	**Snoqualmie River N of High Bridge Rd** **N 47° 48.801'** **W 122° 0.785'** **map page 4-13**	Exclusion - Exclude product from side channel.	50ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	Utilize river boom to exclude the channel. Anchor from shore to shore. Channel only has water during high flow. May be difficult to find, use GPS to locate site. Access site by boat.	Boat, laborers and equipment launch from SNQ-2.88-staging (BL-378).	shorebirds, salmonids (anadromous)

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SNQ-2.88	Visited and Not Tested 10/20/2006	**Snoqualmie River High Bridge Boat Ramp** **N 47° 48.263'** **W 122° 0.152'** **map page 4-13**	Collection - Cascade booms from LB to RB for collection at SQL-2.88.	1300ft B3 - River Boom, or other appropriate type	2-Stages: (1) Deflect current upstream using river boom to main containment boom. Anchor to shore on upstream LB and anchor downstream from the RB, utilize hand bridles to maintain deflection angle if current pressure is strong. (2) Install in stream anchor at upstream end below deflection boom. Install containment boom back to RB. Install shoreline protection along back at collection point. Collect at High Bridge boat ramp.	High Bridge Boat Ramp has 1 concrete boat ramp, 10 gravel car and 20 gravel trailer parking spots. The boat ramp has a moderate to steep grade and is located on a section of the river with a slow to moderate river current.	salmonids (anadromous)
STM-0.64	Visited and Not Tested 10/19/2006	**Steamboat Slough East of I-5 #1** **N 48° 2.018'** **W 122° 10.157'** **map page 4-8**	Exclusion - Keep product out of tidal marsh channels.	200ft B3 - River Boom, or other appropriate type	Exclude product by placing boom parallel to river across mouth of side channel. Anchor from shore to shore. Access site by boat, shallow transit from boat launch to mouth of Steamboat Slough.	Boat, laborers and equipment launch from NC-31-staging (BL-296).	shorebirds, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-1.11	Visited and Not Tested 10/19/2006	**Steamboat Slough East of I-5 #2** **N 48° 1.846'** **W 122° 9.615'** **map page 4-8**	Exclusion - Keep product out of tidal marsh channels.	200ft B3 - River Boom, or other appropriate type, 500ft Sorbent Boom	Exclude product by placing boom parallel to river along marsh. Anchor from shore to shore using natural anchors (trees). There are side channels to the east which may require lengths of sorbent boom to exclude depending on flow conditions. Equipment sorbent boom quantity contains additional lengths to account for varying field conditions.	Boat, laborers and equipment launch from NC-31-staging (BL-296).	shorebirds, sensitive habitat
STM-2.45 -Flood Tide	Visited and Not Tested 10/19/2006	**Steamboat Slough South of cut to Ebey Slough** **N 48° 0.798'** **W 122° 9.081'** **map page 4-10**	Exclusion - Exclude product from side channel.	200ft B3 - River Boom, or other appropriate type, 300ft Sorbent Boom	Deploy boom across mouth of creek anchoring from shore to shore using natural anchors (trees). Sorbent material may also be required in stream approximately 30 ft north, additional sorbent boom length included in equipment list.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-2.66	Visited and Not Tested 10/19/2006	**Steamboat Slough South of Cut to Union Slough** **N 48° 0.636'** **W 122° 9.280'** **map page 4-10**	Exclusion - Exclude product from side channel, wetlands, tidal marsh.	150ft Sorbent Boom	Access site by boat and place 50 ft sorbent boom into side channel. Dam breaching is planned for the near future in this area. There are 2 similar channels within 100 yards to the south that will also require 50 ft of sorbent boom each. Additional boom length included in equipment list.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, sensitive habitat
STM-2.96	Visited and Not Tested 10/19/2006	**Steamboat Slough South of Ebey Slough Confluence** **N 48° 0.378'** **W 122° 9.258'** **map page 4-10**	Exclusion - Exclude product from side channel.	100ft B3 - River Boom, or other appropriate type	Exclude side channel using closed chevron configuration with one leg longer and at a shorter angle. Place longer leg in direction of tidal flow. Anchor apex using SARCA anchor.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-3.18 -A-EbbTide	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #1** **N 48° 0.207'** **W 122° 9.195'** **map page 4-10**	Collection - Collect product during low tide in Steamboat Slough.	1800ft B3 - River Boom, or other appropriate type	Collect product using an inverted Chevron during low tide. Install boom approximately 1500 feet upstream of the levee breach. Use boom deflectors to maintain angle. Collect product using marco skimmer.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, salmonids (anadromous), marine mammals, sensitive habitat - Spencer Island Wetlands
STM-3.18 -B-Flood Tide	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #1** **N 48° 0.207'** **W 122° 9.195'** **map page 4-10**	Collection - Collect product during high tide at RB (east bank).	900ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Deploy boom from RB to inline anchor. Use two SARCA anchors with 60 ft of chain between boom and SARCA and between the two SARCAs. Deploy boom at 30° angle from shore or angle as appropriate for flow velocity. Boom should take approximately 1/3 of river due to high velocity, but may take entire width. Check current.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, salmonids (anadromous), marine mammals, sensitive habitat - Spencer Island Wetlands

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-3.35	Not Visited	**Steamboat Slough at Spencer Island #2** **N 48° 0.059'** **W 122° 9.143'** **map page 4-10**	Exclusion - Exclude product from Spencer Island wetlands.	700ft B3 - River Boom, or other appropriate type	At low tide, exclude product using close chevron formation at mouth of levee breach. The wide and flat, long leg should be in the direction of flow, limit pressure on short leg by checking angle. Tie off to trees at downstream end. Depending on tidal flow could anchor bank to bank across breach starting upstream approximately 1000 ft. Access site by boat from Langus Riverfront Park.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, salmonids (anadromous), marine mammals, sensitive habitat - Spencer Island Wetlands
STM-3.42	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #3** **N 48° 0.003'** **W 122° 9.081'** **map page 4-10**	Exclusion - Exclude product from entering tidal slough on RB.	150ft B3 - River Boom, or other appropriate type	Deploy boom in closed chevron formation and tie into root masses at water level. This channel contains water at low tide.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-3.79	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #4** **N 47° 59.668'** **W 122° 9.024'** **map page 4-10**	Exclusion - Exclude product from entering tidal slough on eastern bank.	150ft B3 - River Boom, or other appropriate type, 100ft Sorbent Boom	Deploy hard boom across mouth of channel using natural anchors. Place sorbent boom upstream in tidal channel.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds
STM-3.89	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #5** **N 47° 59.588'** **W 122° 9.039'** **map page 4-10**	Exclusion - Exclude product from entering tidal slough on southern bank.	105ft B3 - River Boom, or other appropriate type, 250ft Sorbent Boom	Deploy boom across mouth of tidal channel on RB using natural anchors. Place sorbent boom upstream of river boom for sheen control. Use caution because it lies directly behind dock which makes it difficult to deploy equipment. The tidal channel is bisected by small island. At south end of island add 150 ft of sorbent boom.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-4.05	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #6** **N 47° 59.445'** **W 122° 9.106'** **map page 4-10**	Exclusion - Exclude product from entering tidal slough RB (east bank).	120ft B3 - River Boom, or other appropriate type, 110ft Sorbent Boom	Deploy boom across mouth of tidal channel, anchor from shore to shore using natural anchors. Place sorbent boom upstream of river boom for sheen control.	Laboreres and equipment go to site. Boat and operator launch from (BL-301)	shorebirds
STM-4.18	Visited and Not Tested 10/19/2006	**Steamboat Slough at Spencer Island #7** **N 47° 59.379'** **W 122° 9.237'** **map page 4-10**	Exclusion - Exclude product from Spencer Island wetlands.	120ft B3 - River Boom, or other appropriate type, 120ft Sorbent Boom	Deploy hard boom straight across creek mouth and tie off to deadfall. There are numerous natural anchors. Wetlands flood during high tide and discharge during low tide. Must access via boat.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, sensitive habitat - Spencer Island Wetlands

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
STM-4.53	Visited and Not Tested 10/19/2006	**Steamboat Slough at 12th St** **N 47° 59.131'** **W 122° 9.503'** **map page 4-10**	Exclusion - Exclude product from entering tidal creek.	150ft Sorbent Boom	Place sorbent boom at channel opening anchor using natural anchors.	Access site from Dike Rd, off of 12th St. SE and 55th Ave SE. Laboreres and equipment go to site. Boat and operator launch from SNH-1.49-staging (BL-301).	shorebirds
STM-4.80	Visited and Not Tested 10/18/2006	**Steamboat Slough at divergence from Union Slough** **N 47° 59.042'** **W 122° 9.905'** **map page 4-10**	Collection - Collect product from Steamboat Slough. Recover product and remove by boat/landing craft.	600ft B3 - River Boom, or other appropriate type, 600ft Sorbent Boom	Deploy boom across Steamboat Slough from beach on southern bank to point between Union Slough and Steamboat Slough. Strategy should be effective for high and low tide with appropriate anchoring and shoreline protection. Collect at LB for high tide and recover product in 40 gallon drums and remove by boat or landing craft. Collect at RB during low tide using Vac Truck or boat. For shoreline/beach protection, lay tarp and anchor in.	Laborers and equipment go to site. Can access site from Pike Road off of Cherry Ave. Stage laborers and equipment for UNS-4.36 from this site also. Boat and operator launch from SNH -1.49-staging (BL -301).	salmonids (anadromous), raptors

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
SWN-0.39	Visited and Not Tested 10/17/2006	**Swan Trail Slough at 60th St SE** **N 47° 56.517'** **W 122° 9.589'** **map page 4-11**	Collection - Collect product at Swan Trail Slough before it enters the Snohomish River.	150ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	Shut tide gate. Deploy hard boom across Swan Trail Slough and use cellulose sorbent boom as backup. Strategy deployment estimated to take approximately 20 min. Stage from Home Acres Road.	Laborers and equipment go to site, no boat required. Stage from Home Acres Road at site.	salmonids (anadromous)
UNN-0.04	Visited and Not Tested 10/18/2006	**Unnamed Ditch S. of Lake Stevens WWTP #1** **N 48° 0.041'** **W 122° 8.223'** **map page 4-10**	Collection - Collection in side channel	50ft B3 - River Boom, or other appropriate type, 100ft Sorbent Boom	Place plywood in front of upstream end of culvert to create underflow weir. Deploy boom across creek. Use sorbent boom for sheen control. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Laborers and equipment go to site, no boat required. Stage from Lake Stevens WWTP property. Lake Stevens WWTP accessed from Sunnyside Road. No ramp, but can get boat access here.	shorebirds, salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
UNN-0.16	Visited and Not Tested 10/20/2006	**Unnamed Ditch S. of Lake Stevens WWTP #2** **N 48° 0.055'** **W 122° 8.074'** **map page 4-10**	Collection - Collection in small ditch to Lake Stevens WWTP.	50ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	OPLC crosses treatment plant road upstream at N 48 0.0462', W 122 7.9218. Deploy boom at angle across ditch to RB. Place sorbent boom to control sheen. Contact immediately or before entering: WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.	Laborers and equipment go to site, no boat required.	salmonids (anadromous), sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
UNS-2.15 -A	Visited and Not Tested 10/19/2006	**Steamboat Slough at Cut to Union Slough** **N 48° 0.731'** **W 122° 9.318'** **map page 4-10**	Exclusion, collection, deflection - Prevent product from moving across connection channel into Union Slough or Steamboat Slough.	390ft B3 - River Boom, or other appropriate type	Deploy boom from southwest point to northwest point of channel connection to prevent product movement from Steamboat to Union Slough. During low tide boom will exclude product from Union Slough, during high tide collect at south west end. If product is in Union Slough deploy in conjunction with UNS-2.15 B. Place shoreline protection boom along shore in collection area.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
UNS-2.15 -B	Visited and Not Tested 10/19/2006	**Steamboat Slough at Cut to Union Slough** **N 48° 0.731'** **W 122° 9.318'** **map page 4-10**	Collection, diversion, exclusion - Collect product in Union Slough.	300ft B3 - River Boom, or other appropriate type, 200ft Sorbent Boom	Complete in conjunction with UNS-2.15 A. Deploy boom from LB Union Slough to south point of channel connection. During low tide collect on LB, during high tide collect at south point of channel connection with UNS -2.15A. Place shoreline protection boom along shore in both high tide and low tide collection areas. Keep boom taught using SARCA in stream. Access site by boat.	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
UNS-3.63	Visited and Not Tested 10/18/2006	**Union Slough at 4th St SE Bridge** **N 47° 59.614'** **W 122° 9.897'** **map page 4-10**	Collection - Collect product in Union Slough.	430ft B3 - River Boom, or other appropriate type, 60ft Sorbent Boom	Anchor to locked stanchions at downstream end, walk boom across wooden pedestrian bridge and tie off to natural anchor near bridge on LB. Use a portion of boom for LB shoreline protection in collection area. Access via 4th St. SE through the Everett Water Pollution Control Facility. If strategy is only for sheen control in Union Slough use 430 ft of sorbent boom. Can deploy without a boat.	Stage at site. Access site through the Everett Water Pollution Control Facility on 4th St. SE. Can stage from dirt path and LB downstream of bridge . It's approximately 0.9 miles from Langus Park boat ramp to Spencer Island bridge.	shorebirds, salmonids (anadromous), sensitive habitat - Spencer Island Wetland

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
UNS-4.36	Visited and Not Tested 10/19/2006	**Union Slough at Divergence from Steamboat Slough** **N 47° 59.075'** **W 122° 10.045'** **map page 4-10**	Exclusion - Exclude product from wetland/levee break area in Union Slough.	360ft B3 - River Boom, or other appropriate type, 300ft Sorbent Boom	Deploy boom across entrance to Union Slough. Could potentially use beach area for containment on LB. Strategy to be implemented by boat. Contact immediately or before entering: Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to STM-4.80-staging. Can access site from Pike Rd. off Cherry Ave.	salmonids (anadromous), raptors

4.5 Proposed Booming and Collection Strategies - Matrices

Table 4-2: Proposed Booming Strategies and Resources Targeted (Cont)

Strategy	Current Status	Location (NAD83 HARN)	Response Objective	Feet of Boom	Strategy Implementation	Staging Area(s)	Resources Targeted
IF FIELD CONDITIONS REQUIRE MODIFICATION DO IT, THEN NOTIFY COMMAND							
WSC-0.48	Visited and Not Tested 10/20/2006	**Heineck Farm/Weiser Creek** **N 48° 0.294'** **W 122° 7.752'** **map page 4-10**	Collection - Collect product in pond.	50ft B3 - River Boom, or other appropriate type, 50ft Sorbent Boom	Place boom across downstream end of pond, upstream of culvert. The pond surface area is approximately 150 ft by 45 ft. Let product settle out in pond and skim / boom sweep. OPLC Heinick Farm strategy site #1 is downstream of this spot. Contact immediately or before entering: Joseph and Peggy Heineck, Private, (H) 425-334-0879	Heinick Farm can be reached from Sunnyside Blvd. The farm has single lane dirt road near the site where staging can occur.	shorebirds

APPENDIX A - MARINA AND BOAT LAUNCH ACCESS SUMMARY

Appendix A: Marinas and Boat Launch Locations Summary

Reference Number	Site Name	Location	Facility Description
Large Boat Facilities Inventory			
M-17	Bayside Marina	Sector Map 2 N 47° 59.933'/ W 122° 12.917' Puget Sound - Port Gardener Bay	Dry Storage, Dry storage - 75
M-89	Dagmar's Marina	Sector Map 3 N 48° 0.750'/ W 122° 10.833' Snohomish River	Launch Facilities, Launch ramps - 8 Dry Storage, Dry storage - 1100 Launch Facilities, Hoist - 2
M-141	Port of Everett Marina	Sector Map 2 N 48° 0.017'/ W 122° 13.367' Puget Sound - Port Gardner	Boathouses, 31 to 35 feet - 46 Dock Space, Private - 1800 Launch Facilities, Hoist - 1 Launch Facilities, Launch ramps - 13 Launch Facilities, Marine Rail - 1 Launch Facilities, Travellift - 1 Perm Moorage-Covered, 26 to 30 feet - 120 Perm Moorage-Covered, 31 to 35 feet - 7 Perm Moorage-Covered, 36 to 40 feet - 104 Perm Moorage-Covered, 46 to 50 feet - 36 Perm Moorage-Open, 21 to 25 feet - 204 Perm Moorage-Open, 26 to 30 feet - 581 Perm Moorage-Open, 31 to 35 feet - 311 Perm Moorage

Appendix A: Marinas and Boat Launch Locations Summary

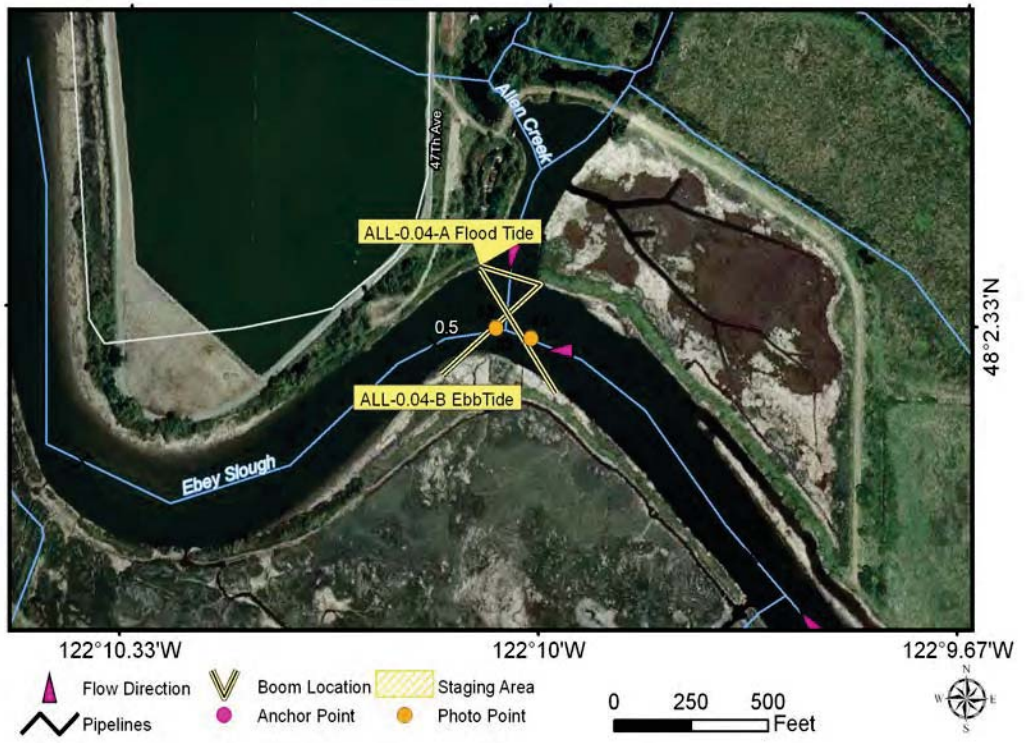
Reference Number	Site Name	Location	Facility Description
Large Boat Facilities Inventory			
M-249	Port of Everett Marina	Sector Map 2 N 48° 0.017'/ W 122° 13.367' Puget Sound - Port Gardner	Boathouses, 31 to 35 feet - 46 Dock Space, Private - 1800 Launch Facilities, Hoist - 1 Launch Facilities, Launch ramps - 13 Launch Facilities, Marine Rail - 1 Launch Facilities, Travellift - 1 Perm Moorage-Covered, 26 to 30 feet - 120 Perm Moorage-Covered, 31 to 35 feet - 7 Perm Moorage-Covered, 36 to 40 feet - 104 Perm Moorage-Covered, 46 to 50 feet - 36 Perm Moorage-Open, 21 to 25 feet - 204 Perm Moorage-Open, 26 to 30 feet - 581 Perm Moorage-Open, 31 to 35 feet - 311 Perm Moorage
M-250	Port of Everett Marine Park & Boat Ramp	Sector Map 2 N 47° 59.517'/ W 122° 12.067' Puget Sound - Port Gardner	Dock Space, Private - 400 Launch Facilities, Launch ramps - 13
Motorboat Launch Inventory			
BL-275	Marysville Boat Ramp	Sector Map 1 N 48° 3.217'/ W 122° 10.900' Ebey Slough	Launches, Ramp - concrete, solid - 1 Trailer Parking, Gravel - 5
BL-296	10th Street Marine Park/Boat Launch	Sector Map 2 N 48° 0.250'/ W 122° 12.983' Port Gardner	Car Parking, Paved and striped - 35 Launches, Loading float - 7 Launches, Ramp - concrete, solid - 13 Restrooms, Flush - 1 Trailer Parking, Paved and striped - 260 Waste Disposal, Pumpout - 1 Waste Disposal, Trash receptacle - 3 Car Parking, Gravel - 100

Appendix A: Marinas and Boat Launch Locations Summary

Reference Number	Site Name	Location	Facility Description
Motorboat Launch Inventory			
BL-299	Port of Everett Marina	Sector Map 2 N 47° 59.933'/ W 122° 12.950' Port Gardner	Launches, Hoist - fixed - 1 Launches, Hoist - portable - 1 Launches, Loading float - 1 Restrooms, Flush - 1 Waste Disposal, Pumpout -
BL-301	Riverfront Park (Everett)	Sector Map 3 N 47° 59.833'/ W 122° 10.650' Snohomish River	Launches, Loading float - 2 Launches, Ramp - concrete, solid - 2 Restrooms, Restrooms w/ showers - 1 Trailer Parking, Paved and striped - 45 Waste Disposal, Trash receptacle - 1
BL-339	Cady Park	Sector Map 5 N 47° 54.567'/ W 122° 5.567' Snohomish River	Car Parking, Gravel - 10 Launches, Ramp - concrete, solid - 1 Trailer Parking, Gravel - 10 Waste Disposal, Trash receptacle - 3
BL-357	Monroe (WDFW) - Skykomish River	Sector Map 6 N 47° 50.817'/ W 121° 58.267' Skykomish River	Car Parking, Gravel - 20 Fencing, Perimeter fence - 1 Launches, Ramp - concrete, plank - 2 Restrooms, Vault - 1 Trailer Parking, Gravel - 60
BL-362	Baehlor (WDFW) - Skykomish River -	Sector Map 6 N 47° 49.933'/ W 121° 59.600' Skykomish River	Launches, Ramp - natural - 1 Trailer Parking, Gravel - 5
BL-378	High Bridge (WDFW) - Snoqualmie River	Sector Map 6 N 47° 48.233'/ W 122° 0.183' Snoqualmie River	Car Parking, Gravel - 10 Launches, Ramp - concrete, plank - 1 Trailer Parking, Gravel - 20

APPENDIX B - DETAILED STRATEGY LOCATIONS AND DESCRIPTIONS

Site Lat/Long:	N 48° 2.350' / W 122° 10.004', Sector Map 7-1
Strategy Objective:	Exclusion, Collection - Deflect product into the mouth of Allen Creek for collection during high tide.
Implementation:	Deploy deflection boom across Ebey Slough. Deploy second boom across Allen Creek to prevent product from traveling too far upstream. There are good natural anchors. Culverts discharge into Allen Creek upstream of site. Small side channels near site may require lining with sorbent material.
Staging Area:	Boat, laborers and equipment launch from NC-29 (BL-275).
Field Notes:	Urban, paved, Light traffic. Culverts discharge into Allen Creek upstream of site. Site is downstream of Olympic Pipeline strategy #19.
Resources Targeted:	shorebirds, freshwater wildlife, sensitive habitat
Watercourse Description:	Creek, Field Visit Width ~ 168ft



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
630 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
200 ft	Sorbent Boom
4 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-63: The mouth of Allen Creek looking from Ebey Slough

Image-64: Anchor point at left side of mouth if looking from Ebey Slough

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

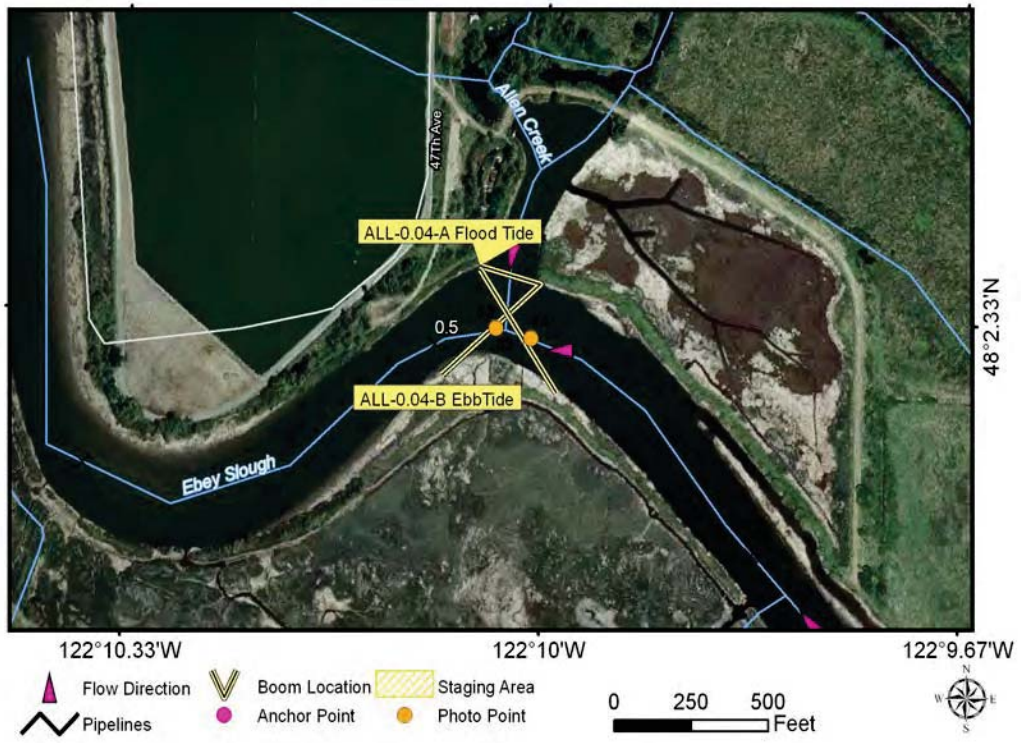
Closest Address:

47th Ave NE, Marysville, 98270

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 2.350' / W 122° 10.004', Sector Map 7-1
Strategy Objective:	Exclusion, Collection, Deflection - Deflect product into the mouth of Allen Creek for collection during low tide.
Implementation:	Deploy deflection boom across Ebey Slough. Deploy second boom across Allen Creek to prevent product from traveling too far upstream. There are good natural anchors. Culverts discharge into Allen Creek upstream of site. Small side channels near site may require lining with sorbent material.
Staging Area:	Boat, laborers and equipment launch from NC-29 (BL-275).
Field Notes:	Urban, paved, Light traffic. Culverts discharge into Allen Creek upstream of site. Site is downstream of Olympic Pipeline strategy #19.
Resources Targeted:	shorebirds, freshwater wildlife, sensitive habitat
Watercourse Description:	River side channel, Allen Creek mouth, Field Visit Width ~ 168ft



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
630 ft	B3 - River Boom, or other appropriate type
200 ft	Sorbent Boom
4 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-63: The mouth of Allen Creek looking from Ebey Slough

Image-65: Looking downstream on Ebey Slough from Allen Creek mouth

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

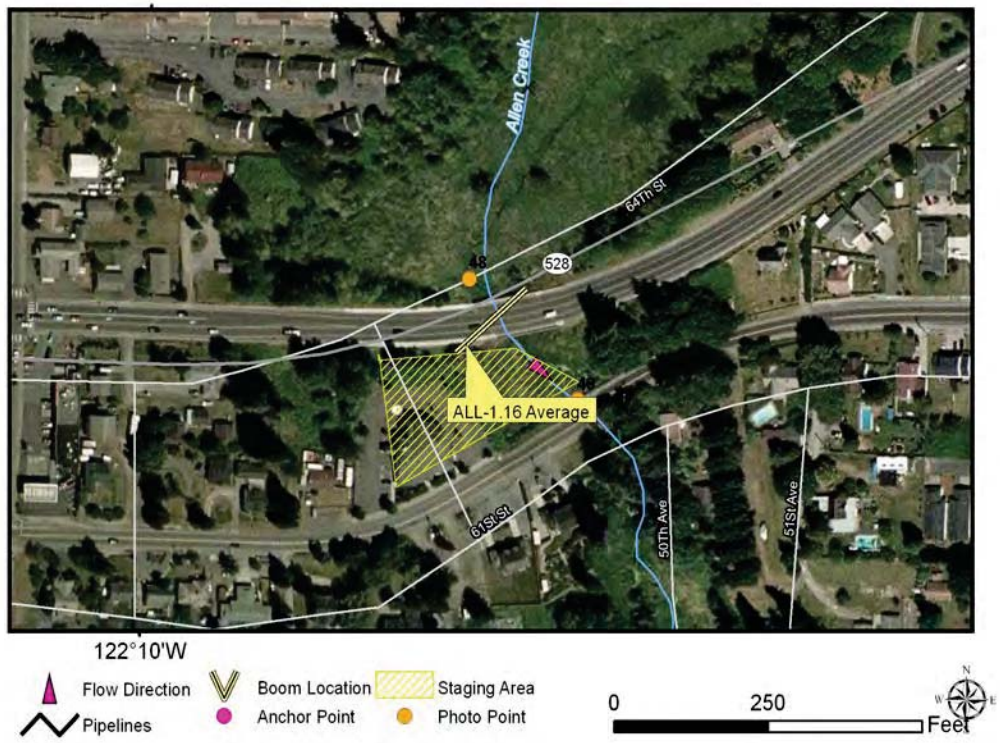
Closest Address:

47th Ave NE, Marysville, 98270

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 3.091' / W 122° 9.872', Sector Map 7-1
Strategy Objective:	Collection - Contain and collect product under bridge.
Implementation:	Where creek widens under bridge attach one 150 ft section of river boom across channel to collect product at right bank.
Site Safety Note:	There is heavy traffic on bridge.
Staging Area:	Stage at site from 61st St. bridge to collect product. No boat launch at site.
Field Notes:	Urban, paved, Heavy Traffic
Resources Targeted:	waterfowl, shorebirds, sensitive habitat
Watercourse Description:	Creek, Field Visit Width ~ 105ft



Suggested Equipment	
Quantity	**Description**
150 ft	B3 - River Boom, or other appropriate type
1	Machete
50 ft	Sorbent Boom
2 each	Stake(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-48: Allen Creek at 64th St NE bridge looking downstream

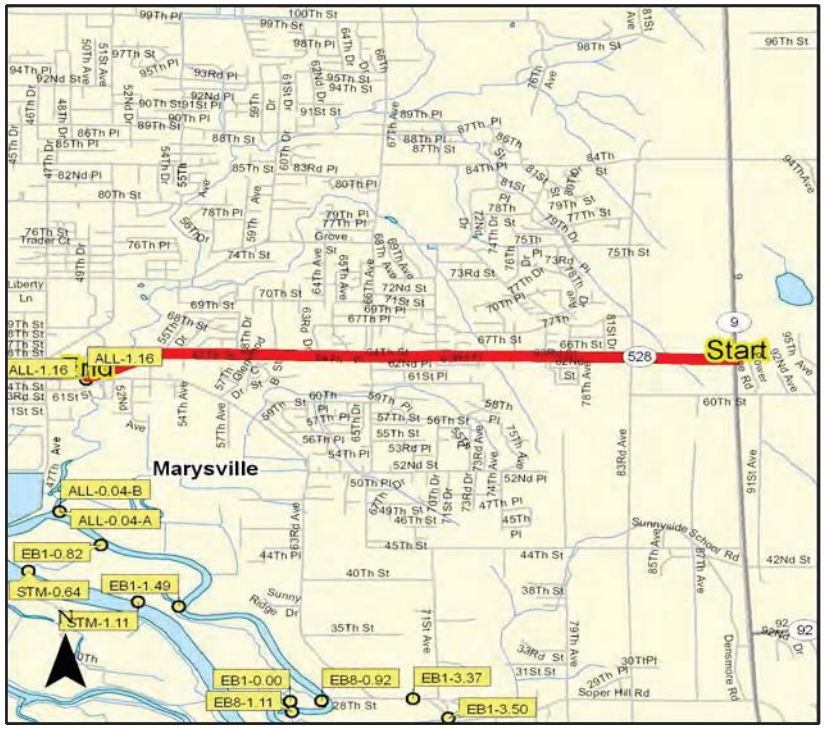
Image-49: Allen Creek looking upstream at 64th St NE bridge

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



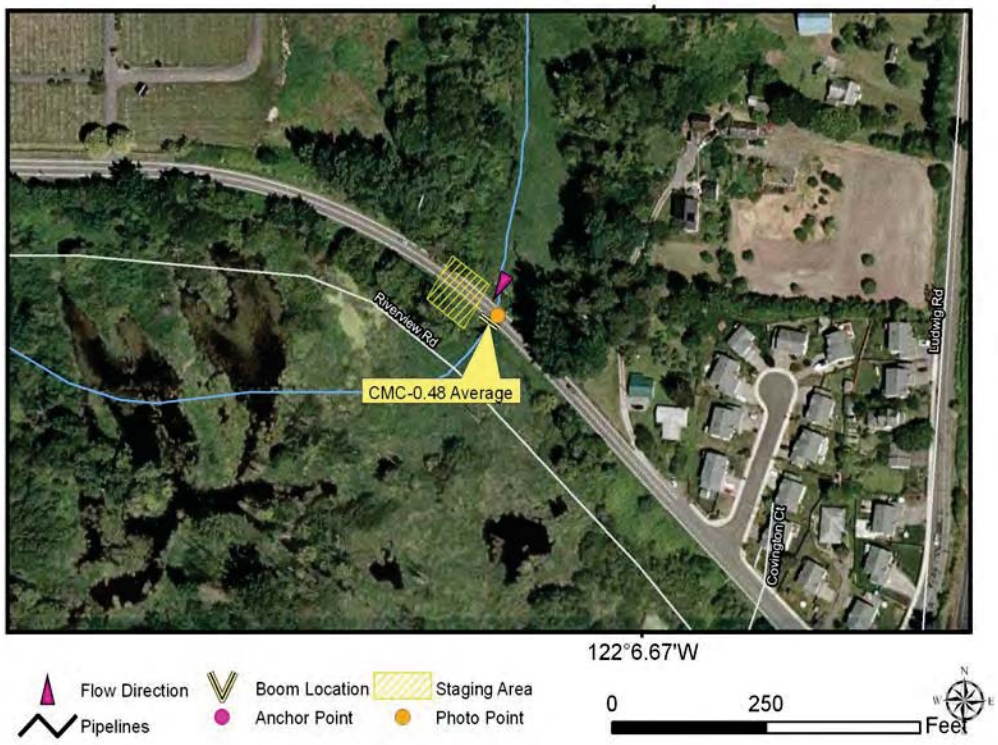
Closest Address:

4867 SR 528, Marysville, 98270

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (2.51 Mile(s))
Arrive at 4867 SR 528, Marysville, WA, 98270, on the left

Site Lat/Long:	N 47° 55.093' / W 122° 6.740', Sector Map 7-5
Strategy Objective:	Exclusion - Protect downstream wetland complex and exclude product from entering Snohomish River.
Implementation:	Block culvert in upstream end to prevent product from entering downstream wetland and eventually the Snohomish River. Creek has slow moving water. A machete is required to clear the area. Bring waders.
Site Safety Note:	Heavy traffic
Staging Area:	Staging is on the shoulder of Riverview Rd, ¼ mile west of Hwy 9
Field Notes:	Urban, paved, Heavy Traffic, will need machete to clear blackberries.
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Creek, Cemetary Creek



Suggested Equipment	
Quantity	**Description**
1 each	Plywood Unknown Size
1 each	Vac Truck(s)
Suggested Personnel	
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/17/2006

Image-172: Looking upstream at Cemetary Creek from Riverview Rd

No Image Available

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number.
Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

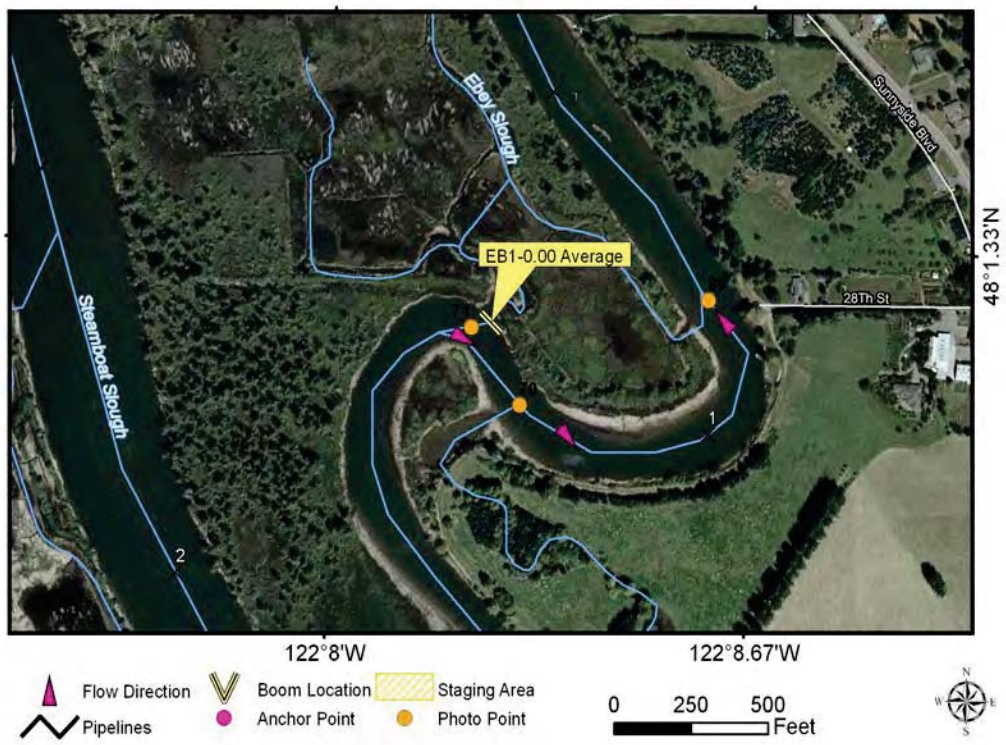
Riverview Rd and 2nd St., Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (1.94 Mile(s))
2. Take ramp to 2nd St (0.23 Mile(s))
3. Turn right on 2nd St (Riverview Rd) (0.11 Mile(s))
4. Continue on Riverview Rd (0.09 Mile (s))

Arrive at Point (N 47° 55.093' / W 122° 6.739'), on the right

Site Lat/Long:	N 48° 1.290' / W 122° 8.864', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from tidal side channel.
Implementation:	Exclude product by placing river boom parallel to river across mouth of tidal creek. Back up with sorbent boom.
Site Safety Note:	Banks drop off to deep water
Staging Area:	Boat, laborers and equipment launch from (BL-275)
Field Notes:	Boat access only, undeveloped
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Ebey Slough Side Channel, Field Visit Depth ~ 18ft



Suggested Equipment	
Quantity	**Description**
100 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
80 ft	Sorbent Boom
2 each	Towing Bridle(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-71: Looking into side channel on left bank from Ebey Slough

No Image Available

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

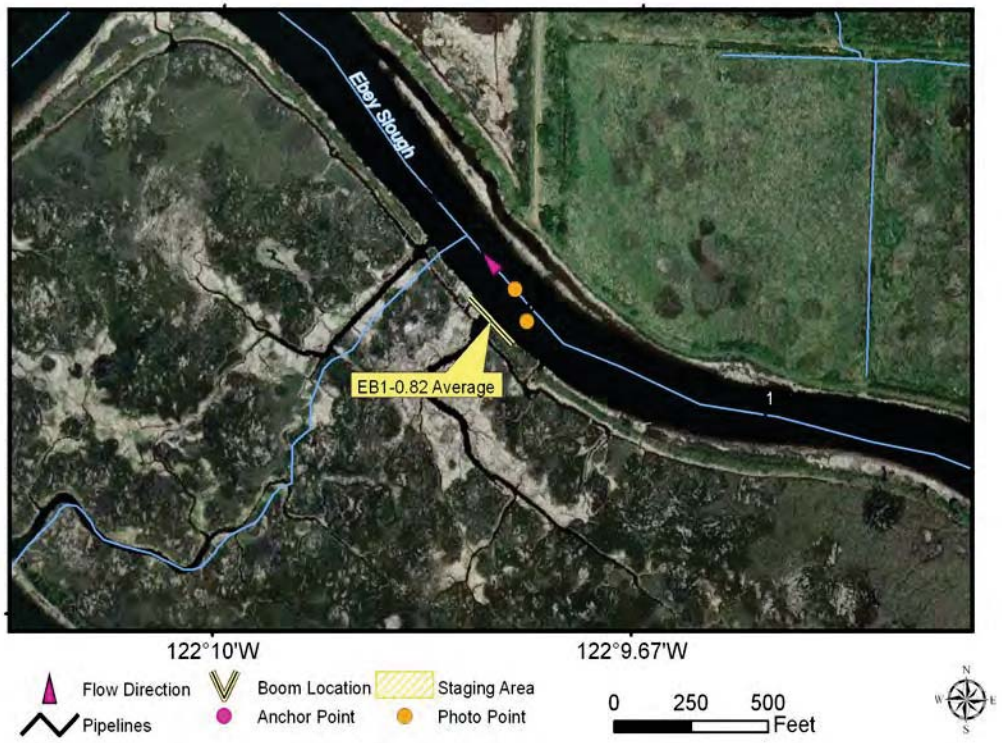
Closest Address:

Everett, 98201

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 2.165' / W 122° 9.800', Sector Map 7-1
Strategy Objective:	Exclusion - Exclude product from tidal channel.
Implementation:	Exclude product by anchoring boom from shore to shore across the mouth parallel to Ebey Slough. Northwest of this creek (~40 yds) is another small creek that should be lined with ~50ft of sorbent boom.
Site Safety Note:	Bank drops off to deep water at high tide
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Resources Targeted:	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat
Watercourse Description:	River side channel, Ebey Slough side channel, Field Visit Width ~ 9ft, Field Visit Depth ~ 20ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
2 each	Hand Bridle(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-66: Looking into wetland marsh on left bank from Ebey Slough

Image-67: Looking into wetland marsh on left bank from Ebey Slough

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

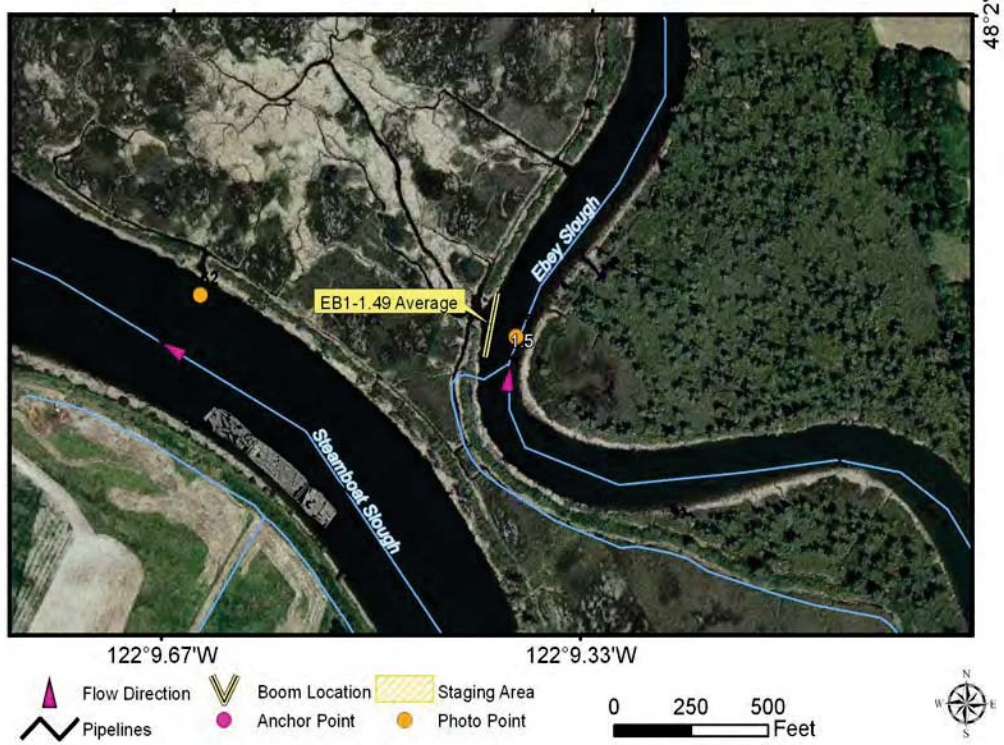
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 1.821' / W 122° 9.414', Sector Map 7-1
Strategy Objective:	Exclusion - Exclude product from tidal channel.
Implementation:	Exclude product by placing boom parallel to river across mouth of side channel. Also deploy sorbent boom along opposite bank to protect small back channel and side channel 450 ft to the north. There are multiple inlets in the area, each requiring 50ft sorbent boom.
Site Safety Note:	Shallow during low tide.
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Boat access only, undeveloped
Resources Targeted:	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat
Watercourse Description:	Slough, Ebey slough tidal channel, Field Visit Width ~ 135ft, Field Visit Depth ~ 7ft,



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
300 ft	Sorbent Boom
2 each	Towing Bridle(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-68: Looking into wetland marsh on left bank from Ebey Slough

No Image Available

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

Everett, 98201

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 1.304' / W 122° 8.259', Sector Map 7-3
Strategy Objective:	Collection - Collect product in King Creek.
Implementation:	Use sandbags with PVC or use plywood to create an underflow dam. The culvert is 3' in diameter.
Site Safety Note:	Traffic on Sunnyside Blvd, Blackberries/Vegetation, Steep banks
Staging Area:	Laborers and equipment go to site, no boat required. Can stage from Sunnyside Blvd or one of two roads nearby. Collect from Sunnyside.
Field Notes:	Urban. Culvert 3' in diameter. There is thick vegetation.
Resources Targeted:	salmonids (anadromous), sensitive habitat
Watercourse Description:	Creek, low, Field Visit Width ~ 3ft, Field Visit Depth ~ 1ft

Suggested Equipment	
Quantity	**Description**
1 each	4 x 8 ft Plywood
6 ft	8 inch PVC
20 each	Sandbag(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
4	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

Image-8: Culvert at King Creek

No Image Available

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number.
Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.
Responsible party or alternate contact:
Macdonald Arch, (W) 425-239-0490, Property owner, property caretaker - Larry Werner

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

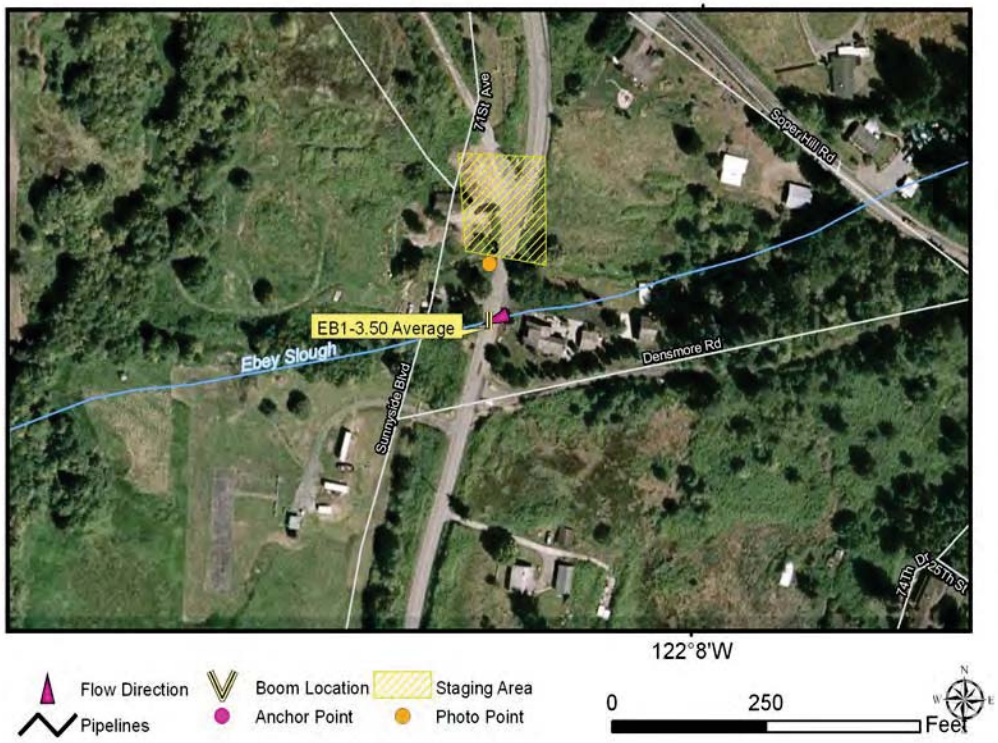
6925 Sunnyside Blvd (closest address), Marysville, 98270

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (2.21 Mile(s))
3. Turn right on Soper Hill Rd (1.26 Mile (s))
4. Continue on Sunnyside Blvd (0.1 Mile (s))

Arrive at 6925 Sunnyside Blvd (closest address), Marysville, WA, 98270, on the left

Site Lat/Long:	N 48° 1.215' / W 122° 8.080', Sector Map 7-3
Strategy Objective:	Collection - Collect product to protect downstream wetlands near Ebey Slough.
Implementation:	Implement a culvert block using plywood and straw bales and pack channel w/ sorbents. Culvert is 4 ft. x 2ft.
Site Safety Note:	Traffic, blackberries
Staging Area:	Laborers and equipment go to site, no boat required.
Field Notes:	Rural, heavy traffic on Sunnyside. 4' wide and 2' high (square) culvert.
Resources Targeted:	salmonids (anadromous), sensitive habitat
Watercourse Description:	Creek, King Creek, Field Visit Width ~ 4ft, Field Visit Depth ~ 1ft, Field Velocity ~ 3.0MPH



Suggested Equipment	
Quantity	**Description**
1 each	4 x 4 ft Plywood
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
4	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

Image-3: King Creek looking downstream

No Image Available

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number.
Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

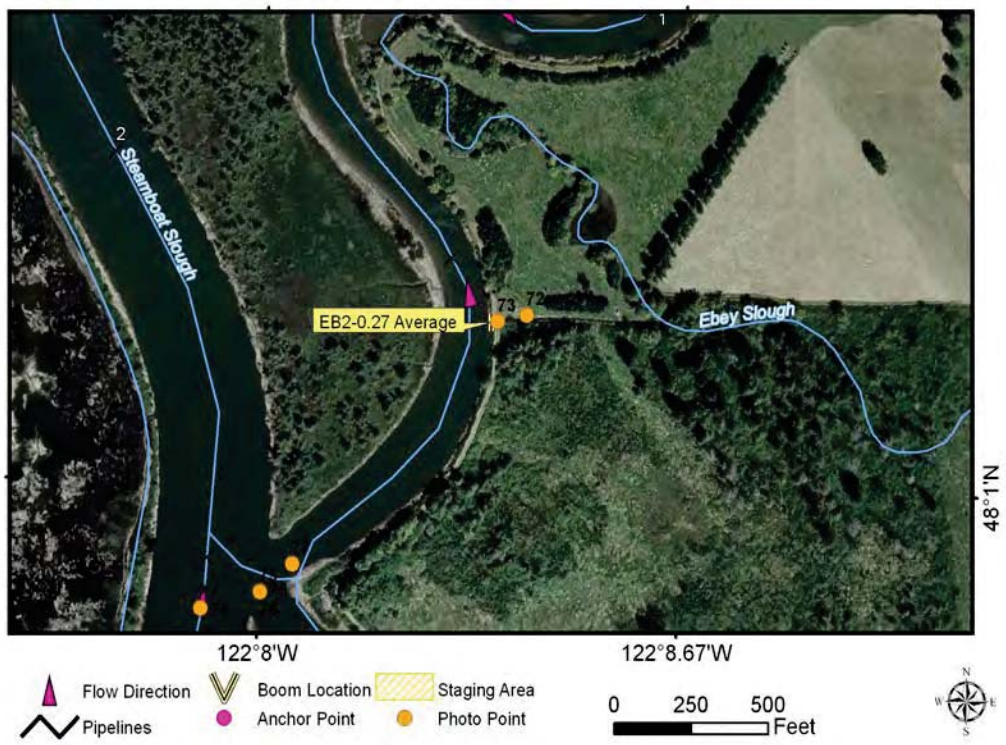
2602 Sunnyside Blvd (closest address), Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (2.21 Mile(s))
3. Turn right on Soper Hill Rd (1.03 Mile (s))
4. Continue on Densmore Rd (0.19 Mile (s))
5. Turn right on Sunnyside Blvd (0.02 Mile (s))

Arrive at 2602 Sunnyside Blvd (closest address), Everett, WA, 98205, on the left

Site Lat/Long:	N 48° 1.079' / W 122° 8.818', Sector Map 7-3
Strategy Objective:	Collection - Block channel (buried culvert) with plywood and collect.
Implementation:	Access area by boat and cross levee. Insert plywood on upstream side of submerged culvert which conveys water through dike.
Site Safety Note:	Bank sloughing.
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural. Access site by boat.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	River side channel, Side channel to Ebey Slough, Field Visit Width ~ 20ft



Suggested Equipment	
Quantity	**Description**
1 each	5 x 5 ft Plywood
1 each	Boat(s)
50 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-72: Side channel to Ebey Slough looking downstream at dike parallel to slough

Image-73: Side channel to Ebey Slough looking upstream from the top of dike

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.

No Hydrograph Chart

No Flow Velocity Chart

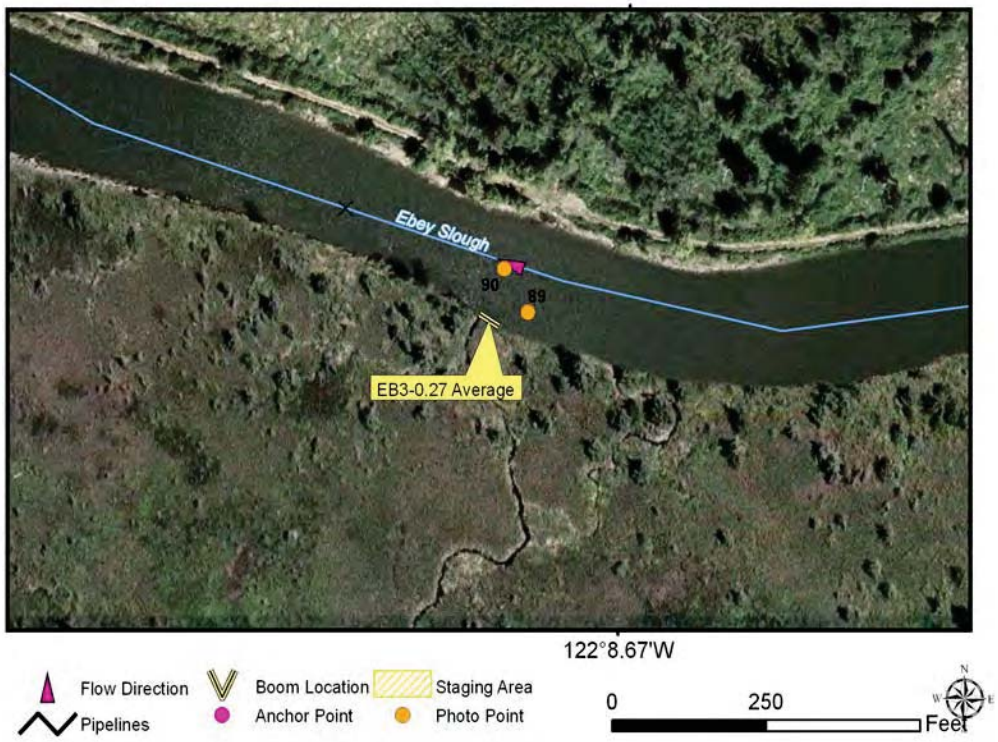
Closest Address:

93 28th St. NE, Everett, 98201

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.841' / W 122° 8.722', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from LB side channels into wetlands/tidal marsh.
Implementation:	Access site by boat and place sorbent boom into side channel. Two additional side channels are located within 40 yards upstream and downstream of this point (N 48° 0.841' / W 122° 8.722') on the LB of Ebey Slough. Sorbent boom length includes enough for all three sites.
Site Safety Note:	Slippery banks, debris
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural. There are many small side channels in this area.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Ebey Slough side channel, Field Visit Width ~ 20ft



Suggested Equipment	
Quantity	**Description**
1 each	Boat(s)
150 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-89: Ebey Slough looking into side channel on river left

Image-90: Ebey Slough looking into side channel on river left

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.738' / W 122° 8.460', Sector Map 7-3
Strategy Objective:	Exclusion, Collection - Exclude product in Ebey Slough from side channel and collect product from channel upstream of culvert.
Implementation:	When product is in Ebey Slough during high tide, anchor river boom from shore to shore at mouth of channel, back-up with sorbent boom, and close the tide gate valve, during low tide, place sorbent boom at mouth of channel. When product is moving down side channel, install plywood underflow weir at upstream end of culvert. Place boom across channel for collection. Access site by boat. Collect product to boat or in barrels.
Site Safety Note:	Shallow and muddy during low tide, debris in channel
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural, wetland restoration site. Culvert goes under levee to Ebey Slough. Access by boat.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Side channel of Ebey Slough, Field Visit Depth ~ 2ft

Suggested Equipment	
Quantity	**Description**
2 each	40-gallon drum
1 each	5 x 5 ft Plywood
50 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
1 each	Diaphragm Pump(s)
40 ft	Sorbent Boom
2 each	Stake(s)
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-91: Ebey Slough looking at outfall on river right

Image-93: Looking upstream at side channel from dike, above outfall culvert

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.

No Hydrograph Chart

No Flow Velocity Chart

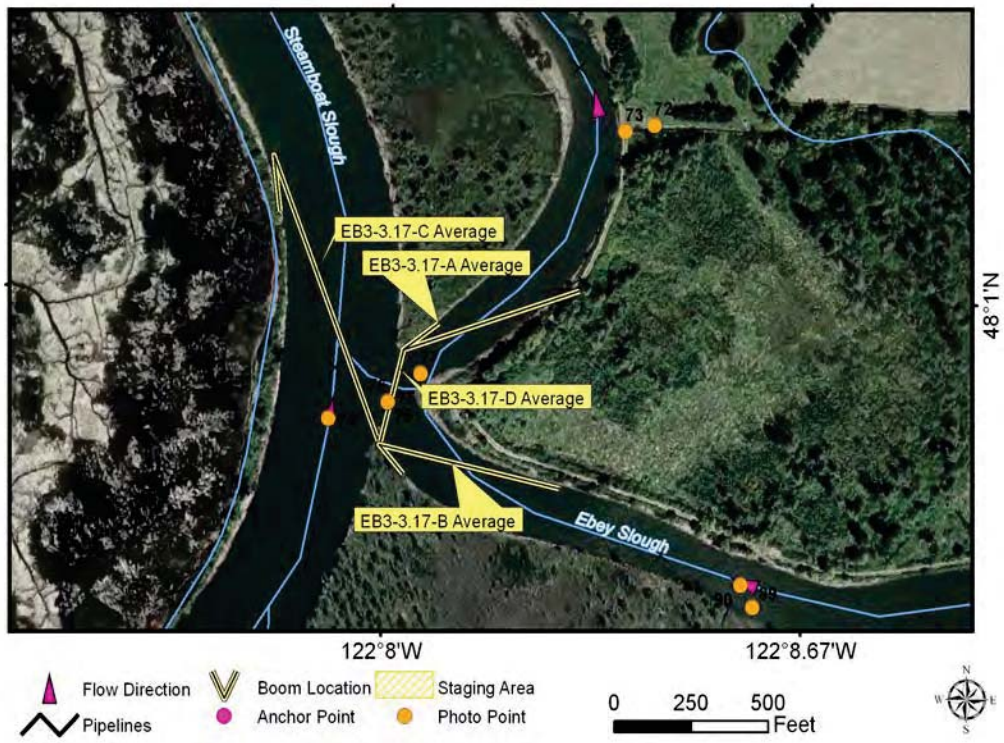
Closest Address:

1720 Sunnyside Blvd, Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.923' / W 122° 9.004', Sector Map 7-3
Strategy Objective:	Collection - Collection in Ebey Slough at north end of slough junction.
Implementation:	Deploy boom across Ebey Slough, anchoring at north point of slough junction (LB) and natural anchor on east side (RB) of Ebey Slough. Extend boom up shoreline for protection on LB. Deploy sorbent boom on downstream side for sheen control. This strategy deployed in conjunction with EBS-3.17 B,C, and D, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Stage EBS-3.17-A, B, C and D together.
Site Safety Note:	Long spans
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural, tidal influence. Boat access only.
Resources Targeted:	shorebirds, salmonids (anadromous), raptors, sensitive habitat
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 150ft,



Suggested Equipment	
Quantity	**Description**
900 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
700 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
8 each	Drive Pin(s)
4 each	Hand Bridle(s)
2 each	Screw Anchor(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-76: Looking downstream (north) into Ebey Slough

Image-77: Looking downstream (north) into Ebey Slough

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

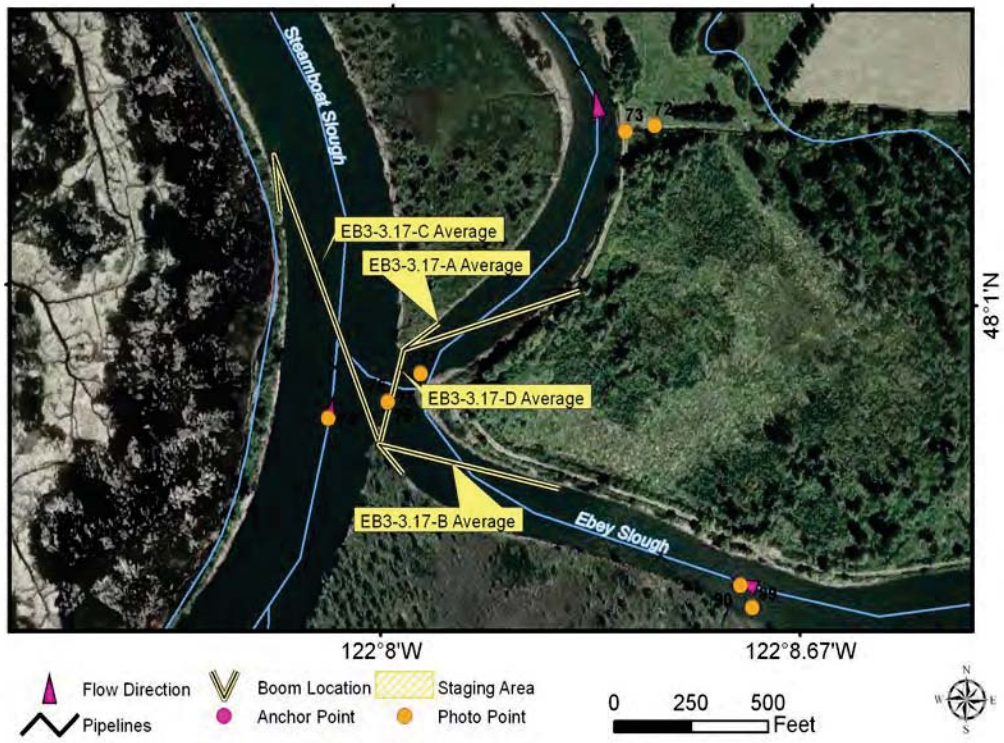
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.923' / W 122° 9.004', Sector Map 7-3
Strategy Objective:	Collection - Collection in Ebey Slough at south end of slough junction.
Implementation:	Deploy boom across Ebey Slough, anchoring to natural anchor at south point of slough junction (RB) and natural anchor on east side (LB) of Ebey Slough. Extend boom up shoreline on LB for protection. Deploy sorbent boom on downstream side for sheen control. This strategy deployed in conjunction with EBS-3.17 A,C, and D, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Deploy A,B and D first if product is in Ebey Slough. Stage EBS-3.17-A, B, C and D together.
Site Safety Note:	Long spans
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural, tidal influence. Boat access only.
Resources Targeted:	shorebirds, salmonids (anadromous), raptors, sensitive habitat
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 180ft



Suggested Equipment	
Quantity	**Description**
1050 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
600 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
8 each	Drive Pin(s)
4 each	Hand Bridle(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-75: Looking upstream (south) into Ebey Slough, south anchor point is at right side of photo

No Image Available

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

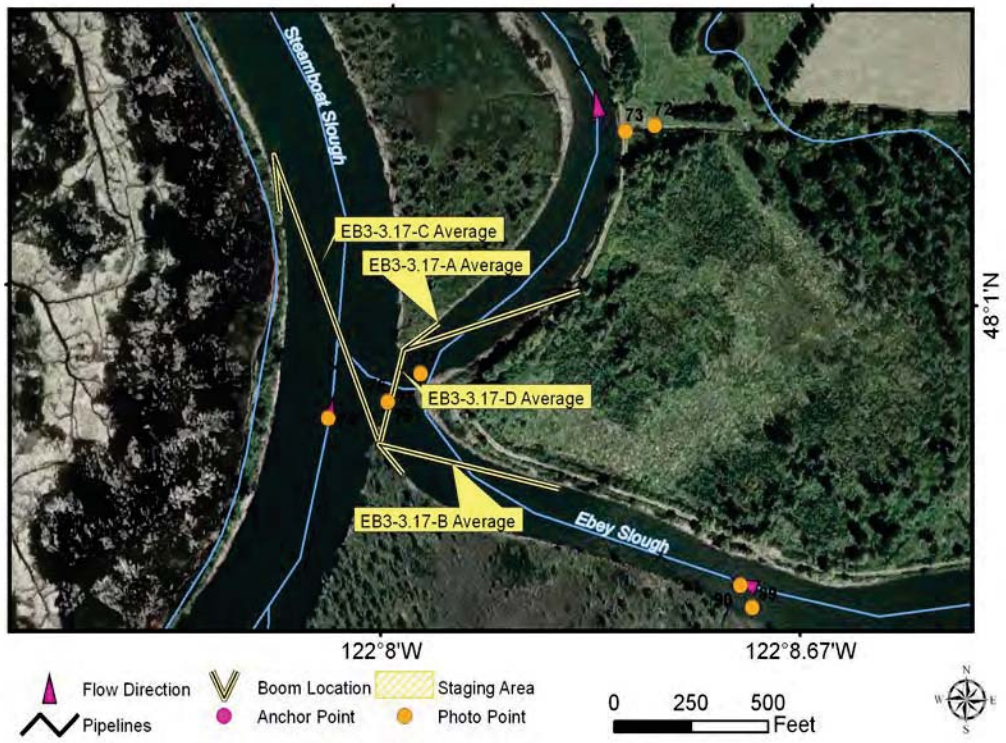
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.923' / W 122° 9.004', Sector Map 7-3
Strategy Objective:	Collection, Deflection - Collection in Steamboat Slough.
Implementation:	Deploy boom across Steamboat Slough to prevent product from moving up/down the slough and for collection at either side. Extend boom up shoreline on LB to protect shoreline in collection area. Place sorbent boom on downstream side for sheen control. Use come-along-winches to tighten boom. Strategy will take 4-5 hours to implement. This strategy deployed in conjunction with EBS-3.17 A, B and D, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Stage EBS-3.17-A, B, C and D together.
Site Safety Note:	Long spans
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural, tidal influence. Boat access only.
Resources Targeted:	shorebirds, salmonids (anadromous), raptors, sensitive habitat
Watercourse Description:	Slough, Steamboat Slough, Field Visit Width ~ 345ft



Suggested Equipment	
Quantity	**Description**
500 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
5 each	Anchor(s) for strong currents - ie. SARCA
1500 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
8 each	Boom Deflector(s)
2 100 ft section(s)	Cable
700 ft	Chain
400 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
2 each	Winch
5 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-74: Looking downstream (north) on Steamboat Slough at collection area

No Image Available

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

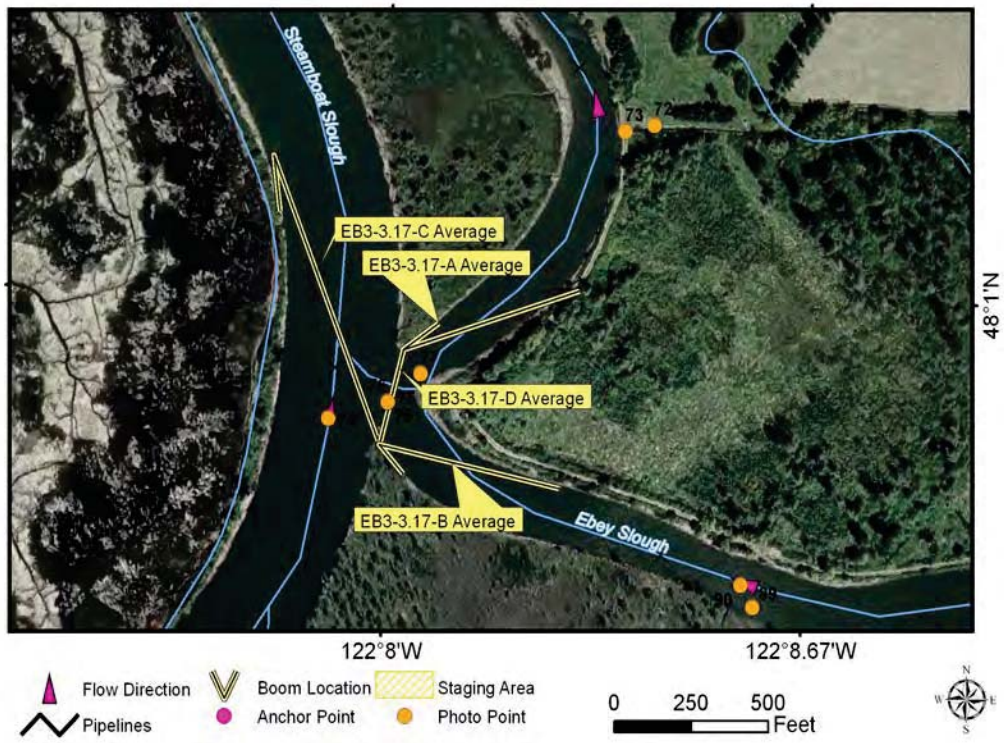
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.923' / W 122° 9.004', Sector Map 7-3
Strategy Objective:	Exclusion, Deflection - Exclusion of product in Steamboat slough to Ebey slough and vice versa.
Implementation:	Deploy boom from north point of slough junction to south point of slough junction to prevent product from moving between sloughs. Deploy sorbent boom on opposite side of boom from product, or both sides depending on movement of product. This strategy deployed in conjunction with EBS-3.17 A, B, and C depending on location of product and flow conditions, the combined personel requirements are 3 supervisors, 3 boat operators, and 9 laborers. Stage EBS-3.17-A, B, C and D together.
Site Safety Note:	Long spans
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Rural, tidal influence. Boat access only.
Resources Targeted:	shorebirds, salmonids (anadromous), raptors, sensitive habitat
Watercourse Description:	Slough, Steamboat and Ebey Slough



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
450 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
120 ft	Chain
1000 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-78: Looking downstream (north) into Ebey Slough, north anchor point is at left of photo

Image-75: Looking upstream (south) into Ebey Slough, south anchor point is at right side of photo

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

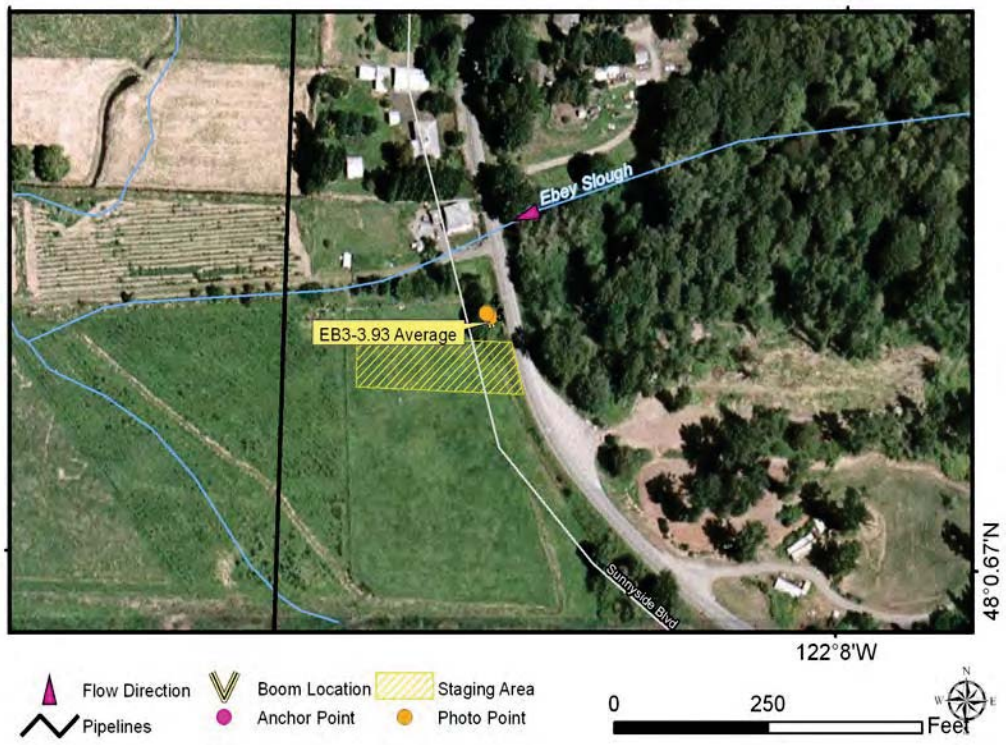
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.719' / W 122° 8.139', Sector Map 7-3
Strategy Objective:	Collection - Collect product from creek.
Implementation:	Install an underflow dam at the top of the fish ladder just downstream of road culvert using sandbags and 8" PVC. At each fish ladder drop (3 of them) add 4x4 plywood underflow dam to retain in each pool. Downstream of fish ladder place 4 straw bales at alternating positions to capture any remaining product.
Site Safety Note:	Traffic, fast moving creek
Staging Area:	Laborers and equipment go to site, no boat required. There is a parking area to the south of the site.
Field Notes:	Rural, gravel, Heavy Traffic. 2'x2' square culvert under road. This is a Sunnyside adopt a stream project fish ladder. Site is just to west of road.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	Creek, Unnamed tributary to Ebey Slough, Field Visit Width ~ 2ft, Field Visit Depth ~ 1ft, Field Velocity ~ 3.5MPH



Suggested Equipment	
Quantity	**Description**
4 each	4 x 4 ft Plywood
1 ft	8 inch PVC
4 each	Bale(s)
20 each	Sandbag(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

Image-4: Unnamed tributary of Ebey Slough at fish ladder looking upstream

Image-5: Unnamed tributary of Ebey Slough at fish ladder looking downstream

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

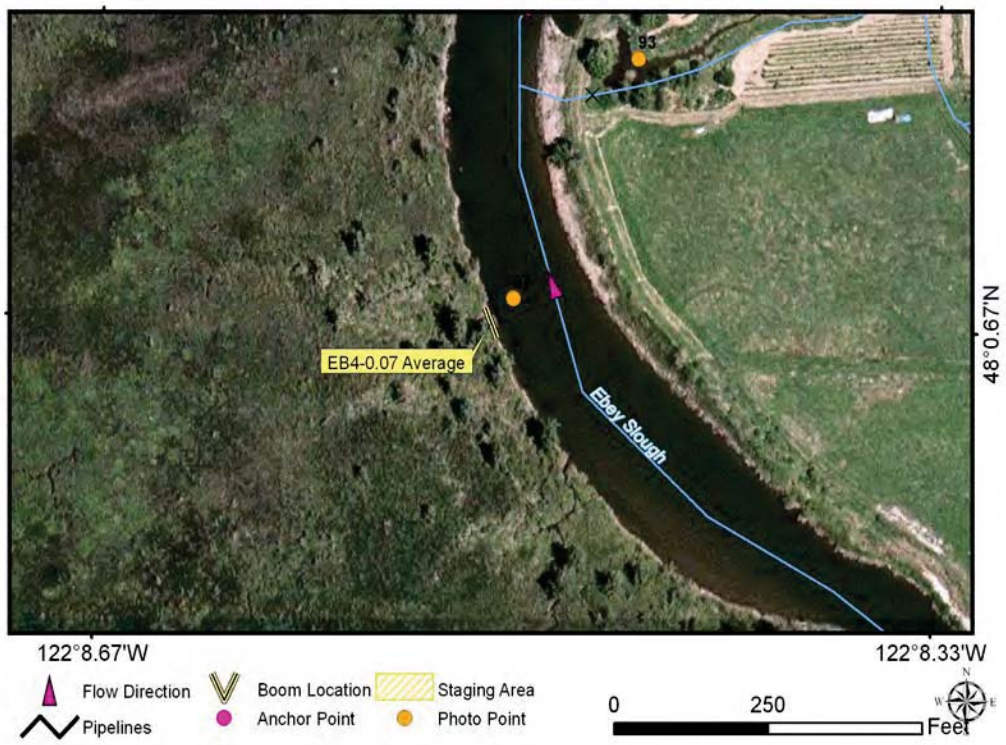
1827 Sunnyside Blvd (closest address), Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (2.21 Mile(s))
3. Turn right on Soper Hill Rd (1.03 Mile (s))
4. Continue on Densmore Rd (0.19 Mile (s))
5. Turn left on Sunnyside Blvd (0.45 Mile (s))

Arrive at 1827 Sunnyside Blvd (closest address), Everett, WA, 98205, on the right

Site Lat/Long:	N 48° 0.663' / W 122° 8.508', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from Ebey Island.
Implementation:	Access site by boat and place sorbent boom across side channel.
Site Safety Note:	Slippery bank, shallow water at low tide
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Access by boat.
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Slough, Small side channel off Eby slough, Field Visit Width ~ 10ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
2 each	Anchor(s) for strong currents - ie. SARCA
1 each	Boat(s)
50 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-97: Ebey Slough looking at outfall on river left

No Image Available

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.312' / W 122° 8.918', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product freshwater marsh.
Implementation:	Exclude openings into wetland by booming across the bend in the slough. Back up boom with sorbent boom (on shoreline side). Implement using 2 boats each with 2 laborers, and 4 laborers on shore. Estimated time for deployment is 1 hour. Strategy must be tended during high tide.
Site Safety Note:	Slippery banks
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Boat access only
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Slough, Wetland adjacent to Ebey Slough, 50 by 7 feet, Field Visit Width ~ 50ft, Field Visit Depth ~ 15ft,

Suggested Equipment	
Quantity	**Description**
400 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
360 ft	B3 - River Boom, or other appropriate type
2 each	Boat(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
4 each	Wing Anchor(s)
Suggested Personnel	
2	Boat Operator (s)
8	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-111: Ebey Slough looking at expansive marshy wetland on river left

Image-113: Ebey Slough looking at expansive marshy wetland on river left

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

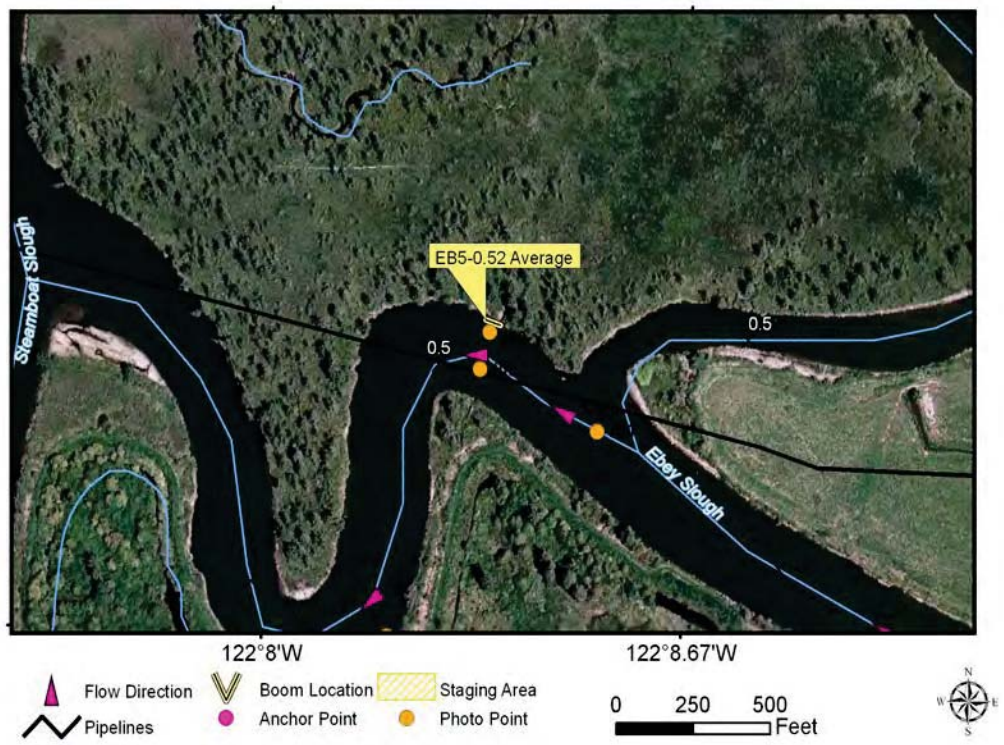
Closest Address:

63rd Ave NE, Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.490' / W 122° 8.814', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from side channel into wetlands/tidal marsh.
Implementation:	Access site by boat and deploy exclusion across mouth of side channel. Deploy sorbent boom as backup protection.
Site Safety Note:	Debris, slippery banks
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Boat access only
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 15ft, Field Visit Depth ~ 18ft,



Suggested Equipment	
Quantity	**Description**
150 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-109: Ebey Slough looking at side channel on river right

Image-110: Ebey Slough looking at side channel on river right

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

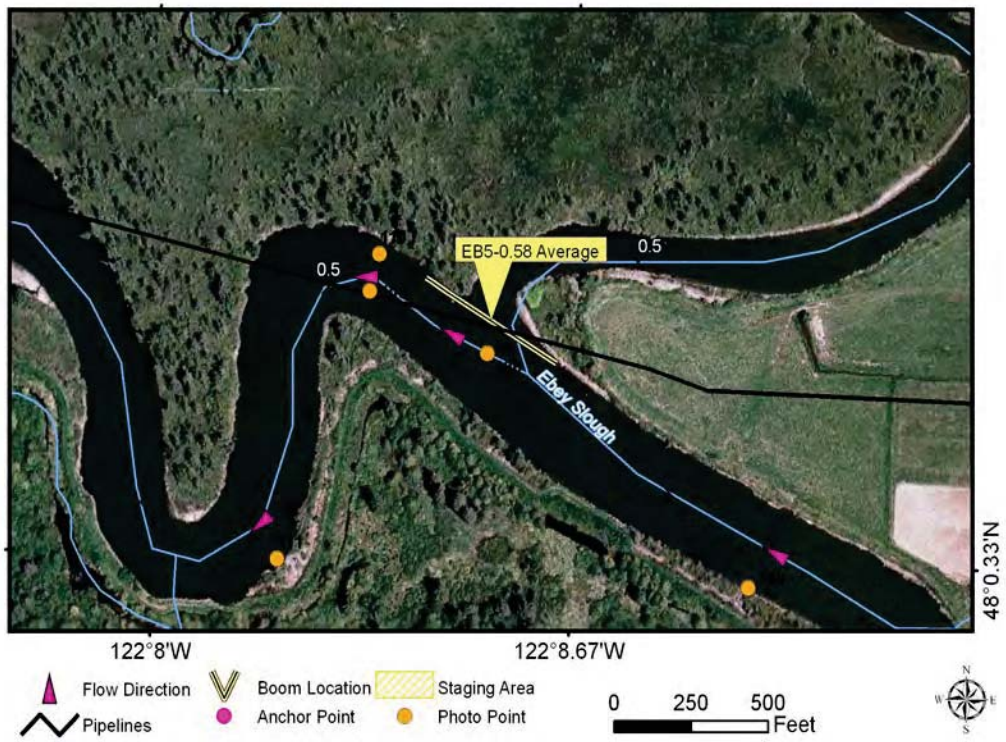
Closest Address:

Everett, 98201

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.434' / W 122° 8.339', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from north Ebey Slough divergence.
Implementation:	Deploy river boom across mouth of divergence using large fir tree as west anchor and tallest piling to east. Deploy sorbent boom as backup to boom and to protect log jam. In stream anchoring is tide dependant. During low tide anchor boom using two anchors on one side. During high tide anchor boom in middle with anchor on each side of boom. Access site by boat. Potential access by levee road on east side of channel, but not confirmed.
Site Safety Note:	Slippery banks, log jam, tides
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Snohomish County owns land on west bank. Private owner on east bank. May be able to access site from levee road on east side, access not field verified.
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Slough, Ebey Slough side channel, 0.2 mph at slackwater, Field Visit Width ~ 165ft, Field Visit Depth ~ 5ft



Suggested Equipment	
Quantity	**Description**
400 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
2 each	Anchor(s) for strong currents - ie. SARCA
450 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
160 ft	Chain
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
2	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-99: Anchor point near wreckage at north/west side of branch

Image-100: Anchor point at pilings at south/east side of branch

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

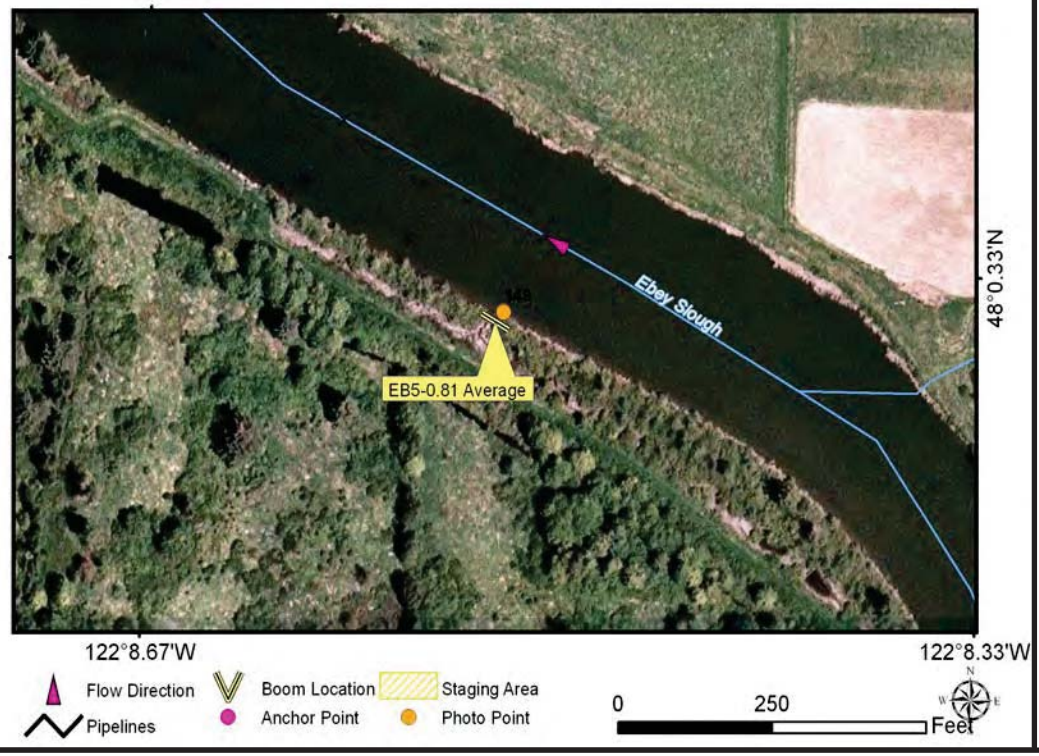
Closest Address:

1121 Sunnyside Blvd (closest Address), Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.322' / W 122° 8.533', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from emergent marsh side channel.
Implementation:	Deploy boom along Ebey Slough LB (western bank). Anchor shore to shore across side channel using natural anchors.
Site Safety Note:	Deep mud
Staging Area:	Boat, laborers and equipment launch from NC-29 staging (BL-275).
Field Notes:	Boat access only
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Ebey Slough side channel, Field Visit Width ~ 30ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
50 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/18/2006

Image-149: Side channel of Ebey Slough looking southwest

No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

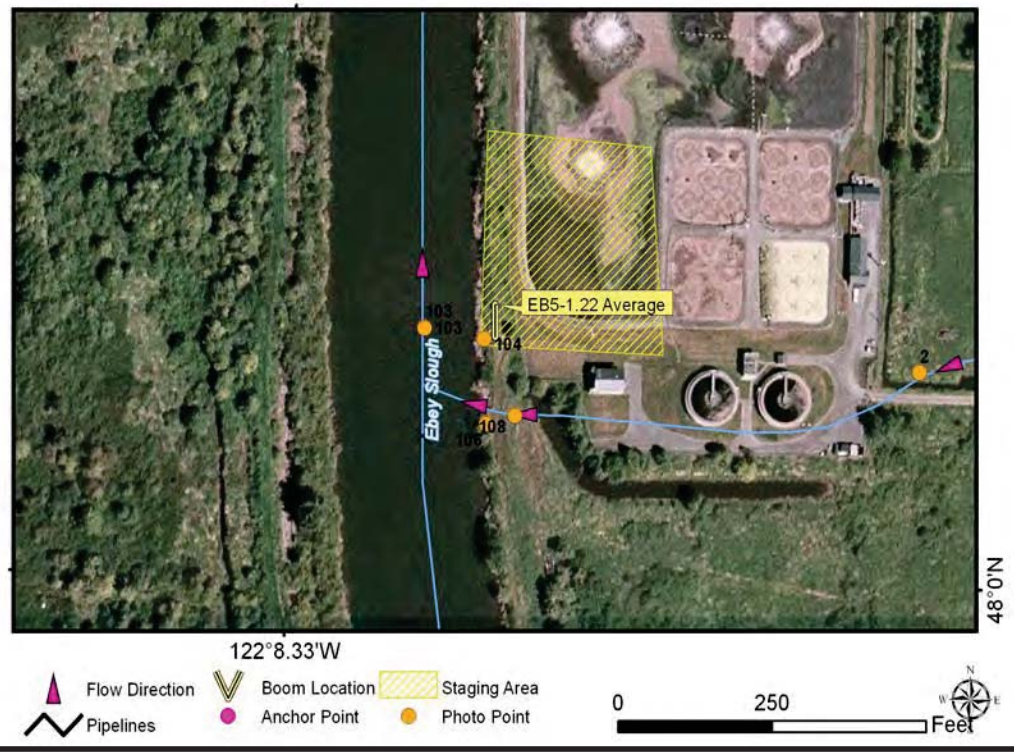
Closest Address:

609 63rd Ave NE (closest address), Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.064' / W 122° 8.251', Sector Map 7-3
Strategy Objective:	Collection - Collect product in Burri Creek and exclude from entering Ebey Slough.
Implementation:	Deploy boom across mouth directly upstream of existing self leveling log boom at the mouth of the channel, place sorbent boom downstream of river boom.
Site Safety Note:	Dense vegetation, tide changes
Staging Area:	Laborers and equipment go to site, no boat required. Stage from Lake Stevens WWTP property. Lake Stevens WWTP accessed from Sunnyside Road.
Field Notes:	Rural, gravel, Light traffic
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Creek, Field Visit Width ~ 18ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
1 each	Diaphragm Pump(s)
60 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-103: Ebey Slough looking at Burri Creek outfall near Lake Stevens WWTP

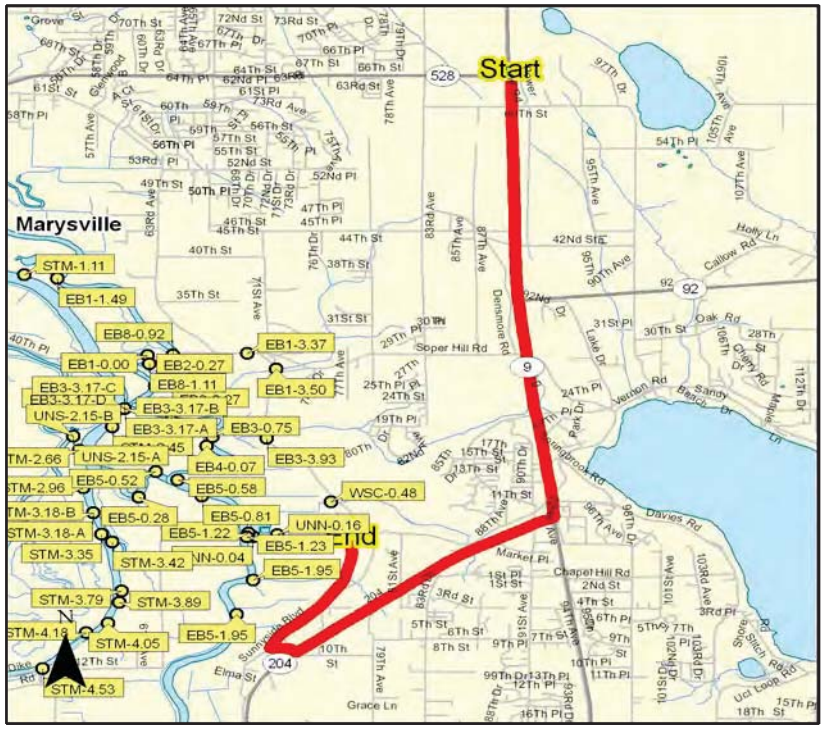
Image-104: Burri Creek looking downstream toward log boom and Ebey Slough

Site Contact Information

Responsible party or alternate contact:
Rick Lewellen, Lake Stevens Wastewater Treatment Plant, (W) 425-334-8588, Answering service can contact appropriate person for after hours plant access.
Lake Stevens Sewer District, (W) 425-334-8588, Lake Stevens Sewer District Office

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

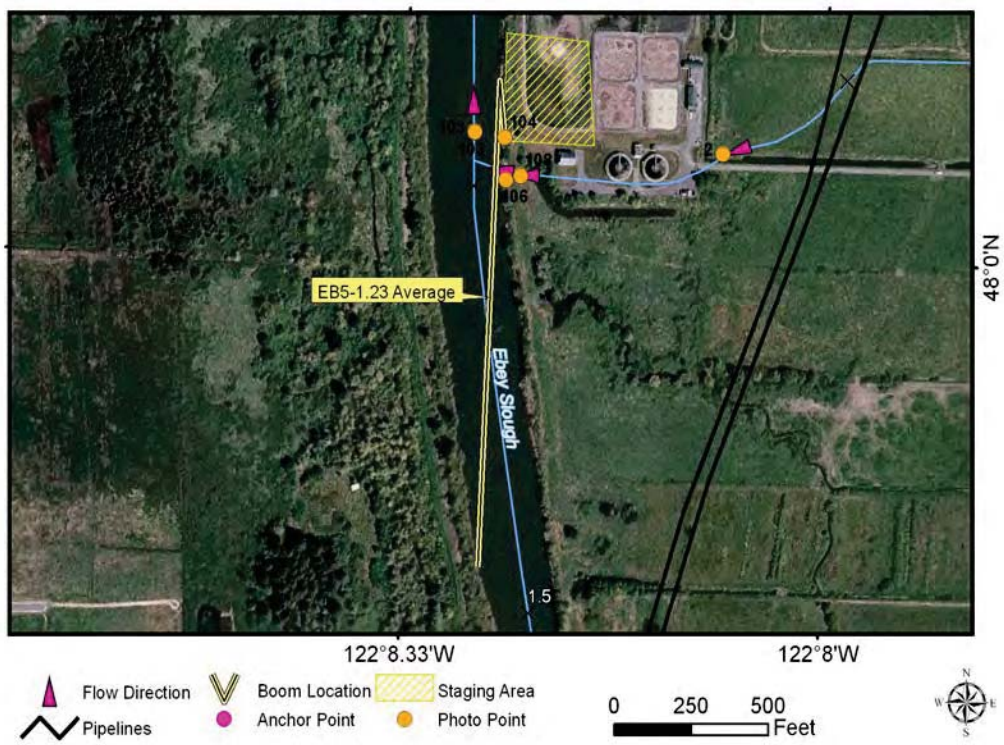
400 Sunnyside, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (1.61 Mile(s))
5. Turn right on 9th St SE (0.14 Mile(s))
6. Make sharp right on Sunnyside Blvd SE (0.93 Mile(s))

Arrive at 400 Sunnyside, Everett, WA, 98205, on the left

Site Lat/Long:	N 48° 0.039' / W 122° 8.262', Sector Map 7-3
Strategy Objective:	Collection - Collect product from Ebey Slough.
Implementation:	Utilize an anchoring system to anchor to LB shoreline (use anchor or natural anchor). Use hand bridles to maintain anchor angle. Deploy boom at 30° angle (or appropriate angle for current) to deflect product to RB. Use in stream anchor and RB outfall location as anchor points. Hand lines can be used in place of boom deflectors. Place approximately 150 ft of boom up shoreline in collection area for shoreline protection. Collect using skimmers. Use sorbent boom where appropriate for sheen control.
Site Safety Note:	Slippery banks, debris.
Staging Area:	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site. Lake Stevens WWTP is staffed from 6:30am to 2:30 am and access gates are open during those hours. Access to the slough is possible through the plant property, directly south of the ditch that borders the southern fence of the treatment plant.
Field Notes:	Rural, gravel, light traffic, tidal influence. Use WWTP as access to levee.
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	River side channel, Field Visit Width ~ 225ft, Field Visit Depth ~ 10ft



Suggested Equipment	
Quantity	**Description**
1525 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
1650 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
8 each	Boom Deflector(s)
60 ft	Chain
20 each	Drive Pin(s)
12 each	Hand Bridle(s)
1 each	Paravane(s)
60 ft	Sorbent Boom
1 each	Universal Skimmer(s)
Suggested Personnel	
1	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-103: Ebey Slough looking at Burri Creek outfall near Lake Stevens WWTP

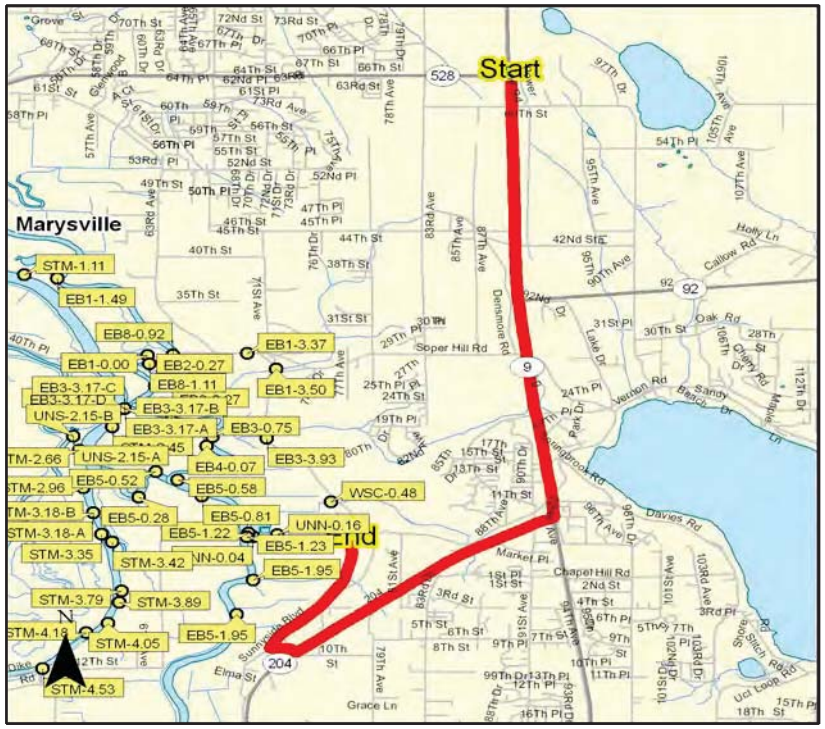
No Image Available

Site Contact Information

Responsible party or alternate contact:
Lake Stevens Sewer District, (W) 425-334-8588, Lake Stevens Sewer District Office
Rick Lewellen, Lake Stevens Wastewater Treatment Plant, (W) 425-334-8588, Answering service can contact appropriate person for after hours plant access.

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

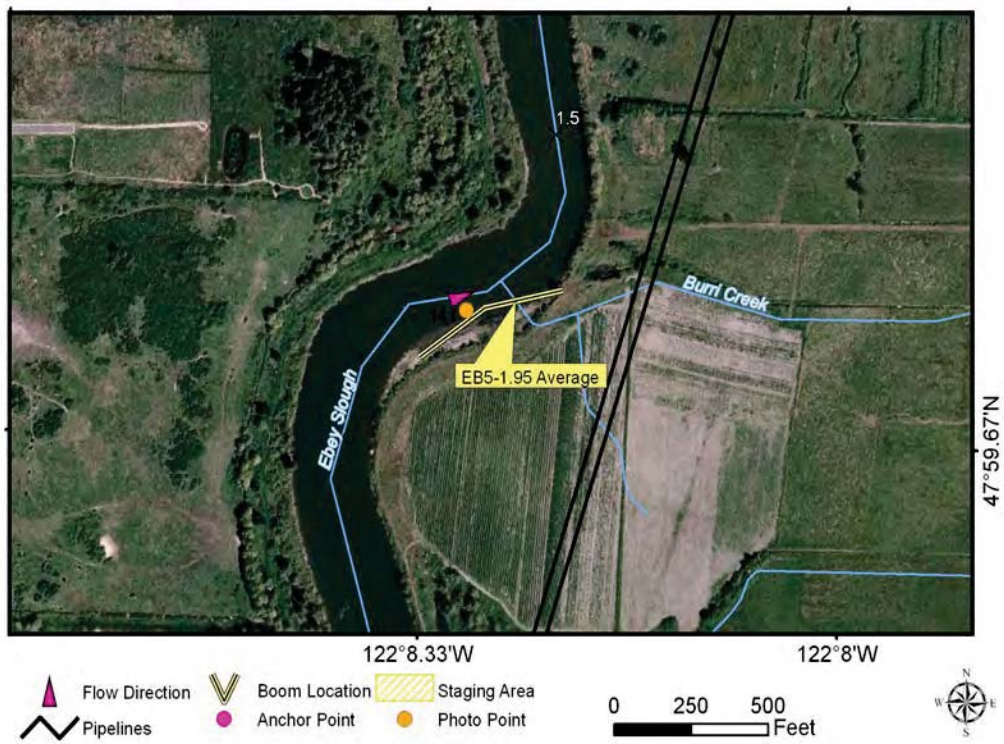
400 Sunnyside Blvd, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (1.61 Mile(s))
5. Turn right on 9th St SE (0.14 Mile(s))
6. Make sharp right on Sunnyside Blvd SE (0.93 Mile(s))

Arrive at 400 Sunnyside Blvd, Everett, WA, 98205, on the left

Site Lat/Long:	N 47° 59.725' / W 122° 8.258', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from emergent marsh.
Implementation:	Deploy boom along Ebey Slough wetland on southeastern bank. 20lb danforth is recommended to anchor apex of boom. Estimated time for deployment is 30 min. Use tree as natural anchor on the northeast end.
Site Safety Note:	Slippery surfaces, deep mud.
Staging Area:	Boat, laborers and equipment launch from SNH-1.49 staging (BL-301).
Field Notes:	Boat access only
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 255ft, Field Visit Depth ~ 11ft



Suggested Equipment	
Quantity	**Description**
150 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
540 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
20 ft	Chain
1 each	Danforth(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-141: Looking southeast at marsh wetland on right bank of Ebey Slough

Image-885: Marsh area on right bank of Ebey Slough, view towards SE.

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

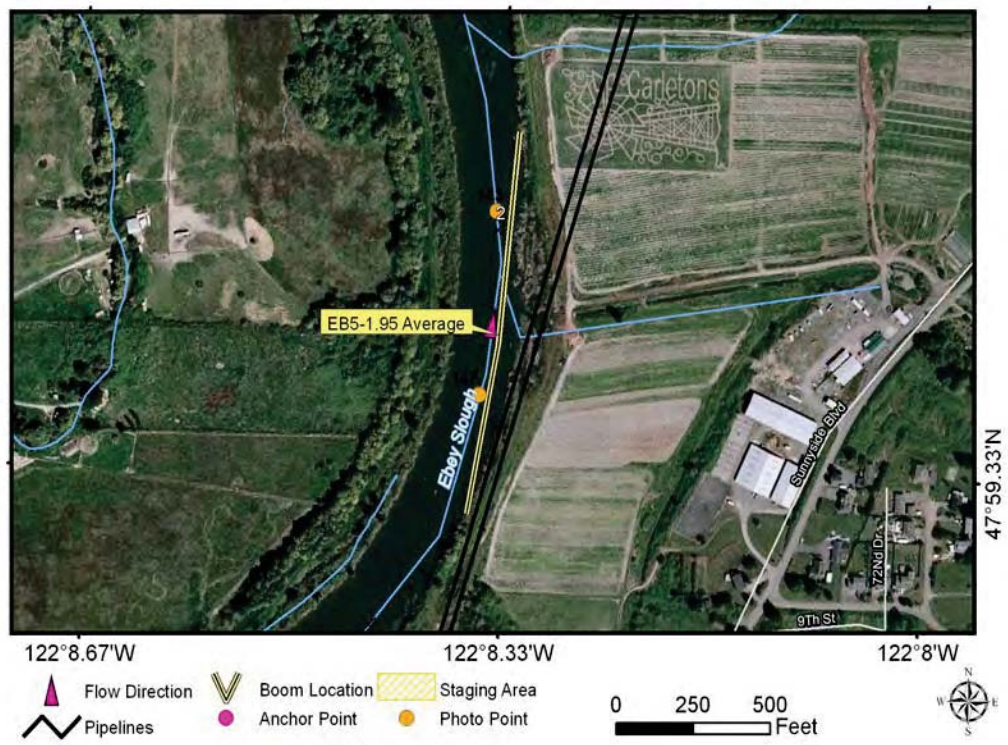
Closest Address:

4 Sunnyside Rd. SE (closest address), Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 59.506' / W 122° 8.323', Sector Map 7-3
Strategy Objective:	Exclusion, Collection - Exclude product from emergent marsh, or keep product in marsh if coming from Olympic Pipeline.
Implementation:	Deploy boom along Ebey Slough eastern bank, across wetland. Recommended anchors from deadhead upstream to bank on RB
Site Safety Note:	Slippery surfaces, mud
Staging Area:	Boat, equipment, and laborers launch from SNH-1.49 staging (BL-301).
Field Notes:	Boat access only.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 255ft, Field Visit Depth ~ 23ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
1200 ft	Sorbent Boom
2 each	Stake(s)
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-143: Looking at side channel wetland on right (east) bank, northern-most section

Image-147: Looking at side channel wetland on right (east) bank, southern-most section

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

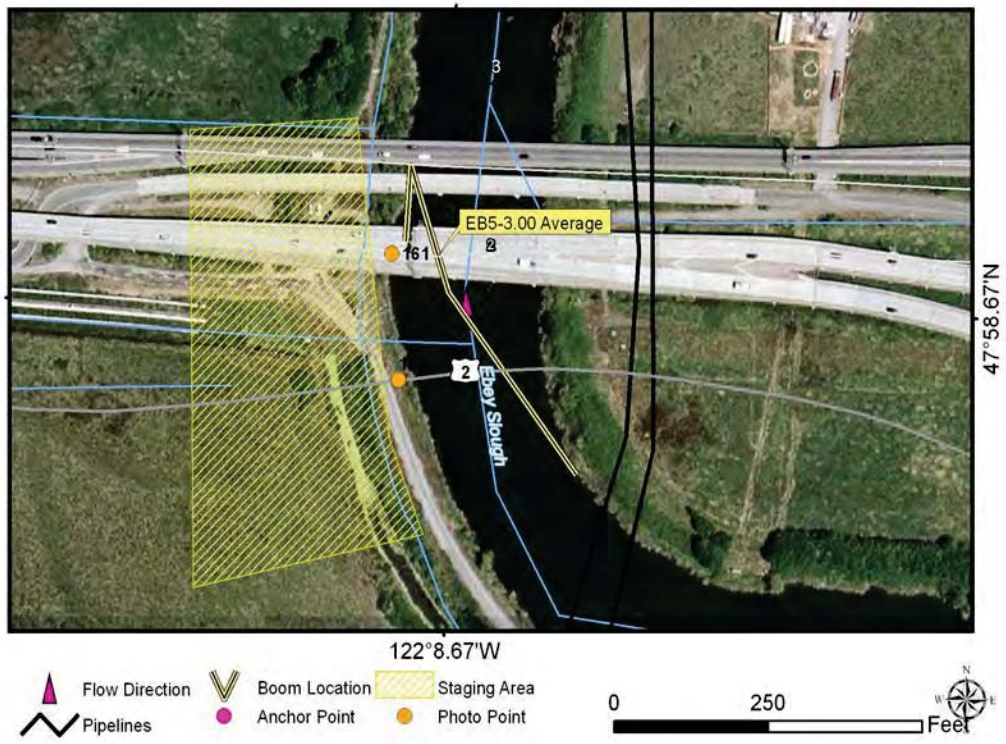
Closest Address:

630/830 Sunnyside Blvd SE, Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 58.690' / W 122° 8.717', Sector Map 7-4
Strategy Objective:	Collection - Collect product at river left bank (LB) just north of bridge.
Implementation:	Deploy from south bridge pier (second pier from west) to most north-west bridge pier and west bank. Then from east bank to S. bridge pier (second pier from west). Use hand bridle and lines to manage boom angle. Use boom for shoreline protection in collection area. Collect material and pump to Vac Truck. If incoming tide is strong, can use strategy in reverse and collect product on RB.
Site Safety Note:	Slips, trips, falls, falling debris from overhead traffic, numerous bridge piers could be hazardous for boats.
Staging Area:	Can stage and launch a boat at site. Hwy 2 frontage road going east from Everett, can drive under highway on west side, park at gate. Launch boat from south side of red gate saying "no trespassing". Recommend removing boat from water at boat launch, not at site.
Field Notes:	Gravel frontage road. Debris may stack up in area. At high tide vegetation control will be needed.
Resources Targeted:	shorebirds, salmonids (anadromous), marine birds, raptors, sensitive habitat - Wetlands bank is nearby
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 240ft, Field Velocity ~ 1.0MPH



Suggested Equipment	
Quantity	**Description**
10200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
825 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
20 each	Drive Pin(s)
15 each	Hand Bridle(s)
200 ft	Sorbent Boom
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/17/2006

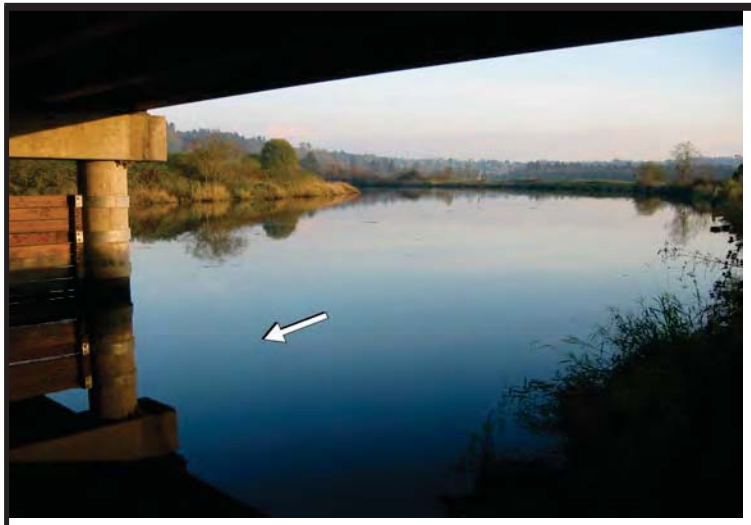


Image-161: Looking south at Ebey Slough from under Hwy 2 bridge

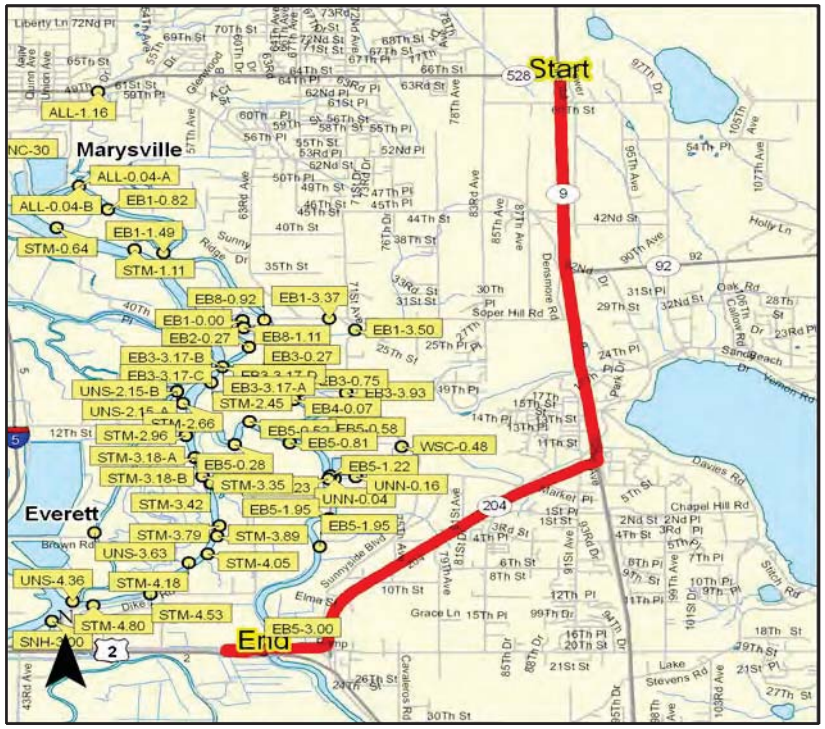
Image-162: Looking north at Hwy 2 bridge over Ebey Slough from left bank

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

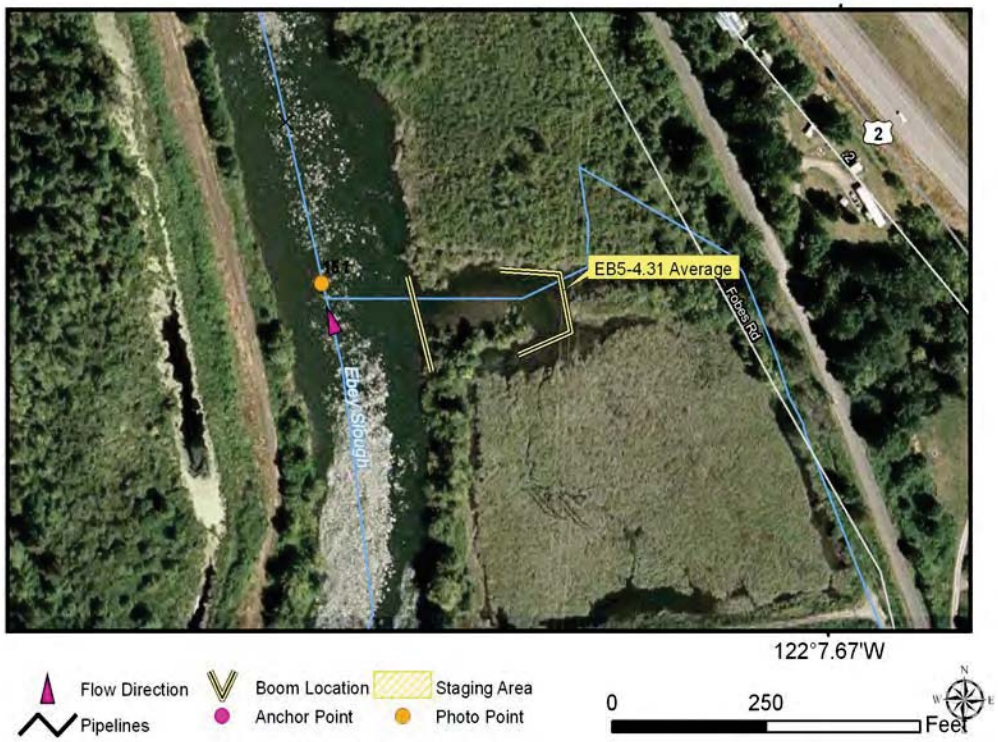
Hwy 2 and 20th St. SE, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (2.15 Mile(s))
5. Bear right onto ramp and go West on US 2 (0.51 Mile(s))
6. Continue on 20th St SE (0.17 Mile(s))
7. Make U-turn at Connecting Rd and go back on 20th St SE (0.23 Mile(s))

Arrive at Point (N 47° 58.69' / W 122° 8.717'), on the right

Site Lat/Long:	N 47° 57.819' / W 122° 7.728', Sector Map 7-4
Strategy Objective:	Exclusion, Collection - Contain spills that enter side channel from Hwy 2 or exclude side channel from product in Ebey Slough.
Implementation:	Stake hard boom across mouth of Hwy 2 feeder stream. Line the three fingers of the channel with sorbent boom. Jon (punt) boat or boat is recommended.
Site Safety Note:	Slips and falls, deep mud
Staging Area:	Boat and operator go to launch from SNH-6.10-staging, laborers and equipment go to site
Field Notes:	Rural, light traffic. Can access site from Fobes Rd., Snohomish Cty restoration site. Boat will have to be hand launched.
Resources Targeted:	shorebirds, sensitive habitat, special protection area - Snohomich Cnty wetlands restoration site.
Watercourse Description:	Slough, Ebey Slough side channel, Field Visit Width ~ 150ft, Field Velocity ~ 0.0MPH



Suggested Equipment	
Quantity	**Description**
60 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
150 ft	B3 - River Boom, or other appropriate type
1 each	Diaphragm Pump(s)
1 each	Jon Boat(s)
600 ft	Sorbent Boom
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-151: Side channel of Ebey Slough looking east

Image-884: Looking into side channel of Ebey Slough.

Site Contact Information

High Priority - contact immediate or before entering:
Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.

No Hydrograph Chart

No Flow Velocity Chart

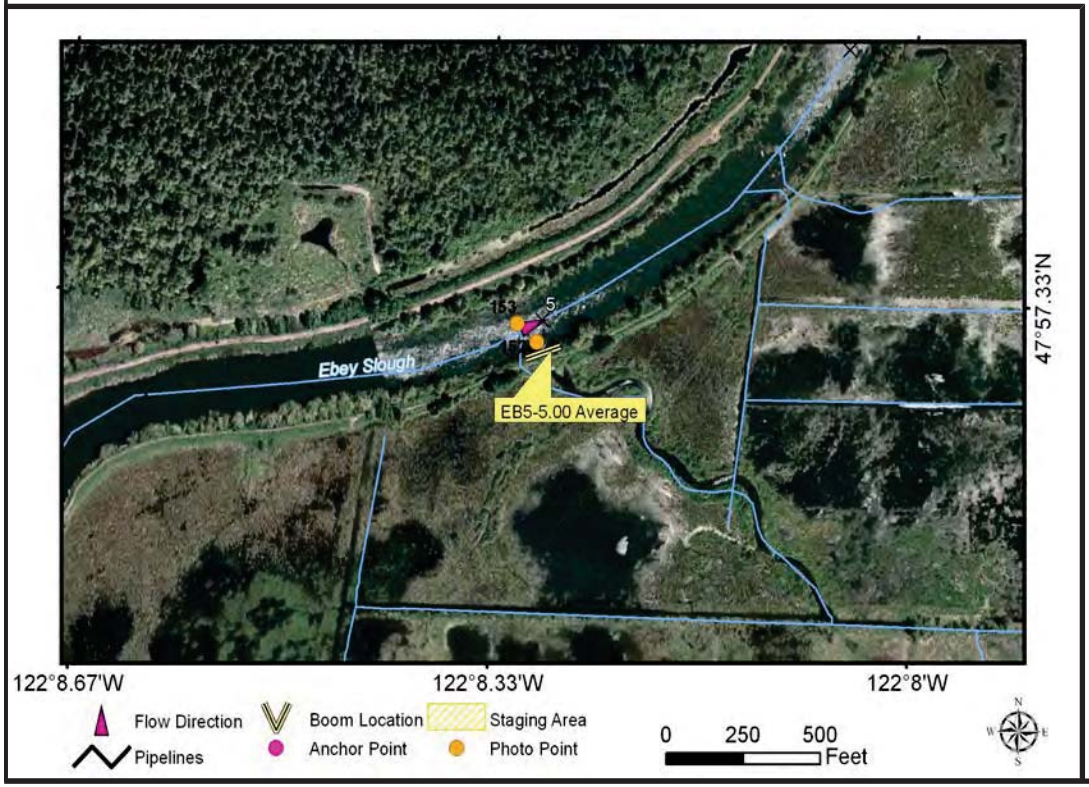
Closest Address:

3515 Fobes Road (across street), Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go North on SR 9 toward 56th St SE (0 Mile(s))
2. Turn left on 56th St SE (John Jump Rd) (0.45 Mile(s))
3. Continue on Fobes Rd (Old Snohomish Rd) (1.66 Mile(s))
Arrive at Point (N 47° 57.819' / W 122° 7.728'), on the left

Site Lat/Long:	N 47° 57.319' / W 122° 8.301', Sector Map 7-4
Strategy Objective:	Exclusion - Exclude product from side channel.
Implementation:	Anchor from shore to shore across side channel using natural anchors upstream of tide gate.
Site Safety Note:	Marshy ground.
Staging Area:	Boat, laborers and equipment launch from SNH-6.10-staging (Rotary Park Boat Launch).
Field Notes:	Rural.
Resources Targeted:	habitat restoration/mitigation site - Snohomish Cnty wetland restoration area
Watercourse Description:	River side channel, Field Velocity ~ 0.5MPH



Suggested Equipment	
Quantity	**Description**
100 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
100 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/18/2006

Image-152: Tide gate at side channel on right bank (southeast) of Ebey Slough

Image-153: Tide gate at side channel on right bank (southeast) of Ebey Slough

Site Contact Information

High Priority - contact immediate or before entering:
Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.

No Hydrograph Chart

No Flow Velocity Chart

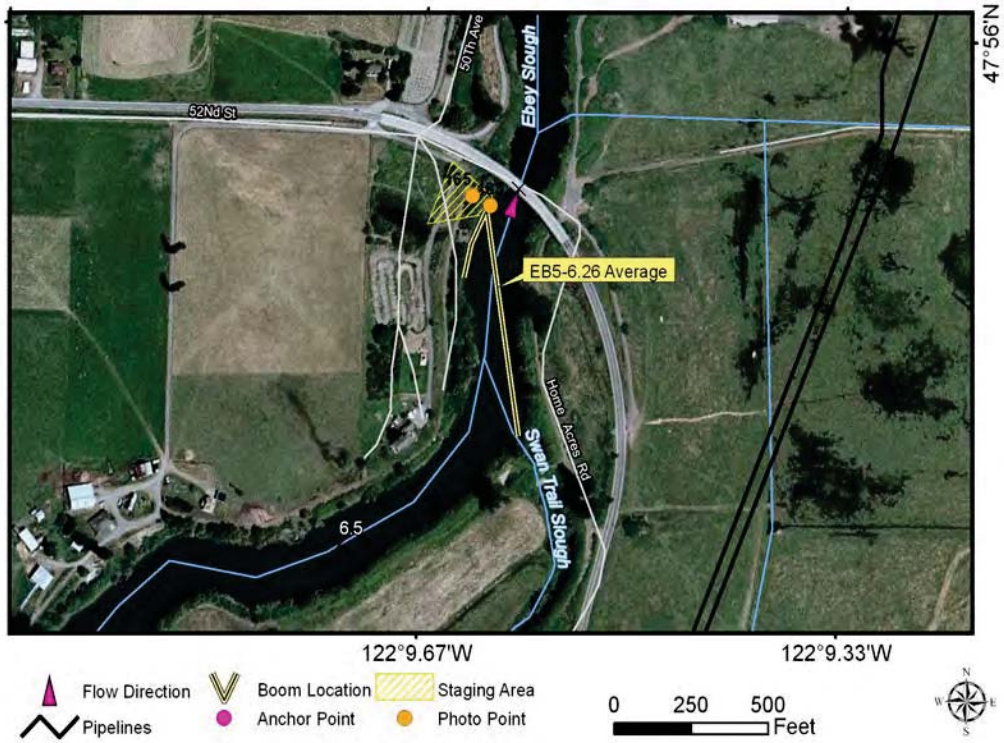
Closest Address:

7127 Skipley Rd. (closest address), Everett

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 56.909' / W 122° 9.636', Sector Map 7-4
Strategy Objective:	Collection - Collect product at river left.
Implementation:	Deploy boom across Ebey Slough to LB and up bank for shoreline protection. Bring boom across to anchor using paravane. Tie boom off to large maple tree just upstream of large rounded bush. Access and collection area at private deck. Deploy sorbent boom on downstream side of containment boom for sheen control.
Site Safety Note:	Steep bank
Staging Area:	Boat and operator go to SNH-6.10-staging, laborers and equipment go to site. Access point at private deck.
Field Notes:	Rural, gravel, light traffic. Hand launch boat.
Resources Targeted:	shorebirds, raptors
Watercourse Description:	Slough, Ebey Slough, muddy bank, Field Visit Width ~ 225ft, Field Velocity ~ 1.0MPH



Suggested Equipment	
Quantity	**Description**
1300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
750 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
1 each	Diaphragm Pump(s)
8 each	Hand Bridle(s)
1 each	Paravane(s)
675 ft	Sorbent Boom
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

Status: Visited and Tested 10/17/2006

Image-163: Looking south on Ebey Slough from left bank

Image-165: Access on left bank to Ebey Slough just north of private deck

Site Contact Information

High Priority - contact immediate or before entering:
Stephan and Katy Haugland, (W) 425-783-0307

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

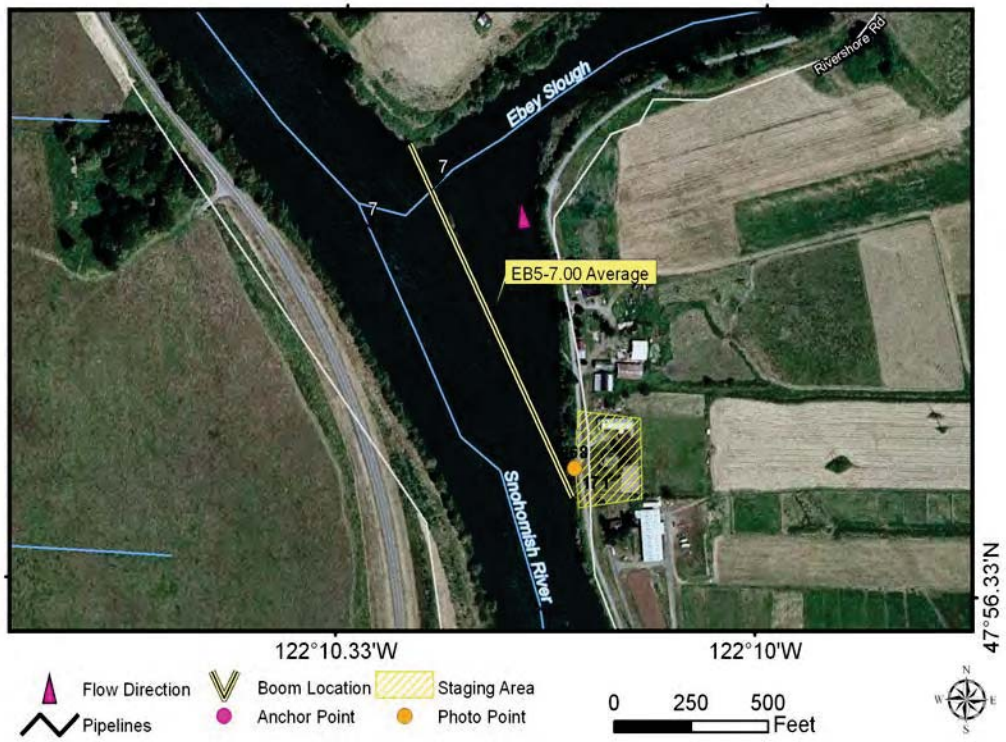
52nd Ave SE and 52nd Street SE, Everett, 98205

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go North on SR 9 toward 56th St SE (0 Mile(s))
2. Turn left on 56th St SE (John Jump Rd) (0.45 Mile(s))
3. Continue on Fobes Rd (Old Snohomish Rd) (0.52 Mile(s))
4. Turn left on 83rd Ave SE (0.43 Mile(s))
5. Turn right on 60th St SE (John Mack Rd) (1.86 Mile(s))
6. Turn right on Home Acres Rd (0.57 Mile(s))
7. Turn left on 50th Ave SE (0.01 Mile(s))
8. Turn left at Driveway to stay on 50th Ave SE (0.05 Mile(s))
9. Continue on 52nd Ave SE (0.03 Mile (s))

Arrive at Point (N 47° 56.909' / W 122° 9.636'), on the left

Site Lat/Long:	N 47° 56.385' / W 122° 10.121', Sector Map 7-4
Strategy Objective:	Exclusion, Collection - Exclude product from Ebey Slough during low tide, or collect during high tide (upstream flow) at Snohomish River RB.
Implementation:	Deploy boom from water across entrance to Ebey Slough. Tie-off to pilings upstream of large maple tree on RB (east bank), wrap trees with rubber for protection. Use 5,800 pound winch hooked up to battery to tighten boom across Slough mouth. Use 20" contractor boom (lake boom: 8 float, 18 skirt) and snatch block. Estimated time of deployment is 2hrs. Alternatively, could boom bank to bank at Slough mouth and in chevron configuration in River and collect using a marco skimmer.
Site Safety Note:	Steep banks
Staging Area:	Boat, equipment, and laborers go to SNH-1.49-staging (BL-301).
Field Notes:	Boat access only
Resources Targeted:	waterfowl, salmonids (anadromous), raptors
Watercourse Description:	River side channel, Ebey Slough and Snohomish River, Field Visit Width ~ 453ft, Field Velocity ~ 0.5MPH



Suggested Equipment	
Quantity	**Description**
800 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
2 each	1/2 in Rubber 3 ft x 1 ft
1200 ft	B3 - River Boom, or other appropriate type
2 each	Boat(s)
2 each	Hand Bridle(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Vac Truck(s)
1 each	Winch
Suggested Personnel	
2	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/17/2006

Image-168: Looking south from right bank of Snohomish River, Ebey Slough diverging to right

Image-171: Upstream anchor point on right bank of Snohomish River

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart

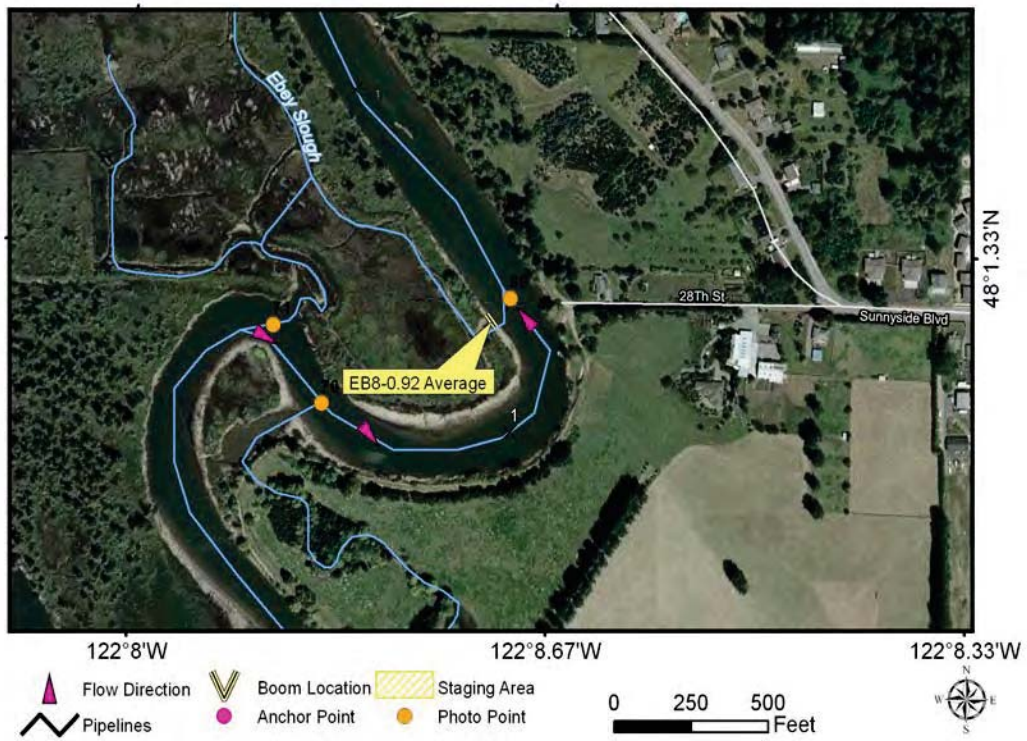
Closest Address:

6203 Rivershore Road, Snohomish, 98290

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 1.294' / W 122° 8.711', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from wetland.
Implementation:	Exclude product by placing boom parallel to river across mouth of tidal creek. There is a cabin right near dike on opposite bank from strategy. Permission to access this site has been given.
Site Safety Note:	Slippery banks, shallow at low tide, debris
Staging Area:	Boat, equipment and laborers launch from SNH-1.49-staging (BL-301).
Field Notes:	Boat access only
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Slough, Ebey Slough, Field Visit Width ~ 36ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
2 each	Hand Bridle(s)
50 ft	Sorbent Boom
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-69: Looking into wetland marsh on left bank from Ebey Slough

Image-883: Close view of wetland marsh on left bank from Ebey Slough.

Site Contact Information

Responsible party or alternate contact:
Jerry Paolson, Kristian Paulson and Associates, (W) 206-783-6708

No Hydrograph Chart

No Flow Velocity Chart

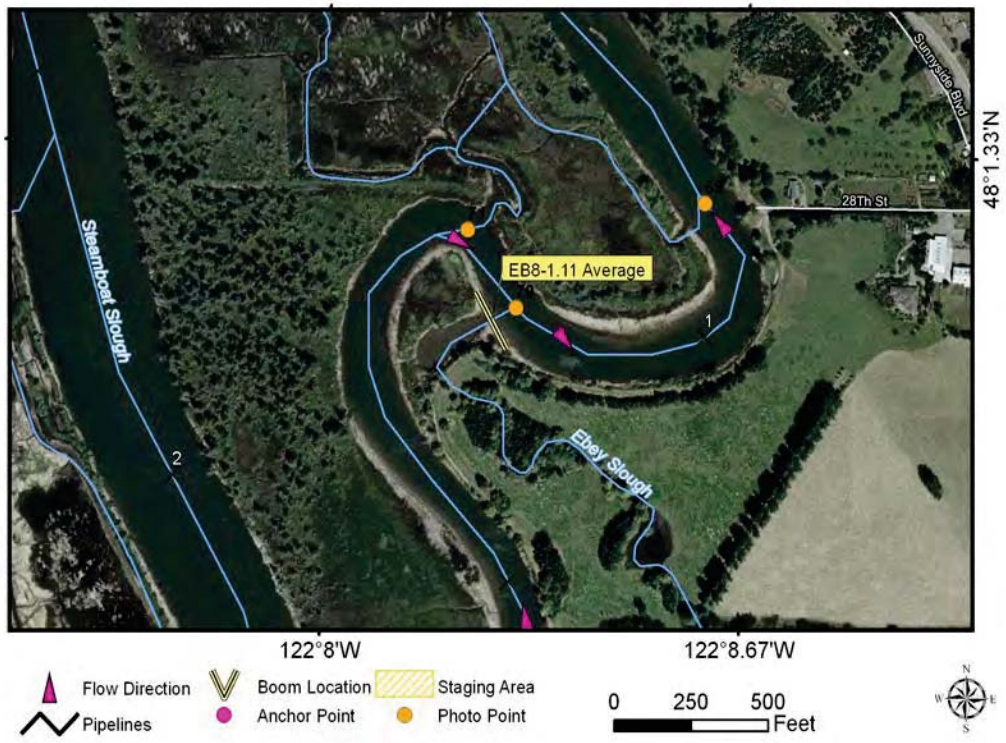
Closest Address:

93 28th St. SE (opposite bank of Ebey Slough), Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 1.233' / W 122° 8.856', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from tidal side channel.
Implementation:	Exclude product by placing boom parallel to river across mouth of tidal creek, anchor from shore to shore. Utilize sorbent boom for sheen control in channel. Sorbent boom length include length for using to plug small side channels on other side of Ebey Slough (requires boat to access other side).
Site Safety Note:	Steep rocky vegetated bamks
Staging Area:	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	Slough, Ebey Slough side channel, Field Visit Width ~ 100ft, Field Visit Depth ~ 3ft, Field Velocity ~ 0.0MPH, mud bottom, rip rap banks



Suggested Equipment	
Quantity	**Description**
200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-70: Looking into side channel (King Creek) on right bank from Ebey Slough

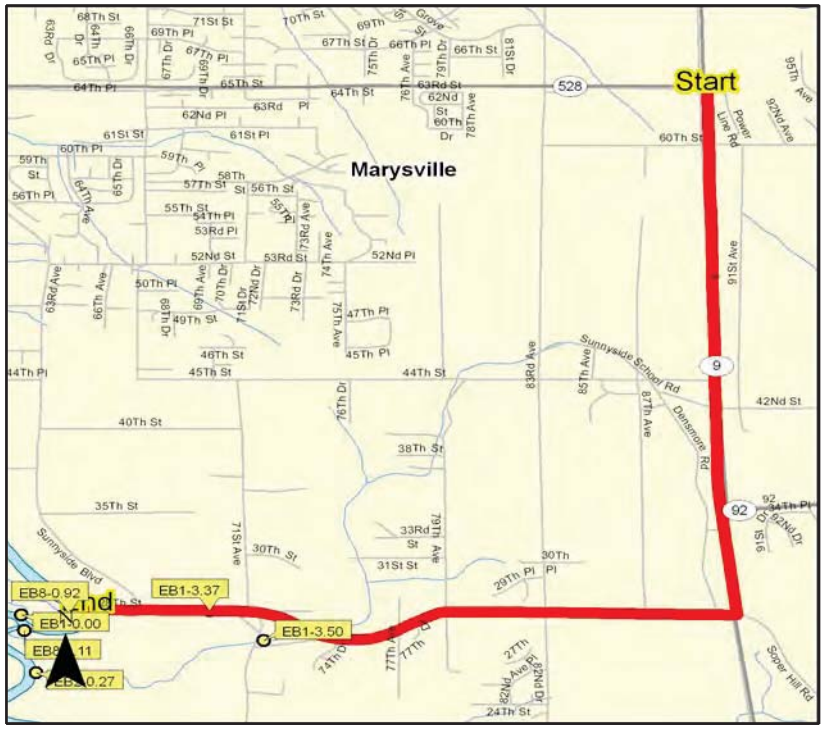
No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

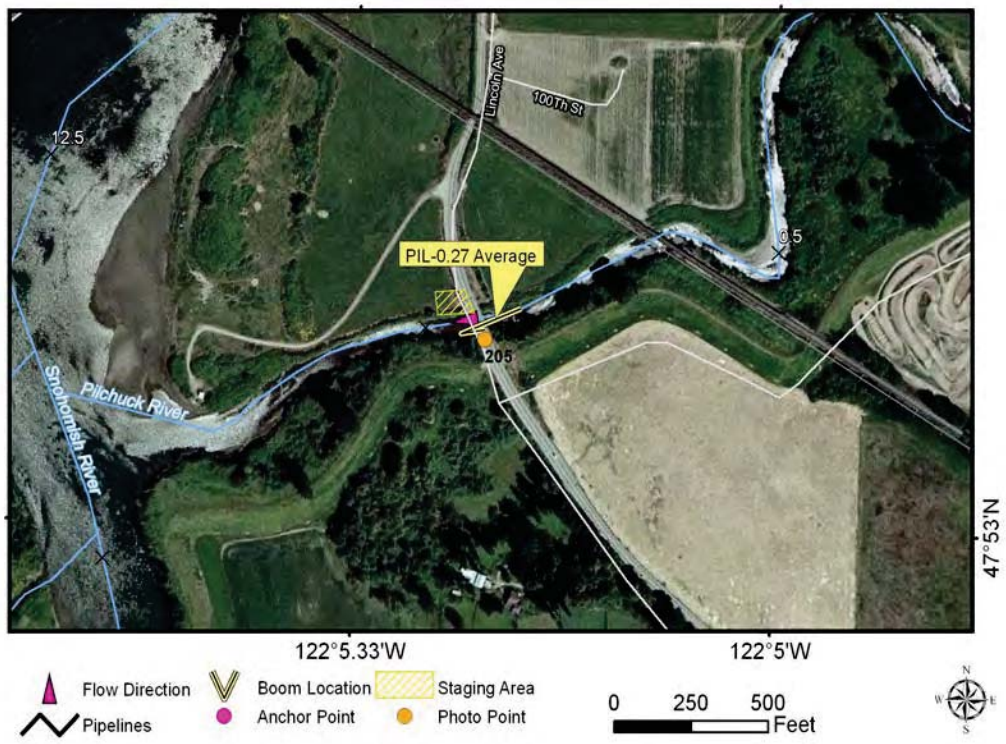
93 28th St. NE, Everett, 98201

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (2.21 Mile(s))
3. Turn right on Soper Hill Rd (1.26 Mile (s))
4. Continue on Sunnyside Blvd (0.26 Mile (s))
5. Continue on 28th St NE (Carlson Rd) (0.17 Mile(s))

Arrive at Point (N 48° 1.233' / W 122° 8.856'), on the left

Site Lat/Long:	N 47° 54.108' / W 122° 5.245', Sector Map 7-5
Strategy Objective:	Initial Containment - Collect product in Pilchuck River at river left.
Implementation:	Access river from the south side. Cross river using rope to pull boom upstream. Anchor boom from rock off point to eddy just downstream of path (west of bridge). Collect product to road. Pumps may be used in place of vac truck. Raft, Jon boat, or belly boat recommended. Clearing of knot weed on south bank will be required in preparation for emergency response.
Site Safety Note:	Steep path, slippery sand, traffic on bridge
Staging Area:	Laborers and equipment go to site. Access the river at south of Lincoln Bridge on west side. Block lane of road for staging, or stage from north west side on private cattle land. Land owner has not been contacted. Get permission for access to cattle ranch.
Field Notes:	Significant knotweed along banks, will need to be cleared prior to implementation. North side of river has a lot of fencing.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River without a dam, fast current, Field Visit Width ~ 27ft, Field Velocity ~ 3.6MPH, steep rip-rap banks



Suggested Equipment	
Quantity	**Description**
210 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
210 ft	B3 - River Boom, or other appropriate type
5 each	Hand Bridle(s)
1 each	Jon Boat(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
3	Laborer (s)
1	Supervisor (s)

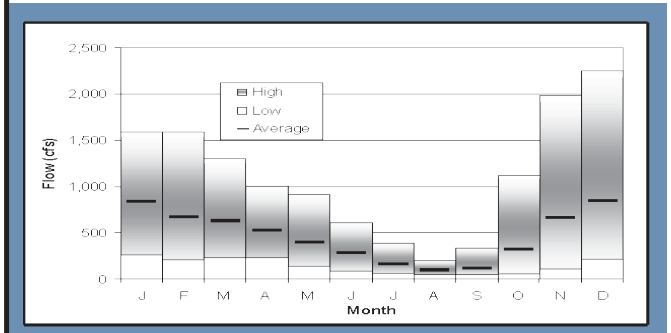
Status: Visited and Not Tested 10/17/2006

Image-204: Pilchuck River looking downstream from left bank under bridge

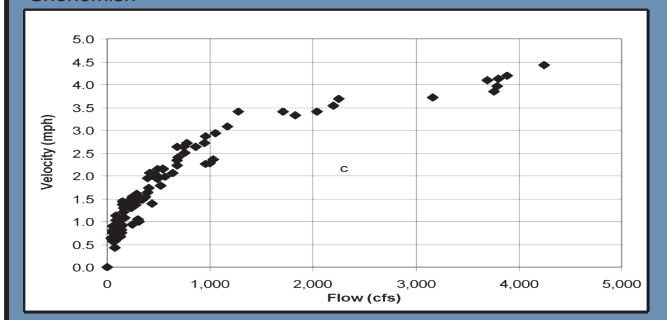
Image-205: Pilchuck River looking upstream from left bank under bridge

Site Contact Information

No contact information available.



Monthly Average Flow, 12155300 Pilchuck River near Snohomish



Average Velocity vs. Flow, 12155300 Pilchuck River near Snohomish

Closest Address:

10704 Old Snohomish Monroe Rd. (closest address), Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (1.08 Mile(s))
5. Turn left on 1st St (0.59 Mile(s))
6. Turn right on Lincoln Ave (0.33 Mile(s))
7. Continue on Old Snohomish Monroe Rd (0.15 Mile(s))

Arrive at 10704 Old Snohomish Monroe Rd. (closest address), Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 54.703' / W 122° 4.977', Sector Map 7-5
Strategy Objective:	Collection - Collect product and pump with vac truck.
Implementation:	Natural eddies may cause pooling just downstream of bridge and upstream of this strategy, check this option. Deploy boom from deadfall tree on LB approximately 140 yards across river almost to beach. Can walk boom across with chest waders. Extend boom approximately 20 yards up shoreline for protection. Use natural anchors. Use rope and hand bridles to maintain boom angle. No boat needed for implementation.
Site Safety Note:	Steep banks with sloughing. Down climbing of ladders required for bank access.
Staging Area:	Laborers and equipment go to site, no boat required.
Field Notes:	River access limited by riparian vegetation and steep banks
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River without a dam, Pilchuck River, Field Visit Width ~ 78ft, Field Visit Depth ~ 2ft, Field Velocity ~ 3.2MPH, Cobble bottom, soft vegetated banks

Suggested Equipment	
Quantity	**Description**
2400 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
480 ft	B3 - River Boom, or other appropriate type
60 ft	Floating Suction
5 each	Hand Bridle(s)
60 ft	Sorbent Boom
1 each	Vac Truck(s)
1 each	Weir Skimmer(s)
Suggested Personnel	
4	Laborer (s)
1	Supervisor (s)

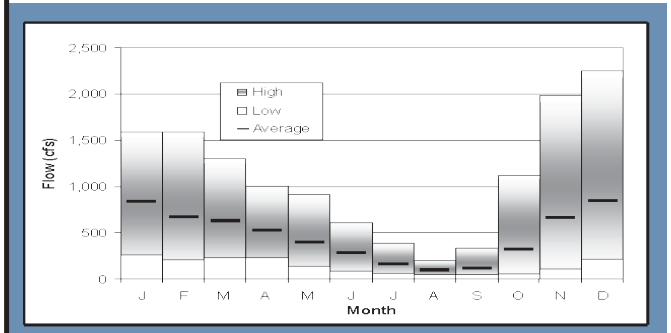
Status: Visited and Not Tested 10/17/2006

Image-188: Looking upstream on Pilchuck River from park on right bank

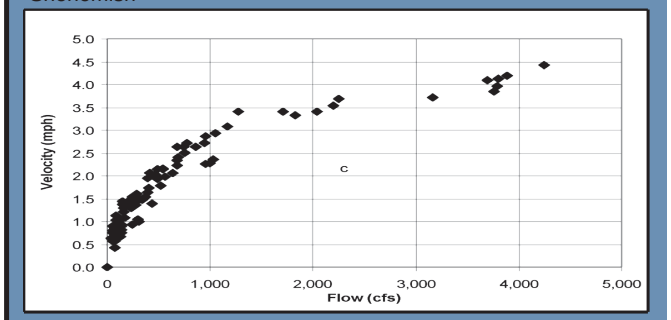
Image-189: Pilchuck River access from Pilchuck Recreation Area

Site Contact Information

Responsible party or alternate contact:
City of Snohomish Parks and Recreation, (W) 360-568-3115, Contact number for department.



Monthly Average Flow, 12155300 Pilchuck River near Snohomish



Average Velocity vs. Flow, 12155300 Pilchuck River near Snohomish

Closest Address:

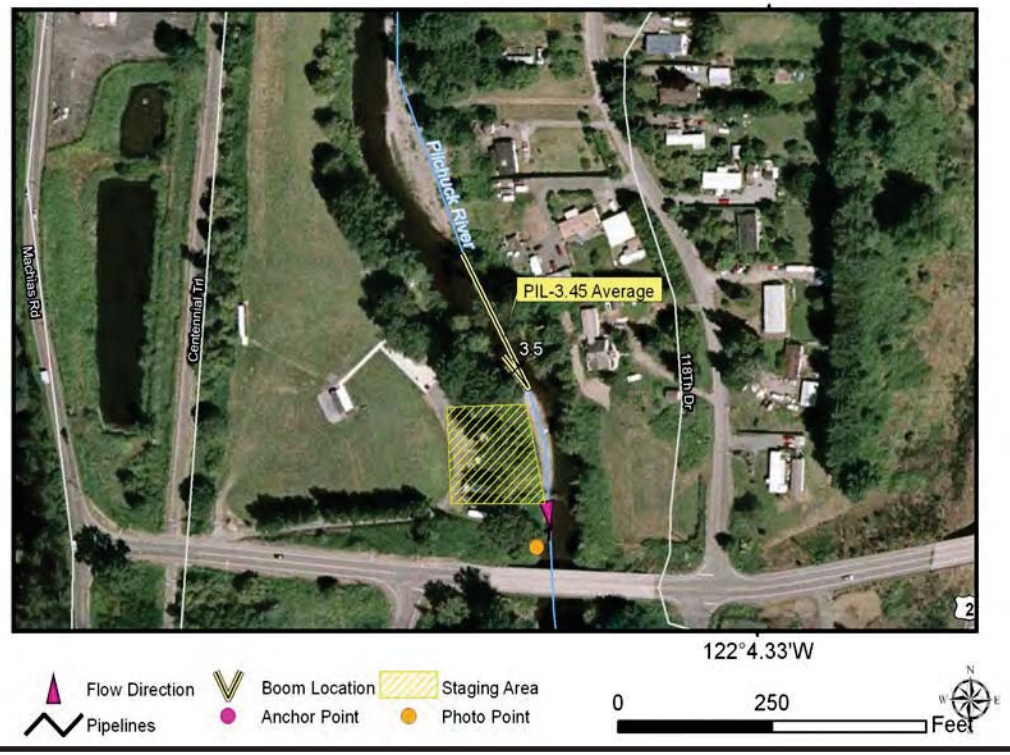
Pilchuck Recreation Area, Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (0.98 Mile(s))
5. Turn left on 2nd St (0.63 Mile(s))
6. Turn right on Cypress Ave (0.04 Mile (s))
7. Turn left on Pilchuck Pike Rd (0.07 Mile (s))
8. Continue on Parking Lot (0.06 Mile(s))

Arrive at Point (N 47° 54.703' / W 122° 4.977'), on the right

Site Lat/Long:	N 47° 56.124' / W 122° 4.435', Sector Map 7-4
Strategy Objective:	Collection - Collection in Pilchuck River, remove product from water.
Implementation:	Boom from deadfall on LB to beach on RB. Extend shoreline protection back up beach to protect and aid collection. Use hand lines to control river boom. Several natural anchors along river. No boat needed for implementation.
Site Safety Note:	Fast water, blackberries.
Staging Area:	Laborers and equipment go to site. Access LB via bridge and 118th Dr SE or RB from American Legion property on Three Lakes Road. Can launch a punt boat from here, but no boat launch. Gate to park may be locked call contact for access.
Field Notes:	Rural, gravel, light traffic.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River without a dam, Pilchuck River, Field Visit Width ~ 60ft, Field Velocity ~ 3.0MPH, cobble bottom



Suggested Equipment	
Quantity	**Description**
600 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
510 ft	B3 - River Boom, or other appropriate type
1 each	Diaphragm Pump(s)
5 each	Hand Bridle(s)
5 each	Stake(s)
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
2 each	Wing Anchor(s)
Suggested Personnel	
5	Laborer (s)
1	Supervisor (s)

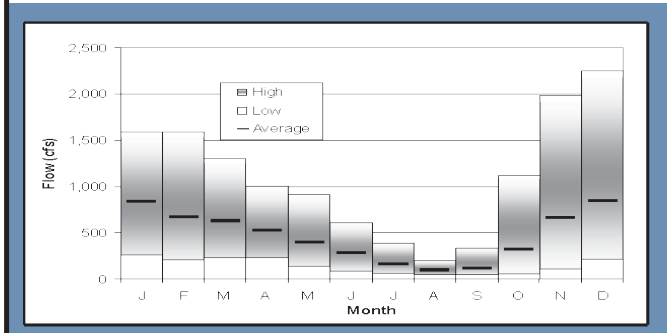
Status: Visited and Not Tested 10/20/2006

Image-1: Pilchuck River looking upstream (north)

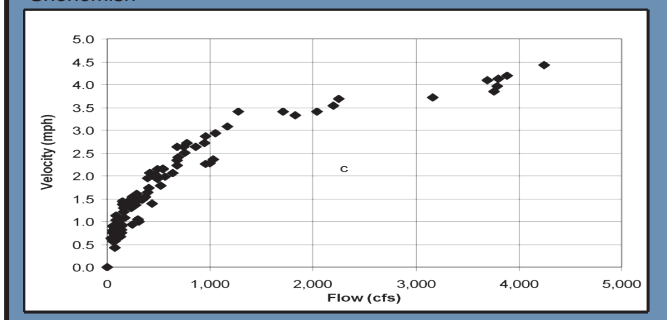
No Image Available

Site Contact Information

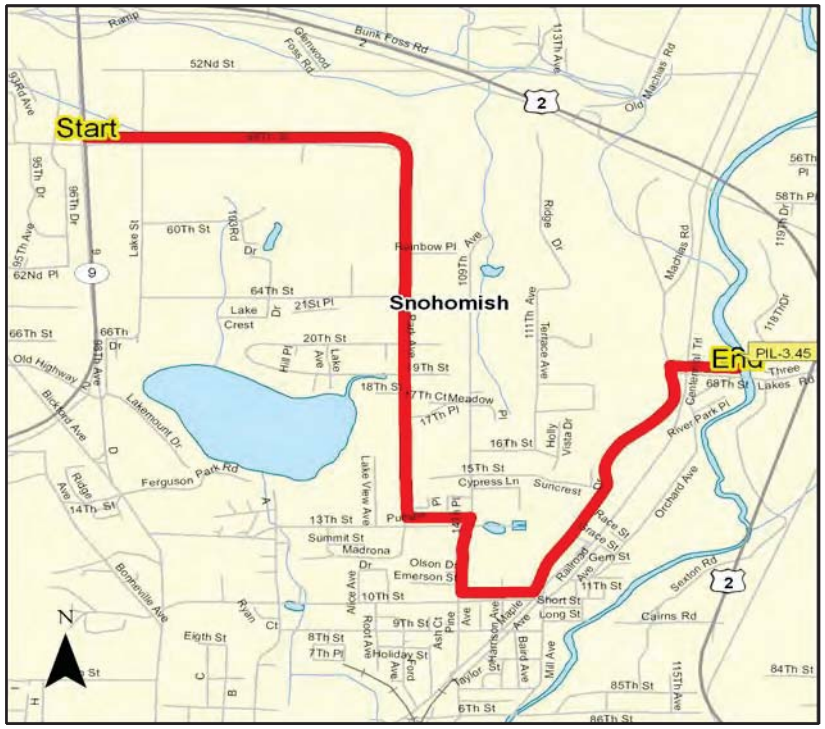
High Priority - contact immediate or before entering:
Joe Carlson, American Legion, (W) 360 862-9506



Monthly Average Flow, 12155300 Pilchuck River near Snohomish



Average Velocity vs. Flow, 12155300 Pilchuck River near Snohomish



Closest Address:

16111 Three Lakes Road, Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go North on SR 9 toward 56th St SE (0 Mile(s))
2. Turn right on 56th St SE (John Jump Rd) (0.6 Mile(s))
3. Continue on 107th Ave SE (Park Ave) (0.64 Mile(s))
4. Continue on Park Ave (Hill Rd) (0.6 Mile(s))
5. Turn left on 13th St (0.12 Mile(s))
6. Make sharp right on Pine Ave (Fair St) (0.25 Mile(s))
7. Turn left on 10th St (0.14 Mile(s))
8. Turn left on Maple Ave (0.37 Mile(s))
9. Continue on S Machias Rd (0.44 Mile (s))
10. Turn right on 3 Lakes Rd (Three Lakes Rd) (0.13 Mile(s))

Arrive at Point (N 47° 56.124' / W 122° 4.435'), on the right

Site Lat/Long:	N 48° 3.325' / W 122° 11.535', Sector Map 7-1
Strategy Objective:	Collection - Collection at RB during high tide.
Implementation:	Collect product approximately 200 yards upstream of Rte 528 bridge on RB (right bank) during high tide. Anchor from shore near bridge RB to LB shore. Extend boom protection approximately 50 ft up shoreline in collection area. Place sorbent boom on downstream side of boom for sheen control. Jon boat is recommended. Exact boom placement will depend on tide.
Site Safety Note:	Unstable banks, muddy
Staging Area:	Stage at corner of Marine Drive and 27th Ave NE in parking lot. Vac Truck for collection should be parked on bridge, one lane of traffic must be blocked. No large boat launch here.
Field Notes:	Urban, paved, heavy traffic on Marine Dr., light traffic on 66th. Banks are unstable, slippery, and muddy.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	River with tidal influence, Quilceda Creek, Field Visit Width ~ 120ft, Field Velocity ~ 1.0MPH

Suggested Equipment	
Quantity	**Description**
450 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
405 ft	B3 - River Boom, or other appropriate type
1 each	Diaphragm Pump(s)
2 each	Hand Bridle(s)
1 each	Jon Boat(s)
40 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
2 each	Wing Anchor(s)
Suggested Personnel	
5	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

Image-45: Quilceda Creek looking downstream (south)

Image-46: Quilceda Creek looking upstream (north)

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

Marine Drive and 27th Ave NE, Marysville, 98271

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Continue on Marine Dr NE (Tulalip Rd) (0.4 Mile(s))
Arrive at Point (N 48° 3.325' / W 122° 11.535'), on the right

Site Lat/Long:	N 48° 3.325' / W 122° 11.535', Sector Map 7-1
Strategy Objective:	Collection - Collection at LB during low tide.
Implementation:	Collect product upstream of Rte 528 bridge on LB (left bank) during low tide. Anchor from upstream RB to downstream LB shore near power line. Extend boom protection ~ 50 ft up shoreline in collection area. Jon boat is recommended. Exact boom placement will depend on tide.
Site Safety Note:	Unstable banks, muddy
Staging Area:	Stage at corner of Marine Drive and 27th Ave NE in parking lot. Vac Truck for collection should be parked on bridge, one lane of traffic must be blocked. No large boat launch here.
Field Notes:	Urban, paved, heavy traffic on Marine Dr., light traffic on 66th. Banks are unstable, slippery, and muddy.
Resources Targeted:	general fish & wildlife resources, sensitive habitat, shorebirds
Watercourse Description:	Creek, Quilceda Creek, Field Visit Width ~ 120ft, Field Velocity ~ 1.0MPH

Suggested Equipment	
Quantity	**Description**
480 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
405 ft	B3 - River Boom, or other appropriate type
1 each	Diaphragm Pump(s)
2 each	Hand Bridle(s)
1 each	Jon Boat(s)
40 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
2 each	Wing Anchor(s)
Suggested Personnel	
5	Laborer (s)
1	Supervisor (s)

Status: Not Visited

Image-45: Quilceda Creek looking downstream (south)

Image-46: Quilceda Creek looking upstream (north)

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

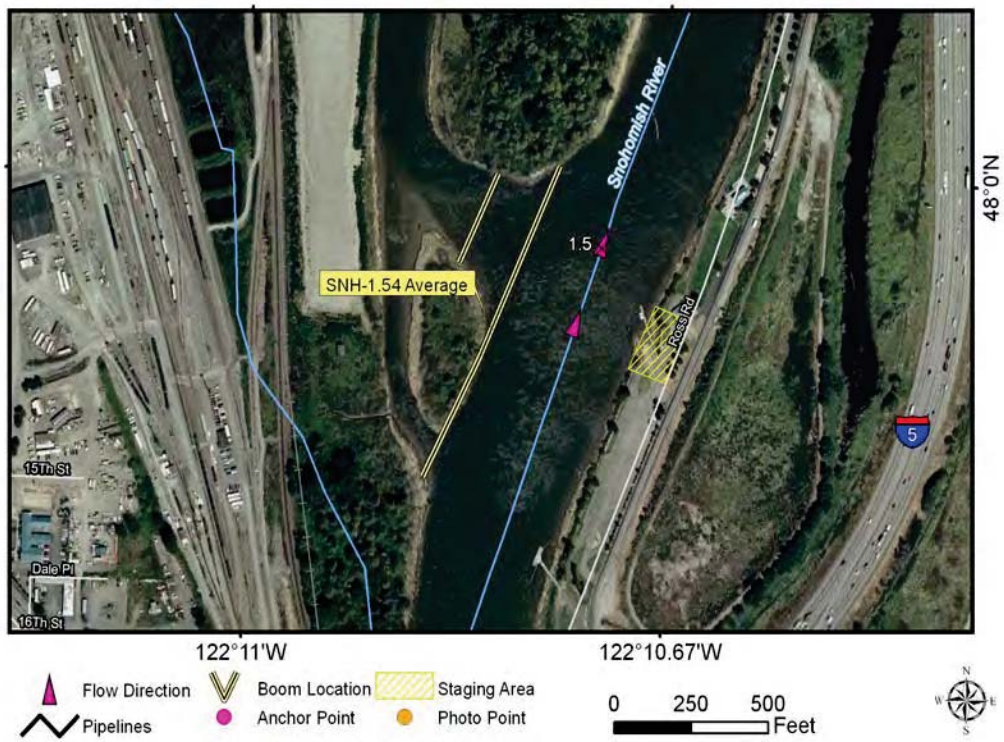
Closest Address:

Marine Drive and 27th Ave NE, Marysville, 98271

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Continue on Marine Dr NE (Tulalip Rd) (0.4 Mile(s))
Arrive at Point (N 48° 3.325' / W 122° 11.535'), on the right

Site Lat/Long:	N 48° 0.006' / W 122° 10.754', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from draws and islands across river from boat launch.
Implementation:	Deploy boom across draws on opposite bank from boat launch. Implement strategy from the water. Recommend using 20-lb danforths to anchor boom except at north-most bank where natural anchors are available.
Site Safety Note:	Boat traffic.
Staging Area:	Boat, laborers and equipment launch from across the river at SNH-1.49-staging (BL-301).
Field Notes:	Across Snohomish River from boat launch, access by boat.
Resources Targeted:	shorebirds, salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River



Suggested Equipment	
Quantity	**Description**
1200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1050 ft	B3 - River Boom, or other appropriate type
2 each	Boat(s)
120 ft	Chain
3 each	Danforth(s)
3 each	Hand Bridle(s)
300 ft	Sorbent Boom
4 each	Towing Bridle(s)
Suggested Personnel	
2	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

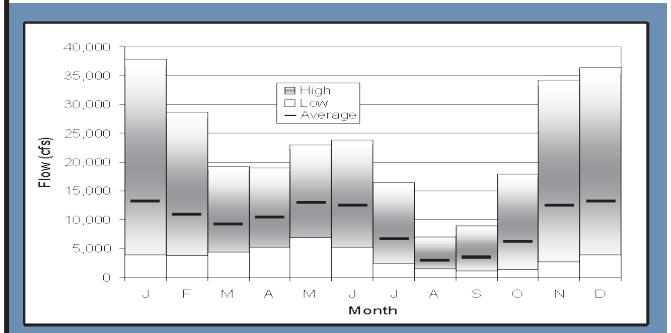
Status: Visited and Not Tested 10/18/2006

No Image Available

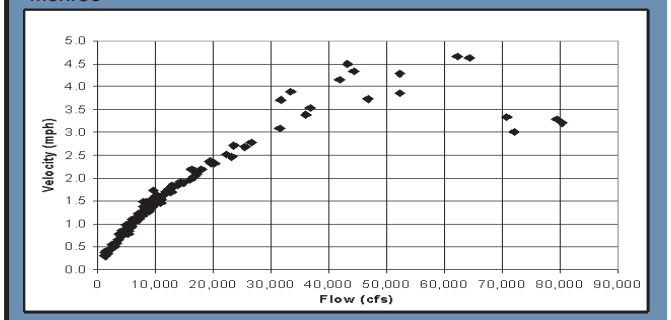
No Image Available

Site Contact Information

Responsible party or alternate contact:
City of Everett, Parks & Recreation Dept., (W) 425-257-8300



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe

Closest Address:

16th St. (closest address), Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 59.656' / W 122° 10.777', Sector Map 7-3
Strategy Objective:	Collection, Diversion - Divert river at inside of bend to collection area at RB at low tide.
Implementation:	During low tide when river velocity is high, only divert 1/3 of river width. Deploy from eastern bridge pier with bridle to paravane, to boom, to RB just upstream of rowing boathouse. Anchor using #12 SARCA. A closed chevron to a marco skimmer may be applicable at this site but would need to be tested during low flow.
Site Safety Note:	Fast moving water, other boats, falling debris close to bridge pier
Staging Area:	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site.
Field Notes:	Urban, paved, light traffic.
Resources Targeted:	shorebirds, marine mammals, salmonids (anadromous), sensitive habitat
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 345ft, Field Visit Depth ~ 23ft, mud and rocks

Suggested Equipment	
Quantity	**Description**
1800 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
1125 ft	B3 - River Boom, or other appropriate type
4 each	Boat(s)
1 100 ft section(s)	Bridge Pier Bridle(s)
1 each	Diaphragm Pump(s)
12 each	Drive Pin(s)
9 each	Hand Bridle(s)
1 each	Paravane(s)
200 ft	Sorbent Boom
1 each	Universal Skimmer(s)
Suggested Personnel	
4	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

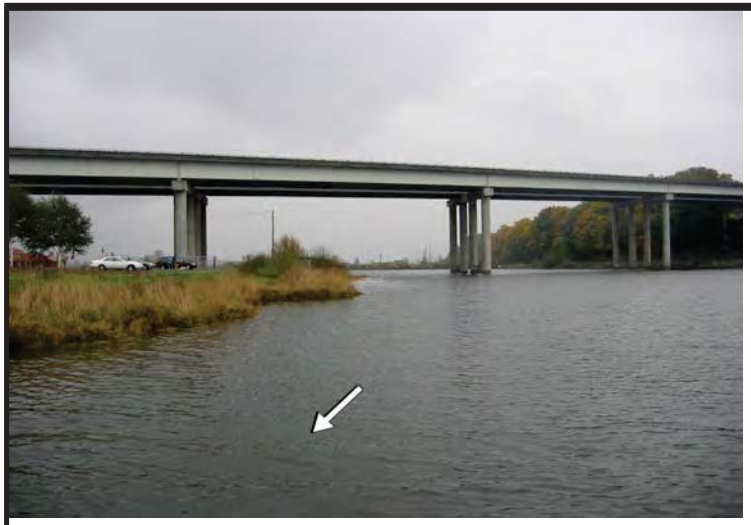
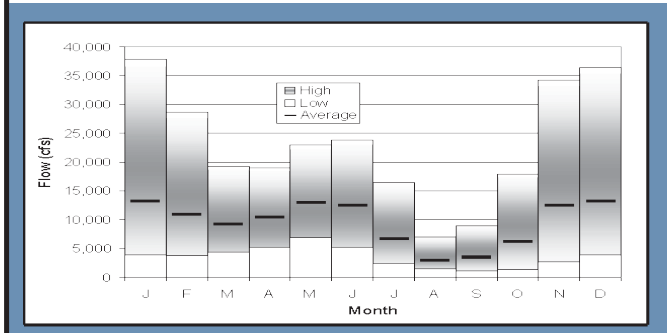


Image-137: Snohomish River looking upstream at I-5 bridge from near right bank

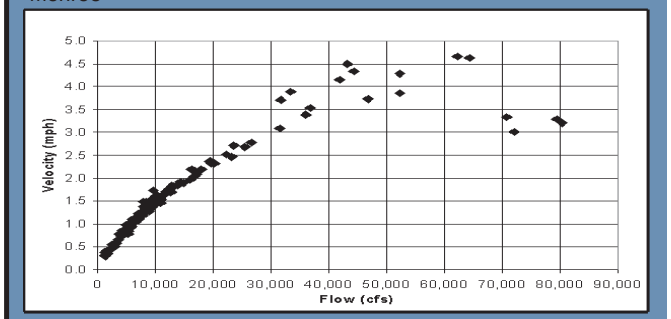
Image-138: Right bank of Snohomish River at Langus Riverfront Park

Site Contact Information

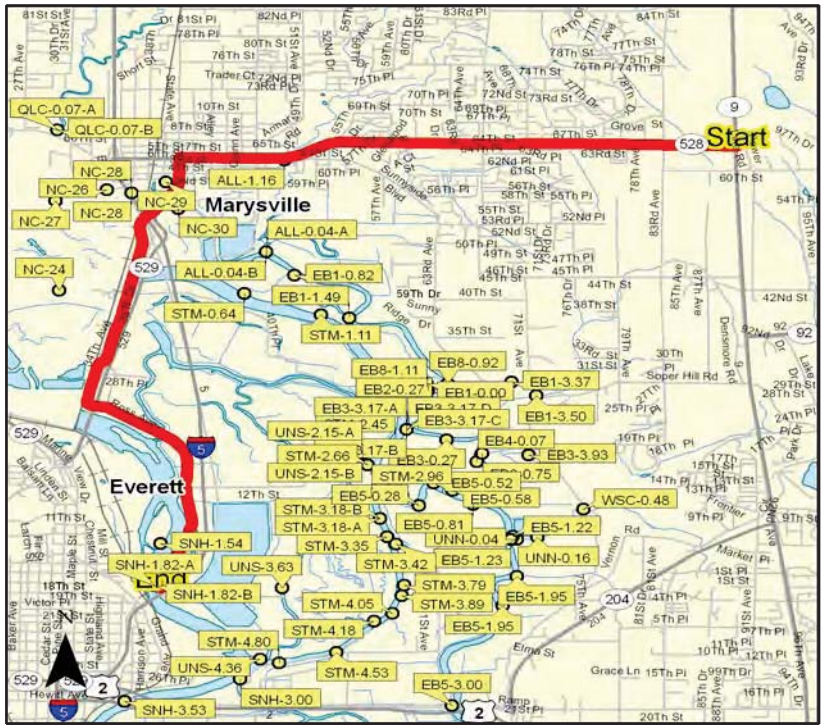
Responsible party or alternate contact:
City of Everett, Parks & Recreation Dept., (W) 425-257-8300



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

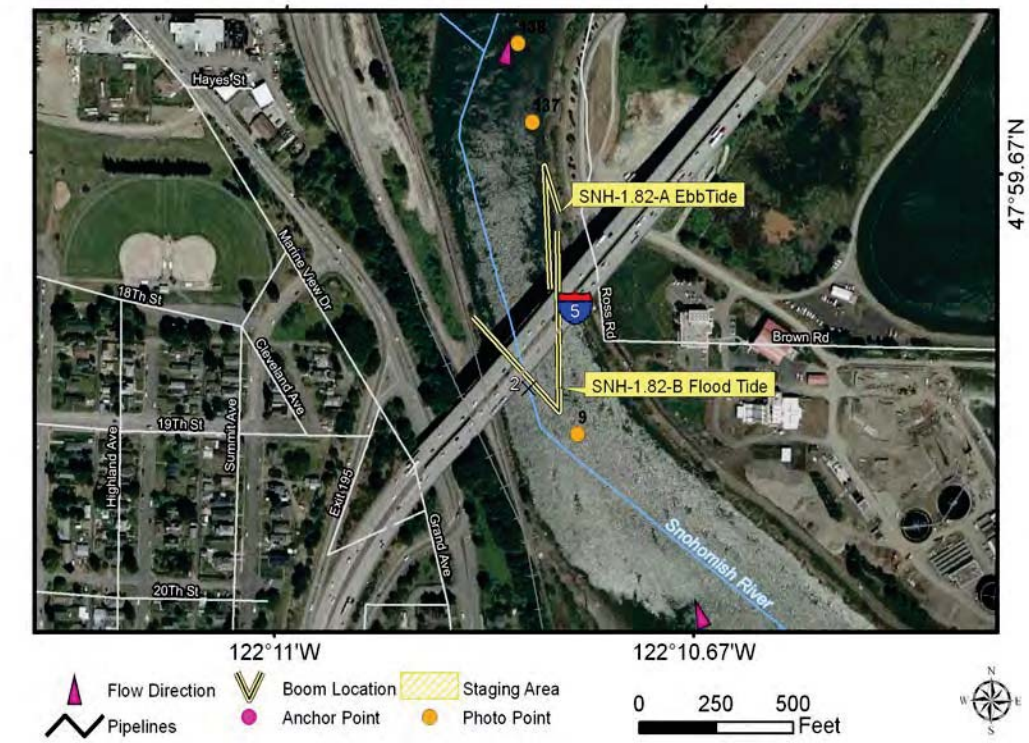
601 Ross Ave, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile(s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (1.98 Mile(s))

Arrive at 601 Ross Ave, Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 59.656' / W 122° 10.777', Sector Map 7-3
Strategy Objective:	Collection - Collect product in Snohomish River during high tide.
Implementation:	Deploy boom in closed chevron under bridge and attach 2 marco skimmers at V apex for product collection. Will need 2 work boats in addition to skimmers. During low tide, may be able to reverse this configuration and continue collection, but it should be tested.
Site Safety Note:	Fast moving water, other boats, falling debris close to bridge pier
Staging Area:	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to site.
Field Notes:	Urban, paved, light traffic.
Resources Targeted:	salmonids (anadromous), marine mammals
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 345ft, Field Visit Depth ~ 23ft, mud and rock



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	4 x 30 ft Cable Slings
1380 ft	B3 - River Boom, or other appropriate type
4 each	Boat(s)
2 each	Marco Skimmer(s)
4 each	Paravane(s)
400 ft	Sorbent Boom
Suggested Personnel	
4	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

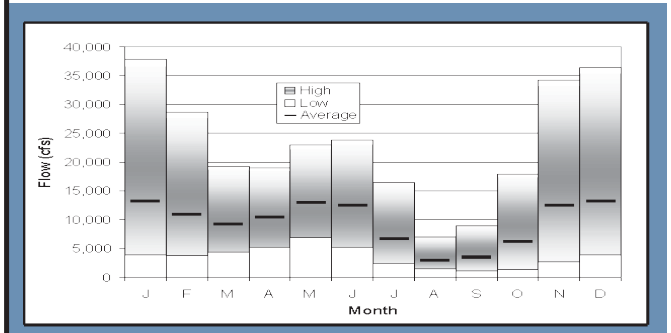
Status: Visited and Not Tested 10/20/2006

Image-9: Snohomish River under I-5 looking downstream

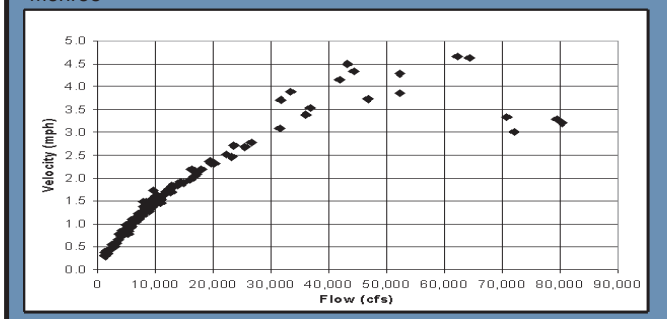
Image-139: Snohomish River looking upstream at I-5 bridge from near right bank

Site Contact Information

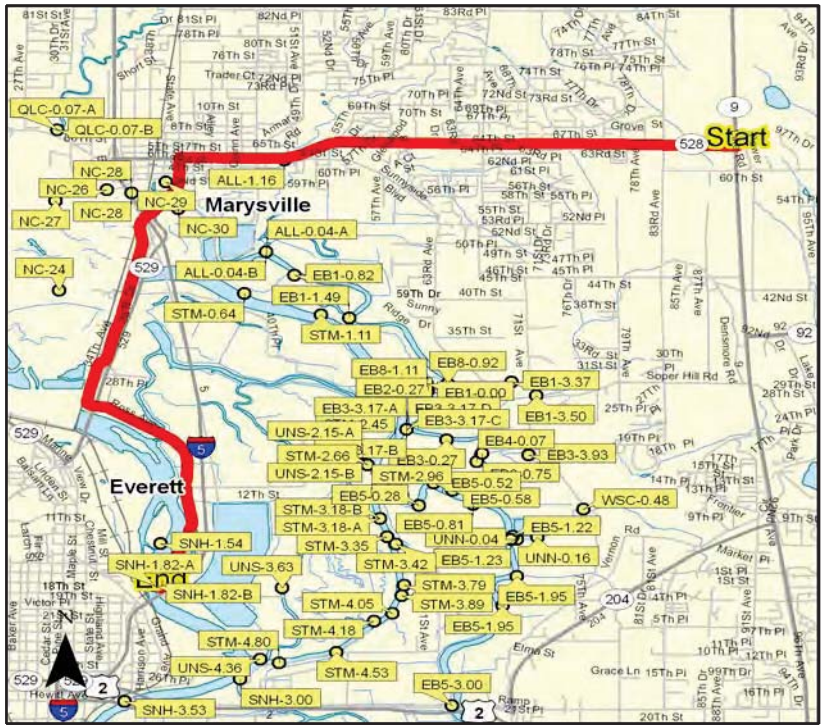
Responsible party or alternate contact:
City of Everett, Parks & Recreation Dept., (W) 425-257-8300



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

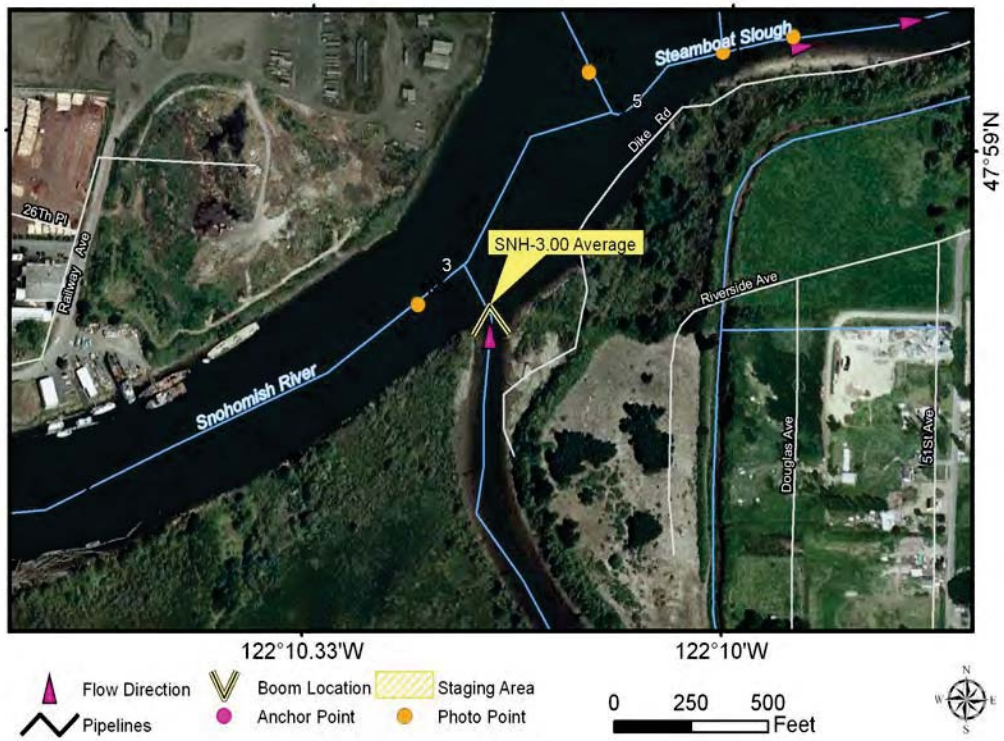
601 Ross Ave, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile (s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (1.98 Mile(s))

Arrive at 601 Ross Ave, Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 58.917' / W 122° 10.189', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from Deadwater Slough.
Implementation:	Deploy river boom in closed chevron formation using onshore anchors (tree stump, barge). Site is near confluence of Union Slough and Steamboat Slough. Use #12 SARCA.
Site Safety Note:	Slippery banks, mud, boat wreckage
Staging Area:	Laborers travel to site, boat, operator and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Urban, paved, light traffic. Site is near confluence of Union Slough and Steamboat Slough.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	Slough, Deadwater Slough, Field Visit Width ~ 90ft, Field Visit Depth ~ 19ft



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
210 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
80 ft	Chain
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-133: Deadwater Slough as it flows into Steamboat Slough looking southeast

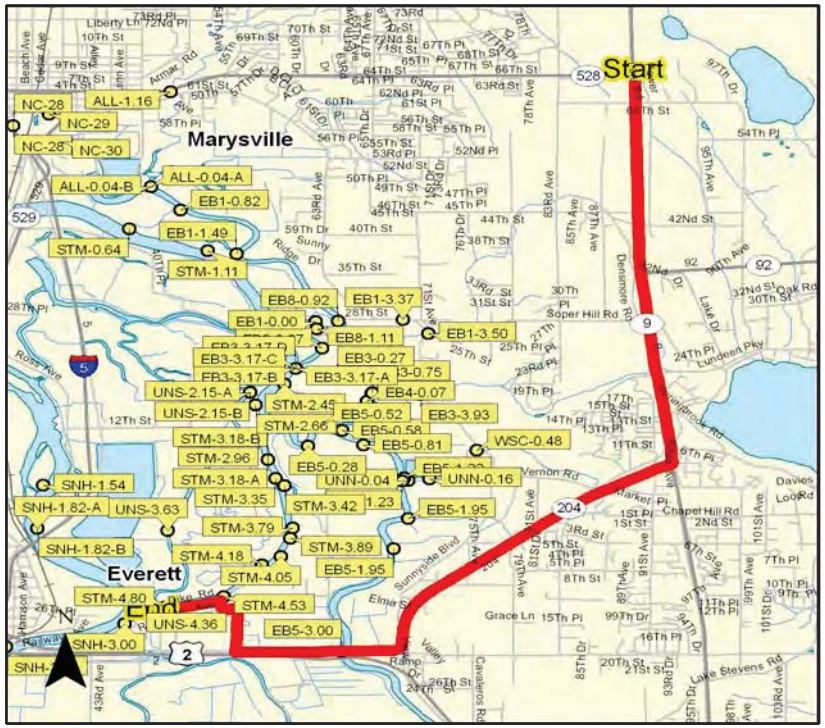
No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

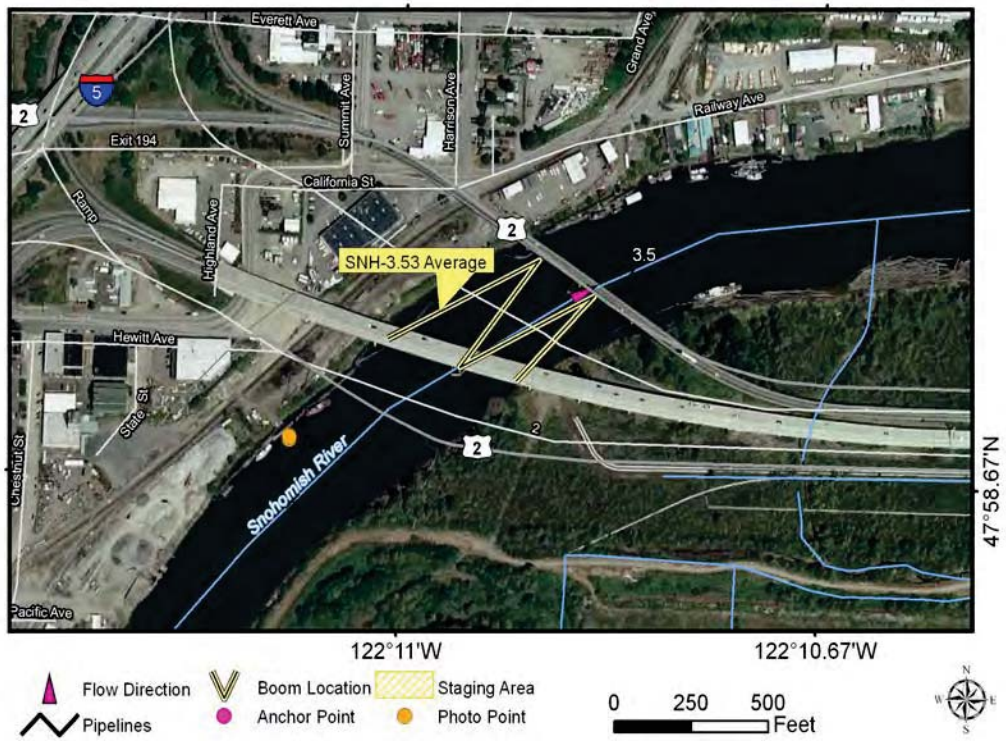
Pike Rd and Hwy 2, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (2.15 Mile(s))
5. Bear right onto ramp and go West on US 2 (0.51 Mile(s))
6. Continue on 20th St SE (0.52 Mile(s))
7. Turn right on 55th Ave SE (0.39 Mile (s))
8. Turn left on Riverside Ave (0.07 Mile (s))
9. Turn right on Pike Rd (0.09 Mile(s))
10. Turn left to stay on Pike Rd (0.42 Mile (s))

Arrive at Pike Rd and Hwy 2, Everett, WA, 98205, on the left

Site Lat/Long:	N 47° 58.764' / W 122° 10.998', Sector Map 7-4
Strategy Objective:	Collection - Collect product using 2 Marco Skimmers
Implementation:	Hook booms to 3 east bound Hwy 2 bridge piers w/ cable slings. Boom back to marco skimmers under west bound Hwy 2. Use 1050 ft boom for western skimmer and 900 ft boom for eastern skimmer. Install western skimmer first, on outside bend.
Site Safety Note:	Boat traffic, tide changes, falling debris from highway.
Staging Area:	Laborers and equipment go to site. Boat and operator launch from (SNH-1.49-staging (BL-301).
Field Notes:	Under Highway 2 bridge, access road under bridges can provide vehicle access.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River with tidal influence, tidal, Field Visit Width ~ 450ft



Suggested Equipment	
Quantity	**Description**
100 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
3 each	4 x 40 ft Cable Slings
1950 ft	B3 - River Boom, or other appropriate type
2 each	Boat(s)
1 each	Diaphragm Pump(s)
2 each	Marco Skimmer(s)
4 each	Paravane(s)
Suggested Personnel	
2	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

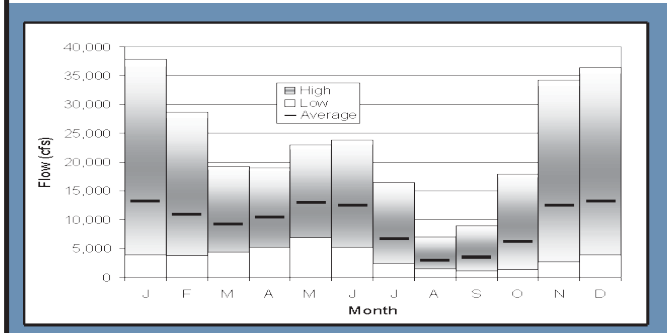
Status: Visited and Not Tested 10/20/2006

Image-16: Snohomish River under Hwy 2 looking downstream at river right

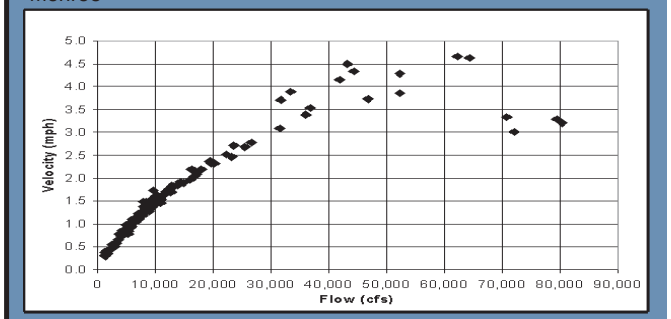
Image-17: Snohomish River under Hwy 2 looking downstream at river left

Site Contact Information

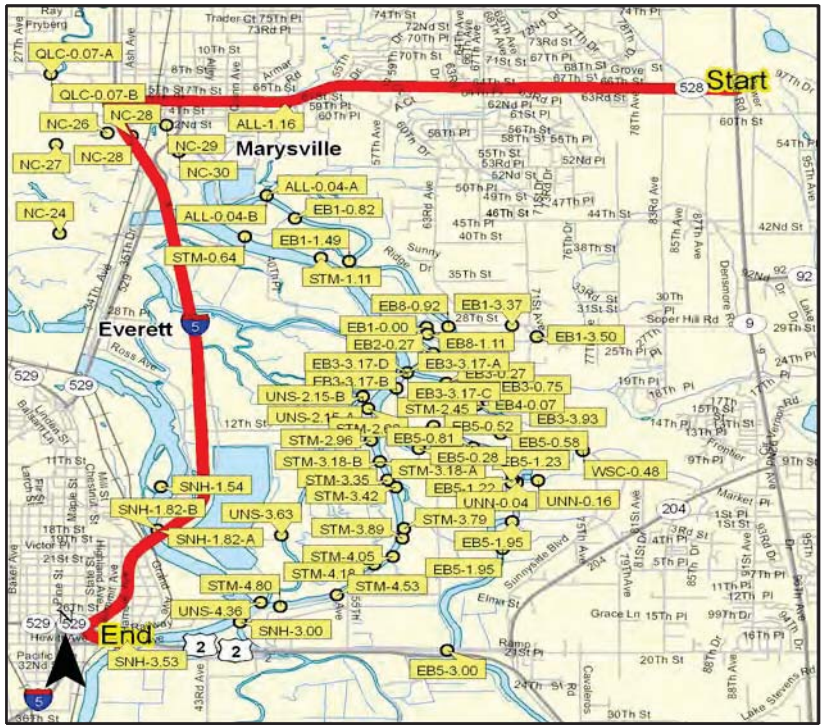
High Priority - contact immediate or before entering:
William Wick, Wick Towing Inc.,
(W) 425-252-6586



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

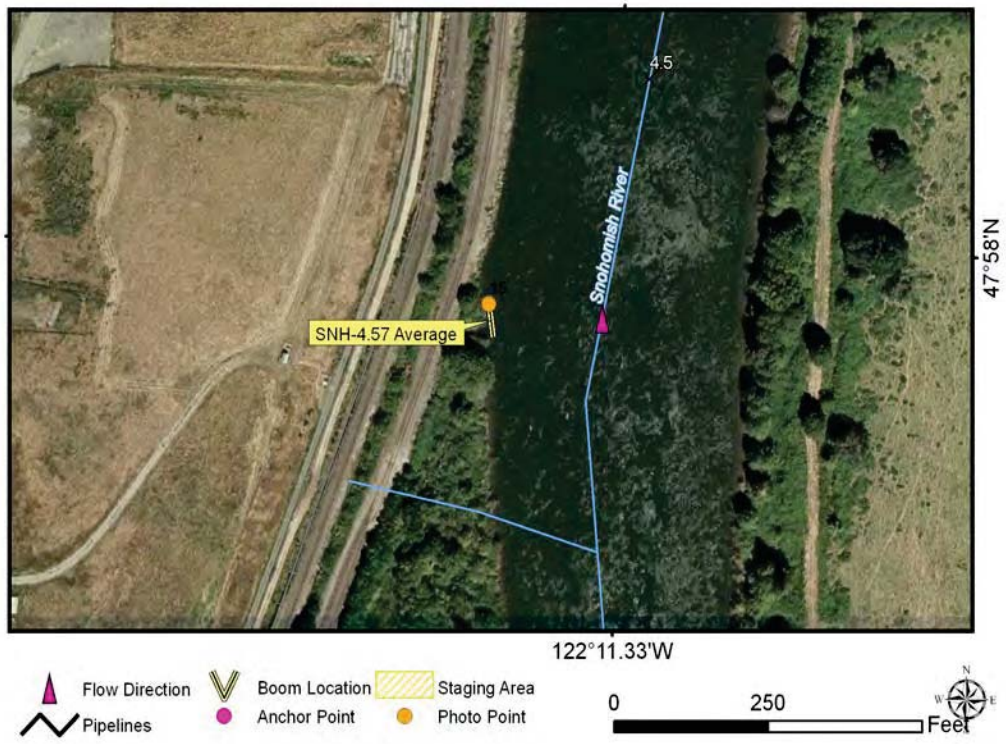
Highland Ave and California St., Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Turn left onto ramp and go South on I 5 (4.79 Mile(s))
3. At exit 194 take ramp to US 2 E/Everett Ave toward Wenatchee (0.19 Mile(s))
4. Take ramp and go on US Hwy 2 E toward Snohomish/Wenatchee (0.47 Mile (s))

Arrive at Point (N 47° 58.764' / W 122° 10.998'), on the left

Site Lat/Long:	N 47° 57.982' / W 122° 11.391', Sector Map 7-4
Strategy Objective:	Exclusion - Exclude product from side channel.
Implementation:	Place hard boom across side channel. Use line to connect boom to natural anchors. Pack side channel with sorbent boom as back-up. Check during max current.
Site Safety Note:	Railroad.
Staging Area:	Boat, laborers and equipment launch from SNH-6.10-staging.
Field Notes:	Industrial area west of railroad tracks. Would have to cross tracks to reach site. Land access not confirmed.
Resources Targeted:	shorebirds
Watercourse Description:	River side channel, Side channel to Snohomish River, Field Visit Width ~ 24ft



Suggested Equipment	
Quantity	**Description**
100 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
40 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

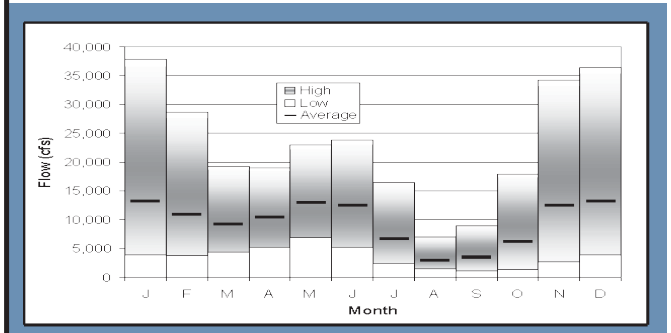
Status: Visited and Not Tested 10/20/2006

Image-15: Side channel to Snohomish River looking upstream

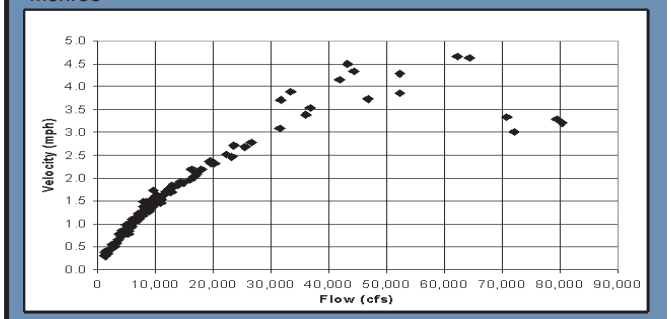
No Image Available

Site Contact Information

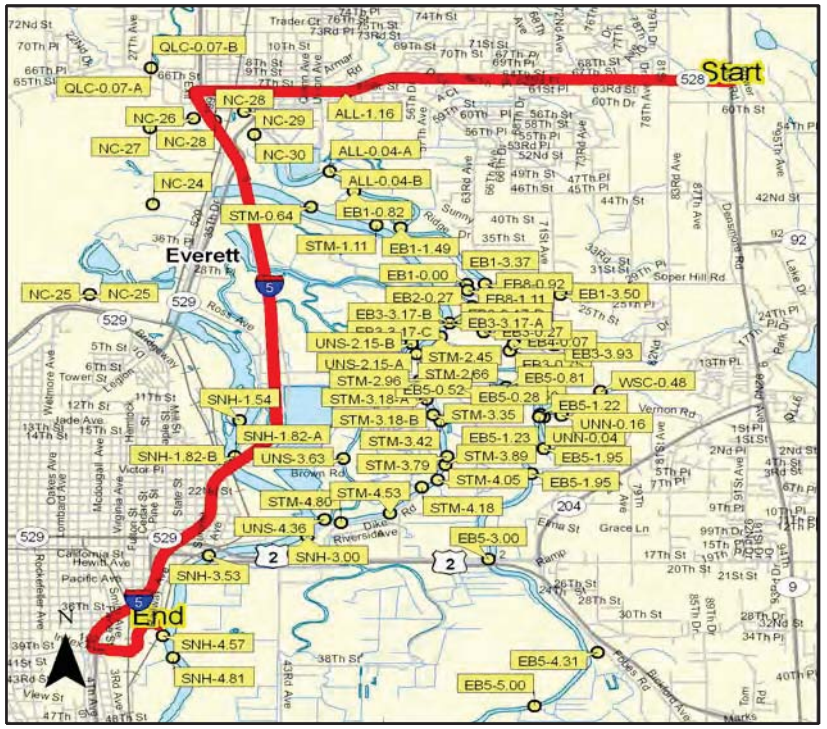
No contact information available.



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



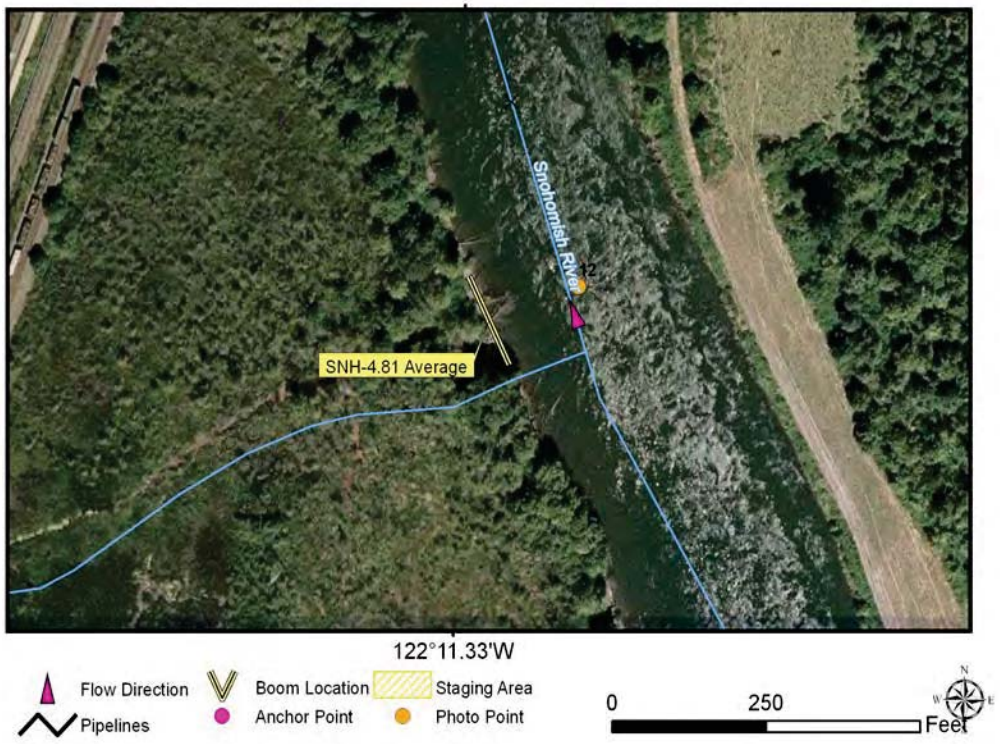
Closest Address:

36th St and Railway Ave., Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Turn left onto ramp and go South on I 5 (6.26 Mile(s))
3. At exit 192 take ramp to 41st St toward Evergreen Way (0.24 Mile(s))
4. Continue on 41st St (0.06 Mile(s))
5. Continue on 41st Extension St (0.17 Mile(s))
6. Turn left to stay on 41st Extension St (0.34 Mile(s))
7. Turn right on 37th St (0.09 Mile(s))
Arrive at Point (N 47° 57.982' / W 122° 11.391'), on the right

Site Lat/Long:	N 47° 57.772' / W 122° 11.306', Sector Map 7-4
Strategy Objective:	Exclusion - Keep product from entering Snohomish River.
Implementation:	Place hard boom across side channel. Use line to connect boom to natural anchors. Pack side channel with sorbent boom as back-up. Strategy should be tended due to tidal flux and obstacles.
Site Safety Note:	Sweepers, submerged objects
Staging Area:	Boat, equipment and laborers travel to site by boat from from SNH-6.10-staging.
Field Notes:	May be able to drive close site through 2nd Ave and Junction Ave. Land access not confirmed.
Resources Targeted:	shorebirds
Watercourse Description:	River side channel, Tidal channel on Snohomish River, Field Visit Width ~ 60ft



Suggested Equipment	
Quantity	**Description**
100 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
150 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
150 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

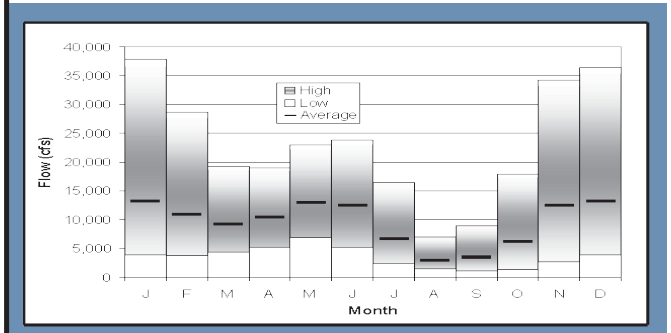
Status: Visited and Not Tested 10/20/2006

Image-12: Unnamed tributary of Snohomish River looking at outfall

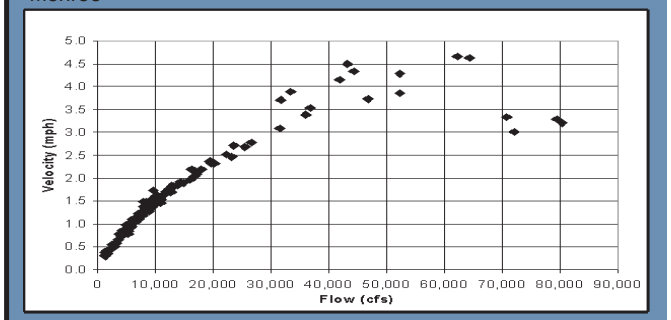
No Image Available

Site Contact Information

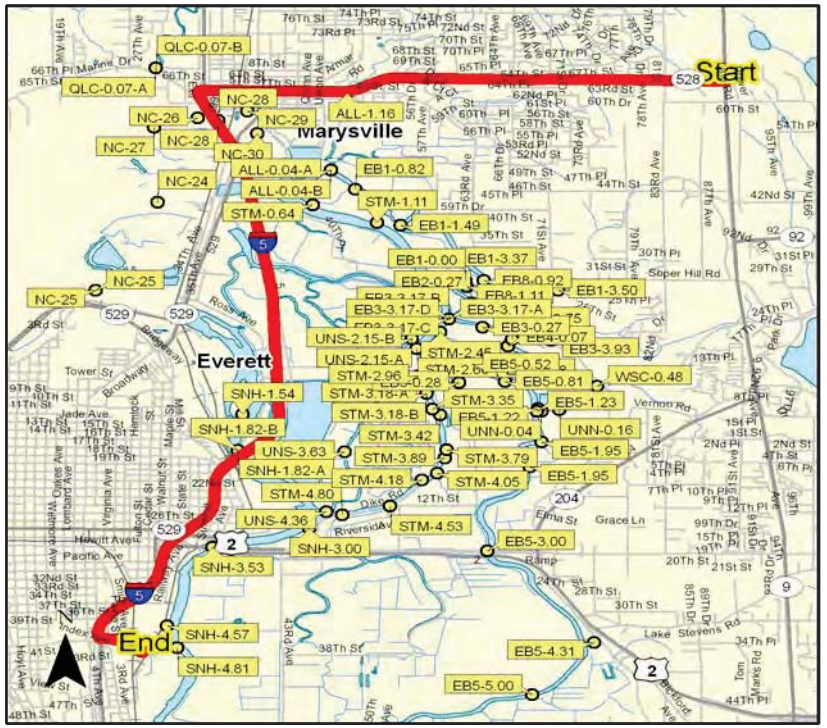
Responsible party or alternate contact:
City of Everett Water Pollution Control Facility, (W) 425-257-8800, Everett Water Pollution Control Facility



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

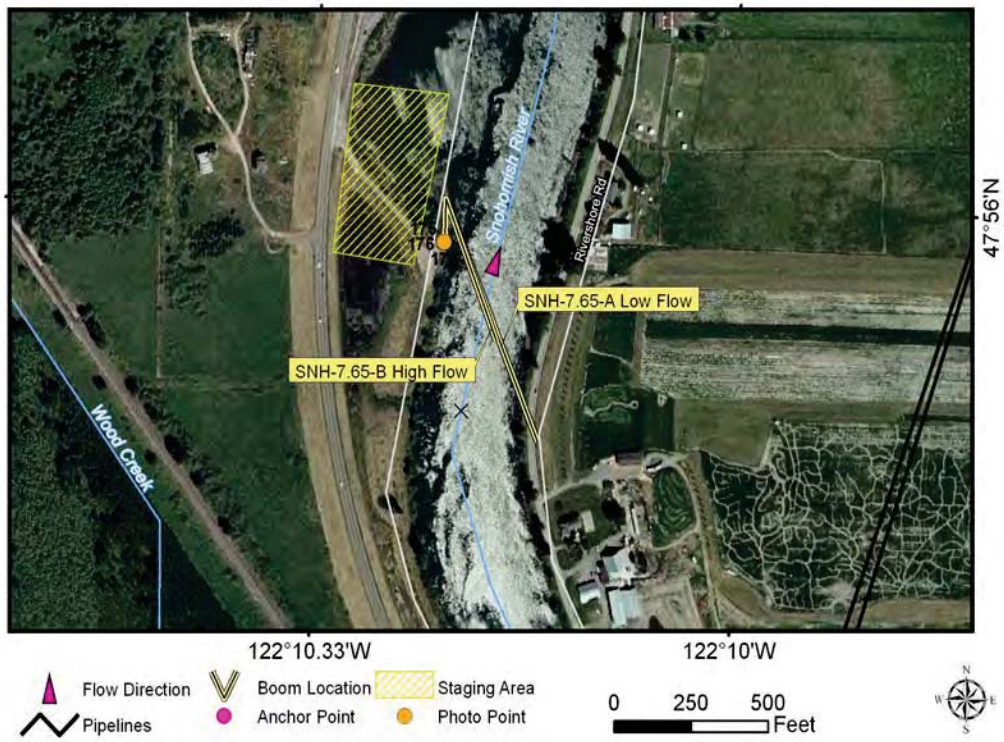
2nd Ave and Junction Ave, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Turn left onto ramp and go South on I 5 (6.26 Mile(s))
3. At exit 192 take ramp to 41st St toward Evergreen Way (0.24 Mile(s))
4. Continue on 41st St (0.06 Mile(s))
5. Continue on 41st Extension St (0.32 Mile(s))

Arrive at Point (N 47° 57.772' / W 122° 11.306'), on the right

Site Lat/Long:	N 47° 55.994' / W 122° 10.263', Sector Map 7-4
Strategy Objective:	Collection, Diversion - Divert the full river width and collect at LB.
Implementation:	When there is low current velocity deploy boom across the full river width, from beach area to opposite bank telephone post nr red bldg (approximately 2000 ft of boom). Use skimmer to collect product to Vac Truck. Place 100ft of boom along LB for protection at collection area. Use sorbent boom for sheen control on downstream side.
Site Safety Note:	Steep banks, jagged rocks.
Staging Area:	Staging area on beach. Must access staging area via locked gate. Laboreres and equipment go to site. Boat and operator launch from SNH-6.1-staging.
Field Notes:	Rural, paved, light traffic.
Resources Targeted:	waterfowl, salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 300ft, Steep banks and jagged rocks on shore.



Suggested Equipment	
Quantity	**Description**
2000 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
2100 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
10 each	Boom Deflector(s)
120 ft	Chain
6 each	Hand Bridle(s)
200 ft	Sorbent Boom
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
7	Laborer (s)
1	Supervisor (s)

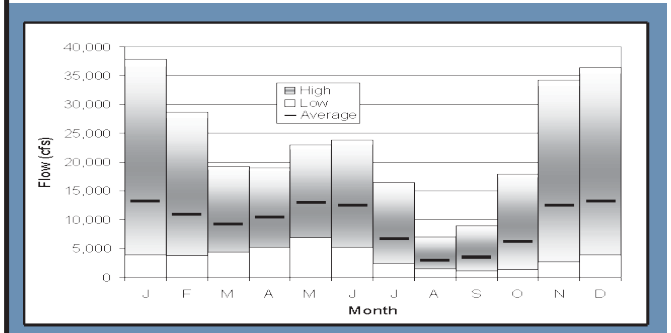
Status: Visited and Not Tested 10/17/2006

Image-175: Looking downstream (north) at Snohomish River and side pool from left bank

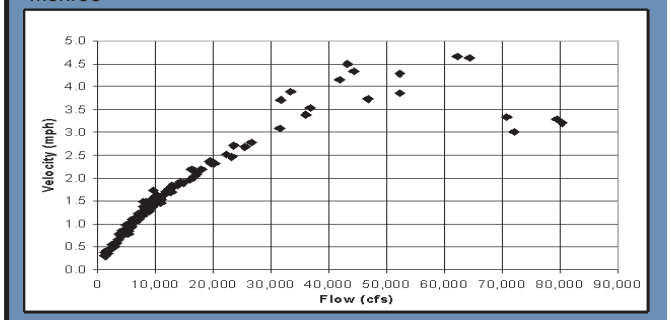
Image-176: Looking upstream (southeast) at Snohomish River from left bank

Site Contact Information

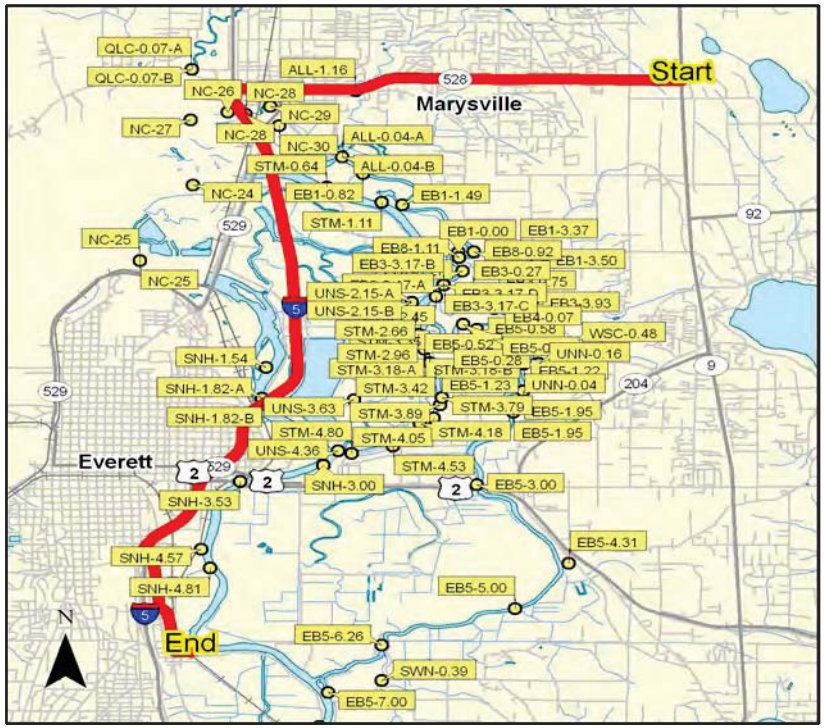
Responsible party or alternate contact:
Snohomish County Road Maintenance, (W) 360-862-7500, To access the location after hours contact 911 and ask for the Snohomish Supervisor. The key needed for the gate is #2126.



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

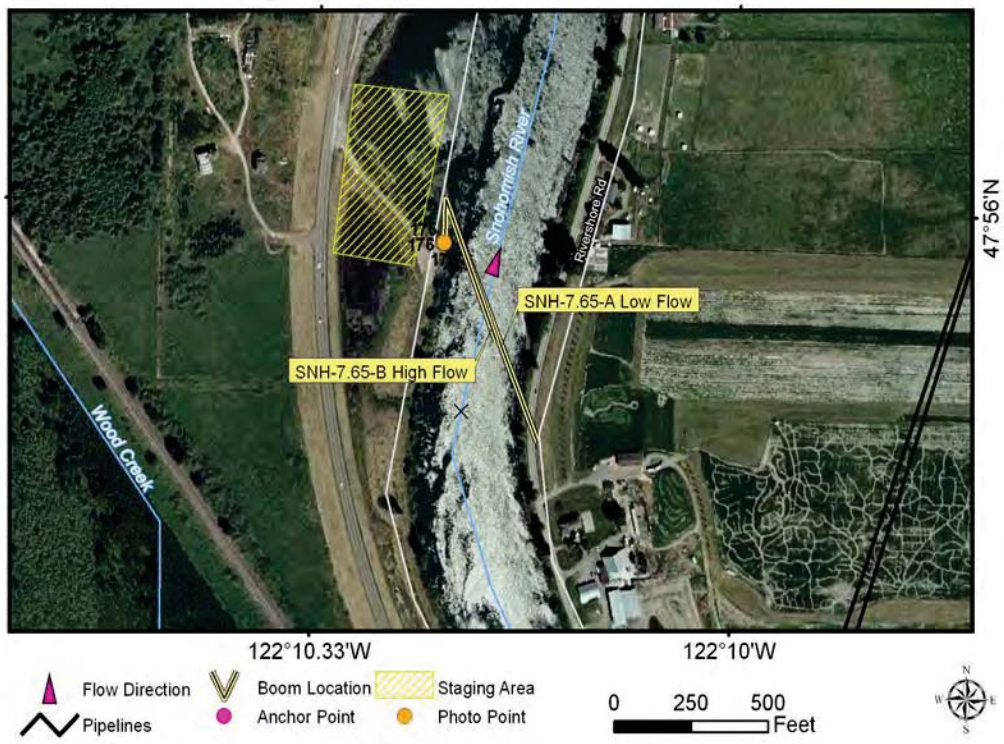
6326 Lowell-Snohomish River Rd (closest address), Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Turn left onto ramp and go South on I 5 (6.26 Mile(s))
3. At exit 192 take ramp to 41st St toward Evergreen Way (0.24 Mile(s))
4. Continue on 41st St (0.06 Mile(s))
5. Turn right on S 3rd Ave (0.57 Mile(s))
6. Bear left on Junction Ave (0.09 Mile(s))
7. Continue on S 2nd Ave (0.54 Mile(s))
8. Turn left on Lenora St (0.1 Mile(s))
9. Continue on Lowell Snohomish River Rd (0.02 Mile(s))

Arrive at 6326 Lowell-Snohomish River Rd (closest address), Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 55.994' / W 122° 10.263', Sector Map 7-4
Strategy Objective:	Collection, Diversion - Divert approximately 1/3 of the river width and collect at LB.
Implementation:	When there is high current velocity take 1/3 of the river width (should capture majority of product due to location on outside river bend). Deploy boom from beach area to in stream SARCA anchor. Use skimmer to collect product to Vac Truck. Place 100ft of boom along LB for protection at collection area. Use sorbent boom for sheen control on downstream side.
Site Safety Note:	Steep banks, jagged rocks.
Staging Area:	Staging area on beach. Must access staging area via locked gate. Laboreres and equipment go to site. Boat and operator launch from SNH-6.1-staging.
Field Notes:	Rural, paved, light traffic.
Resources Targeted:	salmonids (anadromous), waterfowl
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 300ft, Steep banks and jagged rocks on shore



Suggested Equipment	
Quantity	**Description**
1 each	Anchor(s) for strong currents - ie. SARCA
700 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
120 ft	Chain
5 each	Hand Bridle(s)
300 ft	Sorbent Boom
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
7	Laborer (s)
1	Supervisor (s)

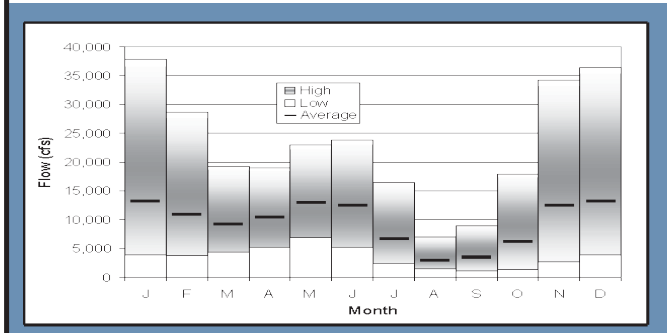
Status: Visited and Not Tested 10/17/2006

Image-175: Looking downstream (north) at Snohomish River and side pool from left bank

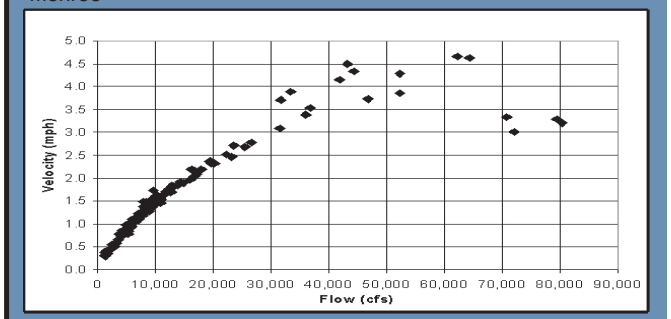
Image-176: Looking upstream (southeast) at Snohomish River from left bank

Site Contact Information

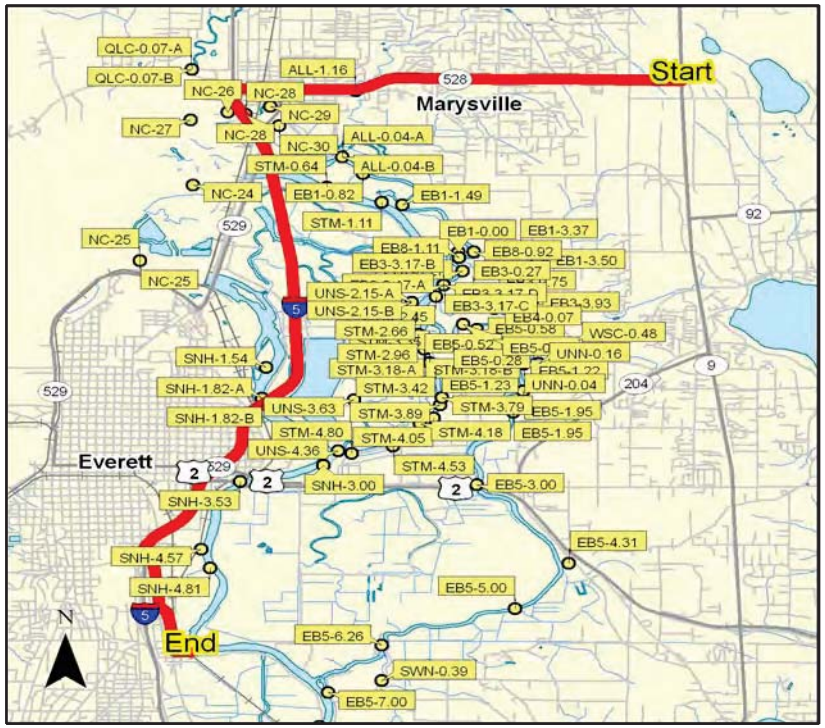
Responsible party or alternate contact:
Snohomish County Road Maintenance, (W) 360-862-7500, To access the location after hours contact 911 and ask for the Snohomish Supervisor. The key needed for the gate is #2126.



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

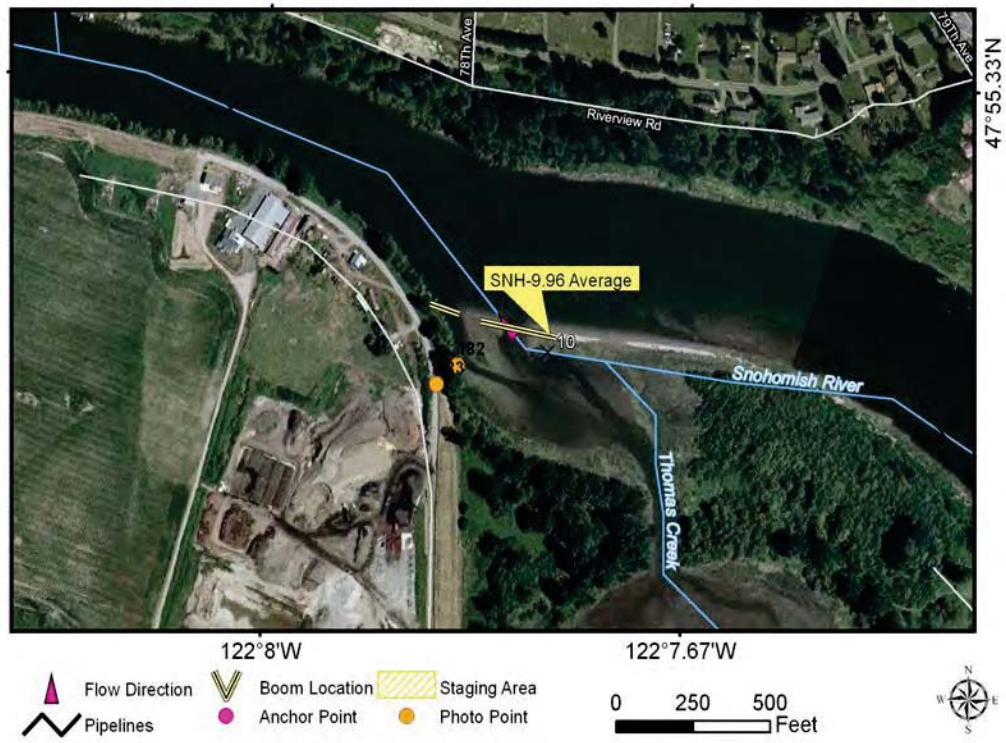
6326 Lowell-Snohomish River Rd (closest address), Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Turn left onto ramp and go South on I 5 (6.26 Mile(s))
3. At exit 192 take ramp to 41st St toward Evergreen Way (0.24 Mile(s))
4. Continue on 41st St (0.06 Mile(s))
5. Turn right on S 3rd Ave (0.57 Mile(s))
6. Bear left on Junction Ave (0.09 Mile(s))
7. Continue on S 2nd Ave (0.54 Mile(s))
8. Turn left on Lenora St (0.1 Mile(s))
9. Continue on Lowell Snohomish River Rd (0.02 Mile(s))

Arrive at 6326 Lowell-Snohomish River Rd (closest address), Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 55.213' / W 122° 7.830', Sector Map 7-5
Strategy Objective:	Exclusion - Exclude product from wetland/open water complex.
Implementation:	Exclude the wetland complex by deploying an exclusion boom across each opening (openings are approximately 250 ft and 100ft). Booms can be deployed by boat, or from the bank on Fiddler Bluff Rd. Booms should be anchored in the middle of the channel openings to maintain shape - wider opening (west) may require 2 anchors. Estimated time for strategy deployment is 1 hour. Site is most threatened during incoming tide when river flows into wetland. Punt boat is reccommended.
Site Safety Note:	Sticky mud, steep, slippery bank at access point.
Staging Area:	Laboreres and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).
Field Notes:	Rural, paved, light traffic. This is a future park site.
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat - freshwater wetland, ~5 acres
Watercourse Description:	Freshwater wetland, Wetland Complex on Snohomish River



Suggested Equipment	
Quantity	**Description**
200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
350 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
120 ft	Chain
3 each	Danforth(s)
3 each	Hand Bridle(s)
1 each	Jon Boat(s)
6 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
4	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/17/2006

Image-182: Looking downstream along Larimer Creek to Snohomish River

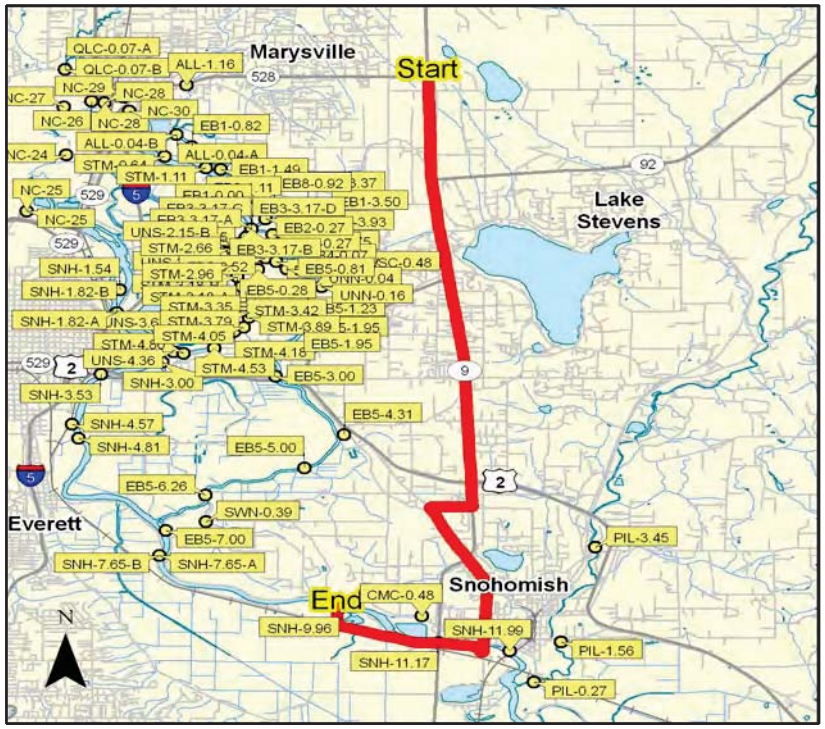
Image-183: Looking across Larimer Creek wetland and Snohomish River from Fiddlers Bluff Rd

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

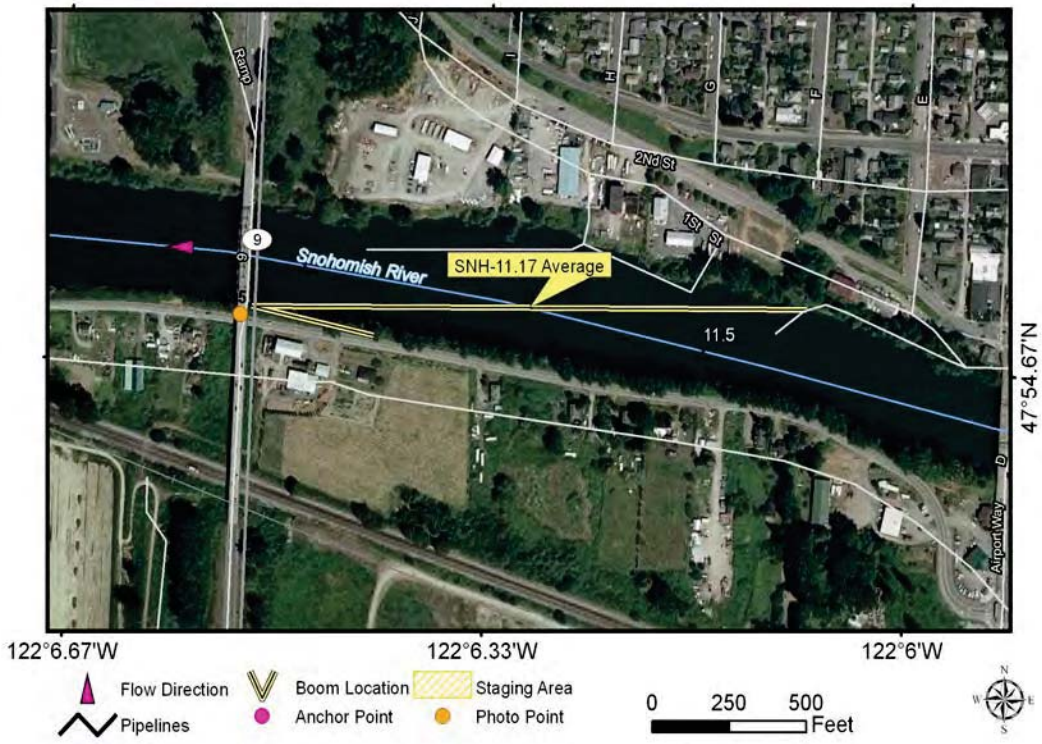
Fiddler Bluff Road, Snohomish, 98290

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (7.48 Mile(s))
3. Turn right on 56th St SE (John Jump Rd) (0.45 Mile(s))
4. Turn left on Bickford Ave (1.39 Mile(s))
5. Continue on AVE D (1.08 Mile(s))
6. Continue on Airport Way (0.16 Mile(s))
7. Turn right on Lowell Snohomish River Rd (1.62 Mile(s))
8. Turn right on Fiddlers Bluff Rd (0.27 Mile(s))

Arrive at Point (N 47° 55.213' / W 122° 7.83'), on the right

Site Lat/Long:	N 47° 54.690' / W 122° 6.527', Sector Map 7-5
Strategy Objective:	Collection, Diversion - Collect product on north side of Hwy 9 bridge.
Implementation:	Deploy boom by boat using paravane. Anchor to rock outcrop of bridge pier on downstream end and big leaning tree (RB) as anchor on upstream end. Modify boom angle as necessary for flow and tide. Extend boom up LB for shoreline protection during collection at low tide and along RB for protection during collection during high tide. Back up boom with sorbent boom for sheen control as necessary. Recover from gravel operation on opposite (right) bank. Must close down one lane of Hwy 9 for staging. If a boat is not available a boom vane could allow boom to be installed without a boat.
Site Safety Note:	Heavy traffic, falling debris from bridge, steep banks, blackberry.
Staging Area:	Can stage from Hwy 9 bridge, must block one lane of traffic. Laborers and equipment go to site. Boat and operator launch from SNH -11.99-staging (BL-339).
Field Notes:	Urban, paved, Heavy Traffic. River velocity can be 0.5 mph upstream during high tide.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 300ft



Suggested Equipment	
Quantity	**Description**
3000 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1800 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
10 each	Boom Deflector(s)
12 each	Hand Bridle(s)
1 each	Paravane(s)
200 ft	Sorbent Boom
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

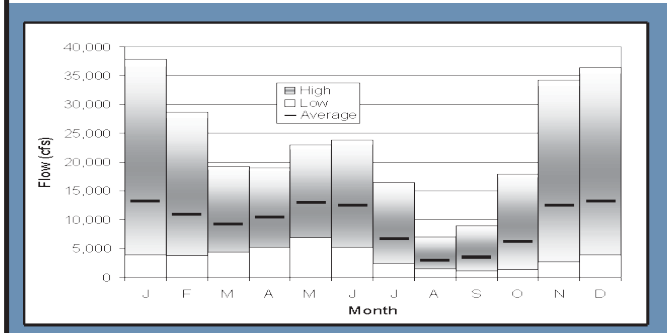
Status: Visited and Not Tested 10/17/2006

Image-185: Snohomish River looking upstream from under Hwy 9 bridge

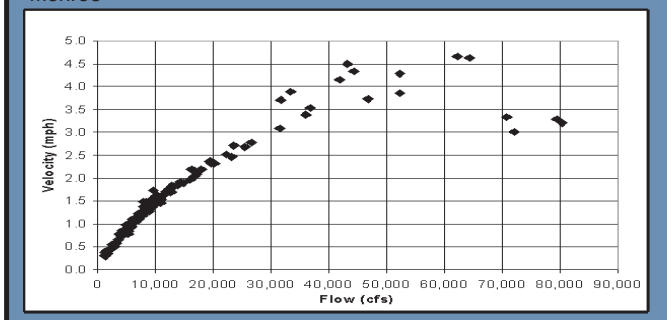
No Image Available

Site Contact Information

No contact information available.



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe

Closest Address:

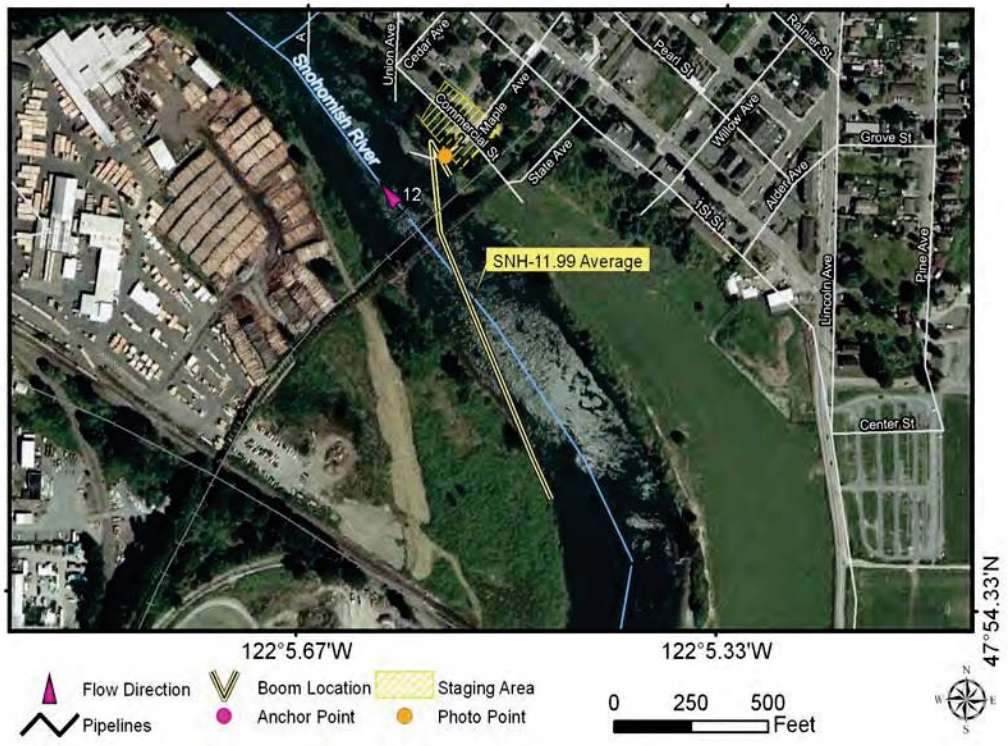
9141 Lowell-Snohomish River Rd., Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (1.08 Mile(s))
5. Continue on Airport Way (0.16 Mile(s))
6. Turn right on Lowell Snohomish River Rd (0.51 Mile(s))

Arrive at 9141 Lowell-Snohomish River Rd., Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 54.564' / W 122° 5.548', Sector Map 7-5
Strategy Objective:	Collection - Collect product in Snohomish River.
Implementation:	Deploy from LB to bridge pier (~1200 ft) and bridge pier to boat launch (225 ft). Extend boom back up shore at both shoreline anchor points (~ 120 ft) to collect during low and high tide. In low tide collect at boat launch. During high tide collect at from opposite shore. Install liner system to protect sandy banks. Universal skimmer may be used in place of brush skimmer. Estimated time for strategy implementation is 3hrs with a trained crew. Work area at boat launch is approximately 30 ft x 120 ft during low/middle tide. Keep boat ramp free and clear.
Site Safety Note:	Slips and falls on boat ramp
Staging Area:	Cady Park has boat access and space for staging. Site has 15 parking spaces, 2 boat ramps, city does not maintain boat ramp. Work area is approximately 30 feet by 120 ft. during low/middle tide. Located at the south end of Maple Ave.
Field Notes:	Urban, paved, light traffic. Tide can change water level by up to 1 meter at this location.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River, tidal effect on WL up to 3 feet., Field Visit Width ~ 330ft, Field Velocity ~ 1.2MPH, Sandy banks



Suggested Equipment	
Quantity	**Description**
3000 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1670 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
10 each	Boom Deflector(s)
1 100 ft section(s)	Bridge Pier Bridle(s)
1 each	Brush Skimmer(s)
20 each	Hand Bridle(s)
20 each	Shoreline Pin(s)
300 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

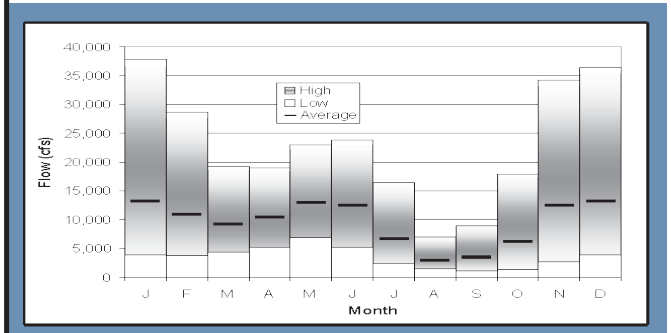
Status: Visited and Not Tested 10/17/2006

Image-211: Snohomish River looking upstream from Snohomish boat launch

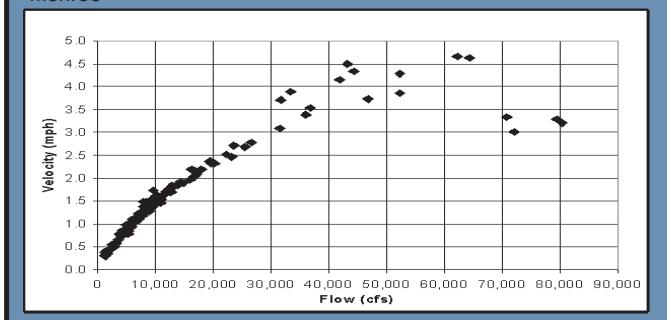
Image-212: Right bank of Snohomish River from Snohomish boat launch

Site Contact Information

Responsible party or alternate contact:
City of Snohomish, (W) 360-568-3115, General City Contact Number



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe

Closest Address:

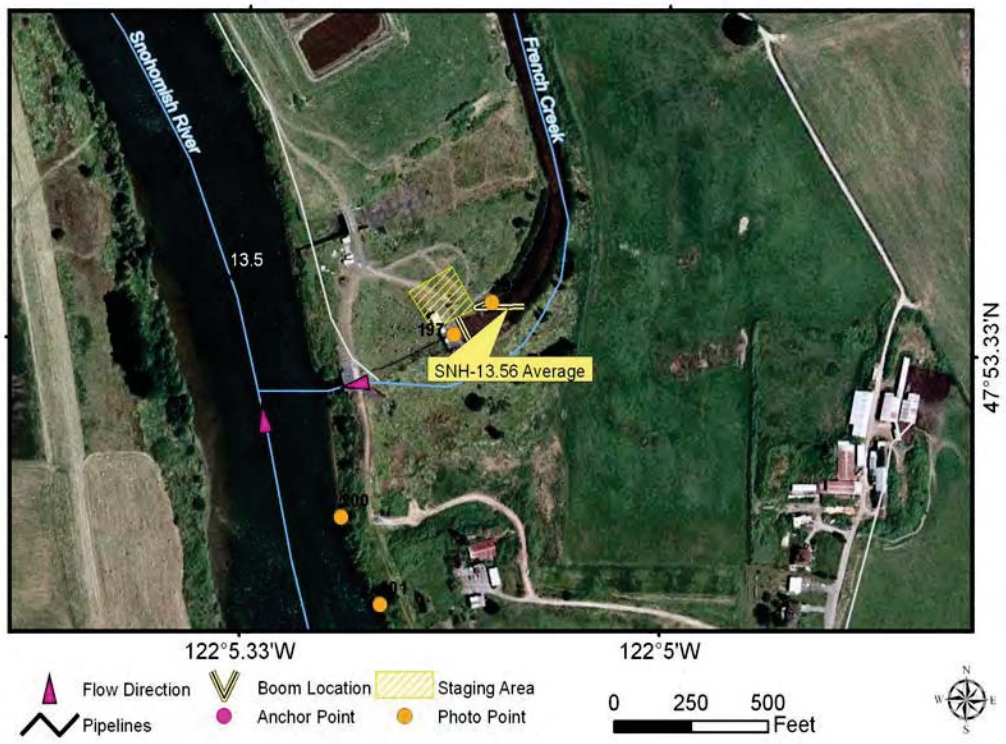
40 Maple Avenue, Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (1.08 Mile(s))
5. Turn left on 1st St (0.35 Mile(s))
6. Turn right on Maple Ave (0.03 Mile(s))

Arrive at 40 Maple Avenue, Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 53.352' / W 122° 5.173', Sector Map 7-5
Strategy Objective:	Collection - Collect product on upstream side of pump station at French Slough.
Implementation:	Contact pump station to request that pumps are shut-off. Deploy sorbent boom across shutoff pumps on upstream side of pump station. Deploy river boom from RB using natural anchors to LB and up shoreline for protection. Collect using skimmer. Jon or punt boat are recommended.
Site Safety Note:	Pump station
Staging Area:	Boat, laborers and equipment go to site. Key to gates on pump station fence behind white tag on fence (by gate). May be desirable to access via Darlington Farm (property to north) as levee ground may be soft. No boat access for Snohomish River here.
Field Notes:	Rural, gravel, light traffic.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	Slough, French Creek, Field Visit Width ~ 66ft, Field Velocity ~ 0.3MPH



Suggested Equipment	
Quantity	**Description**
600 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
480 ft	B3 - River Boom, or other appropriate type
1 each	Jon Boat(s)
1 each	Screw Anchor(s)
22 ft	Sorbent Boom
1 each	Universal Skimmer(s)
Suggested Personnel	
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/17/2006

Image-193: French Creek Slough looking upstream

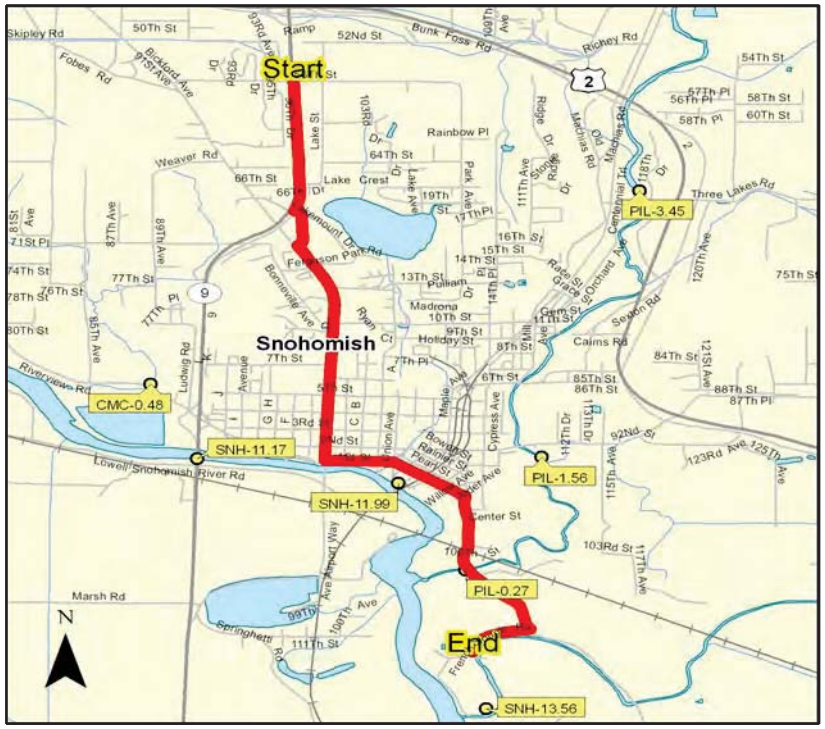
Image-197: French Creek Slough looking upstream from pump station

Site Contact Information

High Priority - contact immediate or before entering:
Neil Wheeler, French Slough Flood Control, (W) 360-568-5383, (M) 425-308-9854

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

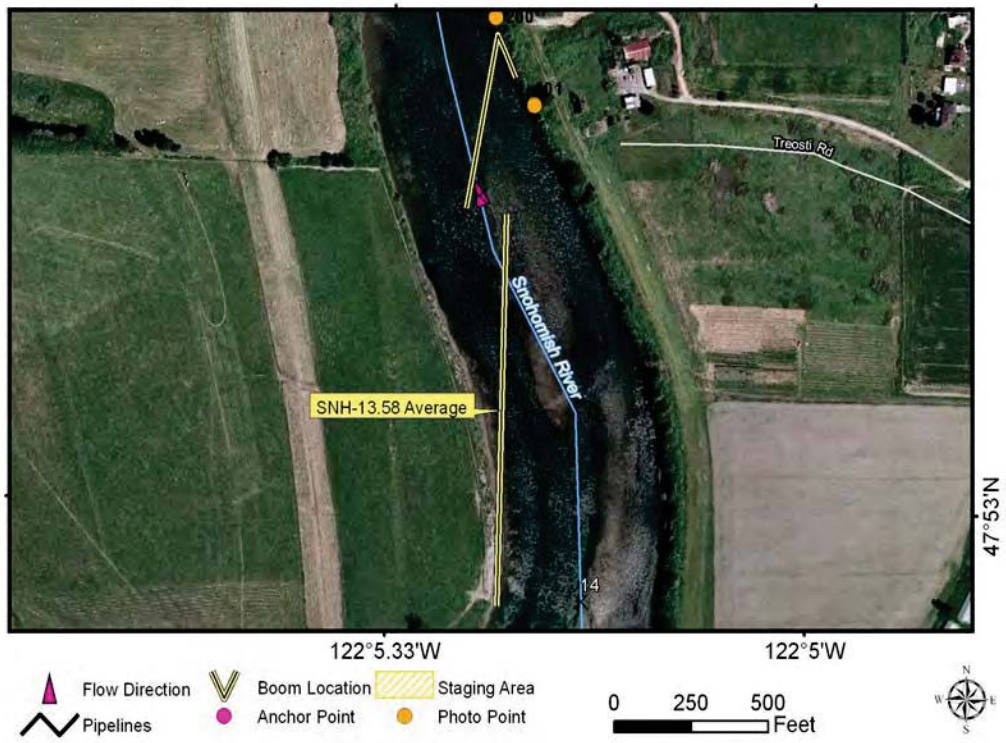
10801 French Slough Rd., Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (1.08 Mile(s))
5. Turn left on 1st St (0.59 Mile(s))
6. Turn right on Lincoln Ave (0.33 Mile(s))
7. Continue on Old Snohomish Monroe Rd (0.58 Mile(s))
8. Make sharp right on French Slough Rd (0.28 Mile(s))

Arrive at 10801 French Slough Rd., Snohomish, WA, 98290, on the right

Site Lat/Long:	N 47° 53.147' / W 122° 5.243', Sector Map 7-5
Strategy Objective:	Deflection, Collection - Deflection of product from French Creek Slough Pump Station.
Implementation:	Deploy 1200 ft of boom as deflection from upstream oxbow to debris in river (or in stream anchor). Deploy 600 ft of boom for collection from in stream anchor to beach line. Deploy boom up shoreline for protection. Place sorbent boom downstream of boom for sheen control. 12 boom deflectors are recommended but if they are not available then do not place boom from oxbow to debris. Use in stream SARCA #12. Estimated deployment time is 3hrs with 2 boats. Jet boats are required to access site due to river rapids.
Site Safety Note:	Dense vegetation along banks. Levee can be very soft for driving.
Staging Area:	Stage on Darlington Farms property. Laborers and equipment go to site. Can access from Treosti Road or through Darlington Farms. Boat and operator launch from SNH-11.99-staging (BL-339).
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 390ft, Field Velocity ~ 2.1MPH



Suggested Equipment	
Quantity	**Description**
3600 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
1900 ft	B3 - River Boom, or other appropriate type
12 each	Boom Deflector(s)
1 each	Diaphragm Pump(s)
10 each	Hand Bridle(s)
1	Jet Boat
1 each	Paravane(s)
60 ft	Sorbent Boom
1 each	Weir Skimmer(s)
Suggested Personnel	
2	Boat Operator (s)
11	Laborer (s)
1	Supervisor (s)

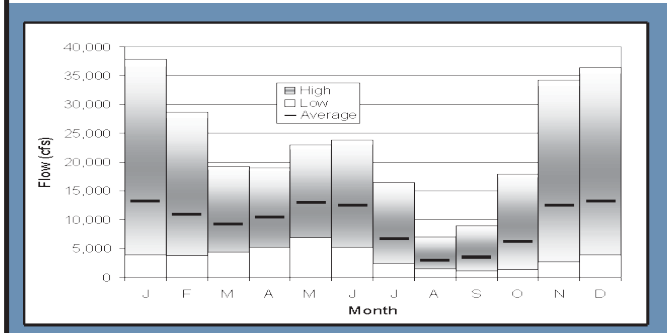
Status: Visited and Not Tested 10/17/2006

Image-200: Debris in Snohomish River at boom deployment location

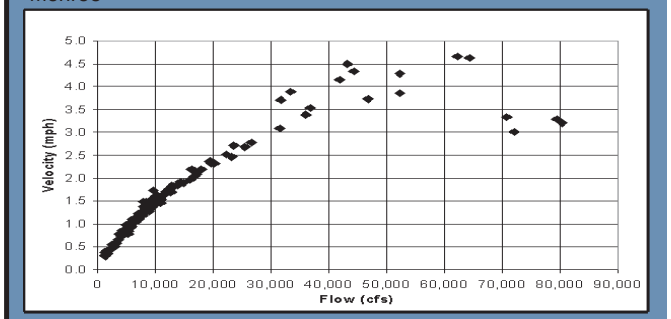
Image-201: Snohomish River looking upstream (south) from French Creek Slough Pump Station

Site Contact Information

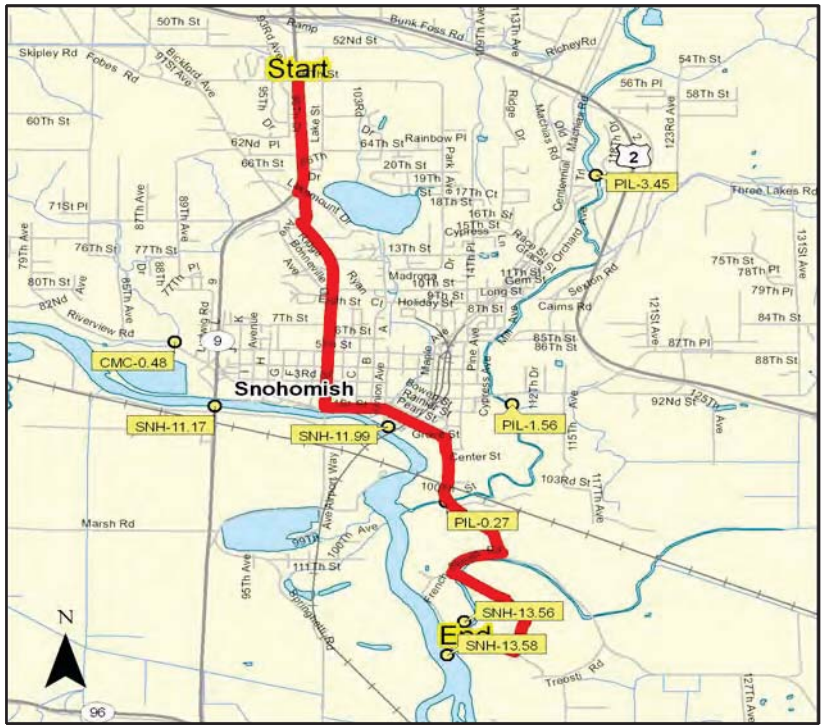
High Priority - contact immediate or before entering:
Neil Wheeler, French Slough Flood Control, (W) 360-568-5383, (M) 425-308-9854
Responsible party or alternate contact:
Fred/Christine Zylstra, (H) 425-343-4746, Has key to gate on Short School Rd.
Bob Darlington, Darlington Farms, (H) 425-345-7236, Contact for staging.



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



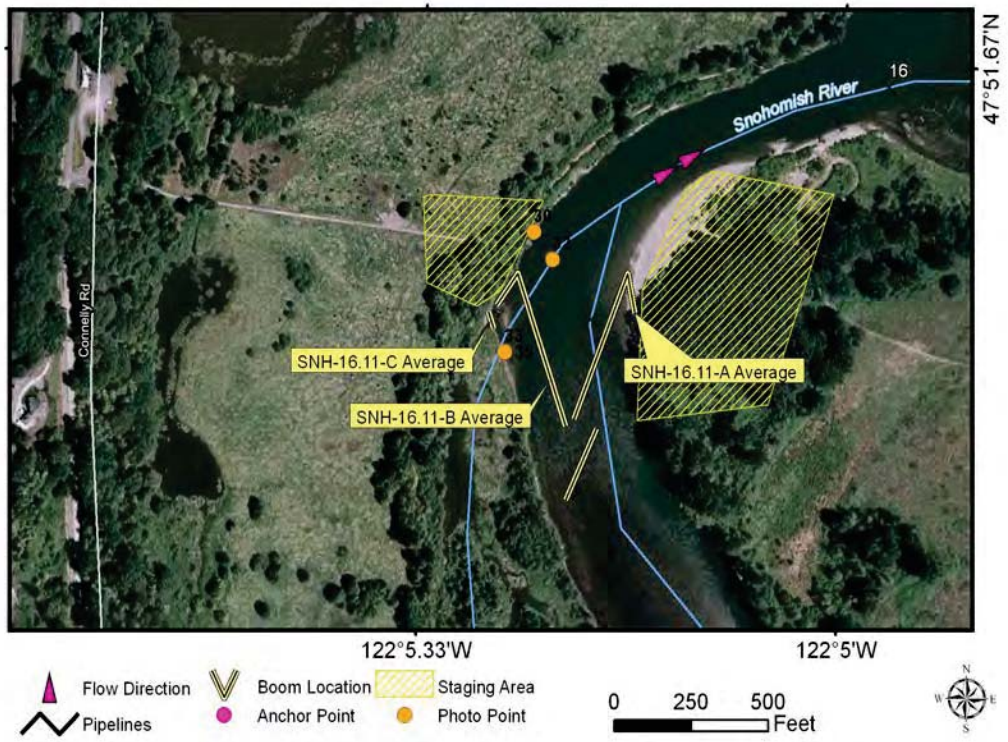
Closest Address:

10800 Treosti Rd., Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (1.08 Mile(s))
5. Turn left on 1st St (0.59 Mile(s))
6. Turn right on Lincoln Ave (0.33 Mile(s))
7. Continue on Old Snohomish Monroe Rd (0.58 Mile(s))
8. Make sharp right on French Slough Rd (0.28 Mile(s))
9. Turn left on Unnamed St (0.71 Mile(s))
10. Turn right on Treosti Rd (Happy Valley Rd) (0.22 Mile(s))
Arrive at 10800 Treosti Rd., Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 51.518' / W 122° 4.872', Sector Map 7-6
Strategy Objective:	Collection, Deflection - Cascade booms to collection site at RB.
Implementation:	Deploy upstream deflection boom to deflect product to collection boom, anchor using 2 SARCA and check angle based on current velocity. Deploy collection boom downstream of deflection boom to collect at RB. Boom should extend from RB beach across 1/3 to 1/2 of river (1/2 width requires ~750 ft), tie into SARCA in stream anchor. Deploy ~ 120 ft of boom along beach at collection area for shoreline protection. Use sorbent boom for sheen control on downstream side. Estimated to take 2 hours to deploy. Use in conjunction with SNH-16.11-B and A; deploy SNH-16.11-A first.
Site Safety Note:	Other boats, steep and slippery bank at LB, slippery cobbles at RB, fast current.
Staging Area:	Snohomish County owns property on right and left bank. Stage from Shorts School Road on RB, from Connelly Rd. on LB. Stage equipment for 16.11 A, B, and C together. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).
Field Notes:	Jet boat required to access site from BL-339.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 450ft, Field Velocity ~ 2.4MPH



Suggested Equipment	
Quantity	**Description**
705 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
3 each	Anchor(s) for strong currents - ie. SARCA
850 ft	B3 - River Boom, or other appropriate type
5 each	Boom Deflector(s)
240 ft	Chain
6 each	Drive Pin(s)
3 each	Hand Bridle(s)
2	Jet Boat
2 each	Paravane(s)
200 ft	Sorbent Boom
1 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
2 each	Vac Truck(s)
Suggested Personnel	
2	Boat Operator (s)
9	Laborer (s)
2	Supervisor (s)

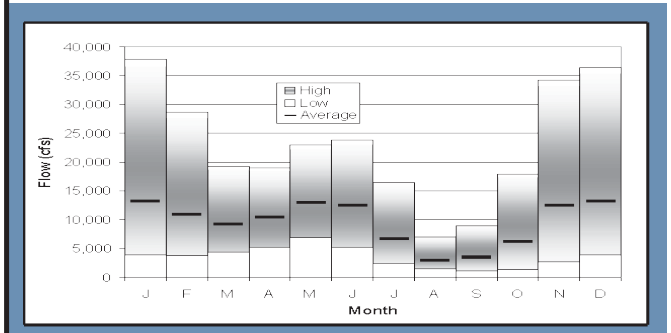
Status: Visited and Not Tested 10/20/2006

Image-33: Snohomish River looking across river at river right

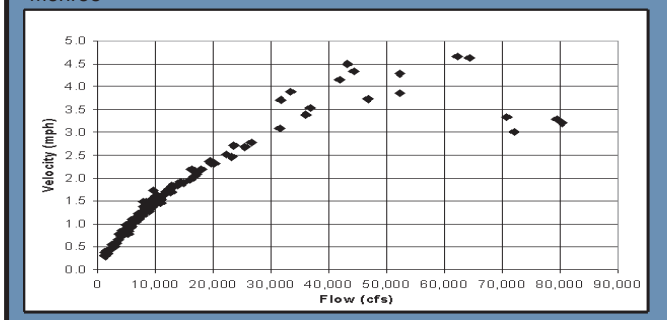
Image-32: Snohomish River looking upstream at river right

Site Contact Information

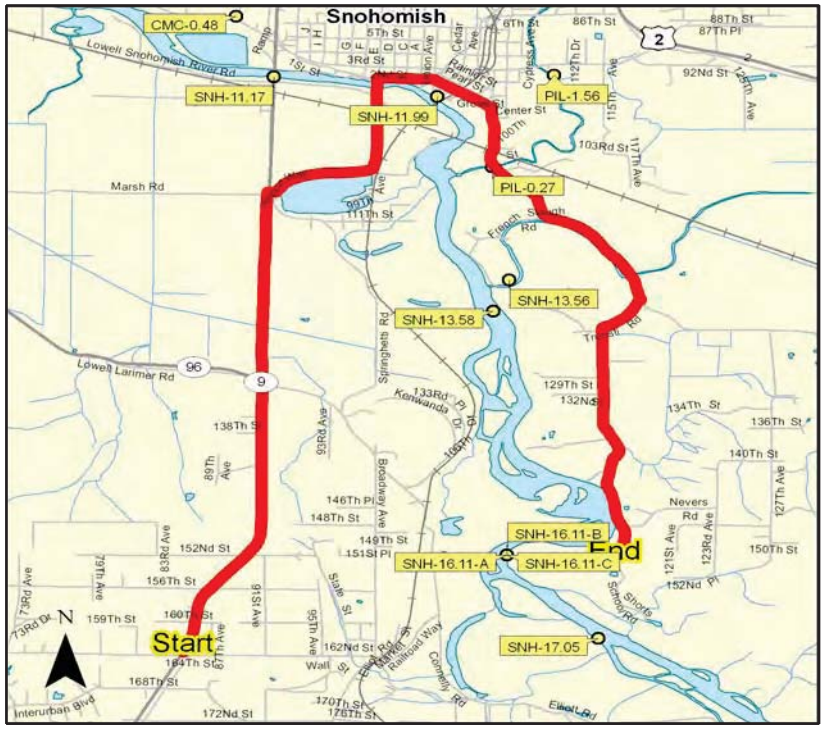
Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

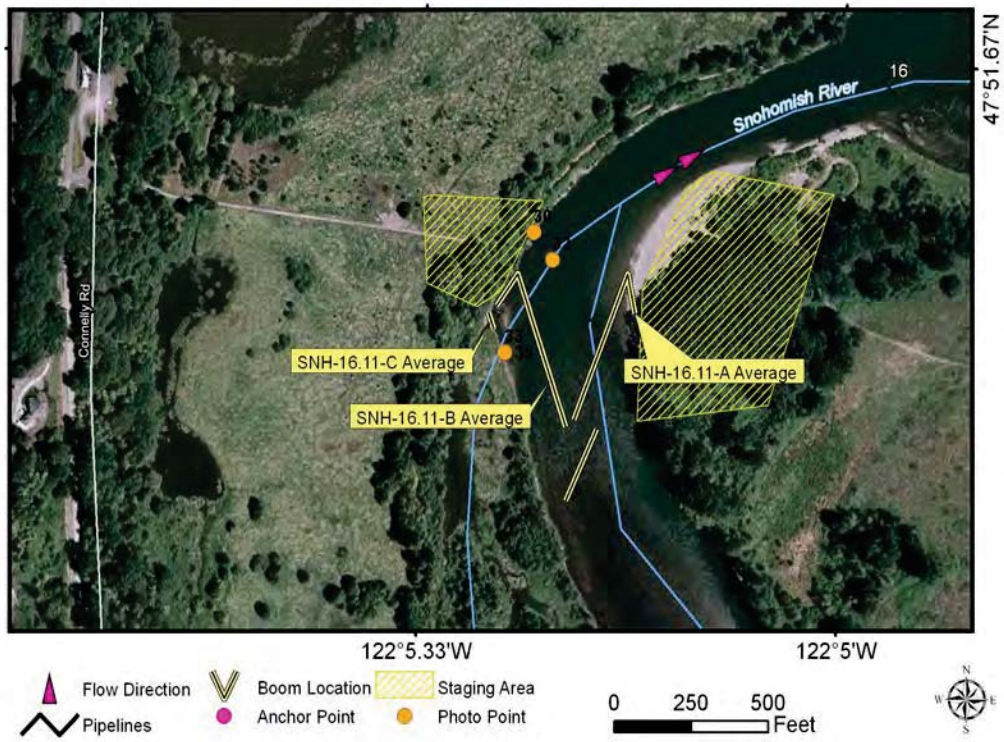
15382 Shorts School Road, 15291 Connelly Rd., Snohomish, 98290

Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North on SR 9 toward 164th St SE (3.58 Mile(s))
2. Turn right on 108th St SE (Marsh Rd) (0.04 Mile(s))
3. Turn left on Airport Way (1.19 Mile(s))
4. Turn right on 1st St (0.59 Mile(s))
5. Turn right on Lincoln Ave (0.33 Mile(s))
6. Continue on Old Snohomish Monroe Rd (1.39 Mile(s))
7. Turn right on Treosti Rd (Tresti Rd) (0.28 Mile(s))
8. Bear left on 115th Ave SE (Shorts School Rd) (1.81 Mile(s))

Arrive at 15382 Shorts School Road, Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 51.518' / W 122° 4.872', Sector Map 7-6
Strategy Objective:	Collection - Collect product at LB.
Implementation:	Use in stream SARCA anchor, bring boom back to shore, anchor to natural anchors. Extend boom up shoreline (~90 ft) for protection in collection area. Use lines to maintain maximum boom angle. Use sorbent boom downstream of river boom for sheen control. Use in conjunction with SNH-16.11-A to cover entire river. Could continue shoreline protection boom to exclude product at 16.11-C.
Site Safety Note:	Other boats, steep and slippery bank at LB, slippery cobbles at RB, fast current.
Staging Area:	Snohomish County owns property on right and left bank. Stage from Shorts School Road on RB, from Connelly Rd. on LB. Stage equipment for 16.11 A, B, and C together. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).
Field Notes:	Jet boat required to access site from BL-339.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River with tidal influence, Snohomish River, Field Visit Width ~ 450ft, Field Velocity ~ 2.4MPH



Suggested Equipment	
Quantity	**Description**
775 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
650 ft	B3 - River Boom, or other appropriate type
80 ft	Chain
3 each	Hand Bridle(s)
2	Jet Boat
1 each	Paravane(s)
200 ft	Sorbent Boom
1 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
2	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

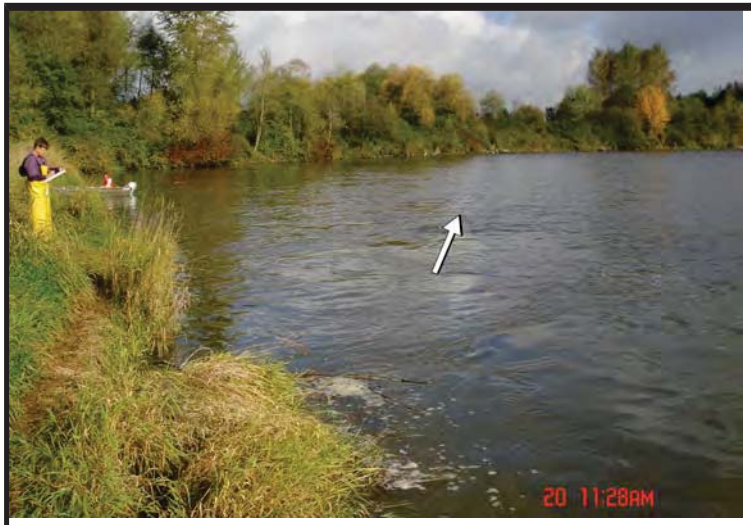
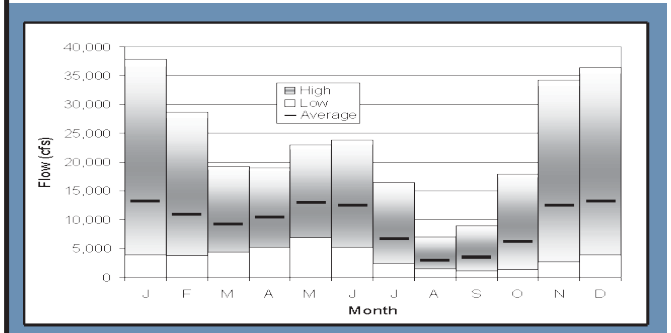


Image-35: Snohomish River looking downstream from left bank

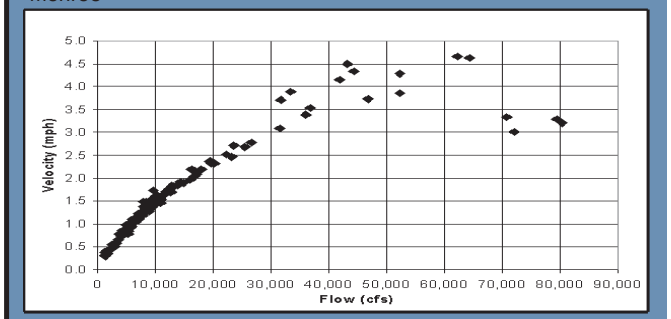
Image-30: Snohomish River looking downstream

Site Contact Information

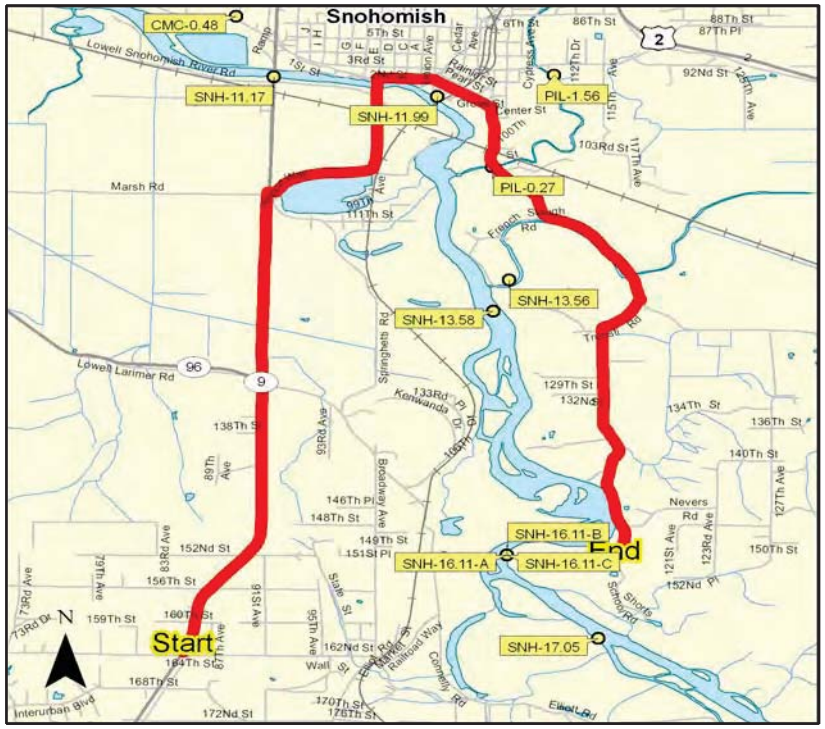
Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

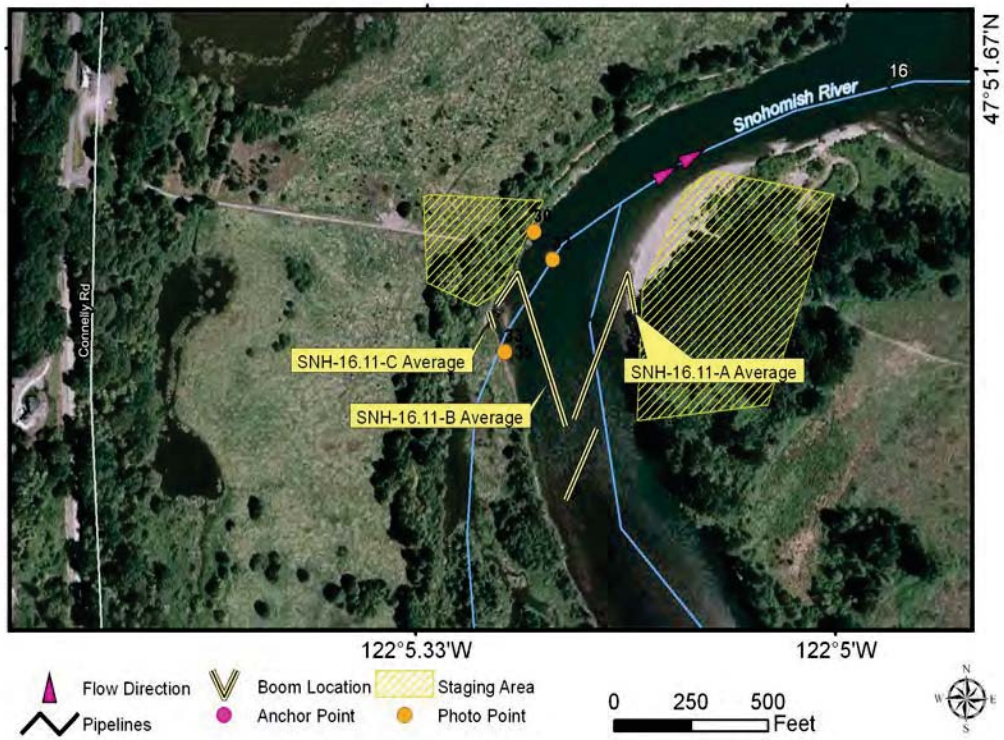
15382 Shorts School Road, 15291 Connelly Rd., Snohomish, 98290

Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North on SR 9 toward 164th St SE (3.58 Mile(s))
2. Turn right on 108th St SE (Marsh Rd) (0.04 Mile(s))
3. Turn left on Airport Way (1.19 Mile(s))
4. Turn right on 1st St (0.59 Mile(s))
5. Turn right on Lincoln Ave (0.33 Mile(s))
6. Continue on Old Snohomish Monroe Rd (1.39 Mile(s))
7. Turn right on Treosti Rd (Tresti Rd) (0.28 Mile(s))
8. Bear left on 115th Ave SE (Shorts School Rd) (1.81 Mile(s))

Arrive at 15382 Shorts School Road, Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 51.518' / W 122° 4.872', Sector Map 7-6
Strategy Objective:	Exclusion - Exclude product from side channel at river left.
Implementation:	Place hardboom across mouth of side channel (mouth is 24ft wide). Place sorbent boom as backup.
Site Safety Note:	Other boats, steep and slippery bank at LB, slippery cobbles at RB, fast current.
Staging Area:	Snohomish County owns property on right and left bank. Stage from Shorts School Road on RB, from Connelly Rd. on LB. Stage equipment for 16.11 A, B, and C together. Laborers and equipment go to site. Boat and operator launch from SNH-11.99-staging (BL-339).
Field Notes:	Jet boat required to access site from BL-339.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River side channel, Side channel to Snohomish River, Field Visit Width ~ 24ft, Field Visit Depth ~ 2ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
2 each	Drive Pin(s)
100 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
3	Laborer (s)

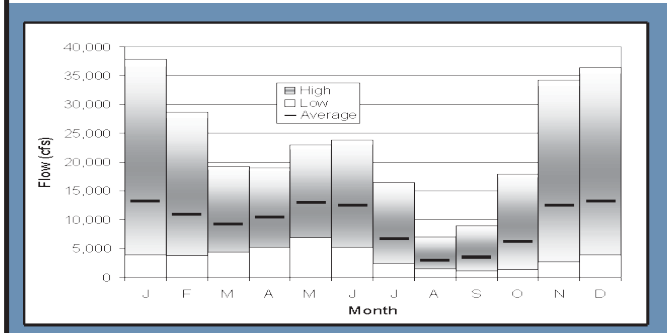
Status: Visited and Not Tested 10/20/2006

Image-882: Looking upstream at side channel from Snohomish River

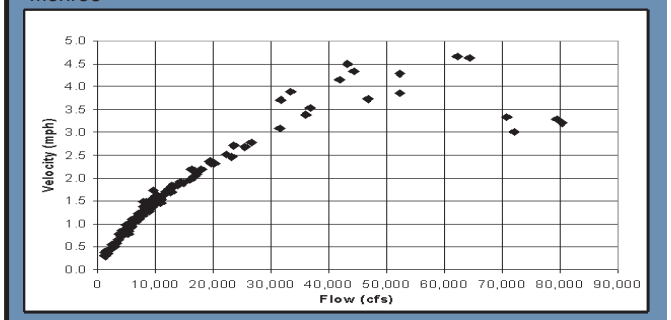
Image-881: Mouth of side channel to Snohomish River

Site Contact Information

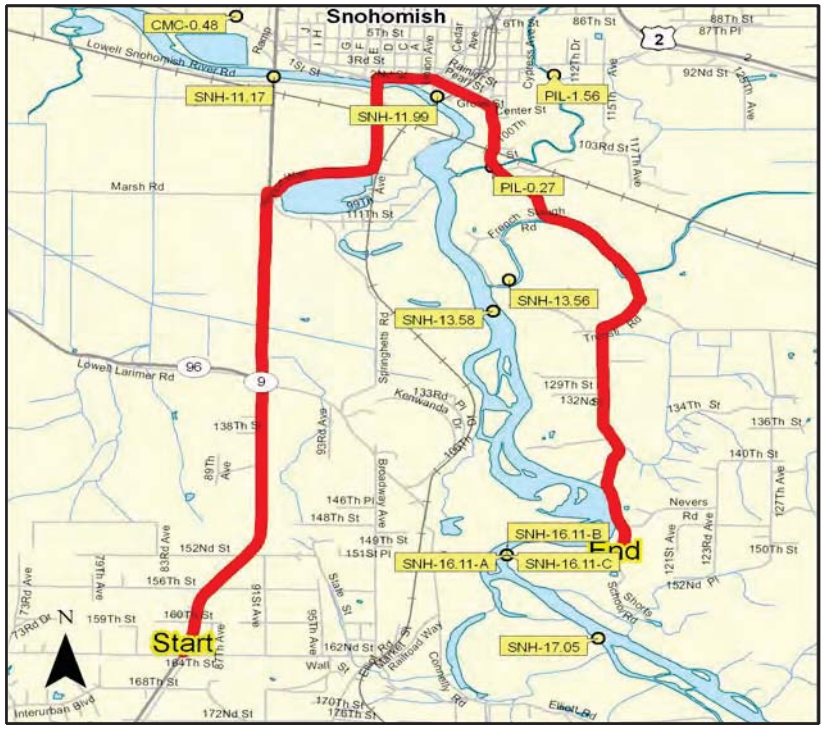
Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



Closest Address:

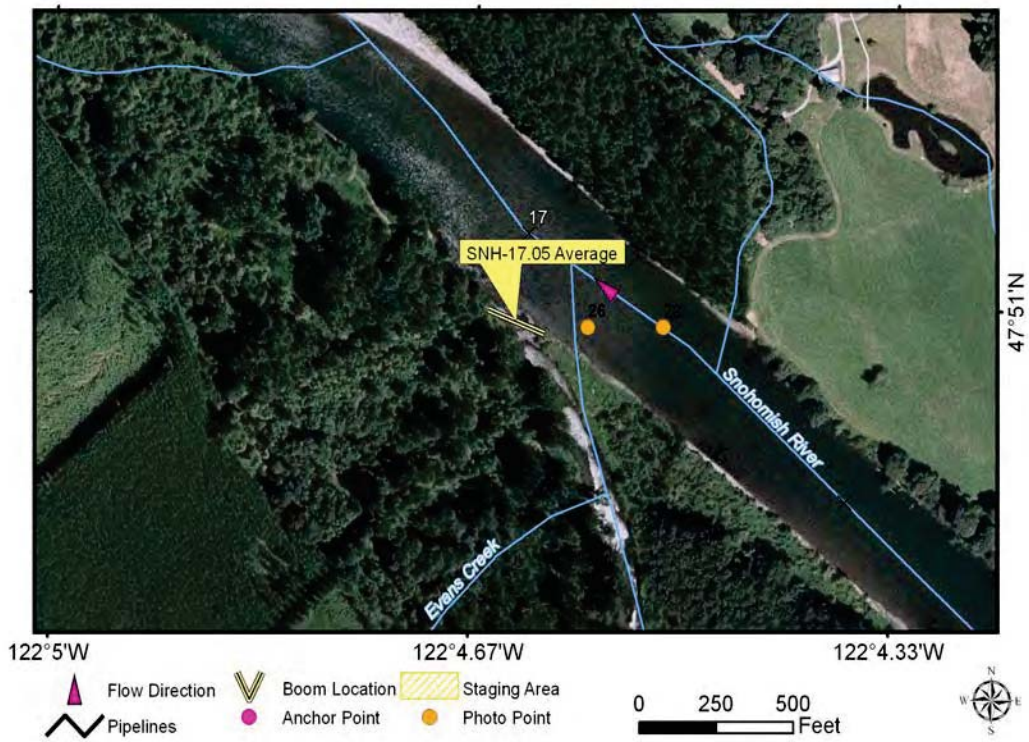
15382 Shorts School Road, 15291 Connelly Rd., Snohomish, 98290

Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North on SR 9 toward 164th St SE (3.58 Mile(s))
2. Turn right on 108th St SE (Marsh Rd) (0.04 Mile(s))
3. Turn left on Airport Way (1.19 Mile(s))
4. Turn right on 1st St (0.59 Mile(s))
5. Turn right on Lincoln Ave (0.33 Mile(s))
6. Continue on Old Snohomish Monroe Rd (1.39 Mile(s))
7. Turn right on Treosti Rd (Tresti Rd) (0.28 Mile(s))
8. Bear left on 115th Ave SE (Shorts School Rd) (1.81 Mile(s))

Arrive at 15382 Shorts School Road, Snohomish, WA, 98290, on the left

Site Lat/Long:	N 47° 50.990' / W 122° 4.632', Sector Map 7-6
Strategy Objective:	Exclusion - Exclude product from moving upstream into back channel.
Implementation:	Deploy boom across channel mouth. Exclusion may not be necessary during low tide/high flow because flow moves downstream too fast.
Staging Area:	Boat, laborers and equipment launch from SNQ-2.88-staging (BL-378).
Resources Targeted:	shorebirds
Watercourse Description:	River side channel, Snohomish R. side channel between SNH-17.05 and SNH-18.53



Suggested Equipment	
Quantity	**Description**
200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
2 each	Anchor(s) for strong currents - ie. SARCA
1 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)

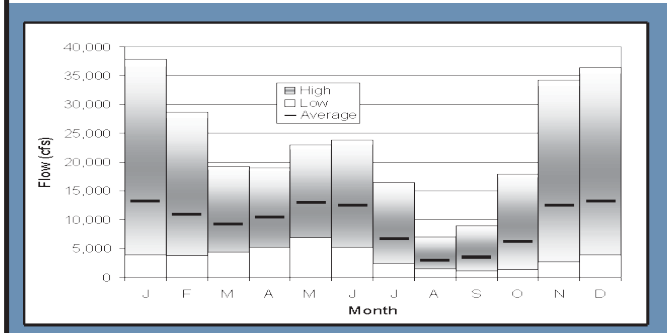
Status: Visited and Not Tested 10/20/2006

Image-26: Snohomish River looking at exclusion location

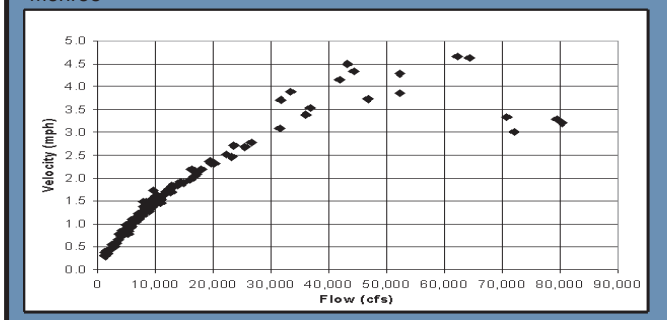
Image-28: Snohomish River looking at exclusion location

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe

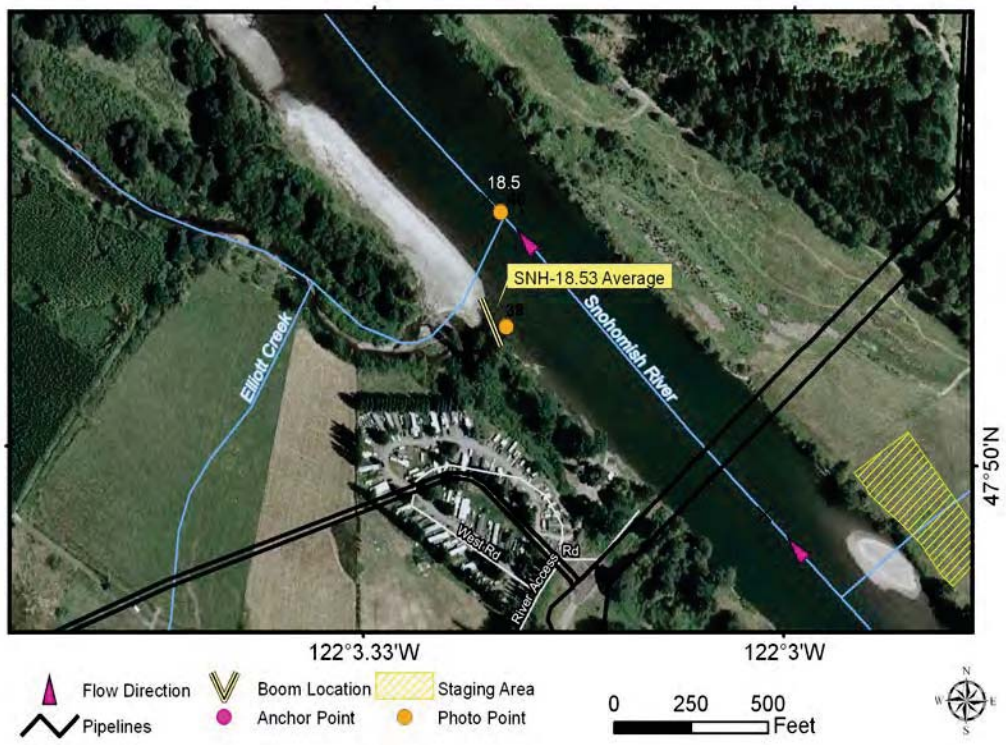
Closest Address:

15813 Shorts School Rd (opposite side Snohomish R., Everett, 98052

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 50.116' / W 122° 3.222', Sector Map 7-6
Strategy Objective:	Deflection - Deflect product away from left bank unnamed side channel.
Implementation:	Use trees for anchor 70 yds upstream of inlet. Depending on conditions could either place boom across left bank channel mouth, or place a deflection boom starting at the upstream natural anchor into channel at a suitable angle (35°) to deflect water away from the channel. Estimated time of implementation is one half-hour. Jet boat is required to access site.
Site Safety Note:	Boat traffic
Staging Area:	Boat, laborers and equipment launch from SNQ-2.88-staging (BL-378).
Field Notes:	Property access to site surrounding left bank side channel was denied. Must access by boat.
Resources Targeted:	shorebirds
Watercourse Description:	River side channel, Snohomish R. side channel between SNH-17.05 and SNH-18.53., Field Visit Width ~ 120ft, Field Velocity ~ 2.4MPH



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
450 ft	B3 - River Boom, or other appropriate type
60 ft	Chain
1	Jet Boat
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

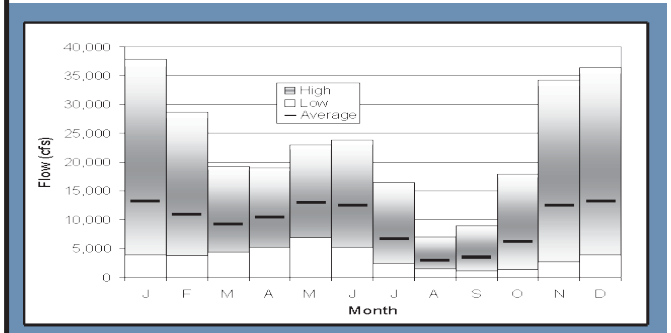
Status: Visited and Not Tested 10/20/2006

Image-38: Snohomish River looking upstream at river left

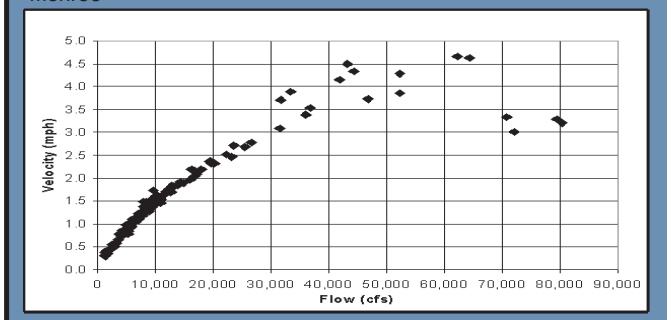
Image-40: Snohomish River looking at into side channel at river left

Site Contact Information

No contact information available.



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe

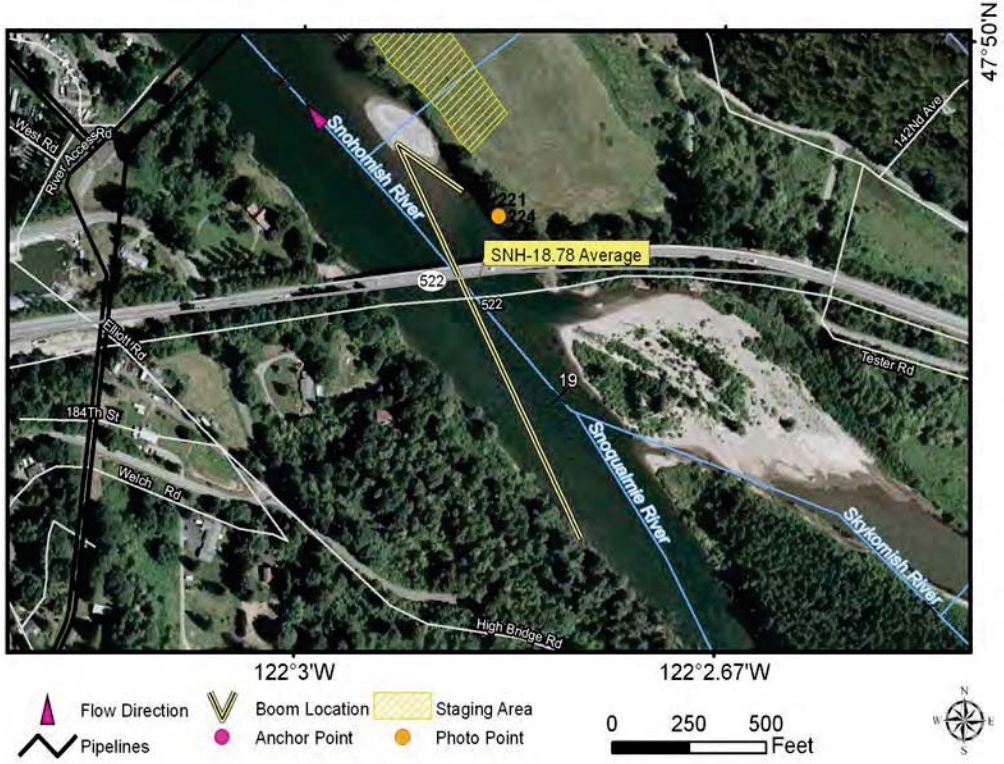
Closest Address:

Elliot Road, N of State Rte 522, Snohomish, 98296

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 49.964' / W 122° 2.880', Sector Map 7-6
Strategy Objective:	Collection - Collect product from Snohomish River near Route 522 bridge.
Implementation:	Deploy hard boom from trees on southeast (left) bank upstream of bridge to intermediate bridge pier, and bridge pier to sand bar on northeast bank (approximately 1200 ft). Continue boom back upstream to protect shoreline. Use sorbent material on both sides of boom for sheen control. Maintain 45° boom angle, or suitable angle for current. Vehicles cannot access bank, so product must be pumped (15-20 ft head) using hose (~400 ft) and 3" diaphragm pump to vac trucks. Boom deflectors can be substituted for rope. May use water bladder for forming to side channels.
Site Safety Note:	High slippery banks.
Staging Area:	Stage at the barn on park property RB. Emergency vehicle access is at the west end of Old Tester Road. There is a very small parking area just outside the park gate, used primarily by fishermen to access the river. There is also roadside parking (primarily for fishermen) on Tester Road from near SR-522 to Old Tester Road. Laboreres and equipment got ot site. Boat and operator launch from SNQ-2.88-staging (BL-378).
Field Notes:	Rural
Resources Targeted:	habitat restoration/mitigation site - There is a restoration site near collection pt.
Watercourse Description:	River with tidal influence, Field Visit Width ~ 495ft, Field Velocity ~ 1.2MPH



Suggested Equipment	
Quantity	**Description**
3000 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1700 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
1 100 ft section(s)	Bridge Pier Bridle(s)
1 each	Brush Skimmer(s)
1 each	Diaphragm Pump(s)
20 each	Drive Pin(s)
20 each	Hand Bridle(s)
3600 ft	Sorbent Boom
2 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

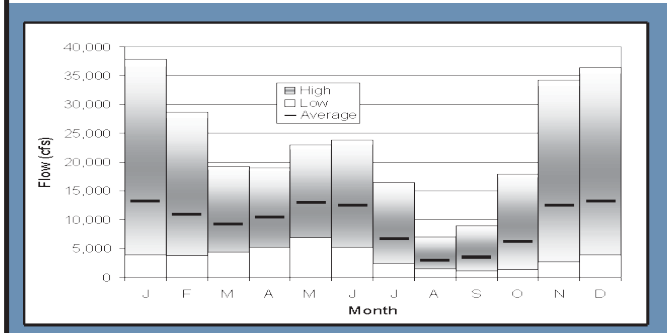
Status: Visited and Not Tested 10/17/2006

Image-224: Snohomish River looking upstream at Hwy 522 bridge from right bank

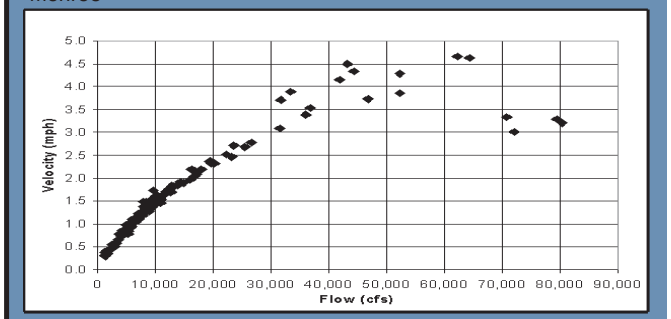
Image-221: Snohomish River looking downstream from right bank at collection area

Site Contact Information

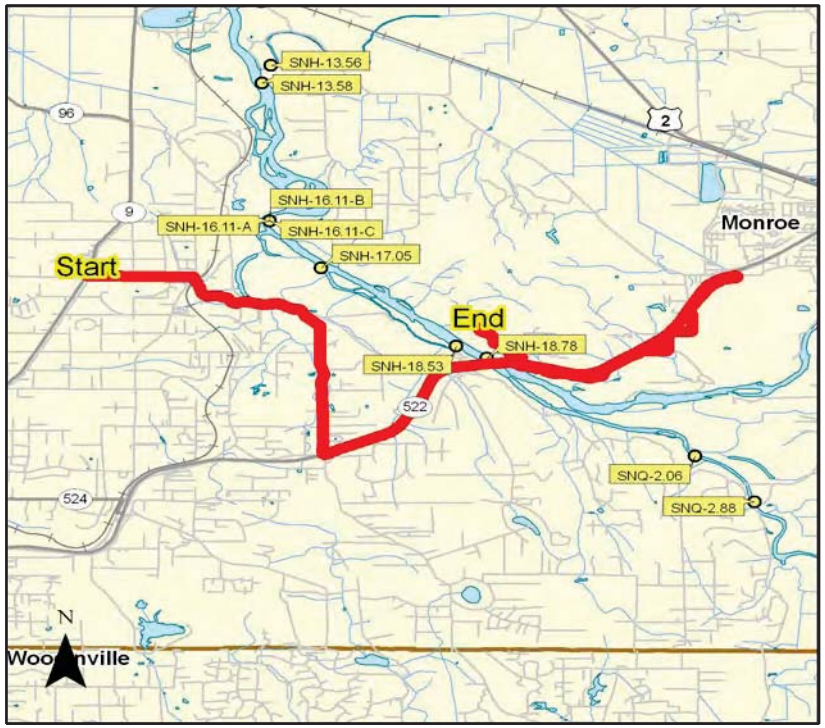
High Priority - contact immediate or before entering:
Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.
Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information



Monthly Average Flow, 12150800 Snohomish River near Monroe



Average Velocity vs. Flow, 12150800 Snohomish River near Monroe



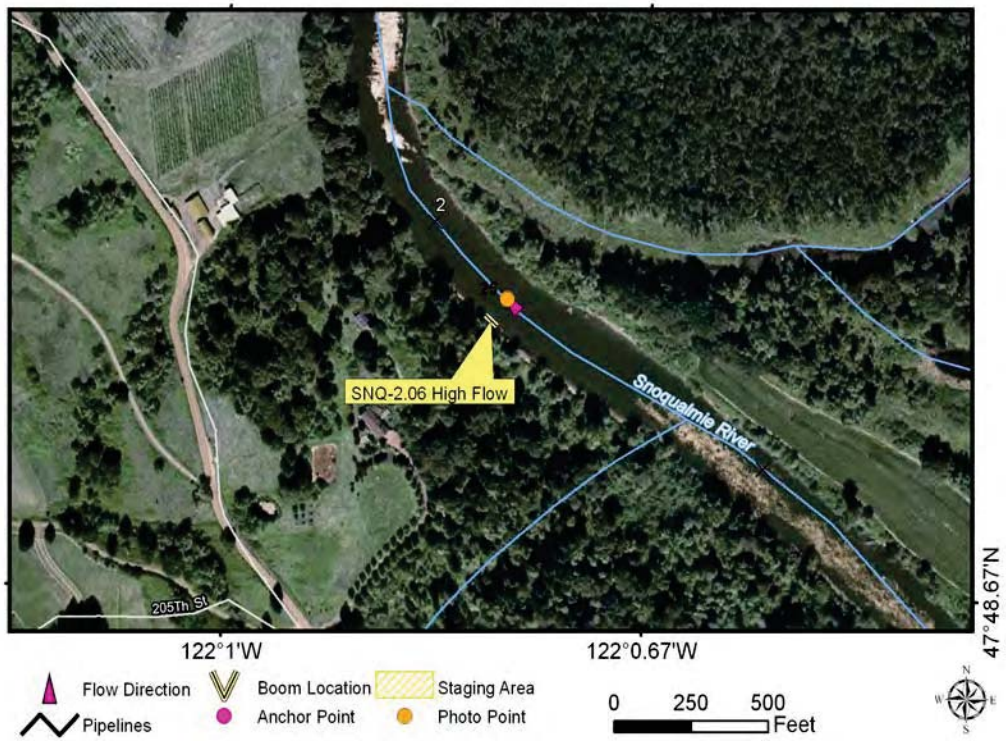
Closest Address:

13807 Old Tester Rd, Snohomish, 98290

Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North East on SR 9 toward 164th St SE (0 Mile(s))
2. Turn right on 164th St SE (Union St) (0.85 Mile(s))
3. Turn right on Broadway Ave (Cathcart Rd) (0.02 Mile(s))
4. Turn left on Elliott Rd (Riverside Dr) (1.08 Mile(s))
5. Turn right on Fales Rd (115th Ave SE) (2.01 Mile(s))
6. Turn left onto ramp and go North East on SR 522 (4.34 Mile(s))
7. Take ramp to 162nd St SE (0.26 Mile(s))
8. Continue on 162nd St SE (164th St SE) (0 Mile(s))
9. Turn right on Tester Rd (2.82 Mile(s))
10. Make sharp left on Old Tester Rd (0.58 Mile(s))

Site Lat/Long:	N 47° 48.801' / W 122° 0.785', Sector Map 7-6
Strategy Objective:	Exclusion - Exclude product from side channel.
Implementation:	Utilize river boom to exclude the channel. Anchor from shore to shore. Channel only has water during high flow. May be difficult to find, use GPS to locate site. Access site by boat.
Site Safety Note:	Boat traffic
Staging Area:	Boat, laborers and equipment launch from SNQ-2.88-staging (BL-378).
Field Notes:	Rural, gravel, light traffic.
Resources Targeted:	shorebirds, salmonids (anadromous)
Watercourse Description:	River side channel, Side channel to Snoqualmie River.,



Suggested Equipment	
Quantity	**Description**
100 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
2 each	Anchor(s) for strong currents - ie. SARCA
50 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
50 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

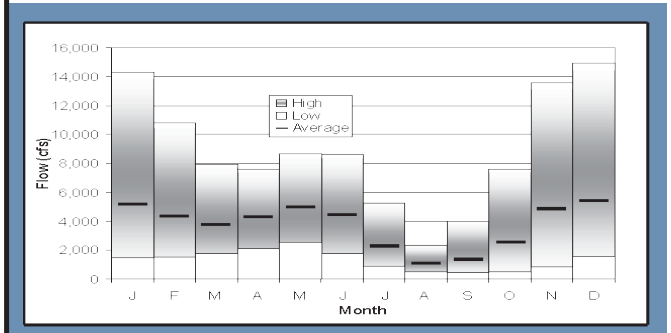
Status: Visited and Not Tested 10/20/2006

Image-25: Snoqualmie River looking upstream at exclusion location

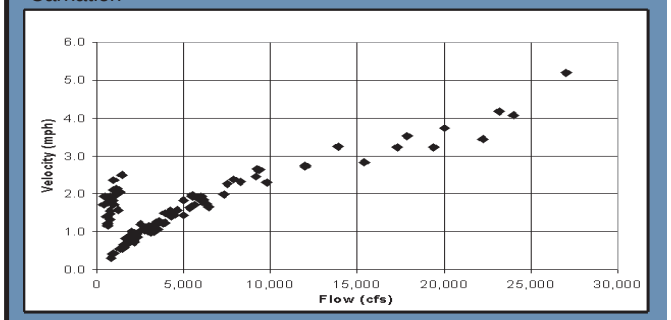
No Image Available

Site Contact Information

No contact information available.



Monthly Average Flow, 12149000 Snoqualmie River near Carnation



Average Velocity vs. Flow, 12149000 Snoqualmie River near Carnation

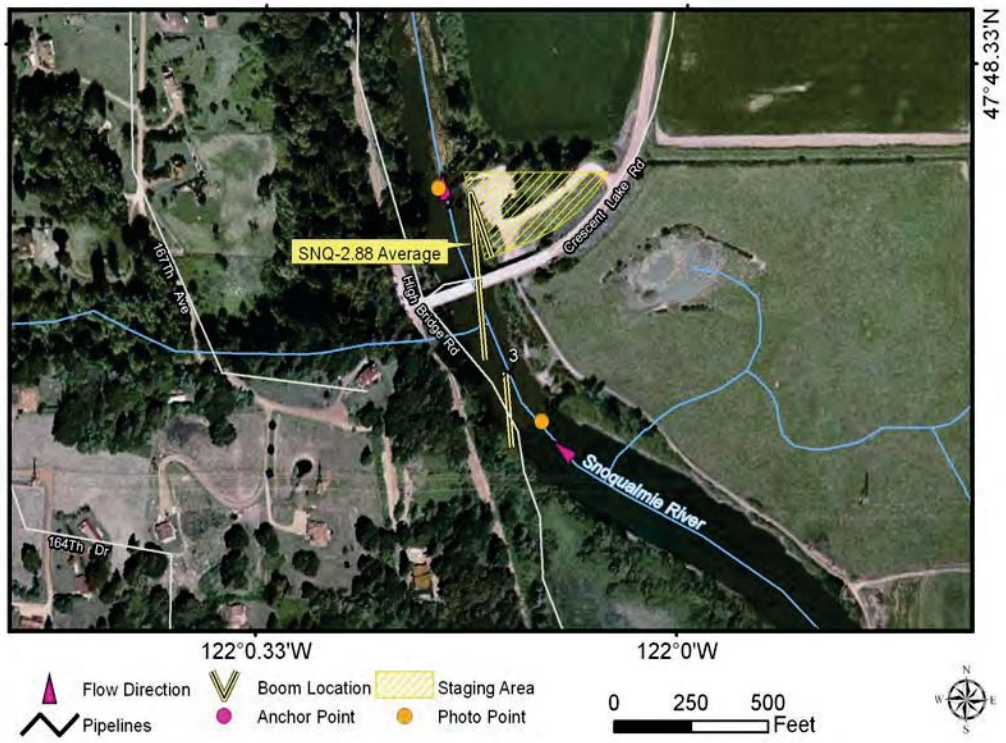
Closest Address:

16121 High Bridge Rd. (closest address), Monroe, 98272

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 48.263' / W 122° 0.152', Sector Map 7-6
Strategy Objective:	Collection - Cascade booms from LB to RB for collection at SQL-2.88.
Implementation:	2-Stages: (1) Deflect current upstream using river boom to main containment boom. Anchor to shore on upstream LB and anchor downstream from the RB, utilize hand bridles to maintain deflection angle if current pressure is strong. (2) Install in stream anchor at upstream end below deflection boom. Install containment boom back to RB. Install shoreline protection along back at collection point. Collect at High Bridge boat ramp.
Staging Area:	High Bridge Boat Ramp has 1 concrete boat ramp, 10 gravel car and 20 gravel trailer parking spots. The boat ramp has a moderate to steep grade and is located on a section of the river with a slow to moderate river current.
Field Notes:	paved road, boat ramp
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	River without a dam, Field Visit Width ~ 240ft, Field Velocity ~ 1.5MPH



Suggested Equipment	
Quantity	**Description**
2325 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
1300 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Chain
8 each	Drive Pin(s)
12 each	Hand Bridle(s)
1 each	Paravane(s)
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
1	Boat Operator (s)
8	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

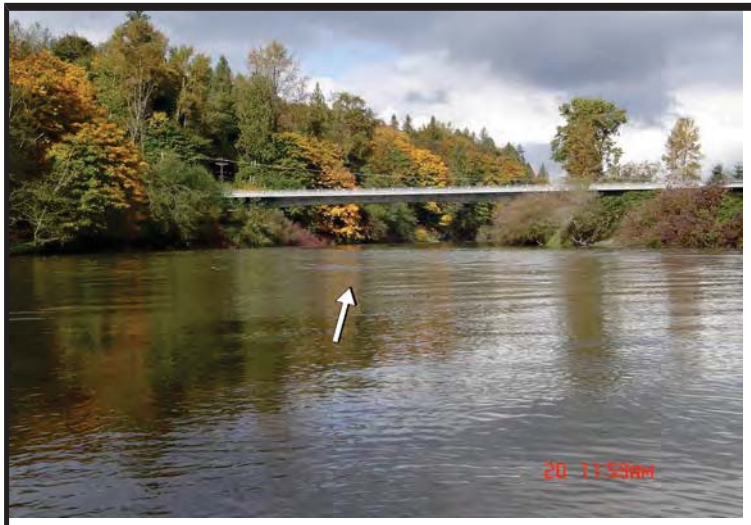
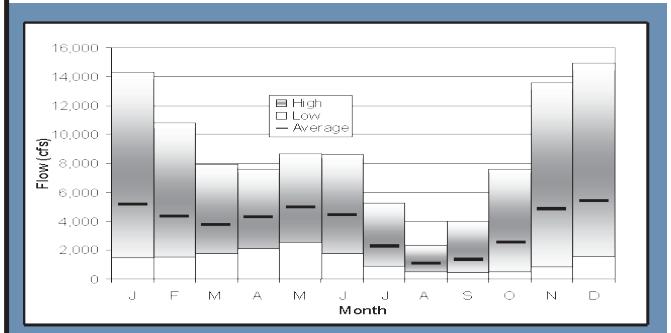


Image-19: Snoqualmie River looking downstream at Crescent Lake bridge and deflection location

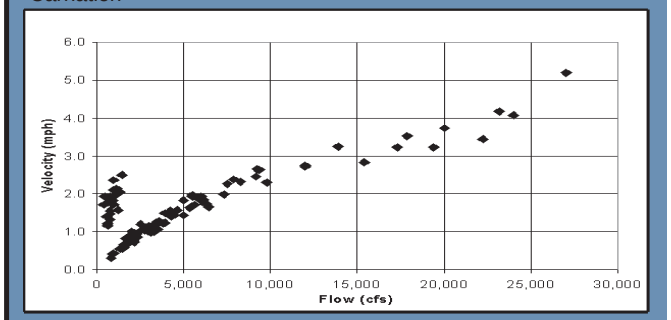
Image-24: Snoqualmie River looking upstream at Crescent Lake bridge

Site Contact Information

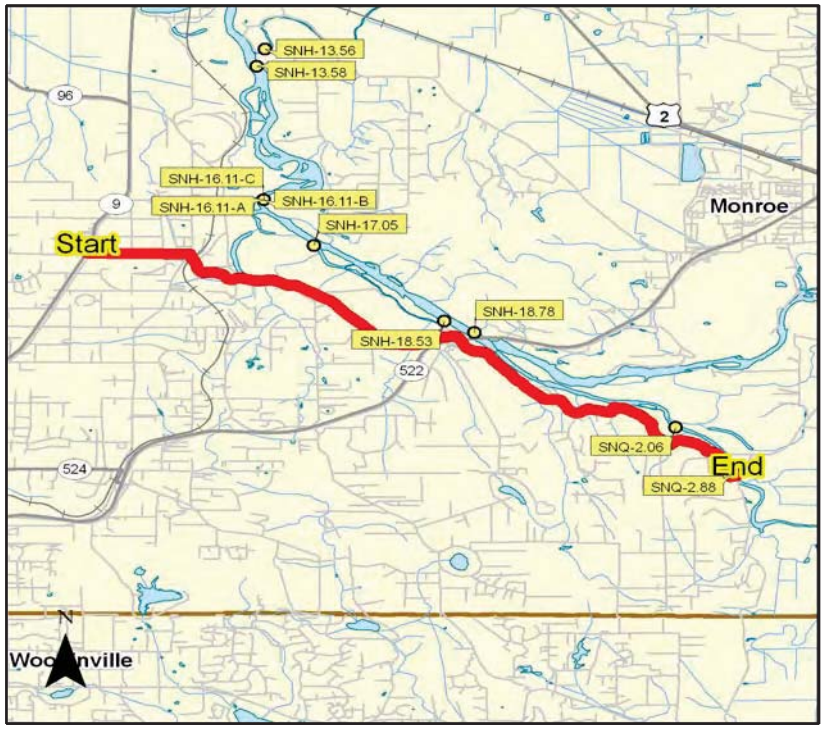
No contact information available.



Monthly Average Flow, 12149000 Snoqualmie River near Carnation



Average Velocity vs. Flow, 12149000 Snoqualmie River near Carnation



Closest Address:

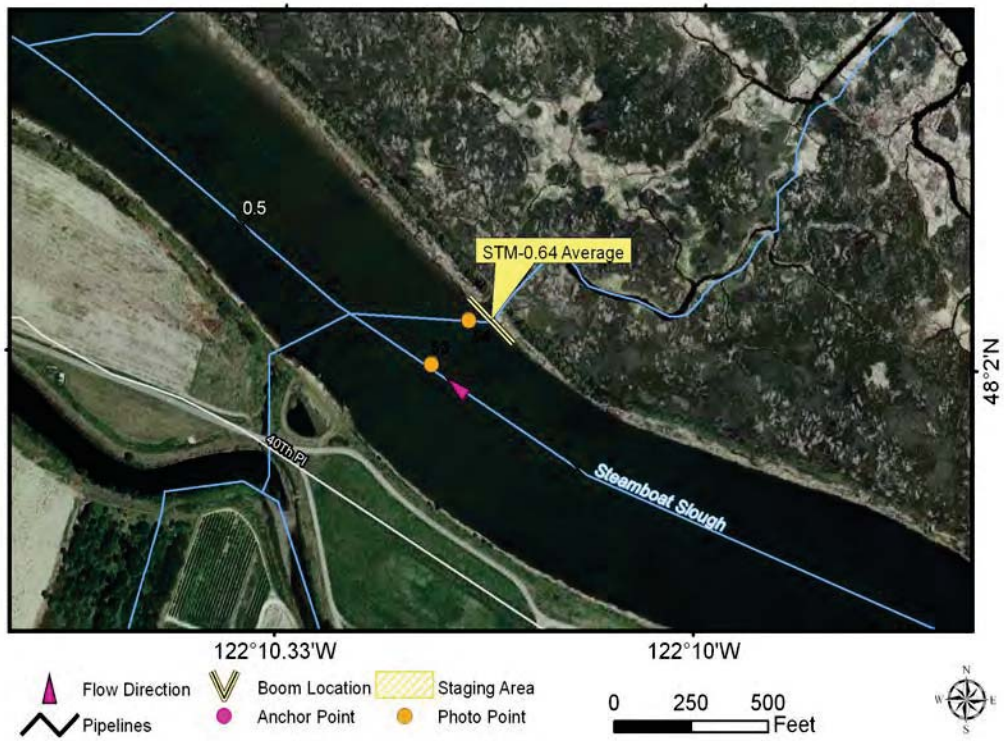
20776 Crescent Lake Rd., Monroe, 98272

Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North East on SR 9 toward 164th St SE (0 Mile(s))
2. Turn right on 164th St SE (Union St) (0.85 Mile(s))
3. Turn right on Broadway Ave (Cathcart Rd) (0.02 Mile(s))
4. Turn left on Elliott Rd (Riverside Dr) (3.02 Mile(s))
5. Bear left on High Bridge Rd (3.32 Mile (s))
6. Turn left on Crescent Lake Rd (0.06 Mile(s))

Arrive at 20776 Crescent Lake Rd., Monroe, WA, 98272, on the left

Site Lat/Long:	N 48° 2.018' / W 122° 10.157', Sector Map 7-1
Strategy Objective:	Exclusion - Keep product out of tidal marsh channels.
Implementation:	Exclude product by placing boom parallel to river across mouth of side channel. Anchor from shore to shore. Access site by boat, shallow transit from boat launch to mouth of Steamboat Slough.
Site Safety Note:	Debris in water, boat traffic
Staging Area:	Boat, laborers and equipment launch from NC-31-staging (BL-296).
Field Notes:	Urban, paved, light traffic.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	River side channel, Unnamed side channel to Steamboat Slough, Field Visit Width ~ 60ft, Field Visit Depth ~ 14ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
2 each	Towing Bridle(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-53: Steamboat Slough looking at wetland marsh on river right

Image-54: Steamboat Slough looking at wetland marsh on river right

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

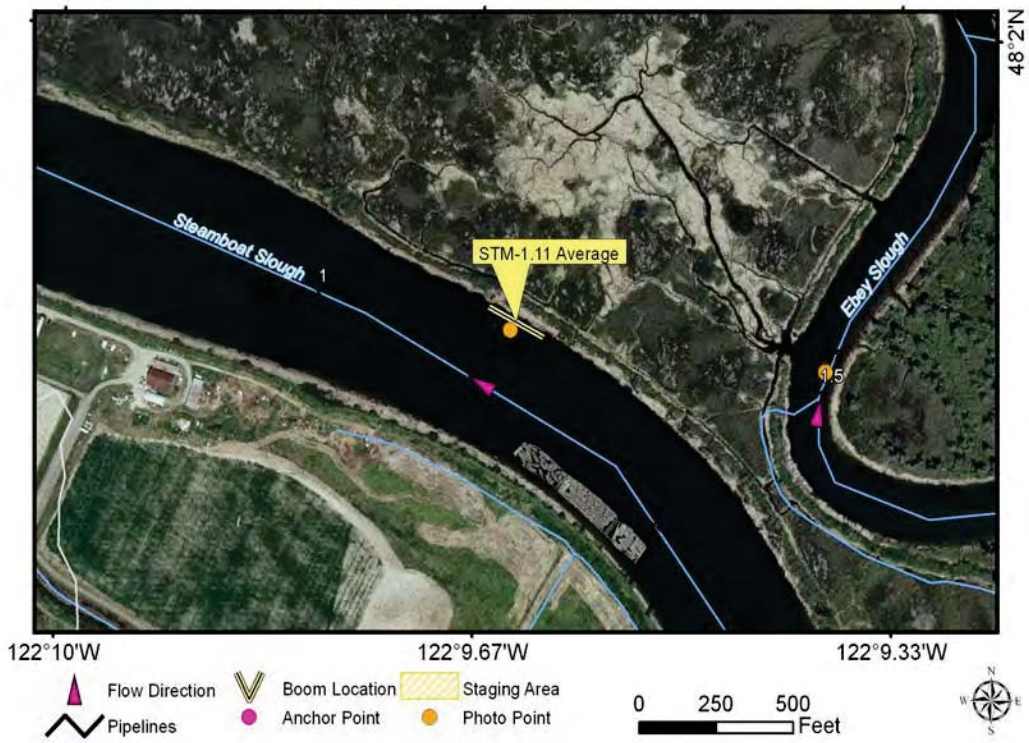
Closest Address:

Marysville, 98270

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 1.846' / W 122° 9.615', Sector Map 7-1
Strategy Objective:	Exclusion - Keep product out of tidal marsh channels.
Implementation:	Exclude product by placing boom parallel to river along marsh. Anchor from shore to shore using natural anchors (trees). There are side channels to the east which may require lengths of sorbent boom to exclude depending on flow conditions. Equipment sorbent boom quantity contains additional lengths to account for varying field conditions.
Site Safety Note:	Boat traffic, log rafts
Staging Area:	Boat, laborers and equipment launch from NC-31-staging (BL-296).
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	River side channel, Steamboat Slough side channels, Field Visit Width ~ 45ft, Field Visit Depth ~ 27ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
500 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-52: Steamboat Slough looking at wetland marsh on river right

No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

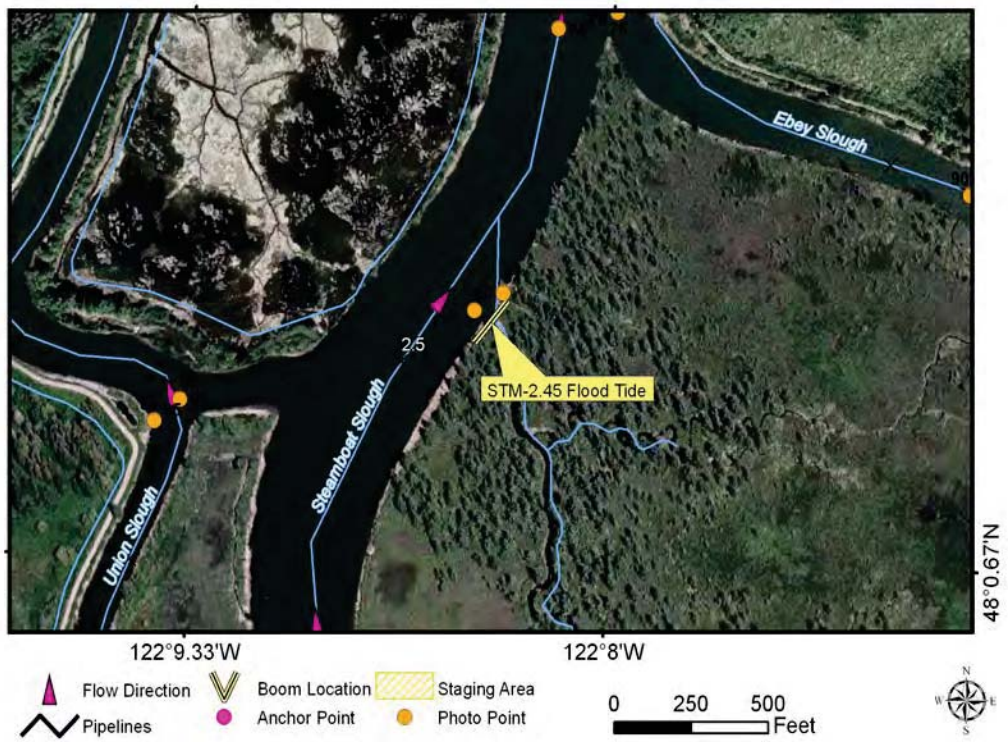
Marysville, 98270

Driving Directions:

Cannot Drive to Site

Steamboat Slough South of cut to Ebey Slough — STM-2.45-Flood Tide 4-200

Site Lat/Long:	N 48° 0.798' / W 122° 9.081', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from side channel.
Implementation:	Deploy boom across mouth of creek anchoring from shore to shore using natural anchors (trees). Sorbent material may also be required in stream approximately 30 ft north, additional sorbent boom length included in equipment list.
Site Safety Note:	Slippery banks, debris, deep mud
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Undeveloped area, tidal influence.
Resources Targeted:	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat
Watercourse Description:	River side channel, Side channel to Steamboat Slough, Field Visit Width ~ 30ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
200 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
2 each	Hand Bridle(s)
300 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-80: Looking into side channel on right bank from Steamboat Slough

Image-81: Looking upstream (south) and into side channel on right bank from Steamboat Slough

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

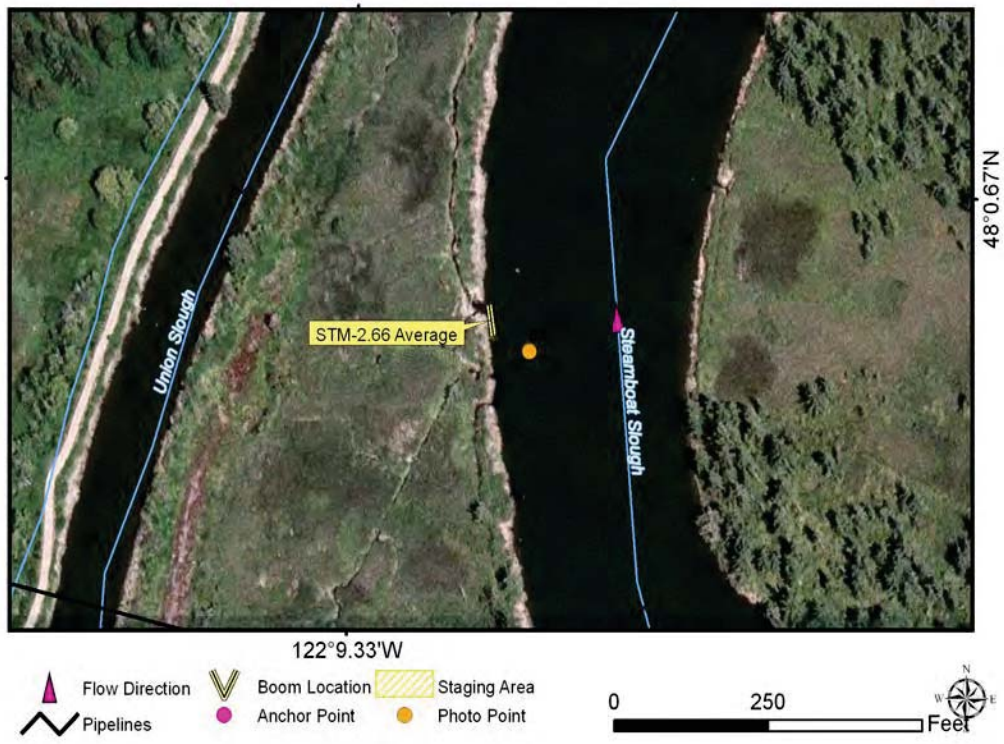
Closest Address:

N/A, Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.636' / W 122° 9.280', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from side channel, wetlands, tidal marsh.
Implementation:	Access site by boat and place 50 ft sorbent boom into side channel. Dam breaching is planned for the near future in this area. There are 2 similar channels within 100 yards to the south that will also require 50 ft of sorbent boom each. Additional boom length included in equipment list.
Site Safety Note:	Slippery banks
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Undeveloped, tidal influence.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	River side channel, Side channel to Steamboat Slough, Field Visit Width ~ 25ft, Field Visit Depth ~ 20ft



Suggested Equipment	
Quantity	**Description**
1 each	Boat(s)
150 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-88: Steamboat Slough looking west at side channel on Spencer Island

No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

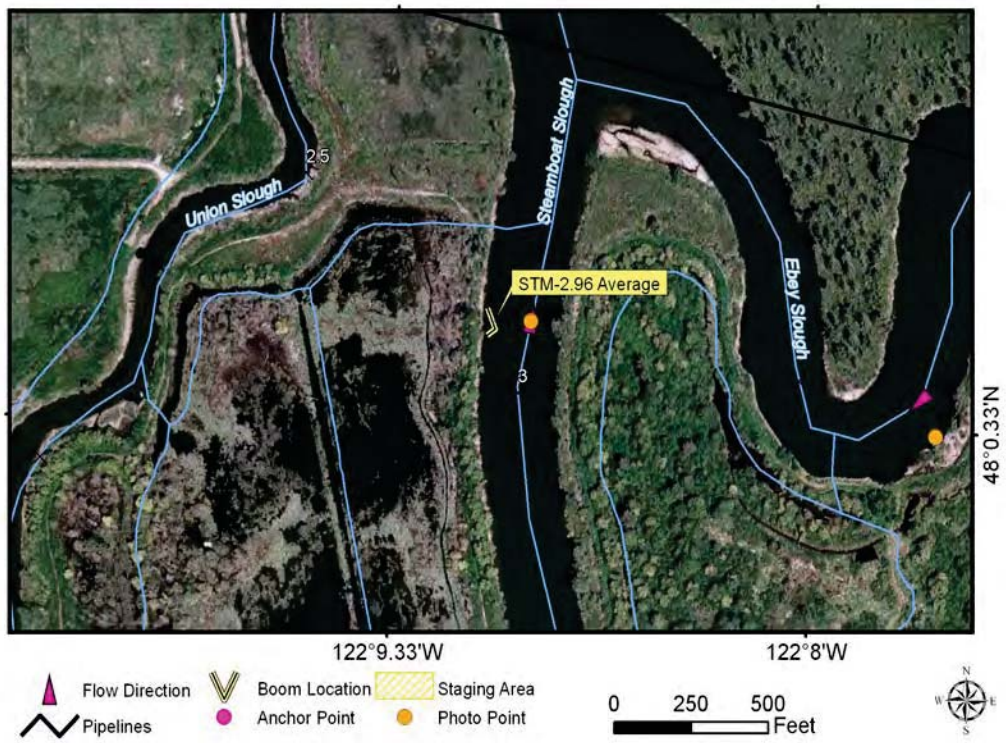
Everett, 98205

Driving Directions:

Cannot Drive to Site

Steamboat Slough South of Ebey Slough Confluence — STM-2.96-Average

Site Lat/Long:	N 48° 0.378' / W 122° 9.258', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from side channel.
Implementation:	Exclude side channel using closed chevron configuration with one leg longer and at a shorter angle. Place longer leg in direction of tidal flow. Anchor apex using SARCA anchor.
Site Safety Note:	Slips and falls
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Undeveloped land. Fast current, tidal influence.
Resources Targeted:	shorebirds, sensitive habitat
Watercourse Description:	River side channel, Steamboat Slough side channel, Field Visit Width ~ 6ft, Field Visit Depth ~ 5ft



Suggested Equipment	
Quantity	**Description**
125 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
100 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Chain
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-51: Steamboat Slough looking west at dike breach on Spencer Island

No Image Available

Site Contact Information

Responsible party or alternate contact:
Kye Iris, WA Department of Fish and Wildlife, (W) 425-775-1311x125, Land Manager

No Hydrograph Chart

No Flow Velocity Chart

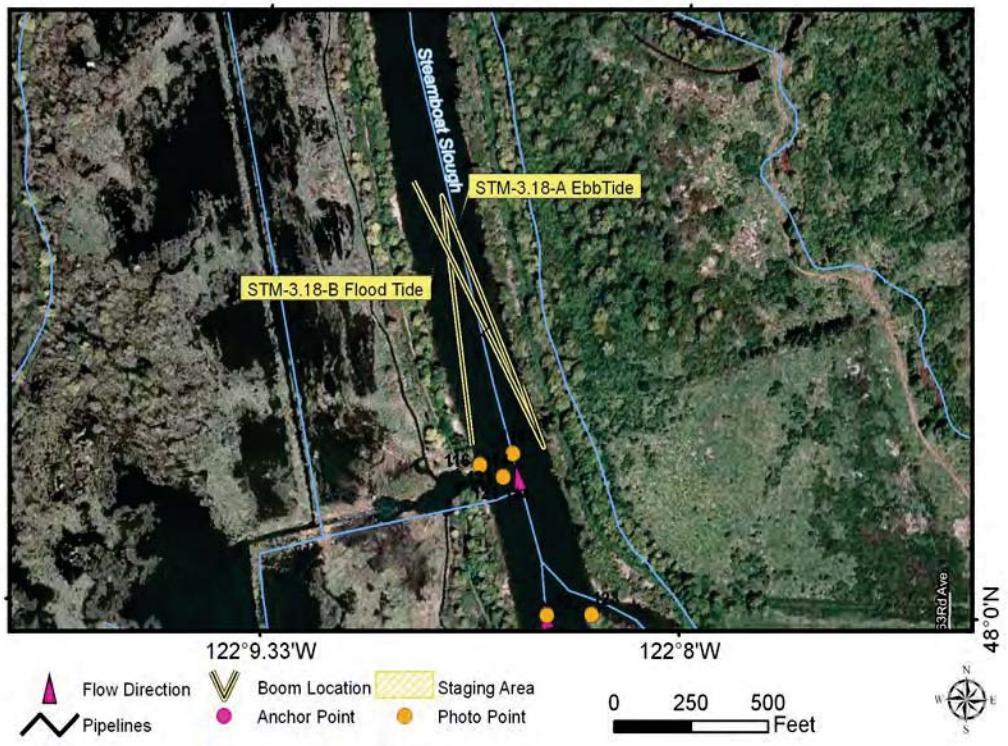
Closest Address:

Levee Breach, Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.207' / W 122° 9.195', Sector Map 7-3
Strategy Objective:	Collection - Collect product during low tide in Steamboat Slough.
Implementation:	Collect product using an inverted Chevron during low tide. Install boom approximately 1500 feet upstream of the levee breach. Use boom deflectors to maintain angle. Collect product using marco skimmer.
Site Safety Note:	There is a very powerfull in flow to Spencer Island during high tide, caution is advised.
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	The NE side of Spencer Island will not be accessible by land in the near future. WDFW and Ducks Unlimited are breaching the dike to improve fish passage.
Resources Targeted:	shorebirds, salmonids (anadromous), marine mammals, sensitive habitat - Spencer Island Wetlands
Watercourse Description:	River with tidal influence, Steamboat Slough,



Suggested Equipment	
Quantity	**Description**
4 each	Anchor(s) for strong currents - ie. SARCA
1800 ft	B3 - River Boom, or other appropriate type
2 each	Boat(s)
16 each	Boom Deflector(s)
120 ft	Chain
1 each	Marco Skimmer(s)
Suggested Personnel	
2	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-114: From Steamboat Slough, looking at dam breach at Spencer Island at low tide

Image-116: Right bank of dam breach and Steamboat Slough at low tide

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

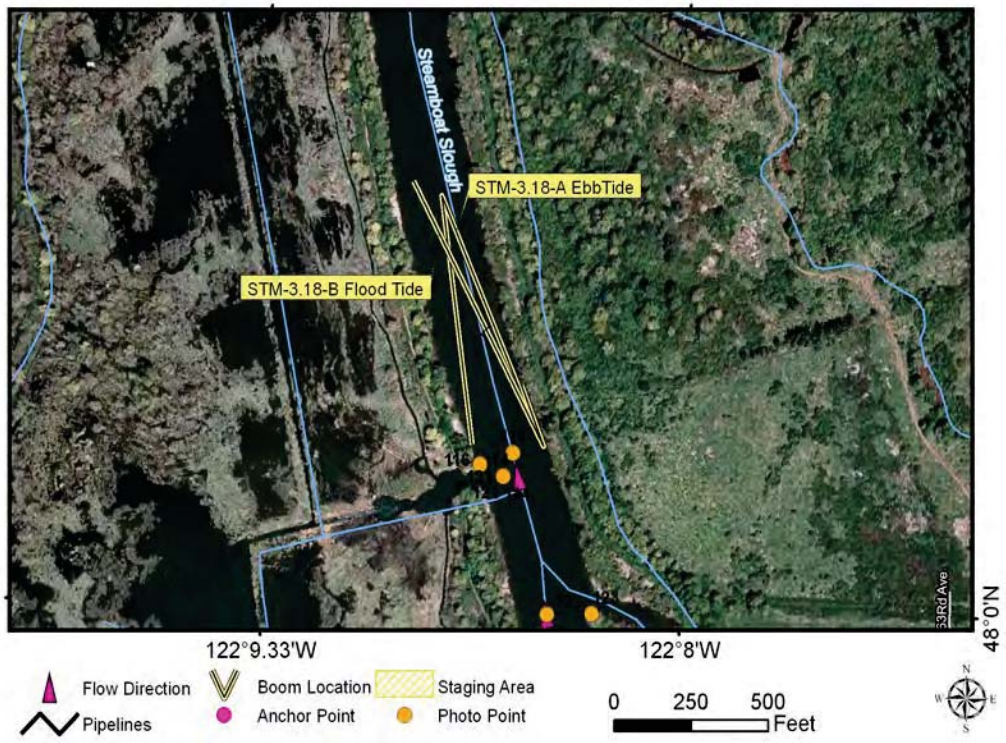
Everett, 98205

Driving Directions:

Cannot Drive to Site

Steamboat Slough at Spencer Island #1 — STM-3.18-B-Flood Tide 4-208

Site Lat/Long:	N 48° 0.207' / W 122° 9.195', Sector Map 7-3
Strategy Objective:	Collection - Collect product during high tide at RB (east bank).
Implementation:	Deploy boom from RB to inline anchor. Use two SARCA anchors with 60 ft of chain between boom and SARCA and between the two SARCAs. Deploy boom at 30° angle from shore or angle as appropriate for flow velocity. Boom should take approximately 1/3 of river due to high velocity, but may take entire width. Check current.
Site Safety Note:	There is a very powerfull in flow to Spencer Island during high tide, caution is advised.
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	The NE side of Spencer Island will not be accessible by land in the near future. WDFW and Ducks Unlimited are breaching the dike to improve fish passage.
Resources Targeted:	shorebirds, salmonids (anadromous), marine mammals, sensitive habitat - Spencer Island Wetlands
Watercourse Description:	River with tidal influence, Steamboat Slough



Suggested Equipment	
Quantity	**Description**
400 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
2 each	Anchor(s) for strong currents - ie. SARCA
900 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
120 ft	Chain
1 each	Diaphragm Pump(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
9	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-118: Steamboat Slough looking south with dam breach on right side out of view

Image-121: Dam breach on Steamboat Slough at high tide

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

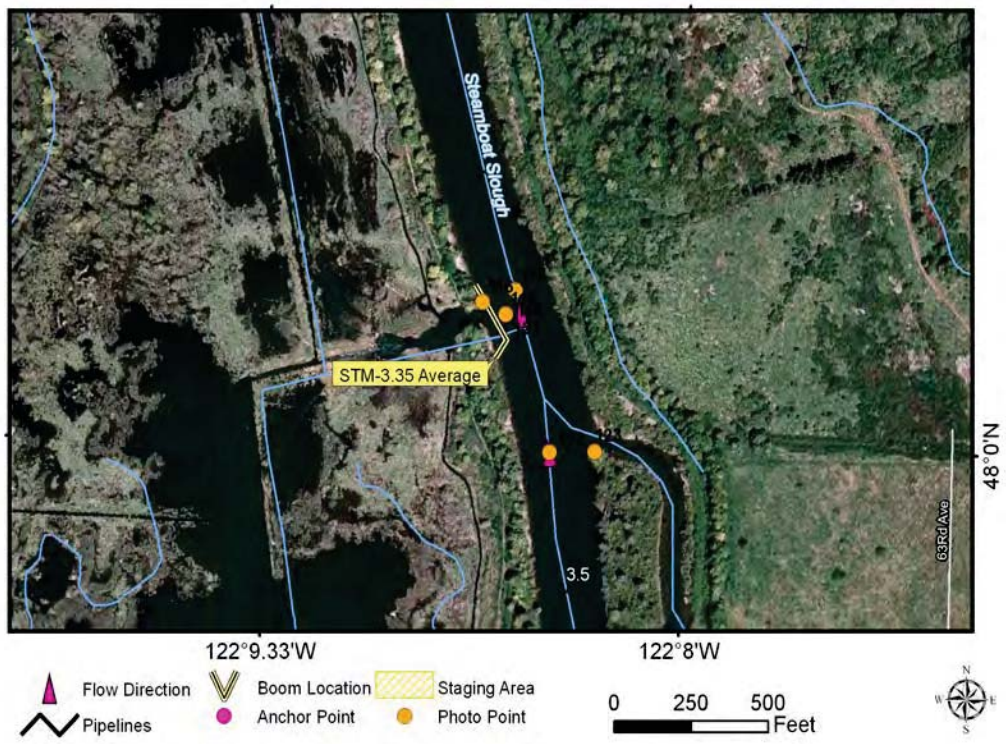
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.059' / W 122° 9.143', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from Spencer Island wetlands.
Implementation:	At low tide, exclude product using close chevron formation at mouth of levee breach. The wide and flat, long leg should be in the direction of flow, limit pressure on short leg by checking angle. Tie off to trees at downstream end. Depending on tidal flow could anchor bank to bank across breach starting upstream approximately 1000 ft. Access site by boat from Langus Riverfront Park.
Site Safety Note:	There is a very powerfull in flow to Spencer Island during high tide, caution is advised.
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	The NE side of Spencer Island will not be accessible by land in the near future. WDFW and Ducks Unlimited are breaching the dike to improve fish passage.
Resources Targeted:	shorebirds, salmonids (anadromous), marine mammals, sensitive habitat - Spencer Island Wetlands
Watercourse Description:	Freshwater wetland, NE Spencer Island levee breach, Field Visit Width ~ 150ft, Field Visit Depth ~ 12ft



Suggested Equipment	
Quantity	**Description**
2 each	Anchor(s) for strong currents - ie. SARCA
700 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
120 ft	Chain
Suggested Personnel	
1	Boat Operator (s)
5	Laborer (s)
1	Supervisor (s)

Status: Not Visited

Image-121: Dam breach on Steamboat Slough at high tide

Image-114: From Steamboat Slough, looking at dam breach at Spencer Island at low tide

Site Contact Information

Responsible party or alternate contact:
Kye Iris, WA Department of Fish and Wildlife, (W) 425-775-1311x125, Land Manager

No Hydrograph Chart

No Flow Velocity Chart

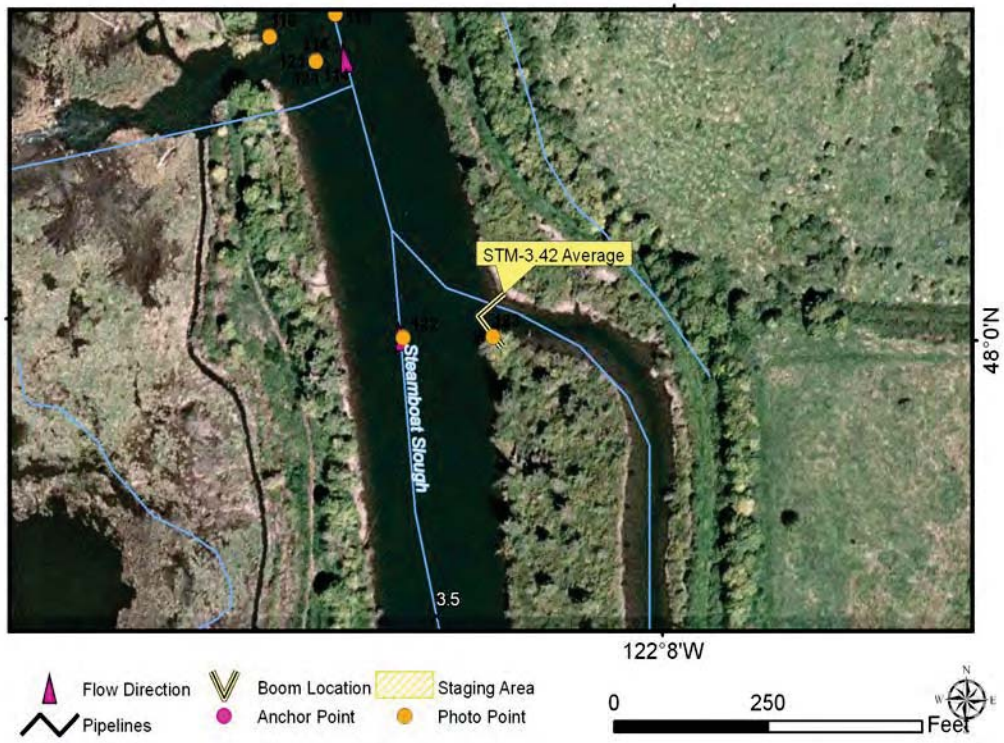
Closest Address:

Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 48° 0.003' / W 122° 9.081', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from entering tidal slough on RB.
Implementation:	Deploy boom in closed chevron formation and tie into root masses at water level. This channel contains water at low tide.
Site Safety Note:	Slippery, debris
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Urban, tidally influenced. This channel contains water at low tide.
Resources Targeted:	shorebirds
Watercourse Description:	Slough, Unnamed Slough to Steamboat Slough, Field Visit Width ~ 45ft, Field Visit Depth ~ 5ft



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
150 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Chain
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-122: Side channel of Steamboat Slough across river from dam breach (east side)

Image-123: Looking east into side channel of Steamboat Slough

Site Contact Information

Responsible party or alternate contact:
Kye Iris, WA Department of Fish and Wildlife, (W) 425-775-1311x125, Land Manager

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

132 63rd Ave NE, Everett, 98205

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 59.668' / W 122° 9.024', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from entering tidal slough on eastern bank.
Implementation:	Deploy hard boom across mouth of channel using natural anchors. Place sorbent boom upstream in tidal channel.
Site Safety Note:	Slippery, debris
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Rural. May be able to access site from dirt road off 63rd Ave SE, however land access has not been confirmed.
Resources Targeted:	shorebirds
Watercourse Description:	River side channel, Field Visit Width ~ 60ft, Field Visit Depth ~ 7ft

Suggested Equipment	
Quantity	**Description**
100 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
150 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
100 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-125: Looking east into side channel of Steamboat Slough

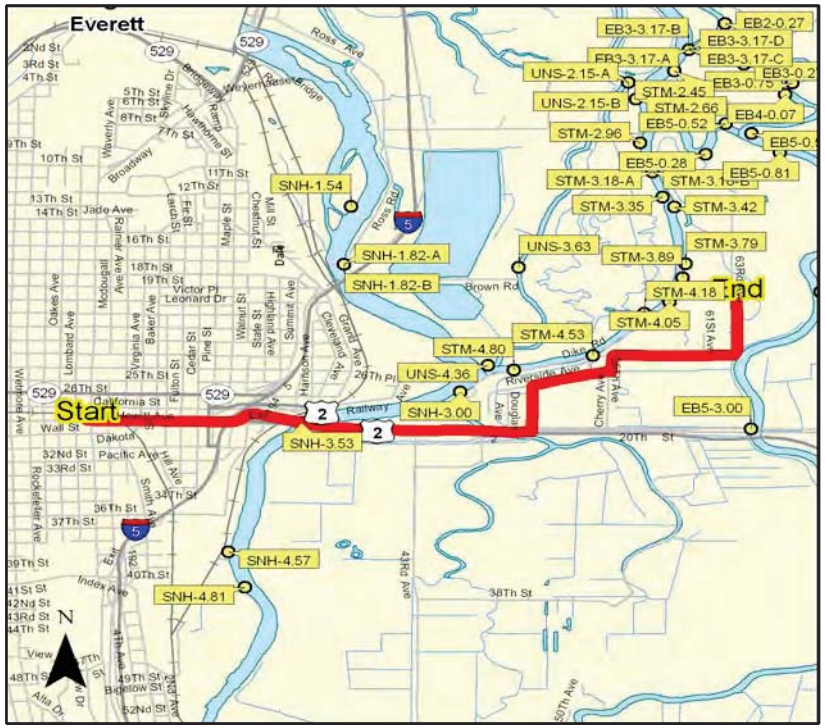
No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

671 63rd Ave SE, Everett, 98205

Driving Directions:

Depart Everett
1. Go East on Hewitt Ave toward Broadway (0.58 Mile(s))
2. Bear left onto ramp and go East on US 2 (0.96 Mile(s))
3. Take ramp to Douglas Ave toward Ebey Island/Homeacres Rd (0.27 Mile(s))
4. Turn left on Douglas Ave (0.22 Mile(s))
5. Continue on Riverside Ave (0.42 Mile (s))
6. Turn left on 55th Ave SE (Cherry Ave) (0.11 Mile(s))
7. Bear right on 12th St SE (Cherry Ave) (0.48 Mile(s))
8. Continue on 63rd Ave SE (0.39 Mile(s))
Arrive at 671 63rd Ave SE, Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 59.588' / W 122° 9.039', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from entering tidal slough on southern bank.
Implementation:	Deploy boom across mouth of tidal channel on RB using natural anchors. Place sorbent boom upstream of river boom for sheen control. Use caution because it lies directly behind dock which makes it difficult to deploy equipment. The tidal channel is bisected by small island. At south end of island add 150 ft of sorbent boom.
Site Safety Note:	Slippery banks, deep mud on road and bank.
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	There is a dock directly in front of side channel. May be able to access site from dirt road off 63rd Ave, however access by land has not been tested.
Resources Targeted:	shorebirds
Watercourse Description:	Slough, Tidal Slough on Steamboat Slough, Field Visit Width ~ 60ft, Field Visit Depth ~ 9ft

Suggested Equipment	
Quantity	**Description**
90 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
105 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
250 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-126: Looking east into side channel of Steamboat Slough

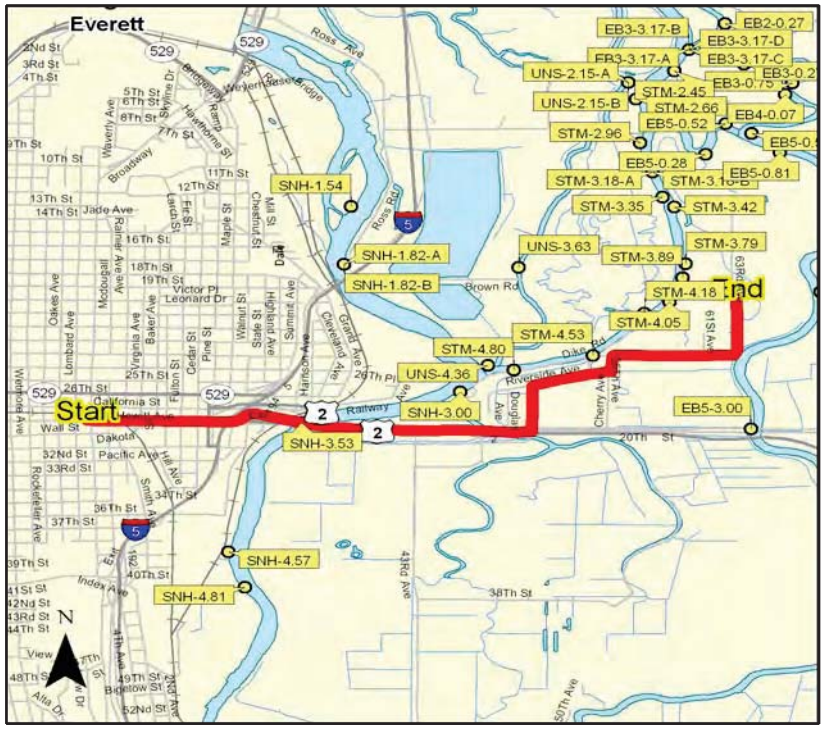
No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



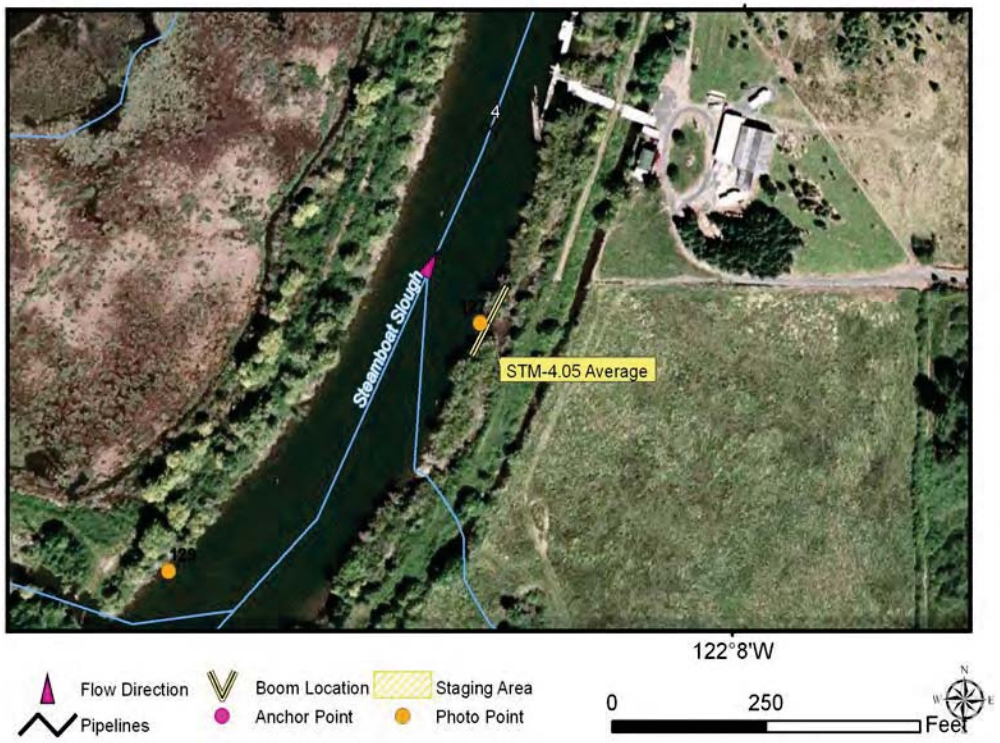
Closest Address:

671 63rd Ave SE, Everett, 98205

Driving Directions:

Depart Everett
1. Go East on Hewitt Ave toward Broadway (0.58 Mile(s))
2. Bear left onto ramp and go East on US 2 (0.96 Mile(s))
3. Take ramp to Douglas Ave toward Ebey Island/Homeacres Rd (0.27 Mile(s))
4. Turn left on Douglas Ave (0.22 Mile(s))
5. Continue on Riverside Ave (0.42 Mile(s))
6. Turn left on 55th Ave SE (Cherry Ave) (0.11 Mile(s))
7. Bear right on 12th St SE (Cherry Ave) (0.48 Mile(s))
8. Continue on 63rd Ave SE (0.39 Mile(s))
Arrive at 671 63rd Ave SE, Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 59.445' / W 122° 9.106', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from entering tidal slough RB (east bank).
Implementation:	Deploy boom across mouth of tidal channel, anchor from shore to shore using natural anchors. Place sorbent boom upstream of river boom for sheen control.
Site Safety Note:	Slippery banks
Staging Area:	Laboreres and equipment go to site. Boat and operator launch from (BL-301)
Resources Targeted:	shorebirds
Watercourse Description:	Slough, Tidal Slough to Steamboat Slough, Field Visit Width ~ 45ft, Field Visit Depth ~ 12ft



Suggested Equipment	
Quantity	**Description**
60 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
120 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
110 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-127: Looking southeast into side channel of Steamboat Slough

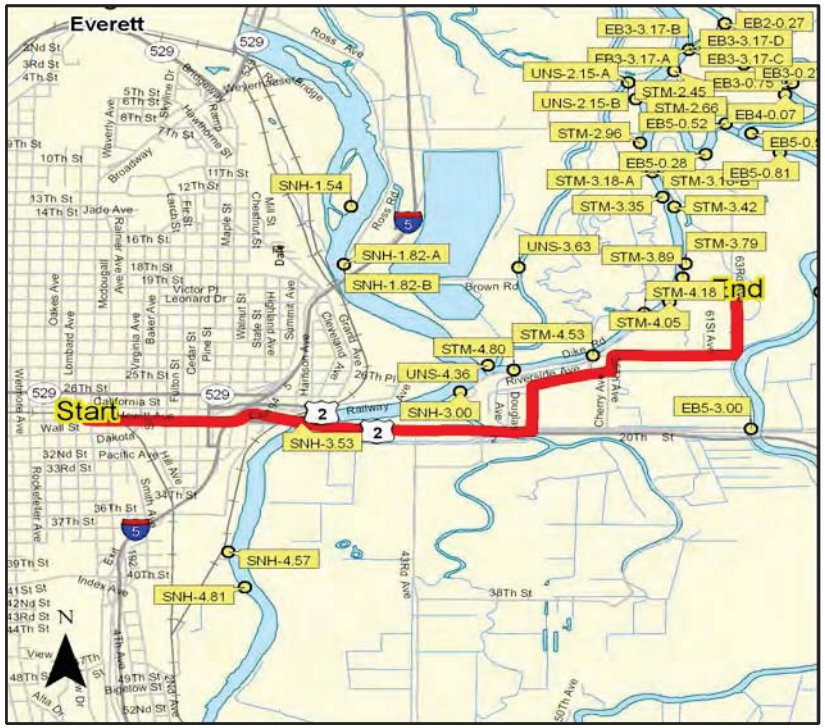
No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart



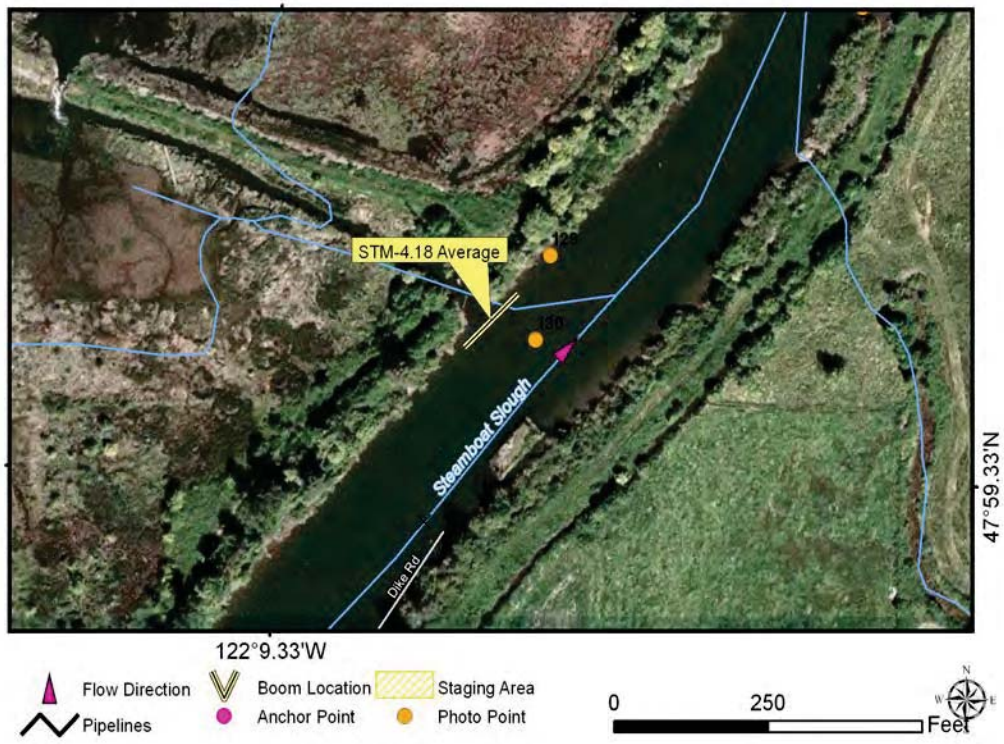
Closest Address:

671 63rd Ave SE, Everett, 98205

Driving Directions:

Depart Everett
1. Go East on Hewitt Ave toward Broadway (0.58 Mile(s))
2. Bear left onto ramp and go East on US 2 (0.96 Mile(s))
3. Take ramp to Douglas Ave toward Ebey Island/Homeacres Rd (0.27 Mile(s))
4. Turn left on Douglas Ave (0.22 Mile(s))
5. Continue on Riverside Ave (0.42 Mile(s))
6. Turn left on 55th Ave SE (Cherry Ave) (0.11 Mile(s))
7. Bear right on 12th St SE (Cherry Ave) (0.48 Mile(s))
8. Continue on 63rd Ave SE (0.39 Mile(s))
Arrive at 671 63rd Ave SE, Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 59.379' / W 122° 9.237', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from Spencer Island wetlands.
Implementation:	Deploy hard boom straight across creek mouth and tie off to deadfall. There are numerous natural anchors. Wetlands flood during high tide and discharge during low tide. Must access via boat.
Site Safety Note:	Debris, mud, slippery banks
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Spencer Island is only accessible by boat.
Resources Targeted:	shorebirds, sensitive habitat - Spencer Island Wetlands
Watercourse Description:	Slough, Tidal Slough on Steamboat Slough, Field Visit Width ~ 45ft, Field Visit Depth ~ 11ft



Suggested Equipment	
Quantity	**Description**
100 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
120 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
120 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-129: Looking southwest at side channel on Spencer Island

Image-130: Looking northwest into side channel on Spencer Island

Site Contact Information

Responsible party or alternate contact:
Snohomish County Parks Department, (W) 425-388-3411, General Parks Department Contact Information
Spencer Island, Snohomish County Parks, (W) 425-388-6616, Spencer Island Regional Park Contact
Kye Iris, WA Department of Fish and Wildlife, (W) 425-775-1311x125, Land Manager

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

4th St SE, Everett, 98206

Driving Directions:

Cannot Drive to Site

Site Lat/Long:	N 47° 59.131' / W 122° 9.503', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from entering tidal creek.
Implementation:	Place sorbent boom at channel opening anchor using natural anchors.
Site Safety Note:	Old boats, debris, old barge
Staging Area:	Access site from Dike Rd, off of 12th St. SE and 55th Ave SE. Laboreres and equipment go to site. Boat and operator launch from SNH-1.49-staging (BL-301).
Field Notes:	Urban, light traffic.
Resources Targeted:	shorebirds
Watercourse Description:	Intermittent Stream, Field Visit Width ~ 75ft

Suggested Equipment	
Quantity	**Description**
150 ft	Sorbent Boom
Suggested Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Tested 10/19/2006

Image-132: Looking southeast past ships to tidal channel on Steamboat Slough

No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

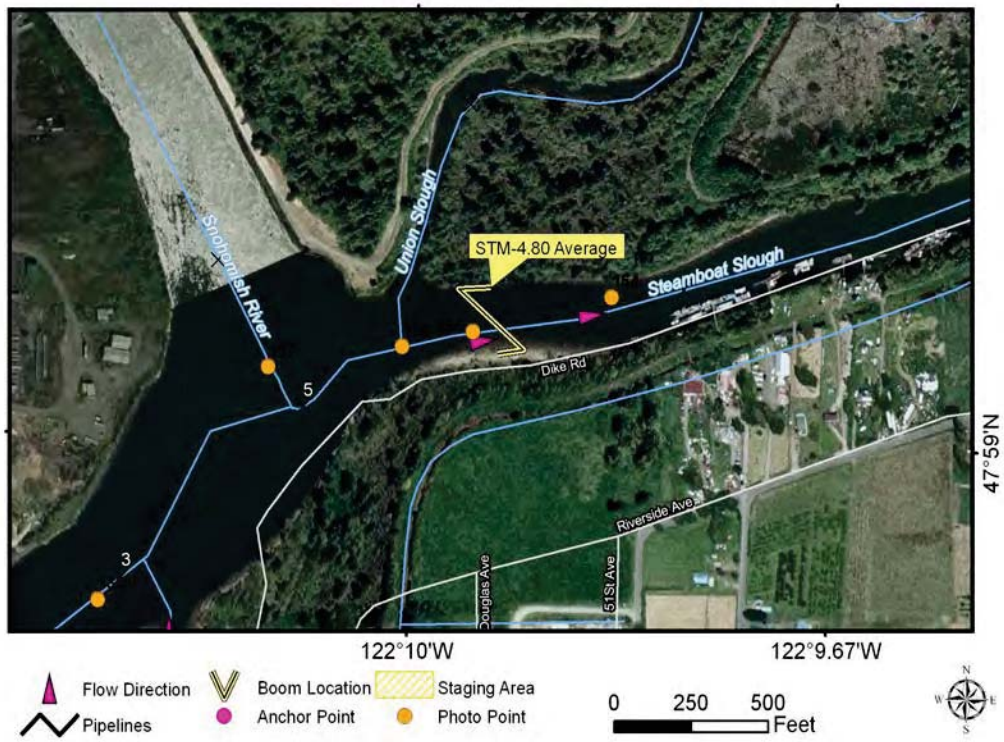
1413 Cherry Ave, Everett, 98205

Driving Directions:

Depart Everett
1. Go East on Hewitt Ave toward Broadway (0.58 Mile(s))
2. Bear left onto ramp and go East on US 2 (0.96 Mile(s))
3. Take ramp to Douglas Ave toward Ebey Island/Homeacres Rd (0.27 Mile(s))
4. Turn left on Douglas Ave (0.22 Mile(s))
5. Continue on Riverside Ave (0.35 Mile (s))
6. Make sharp left on Pike Rd (0.09 Mile (s))
7. Turn right to stay on Pike Rd (0.06 Mile (s))
8. Continue on Dike Rd (0.01 Mile(s))
Arrive at 1413 Cherry Ave, Everett, WA, 98205, on the right

Steamboat Slough at divergence from Union Slough — STM-4.80-Average

Site Lat/Long:	N 47° 59.042' / W 122° 9.905', Sector Map 7-3
Strategy Objective:	Collection - Collect product from Steamboat Slough. Recover product and remove by boat/landing craft.
Implementation:	Deploy boom across Steamboat Slough from beach on southern bank to point between Union Slough and Steamboat Slough. Strategy should be effective for high and low tide with appropriate anchoring and shoreline protection. Collect at LB for high tide and recover product in 40 gallon drums and remove by boat or landing craft. Collect at RB during low tide using Vac Truck or boat. For shoreline/beach protection, lay tarp and anchor in.
Site Safety Note:	Deep mud, vegetation, hunters
Staging Area:	Laborers and equipment go to site. Can access site from Pike Road off of Cherry Ave. Stage laborers and equipment for UNS-4.36 from this site also. Boat and operator launch from SNH-1.49-staging (BL-301).
Field Notes:	Urban, paved, light traffic.
Resources Targeted:	salmonids (anadromous), raptors
Watercourse Description:	Slough, Steamboat Slough, Field Visit Width ~ 210ft, Field Visit Depth ~ 7ft, Field Velocity ~ 0.7MPH,



Suggested Equipment	
Quantity	**Description**
2400 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
600 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
1 each	Diaphragm Pump(s)
6 each	Hand Bridle(s)
600 ft	Sorbent Boom
1 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
8 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
6	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-154: Looking west into Steamboat Slough

Image-155: Looking east in Steamboat Slough

Site Contact Information

Responsible party or alternate contact:
City of Everett Water Pollution Control Facility, (W) 425-257-8800, Everett Water Pollution Control Facility

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

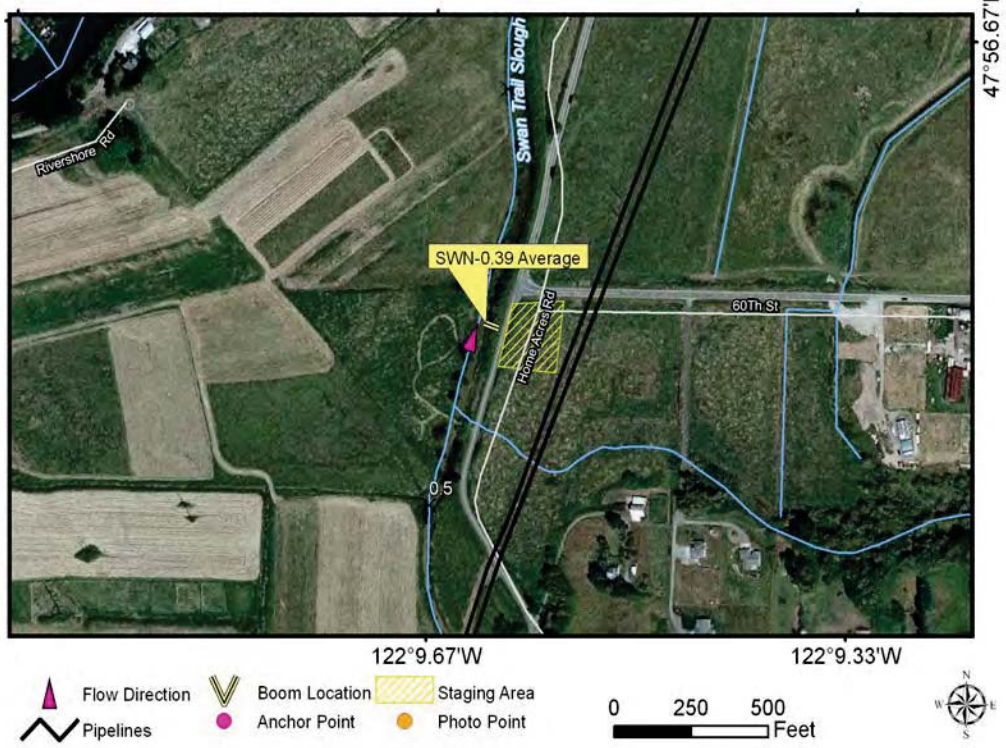
1712 Cherry Ave, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (2.15 Mile(s))
5. Bear right onto ramp and go West on US 2 (0.51 Mile(s))
6. Continue on 20th St SE (0.52 Mile(s))
7. Turn right on 55th Ave SE (0.5 Mile(s))
8. Make sharp left on Cherry Ave (0.02 Mile(s))

Arrive at 1712 Cherry Ave, Everett, WA, 98205, on the right

Site Lat/Long:	N 47° 56.517' / W 122° 9.589', Sector Map 7-4
Strategy Objective:	Collection - Collect product at Swan Trail Slough before it enters the Snohomish River.
Implementation:	Shut tide gate. Deploy hard boom across Swan Trail Slough and use cellulose sorbent boom as backup. Strategy deployment estimated to take approximately 20 min. Stage from Home Acres Road.
Staging Area:	Laborers and equipment go to site, no boat required. Stage from Home Acres Road at site.
Field Notes:	Rural, paved, light traffic.
Resources Targeted:	salmonids (anadromous)
Watercourse Description:	Slough, Swan Trail Slough, Field Visit Width ~ 21ft, mud and rocks bank and bottom



Suggested Equipment	
Quantity	**Description**
150 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
150 ft	B3 - River Boom, or other appropriate type
1 each	Drive Pin(s)
50 ft	Sorbent Boom
1 each	Universal Skimmer(s)
Suggested Personnel	
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/17/2006

No Image Available

No Image Available

Site Contact Information

No contact information available.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

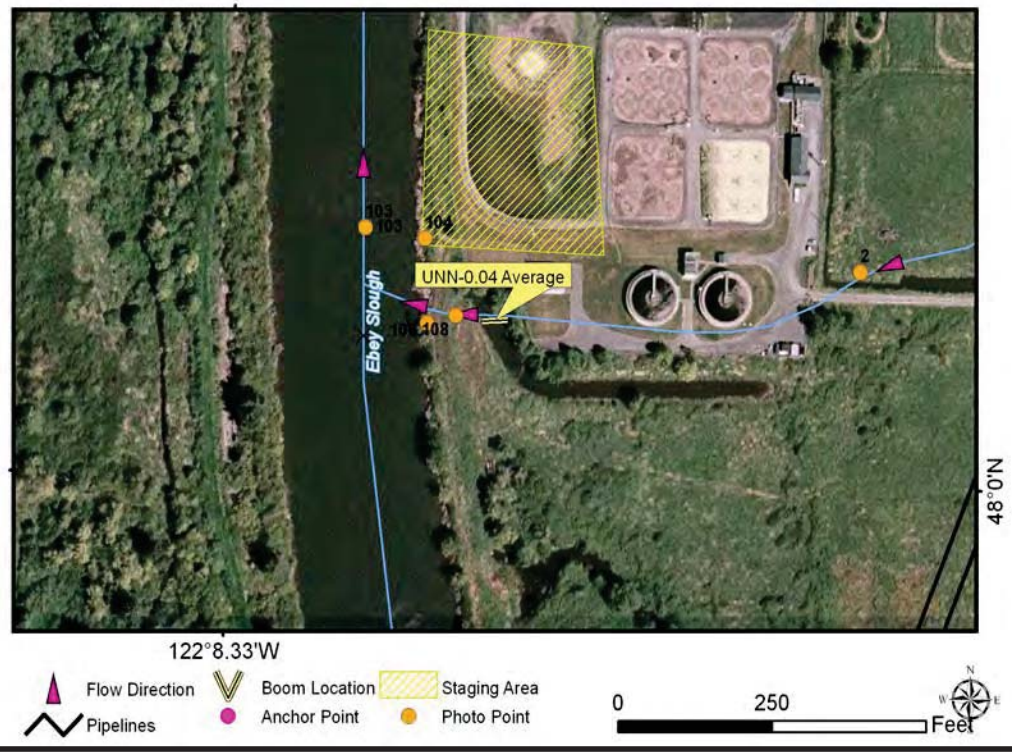
6343 Home Acres Road, Snohomish, 98290

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go North on SR 9 toward 56th St SE (0 Mile(s))
2. Turn left on 56th St SE (John Jump Rd) (0.45 Mile(s))
3. Continue on Fobes Rd (Old Snohomish Rd) (0.52 Mile(s))
4. Turn left on 83rd Ave SE (0.43 Mile(s))
5. Turn right on 60th St SE (John Mack Rd) (1.86 Mile(s))
6. Turn left on Home Acres Rd (0.02 Mile (s))

Arrive at 6343 Home Acres Road, Snohomish, WA, 98290, on the right

Site Lat/Long:	N 48° 0.041' / W 122° 8.223', Sector Map 7-3
Strategy Objective:	Collection - Collection in side channel
Implementation:	Place plywood in front of upstream end of culvert to create underflow weir. Deploy boom across creek. Use sorbent boom for sheen control.
Site Safety Note:	Dense vegetation
Staging Area:	Laborers and equipment go to site, no boat required. Stage from Lake Stevens WWTP property. Lake Stevens WWTP accessed from Sunnyside Road. No ramp, but can get boat access here.
Field Notes:	Rural, gravel, Light traffic
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat
Watercourse Description:	Creek, Field Visit Width ~ 12ft, Field Visit Depth ~ 9ft



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	5 x 5 ft Plywood
2 each	6 ft T-bar(s)
50 ft	B3 - River Boom, or other appropriate type
1 each	Drive Pin(s)
100 ft	Sorbent Boom
1 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-106: Side channel of Ebey Slough near Lake Stevens WWTP, upstream side of outfall

Image-108: Side channel of Ebey Slough near Lake Stevens WWTP, upstream side of outfall

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number.
Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.
Responsible party or alternate contact:
Rick Lewellen, Lake Stevens Wastewater Treatment Plant, (W) 425-334-8588, Answering service can contact appropriate person for after hours plant access.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

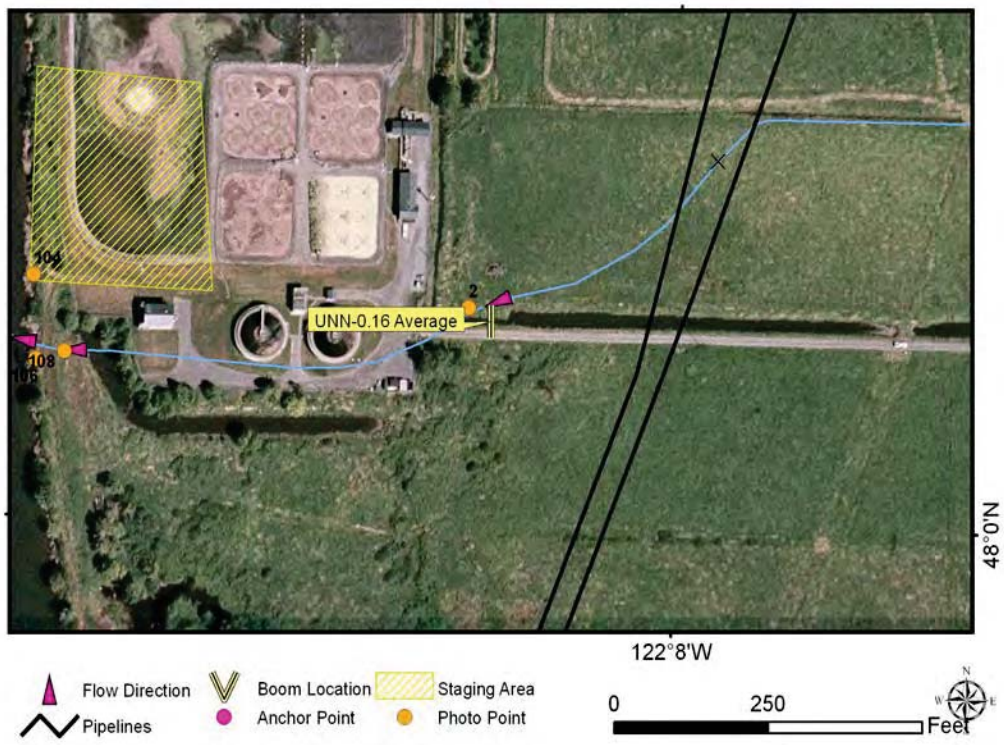
400 Sunnyside, Everett, 98205

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go North on SR 9 toward 56th St SE (0.53 Mile(s))
2. Turn left onto ramp and go North West on US 2 (2.33 Mile(s))
3. Bear left on SR 204 (Snohomish Marysville Rd) (0.66 Mile(s))
4. Turn left on Sunnyside Blvd SE (1.32 Mile(s))

Arrive at 400 Sunnyside, Everett, WA, 98205, on the left

Site Lat/Long:	N 48° 0.055' / W 122° 8.074', Sector Map 7-3
Strategy Objective:	Collection - Collection in small ditch to Lake Stevens WWTP.
Implementation:	OPLC crosses treatment plant road upstream at N 48 0.0462', W 122 7.9218. Deploy boom at angle across ditch to RB. Place sorbent boom to control sheen.
Site Safety Note:	Incoming road is rig matting
Staging Area:	Laborers and equipment go to site, no boat required.
Field Notes:	Rural, gravel, light traffic.
Resources Targeted:	salmonids (anadromous), sensitive habitat
Watercourse Description:	Ditch, Field Visit Width ~ 24ft



Suggested Equipment	
Quantity	**Description**
50 ft	B3 - River Boom, or other appropriate type
50 ft	Sorbent Boom
2 each	Stake(s)
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
2	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

Image-2: Unnamed tributary near Lake Stevens WWTP looking East

No Image Available

Site Contact Information

High Priority - contact immediate or before entering:
WDFW Emergency Hydraulic Project Approval, (M) 360-534-8233, 24-hour pager number. Responders must receive Emergency HPA from the WDFW prior to using culvert blocks and underflow dams.
Responsible party or alternate contact:
Rick Lewellen, Lake Stevens Wastewater Treatment Plant, (W) 425-334-8588, Answering service can contact appropriate person for after hours plant access.

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

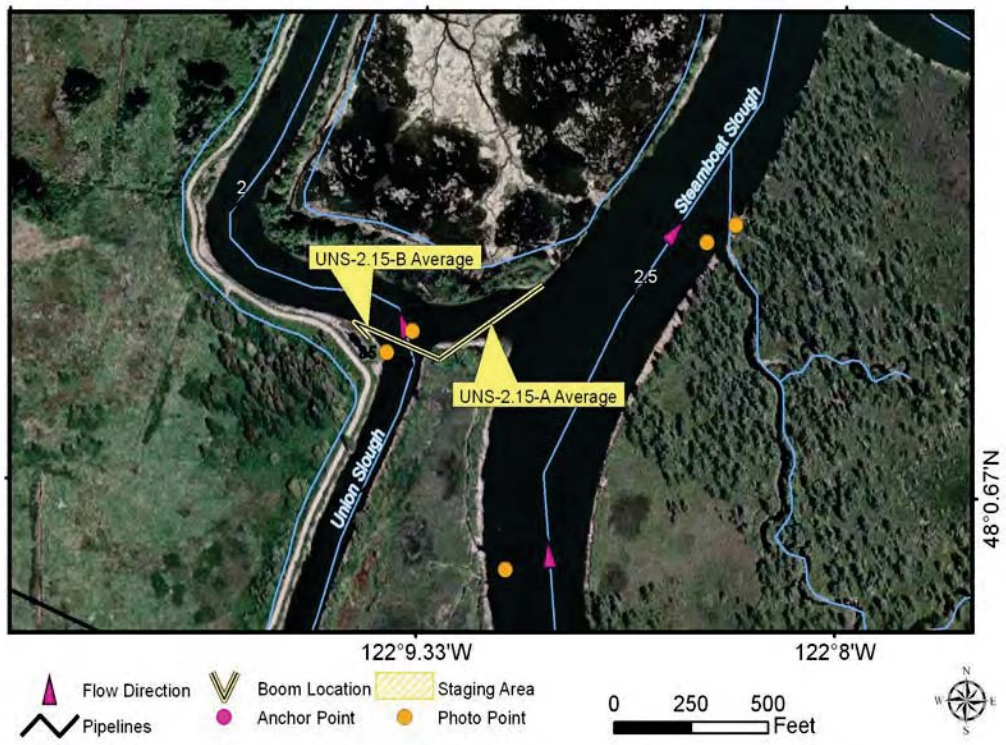
400 Sunnyside Blvd., Everett, 98205

Driving Directions:

Depart Snohomish, Maple and 2nd Ave
1. Go North on SR 9 toward 56th St SE (0.53 Mile(s))
2. Turn left onto ramp and go North West on US 2 (2.33 Mile(s))
3. Bear left on SR 204 (Snohomish Marysville Rd) (0.66 Mile(s))
4. Turn left on Sunnyside Blvd SE (1.32 Mile(s))

Arrive at 400 Sunnyside Blvd., Everett, WA, 98205, on the left

Site Lat/Long:	N 48° 0.731' / W 122° 9.318', Sector Map 7-3
Strategy Objective:	Exclusion, Collection, Deflection - Prevent product from moving across connection channel into Union Slough or Steamboat Slough.
Implementation:	Deploy boom from southwest point to northwest point of channel connection to prevent product movement from Steamboat to Union Slough. During low tide boom will exclude product from Union Slough, during high tide collect at south west end. If product is in Union Slough deploy in conjunction with UNS-2.15 B. Place shoreline protection boom along shore in collection area.
Site Safety Note:	Slippery banks (silty)
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Rural, gravel/dirt, light traffic, tidal influence. Public land. Land access not confirmed, vac truck may not be able to gain access to levee road on west bank Union Slough, access by boat.
Resources Targeted:	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat
Watercourse Description:	River side channel, Field Visit Width ~ 150ft



Suggested Equipment	
Quantity	**Description**
1200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
390 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Chain
1 each	Diaphragm Pump(s)
8 each	Hand Bridle(s)
10 each	Stake(s)
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
2 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-82: Looking from Union Slough east into connection channel

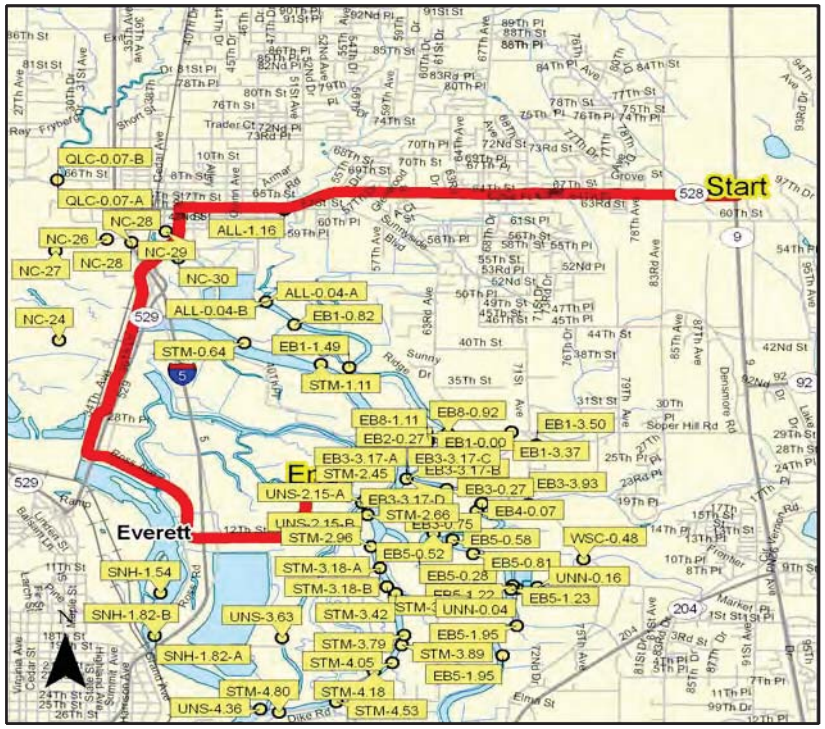
Image-85: Looking from Union Slough east into connection channel

Site Contact Information

Responsible party or alternate contact:
Kye Iris, WA Department of Fish and Wildlife, (W) 425-775-1311x125, Land Manager

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

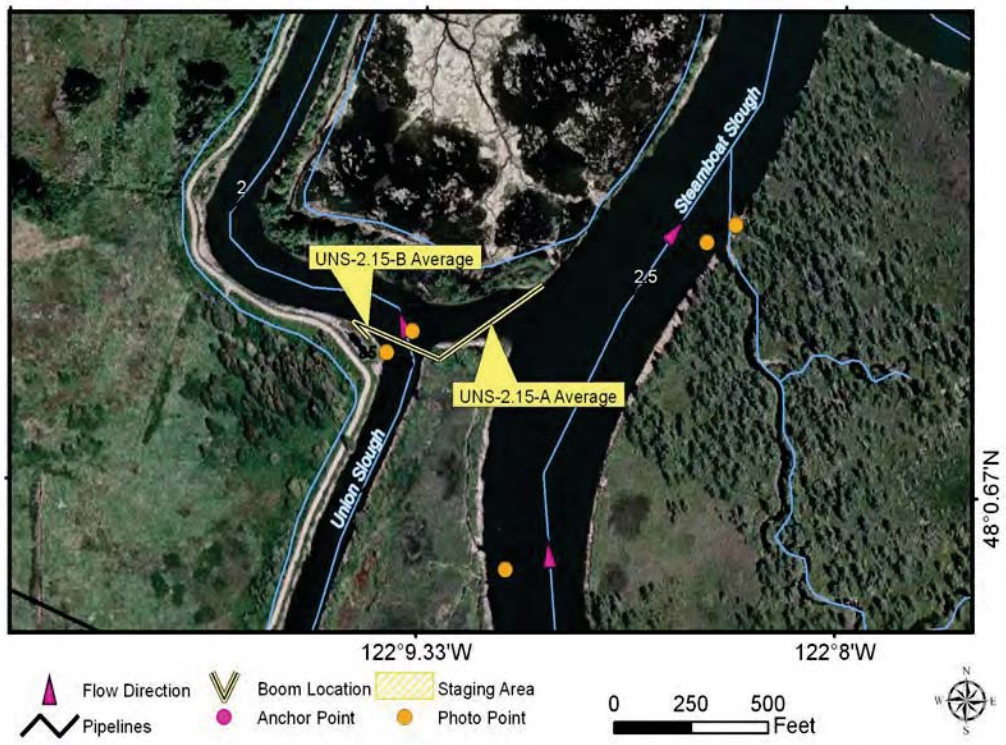
1605 51st Ave NE (west bank), Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile (s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (0.95 Mile(s))
7. Bear left on 12th St NE (0.7 Mile(s))
8. Bear left on 51st Ave NE (0.52 Mile(s))

Arrive at Point (N 48° 0.731' / W 122° 9.318'), on the right

Site Lat/Long:	N 48° 0.731' / W 122° 9.318', Sector Map 7-3
Strategy Objective:	Collection, Diversion, Exclusion - Collect product in Union Slough.
Implementation:	Complete in conjunction with UNS-2.15 A. Deploy boom from LB Union Slough to south point of channel connection. During low tide collect on LB, during high tide collect at south point of channel connection with UNS-2.15A. Place shoreline protection boom along shore in both high tide and low tide collection areas. Keep boom taught using SARCA in stream. Access site by boat.
Site Safety Note:	Slippery banks (silty)
Staging Area:	Boat, laborers and equipment launch from SNH-1.49-staging (BL-301).
Field Notes:	Rural, gravel/dirt, light traffic, tidal influence. Public land. Land access not confirmed, vac truck may not be able to gain access to levee road on west bank Union Slough, access by boat.
Resources Targeted:	shorebirds, salmonids (anadromous), freshwater wildlife, sensitive habitat
Watercourse Description:	Slough, Union Slough, Field Visit Width ~ 150ft



Suggested Equipment	
Quantity	**Description**
200 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
1 each	Anchor(s) for strong currents - ie. SARCA
300 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Chain
1 each	Diaphragm Pump(s)
200 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
4 each	Wing Anchor(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-85: Looking from Union Slough east into connection channel

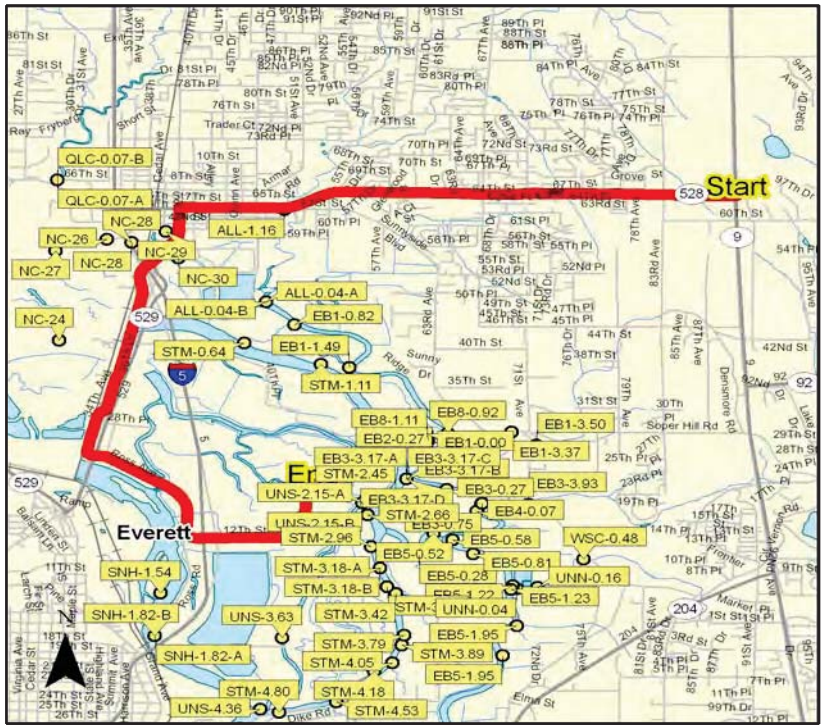
Image-82: Looking from Union Slough east into connection channel

Site Contact Information

Responsible party or alternate contact:
Kye Iris, WA Department of Fish and Wildlife, (W) 425-775-1311x125, Land Manager

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

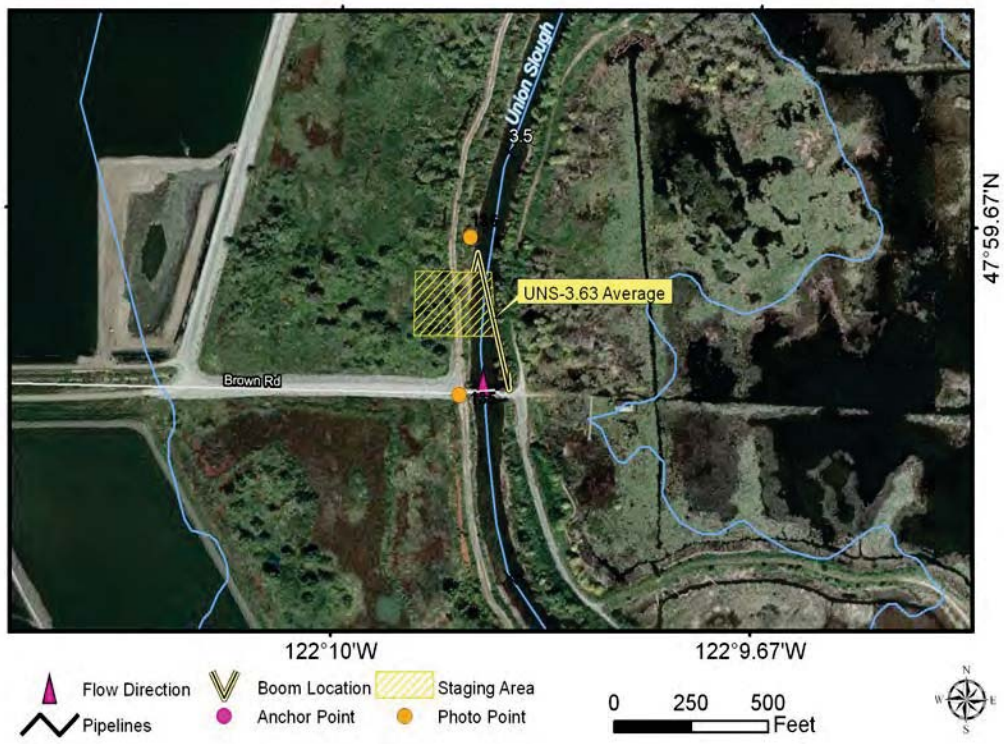
1605 51st Ave NE (west bank), Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile (s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (0.95 Mile(s))
7. Bear left on 12th St NE (0.7 Mile(s))
8. Bear left on 51st Ave NE (0.52 Mile(s))

Arrive at Point (N 48° 0.731' / W 122° 9.318'), on the right

Site Lat/Long:	N 47° 59.614' / W 122° 9.897', Sector Map 7-3
Strategy Objective:	Collection - Collect product in Union Slough.
Implementation:	Anchor to locked stanchions at downstream end, walk boom across wooden pedestrian bridge and tie off to natural anchor near bridge on LB. Use a portion of boom for LB shoreline protection in collection area. Access via 4th St. SE through the Everett Water Pollution Control Facility. If strategy is only for sheen control in Union Slough use 430 ft of sorbent boom. Can deploy without a boat.
Site Safety Note:	Congestion of vehicle traffic due to limited parking.
Staging Area:	Stage at site. Access site through the Everett Water Pollution Control Facility on 4th St. SE. Can stage from dirt path and LB downstream of bridge . It's approximately 0.9 miles from Langus Park boat ramp to Spencer Island bridge.
Field Notes:	Rural, gravel, light traffic.
Resources Targeted:	shorebirds, salmonids (anadromous), sensitive habitat - Spencer Island Wetland
Watercourse Description:	Slough, Union Slough, Field Visit Width ~ 135ft, Field Velocity ~ 0.5MPH



Suggested Equipment	
Quantity	**Description**
600 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
430 ft	B3 - River Boom, or other appropriate type
1 each	Diaphragm Pump(s)
3 each	Drive Pin(s)
3 each	Hand Bridle(s)
60 ft	Sorbent Boom
1 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
Suggested Personnel	
5	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/18/2006

Image-135: Bridge to Spencer Island from the west

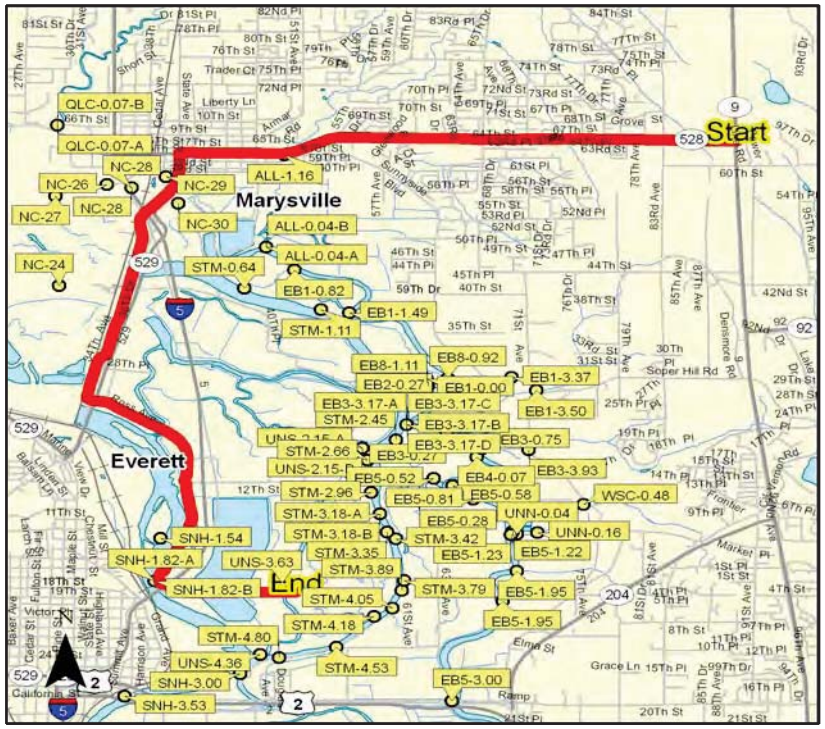
Image-136: Looking south at bridge from west bank (river left)

Site Contact Information

Responsible party or alternate contact:
City of Everett Water Pollution Control Facility, (W) 425-257-8800, Everett Water Pollution Control Facility
City of Everett, Parks & Recreation Dept., (W) 425-257-8300

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

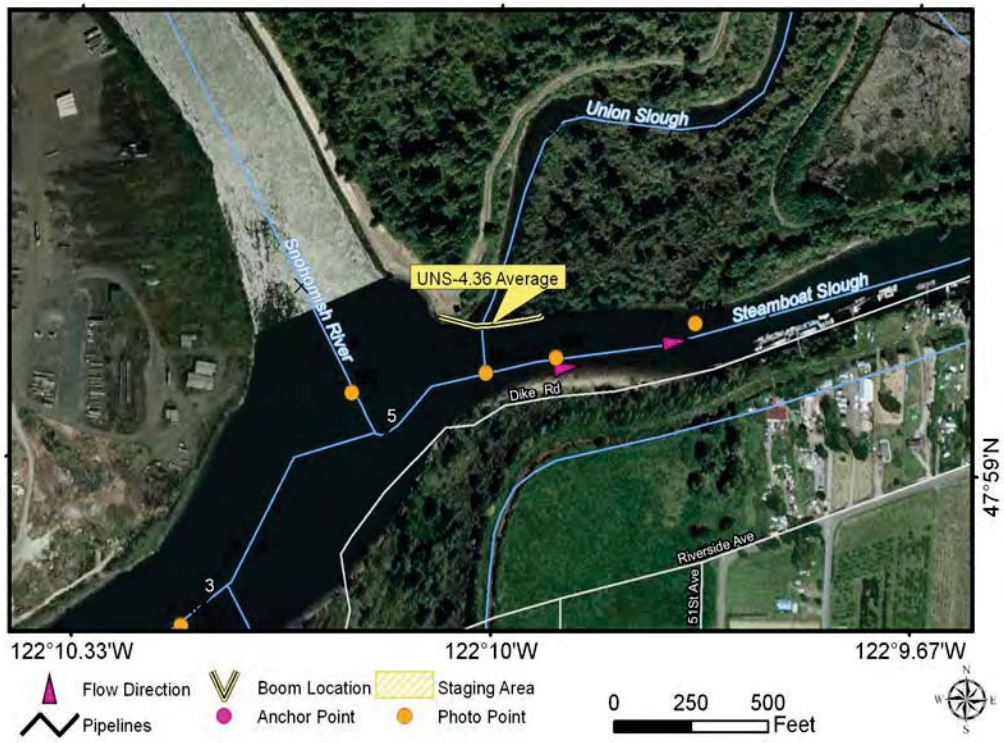
4099 4th St. SE, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile(s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (2.01 Mile(s))
7. Continue on Ross Rd (0.01 Mile(s))
8. Continue on 4th St SE (Brown Rd SE) (0.74 Mile(s))

Arrive at 4099 4th St. SE, Everett, WA, 98205, on the left

Site Lat/Long:	N 47° 59.075' / W 122° 10.045', Sector Map 7-3
Strategy Objective:	Exclusion - Exclude product from wetland/levee break area in Union Slough.
Implementation:	Deploy boom across entrance to Union Slough. Could potentially use beach area for containment on LB. Strategy to be implemented by boat.
Site Safety Note:	Debris, deadheads
Staging Area:	Boat and operator go to (BL-301) SNH-1.49-staging, laborers and equipment go to STM-4.80-staging. Can access site from Pike Rd. off Cherry Ave.
Field Notes:	Land access not confirmed.
Resources Targeted:	salmonids (anadromous), raptors
Watercourse Description:	Slough, Union Slough, Field Visit Width ~ 90ft



Suggested Equipment	
Quantity	**Description**
300 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
360 ft	B3 - River Boom, or other appropriate type
1 each	Boat(s)
60 ft	Chain
1 each	Danforth(s)
300 ft	Sorbent Boom
2 each	Towing Bridle(s)
Suggested Personnel	
1	Boat Operator (s)
3	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/19/2006

Image-156: Looking north into Union Slough from Steamboat Slough

Image-157: Looking east into Steamboat Slough

Site Contact Information

High Priority - contact immediate or before entering:
Diane Baily, Snohomish County Parks Department, (W) 425-388-6622, Property Access, M-F 8-5, during extreme emergency can cut lock if gate acccess contact is not available.
Responsible party or alternate contact:
City of Everett Water Pollution Control Facility, (W) 425-257-8800, Everett Water Pollution Control Facility

No Hydrograph Chart

No Flow Velocity Chart

Closest Address:

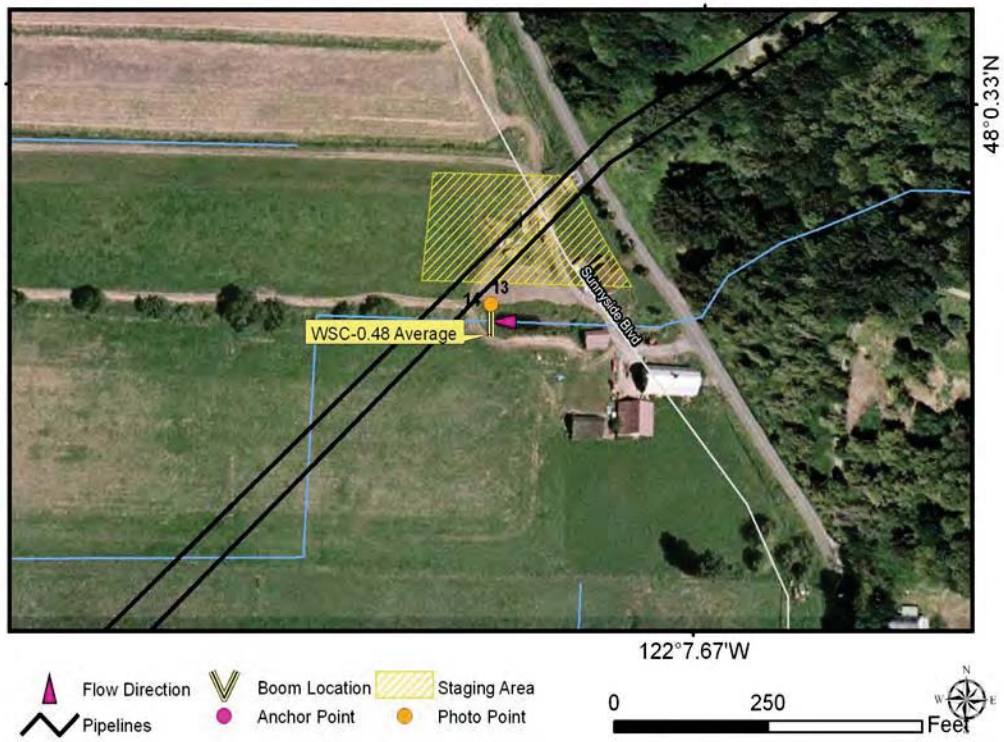
1455 Cherry Ave, Pike Rd., Everett, 98502

Driving Directions:

Depart Everett
1. Go East on Hewitt Ave toward Broadway (0.58 Mile(s))
2. Bear left onto ramp and go East on US 2 (0.96 Mile(s))
3. Take ramp to Douglas Ave toward Ebey Island/Homeacres Rd (0.27 Mile(s))
4. Turn left on Douglas Ave (0.22 Mile(s))
5. Continue on Riverside Ave (0.35 Mile (s))
6. Make sharp left on Pike Rd (0.09 Mile (s))
7. Turn left to stay on Pike Rd (0.38 Mile (s))

Arrive at Point (N 47° 59.075' / W 122° 10.045'), on the right

Site Lat/Long:	N 48° 0.294' / W 122° 7.752', Sector Map 7-3
Strategy Objective:	Collection - Collect product in pond.
Implementation:	Place boom across downstream end of pond, upstream of culvert. The pond surface area is approximately 150 ft by 45 ft. Let product settle out in pond and skim / boom sweep. OPLC Heinick Farm strategy site #1 is downstream of this spot.
Site Safety Note:	Steep, slippery bank
Staging Area:	Heinick Farm can be reached from Sunnyside Blvd. The farm has single lane dirt road near the site where staging can occur.
Field Notes:	Rural, gravel, light traffic on farm property. Sunnyside Blvd has heavy traffic.
Resources Targeted:	shorebirds
Watercourse Description:	Ditch, Weiser Creek/Unnamed Creek, Field Visit Width ~ 4ft, Field Visit Depth ~ 2ft, Field Velocity ~ 3.0MPH



Suggested Equipment	
Quantity	**Description**
50 ft	1/2" Dbl Braided Propylene Line w Safety Clasps
50 ft	B3 - River Boom, or other appropriate type
2 each	Drive Pin(s)
50 ft	Sorbent Boom
2 each	Towing Bridle(s)
1 each	Universal Skimmer(s)
1 each	Vac Truck(s)
Suggested Personnel	
4	Laborer (s)
1	Supervisor (s)

Status: Visited and Not Tested 10/20/2006

Image-13: Unnamed tributary of Ebey Slough north of the Lake Stevens WWTP

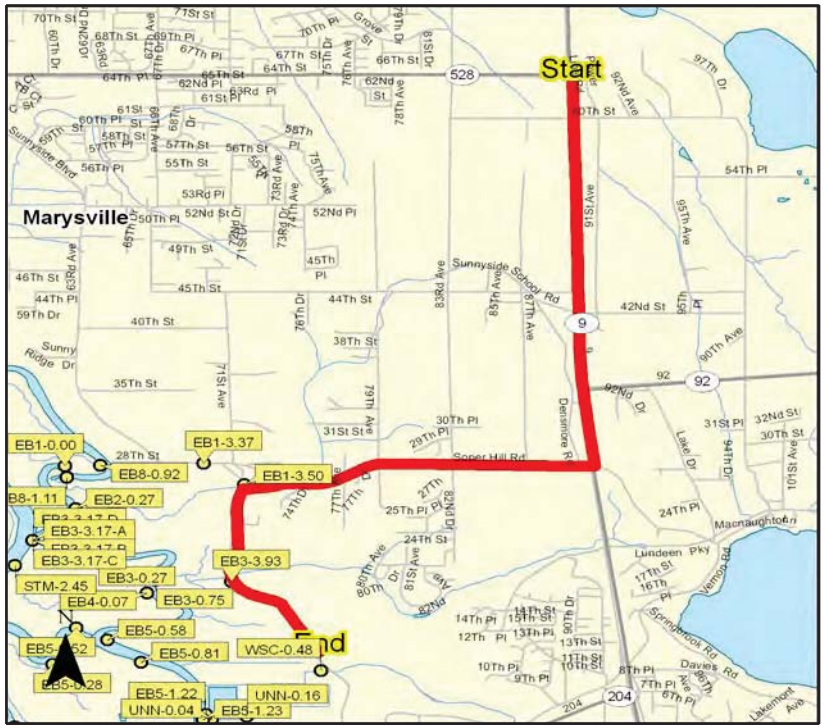
Image-14: Unnamed tributary of Ebey Slough north of the Lake Stevens WWTP

Site Contact Information

High Priority - contact immediate or before entering:
Joseph and Peggy Heineck, Private, (H) 425-334-0879

No Hydrograph Chart

No Flow Velocity Chart



Closest Address:

930 Sunnyside Blvd., Everett, 98205

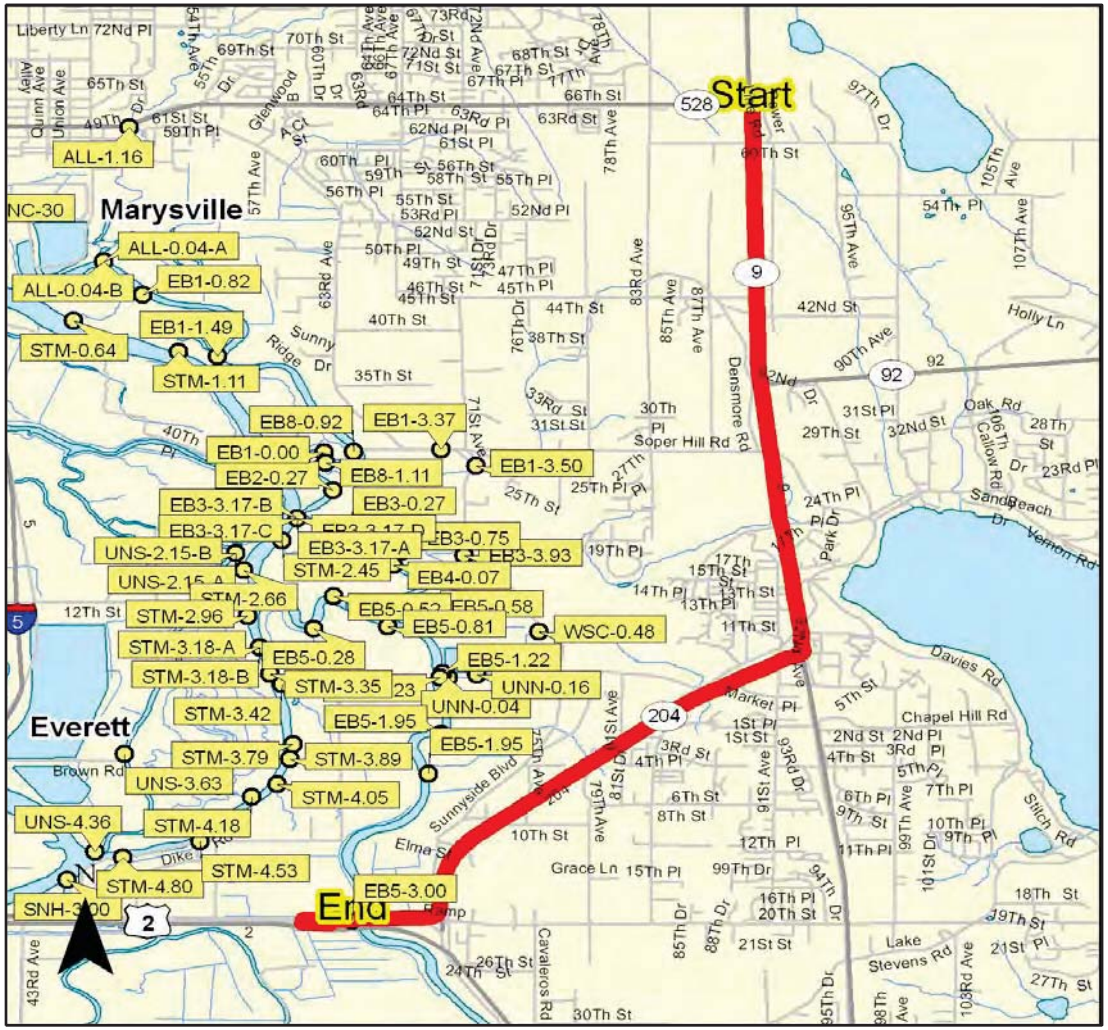
Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (2.21 Mile(s))
3. Turn right on Soper Hill Rd (1.03 Mile (s))
4. Continue on Densmore Rd (0.19 Mile (s))
5. Turn left on Sunnyside Blvd (1.05 Mile (s))

Arrive at 930 Sunnyside Blvd., Everett, WA, 98205, on the left

APPENDIX C - DETAILED STAGING LOCATIONS AND DESCRIPTIONS

Lat/Long:	N 47° 58.690' / W 122° 8.717', Sector Map 7-4
Staging Description:	Can stage and launch a boat at site. Hwy 2 frontage road going east from Everett, can drive under highway on west side, park at gate. Launch boat from south side of red gate saying "no trespassing". Recommend removing boat from water at boat launch, not at site.
Site Contacts:	



Closest Address:

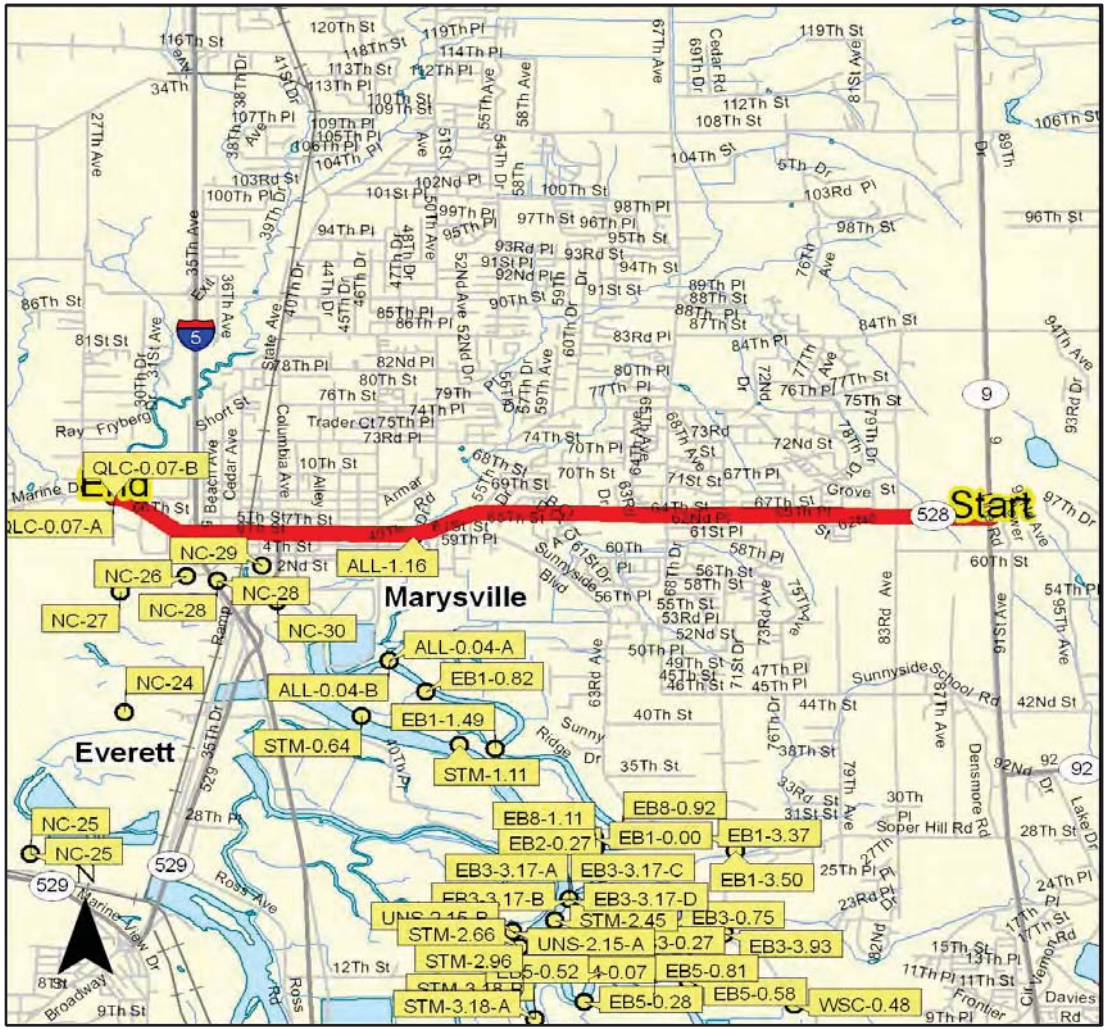
Hwy 2 and 20th St. SE, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (2.15 Mile(s))
5. Bear right onto ramp and go West on US 2 (0.51 Mile(s))
6. Continue on 20th St SE (0.17 Mile (s))
7. Make U-turn at Connecting Rd and go back on 20th St SE (0.23 Mile(s)) Arrive at Point (N 47° 58.69' / W 122° 8.717'), on the right

Strategy Sites Served:

Lat/Long:	N 48° 3.325' / W 122° 11.535', Sector Map 7-1
Staging Description:	Stage at corner of Marine Drive and 27th Ave NE in parking lot. Vac Truck for collection should be parked on bridge, one lane of traffic must be blocked. No large boat launch here.
Site Contacts:	Responsible party or alternate contact:



Closest Address:

Marine Drive and 27th Ave NE, Marysville, 98271

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Continue on Marine Dr NE (Tulalip Rd) (0.4 Mile(s))
Arrive at Point (N 48° 3.325' / W 122° 11.535'), on the right

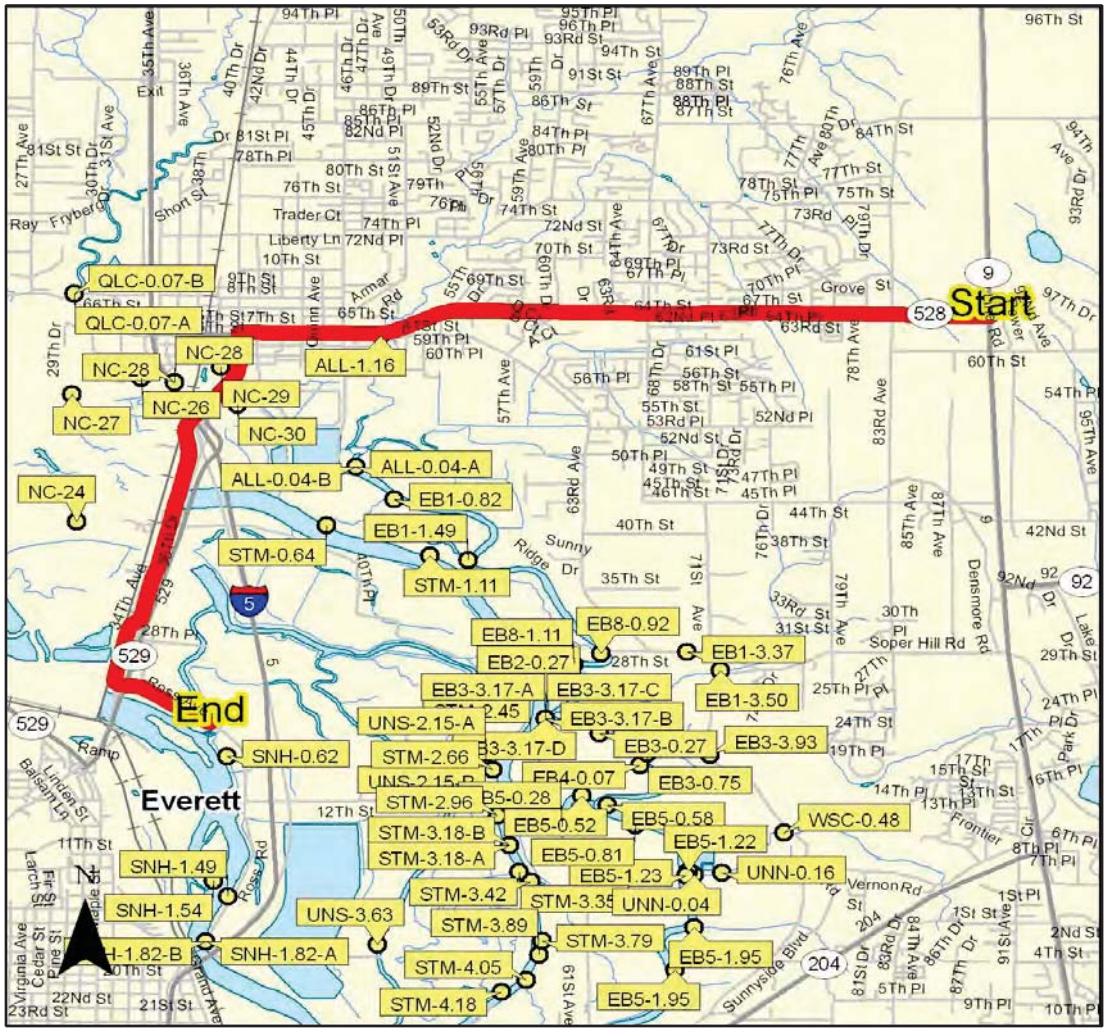
Strategy Sites Served:

QLC-0.07
SNO-(Marine)

Dagmar's Marina on Snohomish River

SNH-0.62 - Staging

Lat/Long:	N 48° 0.712' / W 122° 10.680', Sector Map 7-3
Staging Description:	Boat launch with 4 double wide ramps with finger piers. Dry storage and 2 hoists,. Restrooms.
Site Contacts:	Responsible party or alternate contact: Dagmar's Marina, W 425-745-2275



Closest Address:

1871 Ross Ave., Everett, 98205

Driving Directions:

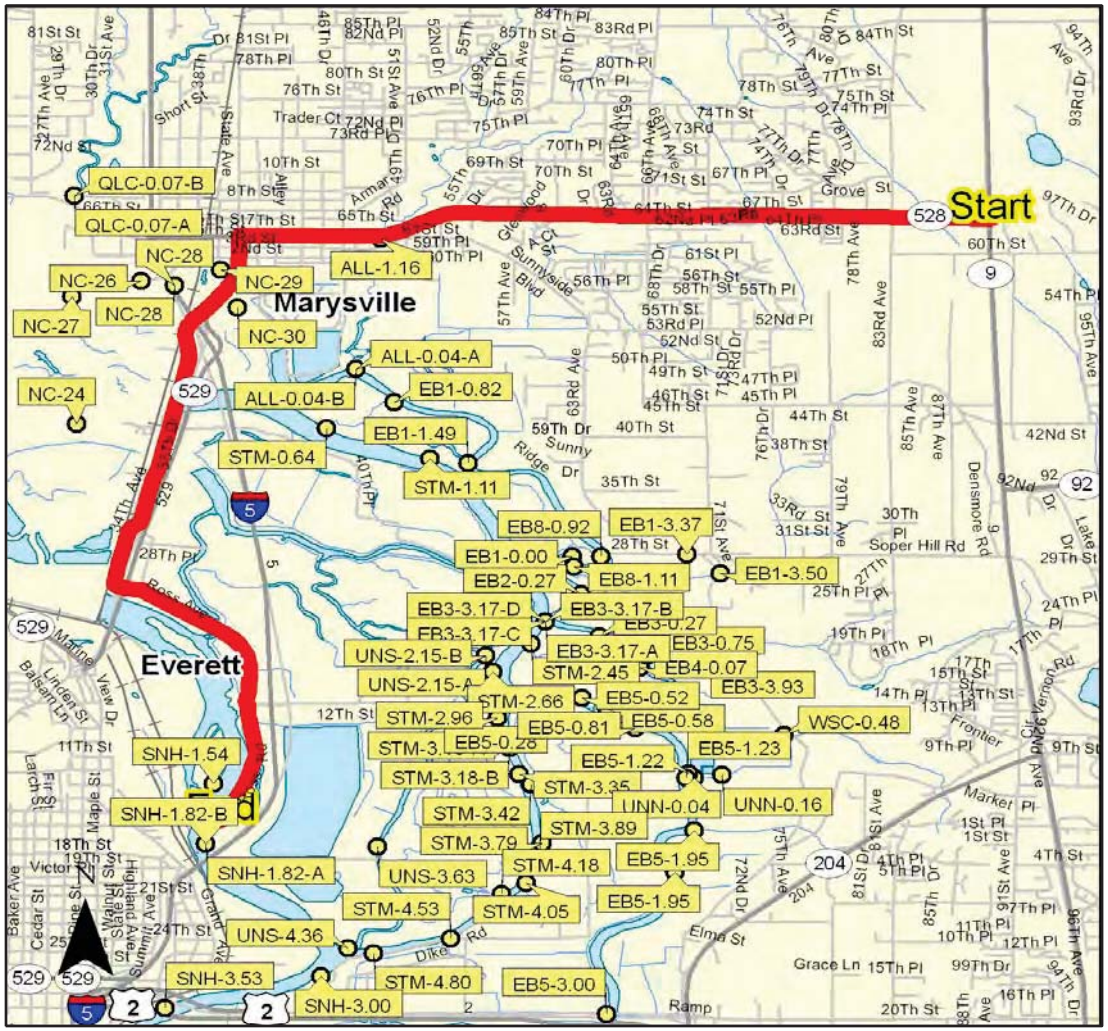
Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile(s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (0.44 Mile (s))

Arrive at 1871 Ross Ave., Everett, WA, 98205, on the right

Strategy Sites Served:

SNH-0.00
SNO-(Marine)

Lat/Long:	N 47° 59.921' / W 122° 10.677', Sector Map 7-3
Staging Description:	Park with 2 concrete boat ramps, with 2 floating piers, restrooms with showers, trailer parking (45 sites), trash.
Site Contacts:	Responsible party or alternate contact: City of Everett, Parks & Recreation Dept., W 425-257-8300



Closest Address:

713 Ross Ave., Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.09 Mile(s))
2. Turn left on State Ave (0.31 Mile(s))
3. Continue on SR 529 (1.29 Mile(s))
4. Take ramp to 34th Ave NE (0.05 Mile(s))
5. Continue on 34th Ave NE (Frontage Rd) (0.77 Mile(s))
6. Continue on Ross Ave (1.8 Mile(s))
Arrive at 713 Ross Ave., Everett, WA, 98205, on the right

Strategy Sites Served:

EB5-1.95
EB5-7.00
EB8-0.92
SNH-0.00
SNH-1.49
SNH-1.54
SNH-3.00
STM-2.45
STM-2.66
STM-2.96
STM-3.18
STM-3.35
STM-3.42
STM-3.79
STM-3.89
STM-4.18
UNS-2.15
SNO-(Marine)

Lat/Long:	N 47° 54.564' / W 122° 5.548', Sector Map 7-5
Staging Description:	Cady Park has boat access and space for staging. Site has 15 parking spaces, 2 boat ramps, city does not maintain boat ramp. Work area is approximately 30 feet by 120 ft. during low/middle tide. Located at the south end of Maple Ave.
Site Contacts:	Responsible party or alternate contact: City of Snohomish, W 360-568-3115

Closest Address:

40 Maple Avenue, Snohomish, 98290

Driving Directions:

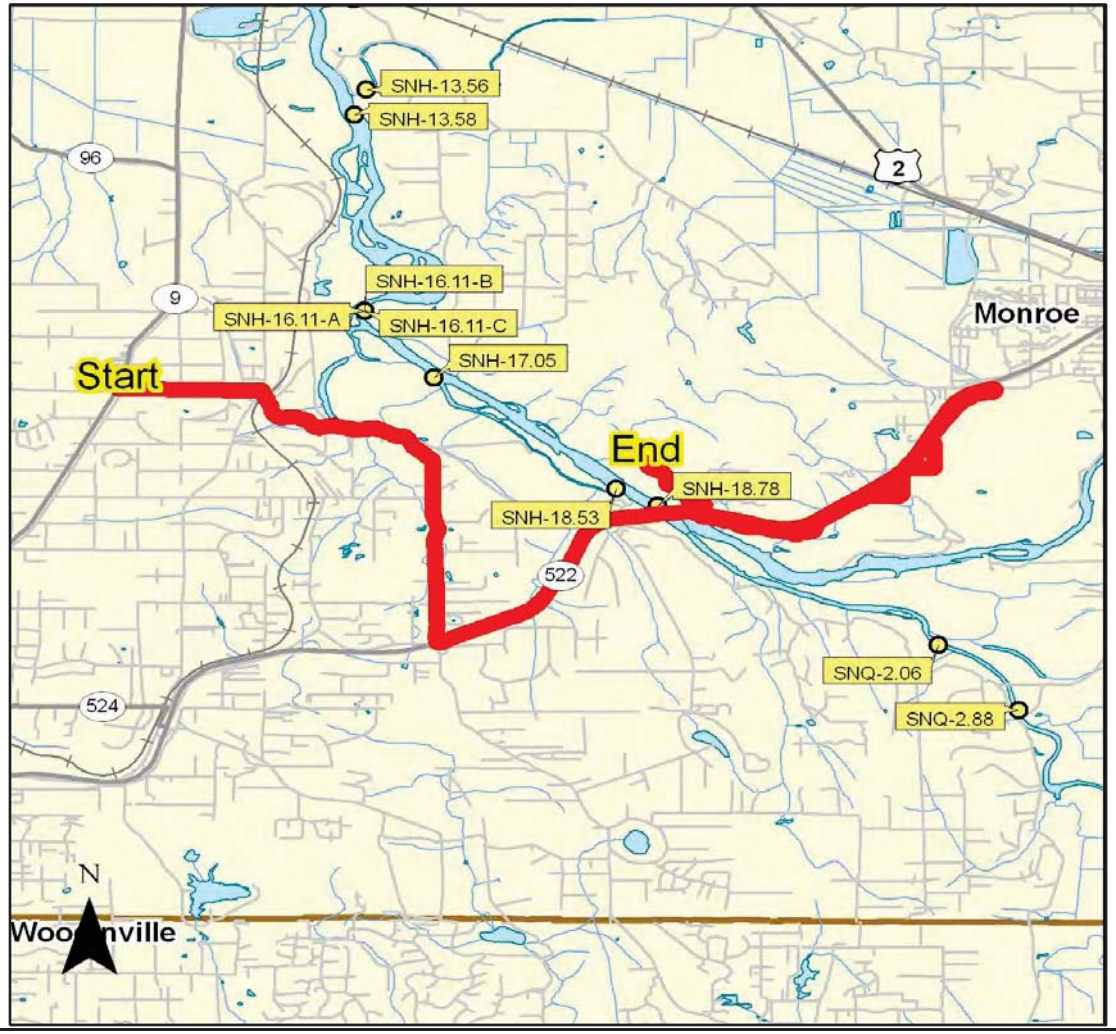
Depart Snohomish, Maple and 2nd Ave
1. Go South on SR 9 toward Ridge Ave (0.82 Mile(s))
2. Make sharp left on Ridge Ave (0.24 Mile(s))
3. Make sharp left on Bickford Ave (AVE D) (0.28 Mile(s))
4. Continue on AVE D (1.08 Mile(s))
5. Turn left on 1st St (0.35 Mile(s))
6. Turn right on Maple Ave (0.03 Mile (s))

Arrive at 40 Maple Avenue, Snohomish, WA, 98290, on the left

Strategy Sites Served:

SNH-11.99
SNO-(Marine)

Lat/Long:	N 47° 49.964' / W 122° 2.880', Sector Map 7-6
Staging Description:	Stage at the barn on park property RB. Emergency vehicle access is at the west end of Old Tester Road. There is a very small parking area just outside the park gate, used primarily by fishermen to access the river. There is also roadside parking (primarily for fishermen) on Tester Road from near SR-522 to Old Tester Road. Laboreres and equipment got ot site. Boat and operator launch from SNQ-2.88-staging (BL-378).
Site Contacts:	High Priority: Contact before entering or immediate notification required. Diane Baily, Snohomish County Parks Department, W 425-388-6622 Responsible party or alternate contact: Snohomish County Parks Department, W 425-388-3411



Closest Address:

13807 Old Tester Rd, Snohomish, 98290

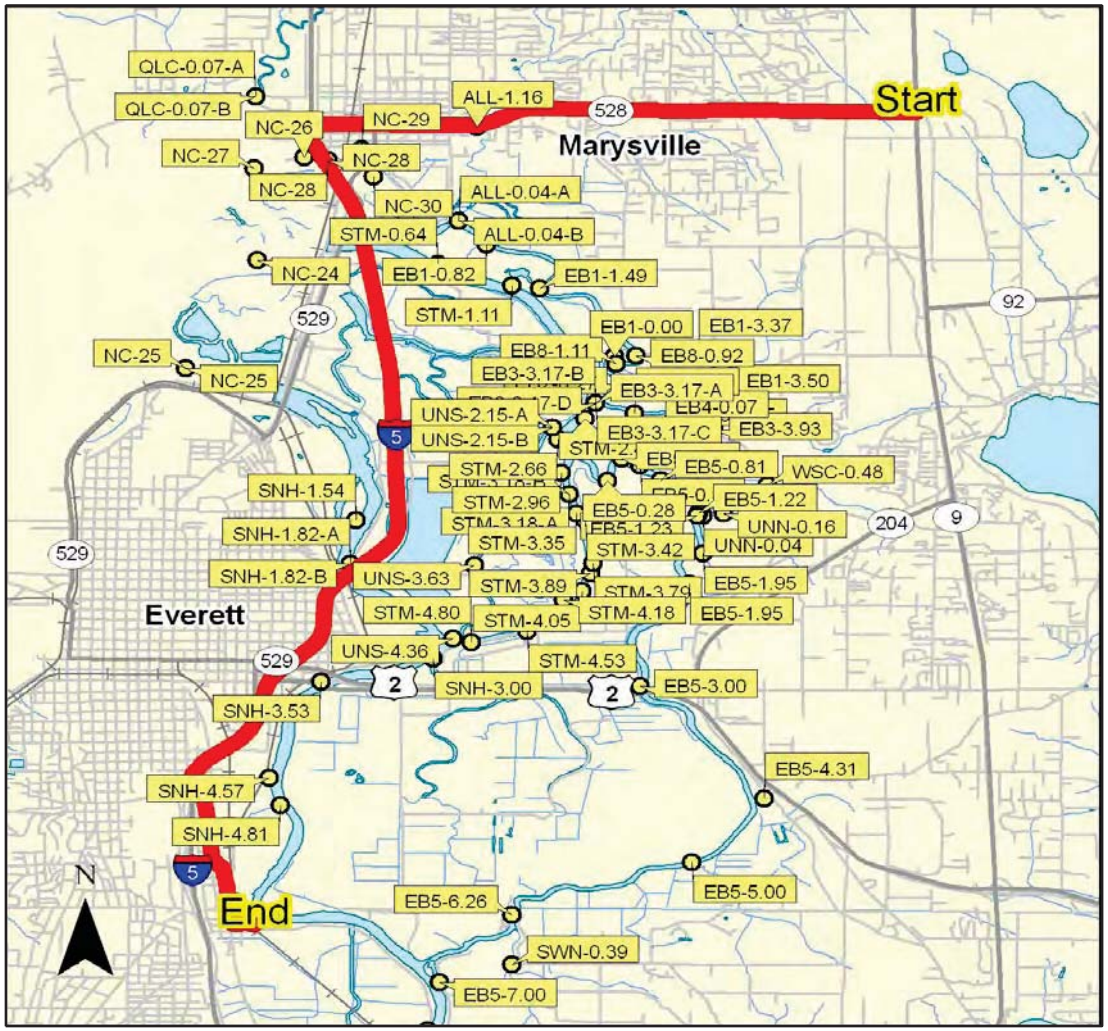
Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North East on SR 9 toward 164th St SE (0 Mile(s))
2. Turn right on 164th St SE (Union St) (0.85 Mile(s))
3. Turn right on Broadway Ave (Cathcart Rd) (0.02 Mile(s))
4. Turn left on Elliott Rd (Riverside Dr) (1.08 Mile(s))
5. Turn right on Fales Rd (115th Ave SE) (2.01 Mile(s))
6. Turn left onto ramp and go North East on SR 522 (4.34 Mile(s))
7. Take ramp to 162nd St SE (0.26 Mile(s))
8. Continue on 162nd St SE (164th St SE) (0 Mile(s))
9. Turn right on Tester Rd (2.82 Mile (s))
10. Make sharp left on Old Tester Rd (0.58 Mile(s))

Arrive at 13807 Old Tester Rd, Snohomish, WA, 98290, on the right

Strategy Sites Served:

Lat/Long:	N 47° 56.841' / W 122° 11.090', Sector Map 7-4
Staging Description:	Narrow paved boat launch (~ 18 ft wide) with short finger pier. Can launch small trailer. ~ 1/4 acre paved parking areas, restrooms.
Site Contacts:	Responsible party or alternate contact: City of Everett, W 425-257-8300



Closest Address:

3497 Lowell-Snohomish River Rd., Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go West on SR 528 (64th St NE) toward 83rd Ave NE (3.49 Mile(s))
2. Turn left onto ramp and go South on I 5 (6.26 Mile(s))
3. At exit 192 take ramp to 41st St toward Evergreen Way (0.24 Mile(s))
4. Continue on 41st St (0.06 Mile(s))
5. Turn right on S 3rd Ave (0.57 Mile (s))
6. Bear left on Junction Ave (0.09 Mile (s))
7. Continue on S 2nd Ave (0.54 Mile (s))
8. Turn left on Lenora St (0.1 Mile(s))
9. Continue on Lowell Snohomish River Rd (0.03 Mile(s))

Arrive at 3497 Lowell-Snohomish River Rd., Everett, WA, 98205, on the left

Strategy Sites Served:

EB5-5.00
SNH-0.00
SNH-4.57
SNH-4.81
SNH-6.10
SNO-(Marine)

Lat/Long:	N 47° 48.263' / W 122° 0.152', Sector Map 7-6
Staging Description:	High Bridge Boat Ramp has 1 concrete boat ramp, 10 gravel car and 20 gravel trailer parking spots. The boat ramp has a moderate to steep grade and is located on a section of the river with a slow to moderate river current.
Site Contacts:	

Closest Address:

20776 Crescent Lake Rd., Monroe, 98272

Driving Directions:

Depart Monroe, US 2 and Lewis St (Route 203)
1. Go North East on SR 9 toward 164th St SE (0 Mile(s))
2. Turn right on 164th St SE (Union St) (0.85 Mile(s))
3. Turn right on Broadway Ave (Cathcart Rd) (0.02 Mile(s))
4. Turn left on Elliott Rd (Riverside Dr) (3.02 Mile(s))
5. Bear left on High Bridge Rd (3.32 Mile(s))
6. Turn left on Crescent Lake Rd (0.06 Mile(s))

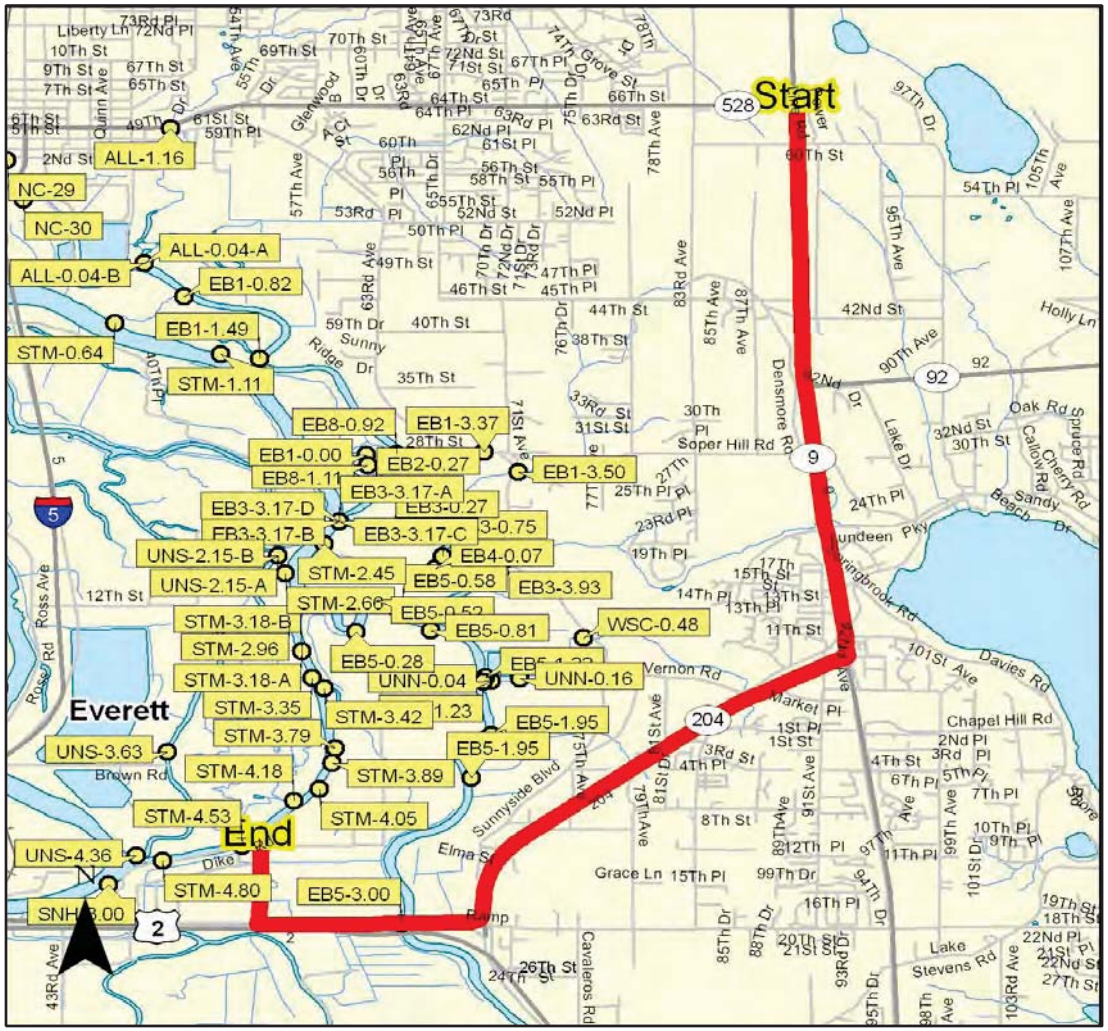
Arrive at 20776 Crescent Lake Rd., Monroe, WA, 98272, on the left

Strategy Sites Served:

SNH-17.05
SNH-18.53
SNH-18.78
SNQ-2.06
SNQ-2.88
SNO-(Marine)

Steamboat Slough at divergence from Union Slough — STM-4.80 - Staging

Lat/Long:	N 47° 59.042' / W 122° 9.905', Sector Map 7-3
Staging Description:	Laborers and equipment go to site. Can access site from Pike Road off of Cherry Ave. Stage laborers and equipment for UNS-4.36 from this site also. Boat and operator launch from SNH-1.49-staging (BL-301).
Site Contacts:	Responsible party or alternate contact: City of Everett Water Pollution Control Facility, W 425-257-8800



Closest Address:

1712 Cherry Ave, Everett, 98205

Driving Directions:

Depart Everett, Snohomish Cty
1. Go East on SR 528 (64th St NE) toward SR 9 (0 Mile(s))
2. Turn right on SR 9 (3.41 Mile(s))
3. Take ramp to SR 204 (0.11 Mile(s))
4. Bear right on SR 204 (Snohomish Marysville Rd) (2.15 Mile(s))
5. Bear right onto ramp and go West on US 2 (0.51 Mile(s))
6. Continue on 20th St SE (0.52 Mile (s))
7. Turn right on 55th Ave SE (0.5 Mile (s))
8. Make sharp left on Cherry Ave (0.02 Mile(s))

Arrive at 1712 Cherry Ave, Everett, WA, 98205, on the right

Strategy Sites Served:

UNS-4.36
SNO-(Marine)

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WRIA 7

GEOGRAPHIC RESPONSE PLAN

(SKYKOMISH RIVER)

CHAPTER 4b

Response Strategies & Priorities

July, 2013

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TABLE OF CONTENTS

Before you print this document:

This chapter and appendices are provided in "landscape" page orientation. The detailed (2-page) response strategy information in Appendix 4A, notification strategy information in Appendix 4B, staging area information in Appendix 4C, and boat launch location information in Appendix 4D (PDF pp. 321-348) have all been designed for duplex printing (front and back side of paper), "open to top" configuration.

4.1 - Chapter Introduction

This chapter provides information on GRP response strategies and the order (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?

- Is an Emergency Hydraulic Project Approval (HPA) required prior to implementing a particular strategy? In Washington State, the implementation of any response strategy that reduces, interrupts, or diverts the flow of water in streams, including the installation of culvert blocks and underflow dams, requires an Emergency HPA from the Washington Department of Fish and Wildlife (WDFW). To obtain an Emergency HPA, contact WDFW at 360-534-8233 (24-hour pager).

- 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 – District 7 (360) 805-1153
    - City of Monroe Police-(360) 794-6300
    - City of Gold Bar Police- (360) 793-8986
    - City of Sultan Police- (425) 388-6260
    - Snohomish County Sheriff's Office- (425) 388-3393
    - King County Sheriff Skykomish Substation- (360) 677-2803
    - Tulalip Tribal Police (360) 716-4608

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. 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.

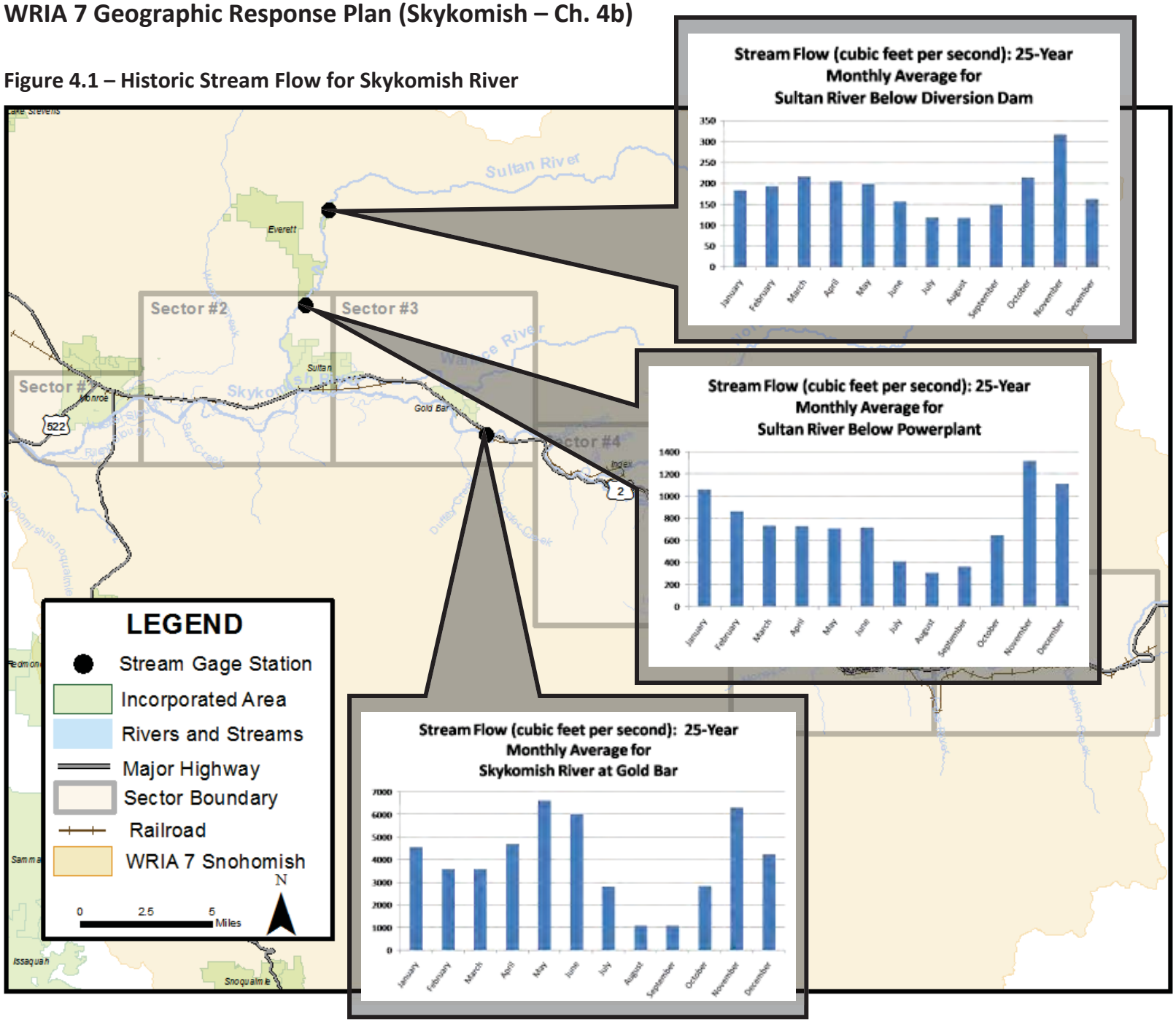
4.1.2 - Historical River Stream Flow Ranges:

Gage/stream flow data from U.S. Geological Survey (USGS) was used to calculate mean monthly stream discharge. A 25-year monthly average from January, 1985 through December, 2010 was used. 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 because they are subject to change, dependent on the configuration of the riverbed. 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.

Table 4.1 – Historic Stream Flow for Skykomish River and Tributaries

	Stream Flow (cubic feet per second): 25-Year Monthly Average		
	Skykomish River at Gold Bar	Sultan River Below Diversion Dam	Sultan River Below Powerplant
January	4570	183	1060
February	3590	193	861
March	3590	216	731
April	4690	204	727
May	6620	197	706
June	6020	156	717
July	2810	118	411
August	1090	117	305
September	1090	148	364
October	2840	214	645
November	6300	316	1320
December	4240	162	1110
	Map	Map	Map

Figure 4.1 – Historic Stream Flow for Skykomish River



How to Estimate Water Speed to Determine the Maximum Boom Deflection Angle:

Anchor a line with two floating buoy markers attached at a spacing 100 feet apart (measuring 100 feet along a straight portion of river bank may be more timely but also less accurate). 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.

Use the following table to estimate water speed and the maximum boom deflection angle:

Table 4.2 – Water Speed Drift Measurement Table

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

Source: Oil Spill Response in Fast Currents. A Field Guide. U.S. Coast Guard Research and Development Center. October, 2001

4.2 – Area Overview Maps

The following maps are meant to provide a geographic overview of the WRIA 7 Skykomish River GRP area. Sector maps in Section 4.4 of this chapter provide more detail on the locality of response strategies, spill origin points, staging areas, and boat launch locations. Detailed information on strategies, staging areas, and boat launches can be found in the chapter appendices.

The following area maps are provided for reference:

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

Figure 4.2 – Dam Locations for the WRIA 7 Skykomish River GRP

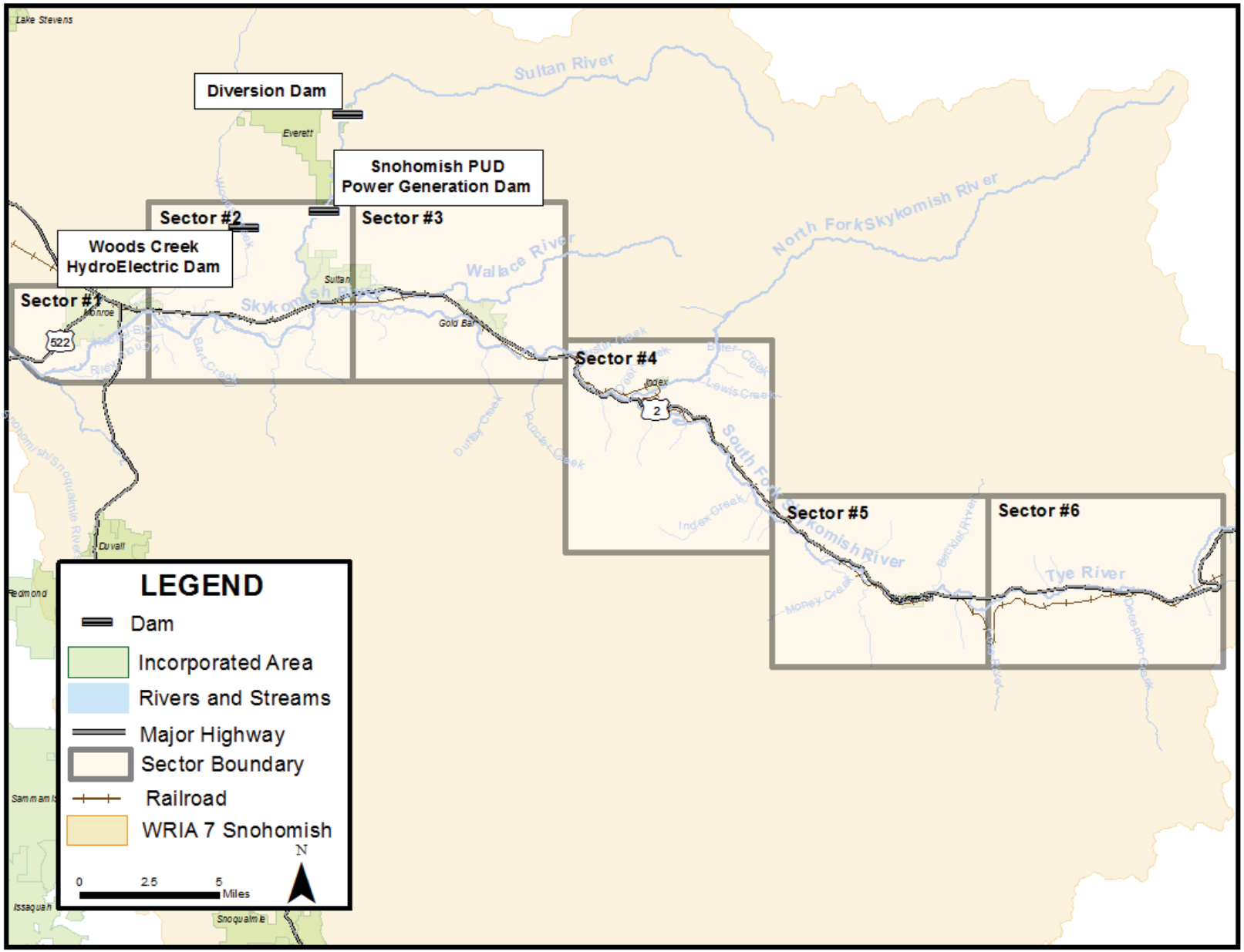


Figure 4.3 – Response Strategy Locations for the WRIA 7 Skykomish River GRP

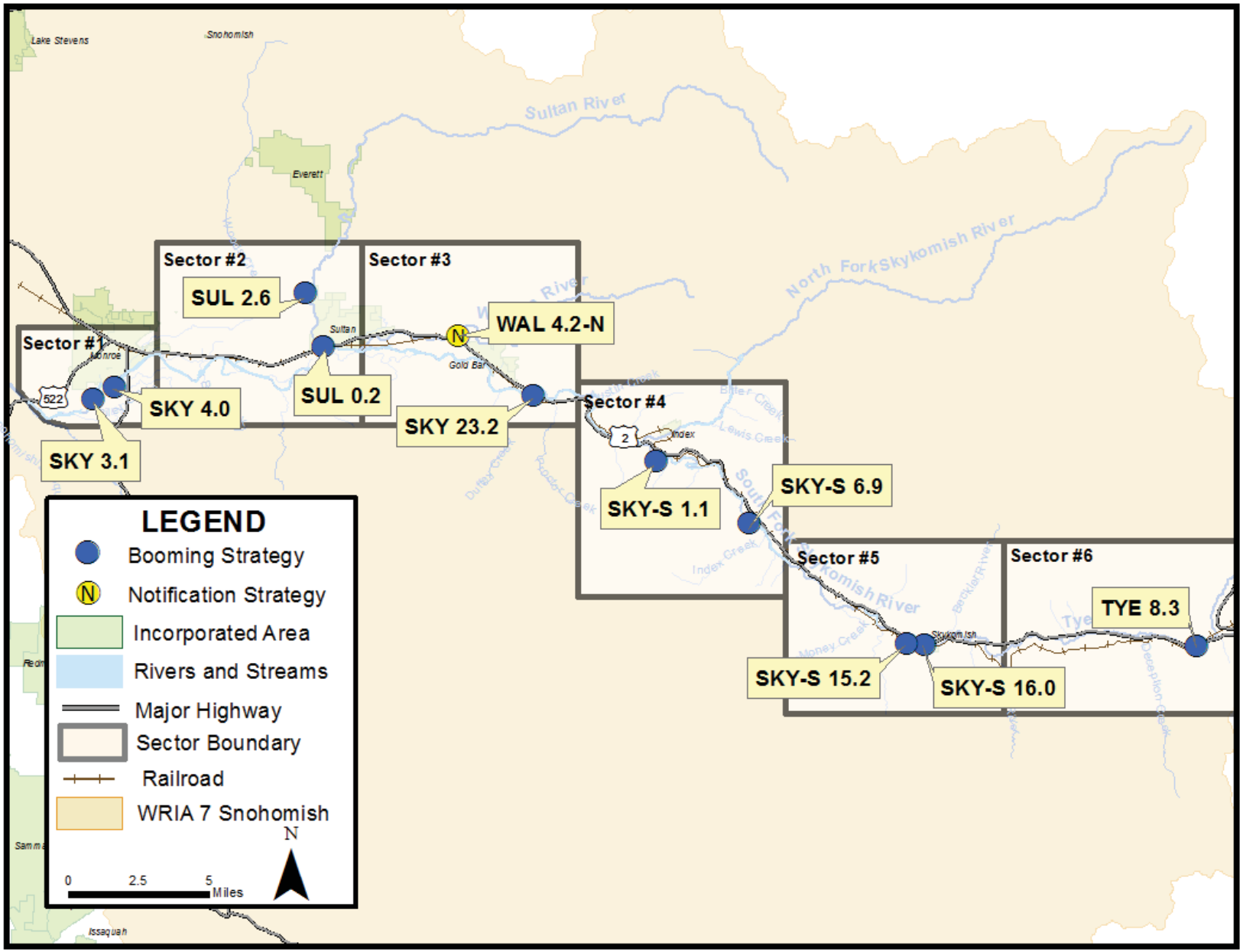


Figure 4.4 – Notification Strategy Locations for the WRIA 7 Skykomish River GRP

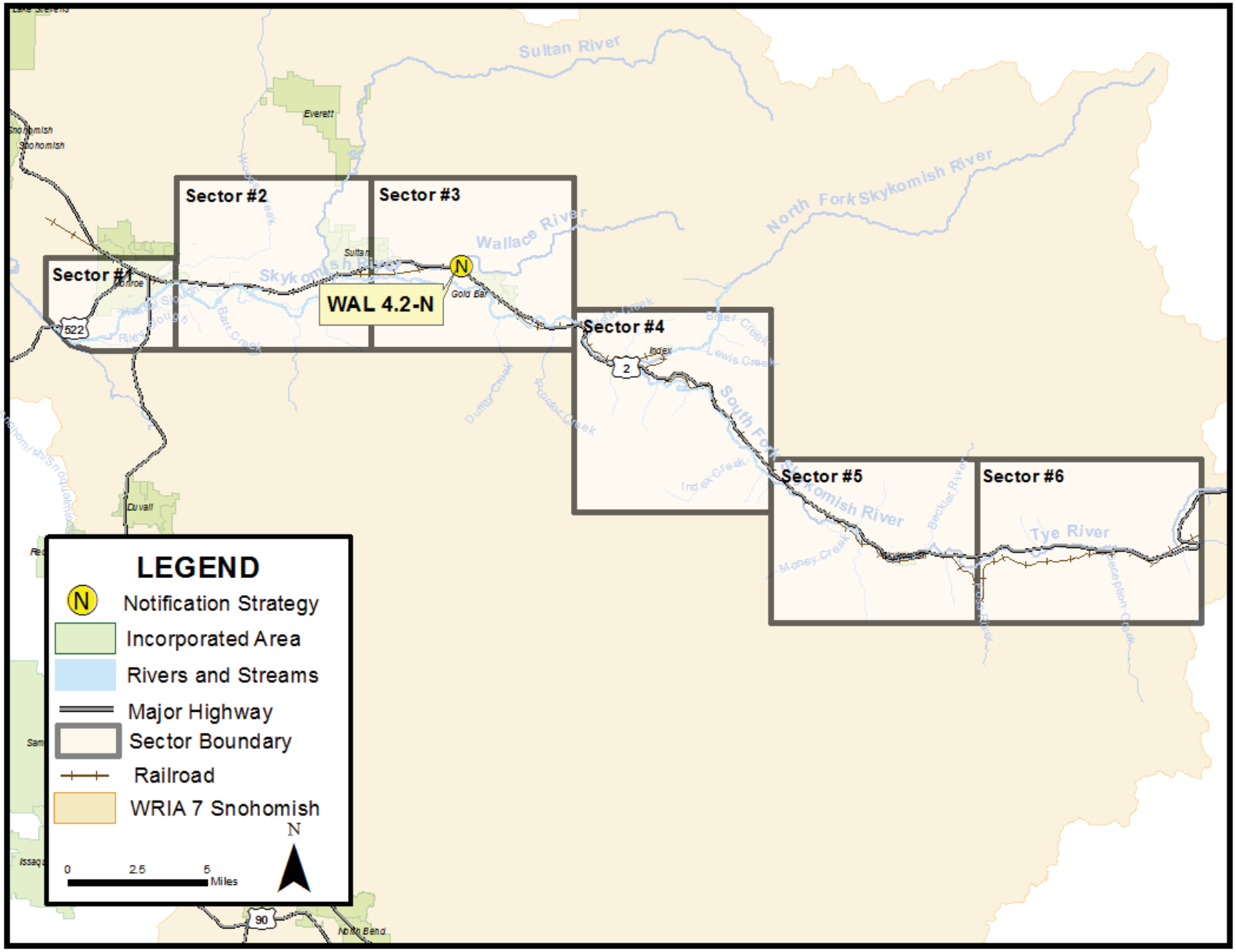


Figure 4.5 –Staging Areas for the WRIA 7 Skykomish River GRP

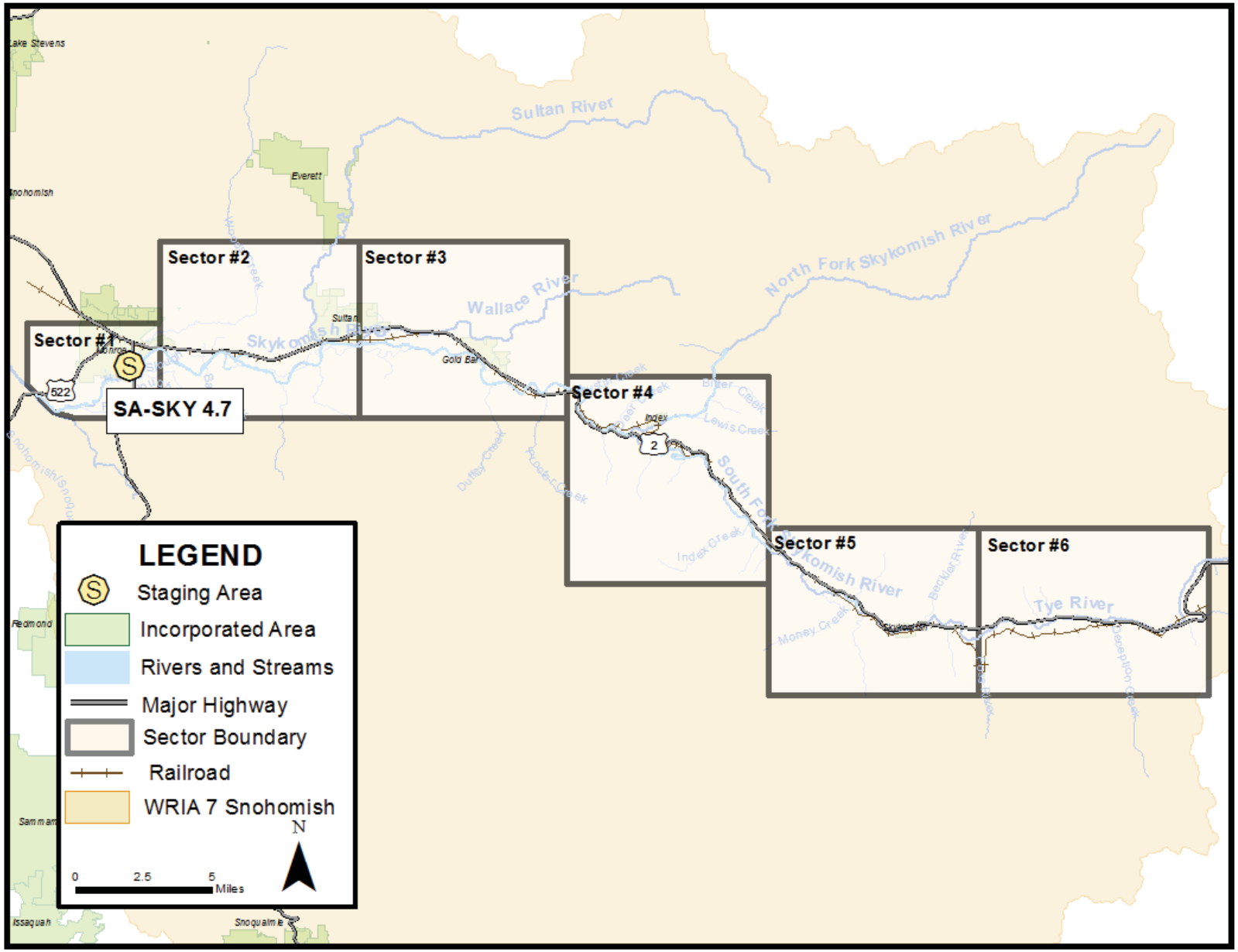


Figure 4.6 – Boat Launch Locations for the WRIA 7 Skykomish River GRP

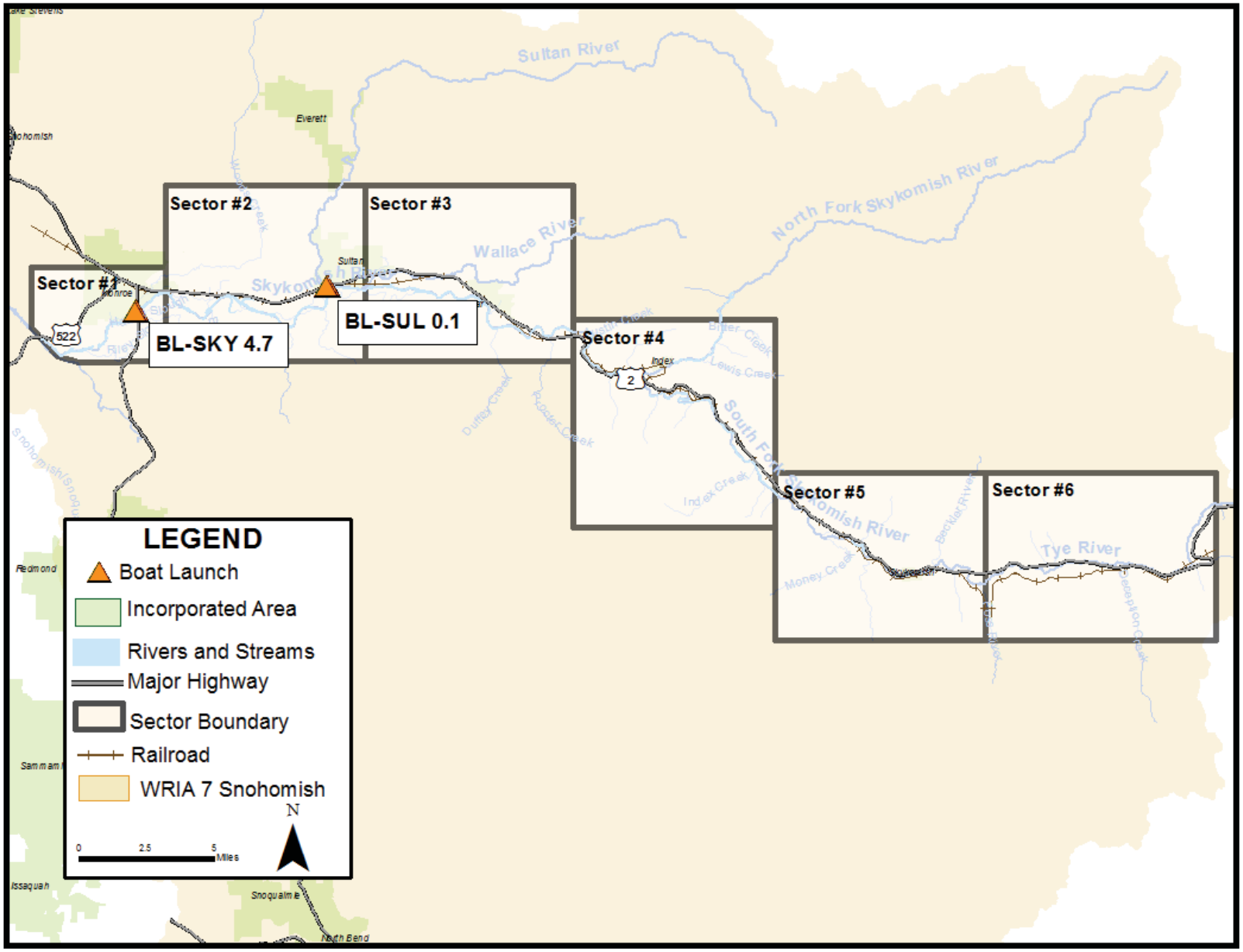
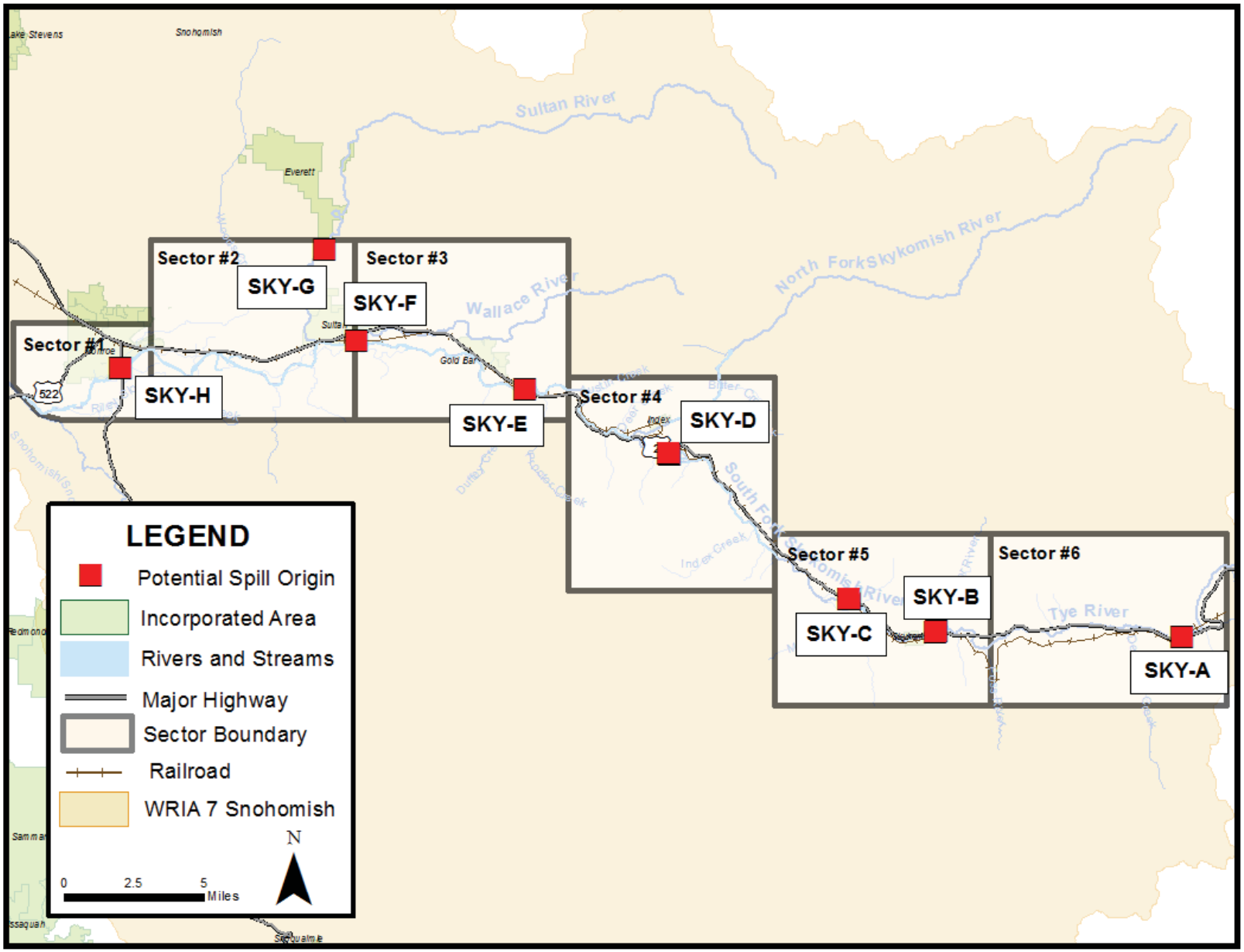


Figure 4.7 – Spill Origin Points for the WRIA 7 Skykomish River GRP



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4.3 – Strategy & Response Priorities

4.3.1 - General Response Priorities: The following list provides the order of response priorities after an oil spill impacts the Skykomish River or one of its tributaries.

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. Notify any dams downstream of the spill location.
4. Control and contain the source of the spill; mobilize resources to the spill location. Source control and containment are always a higher priority than GRP strategy implementation.
5. Determine the priority or order GRP strategies should be implemented based on the location of the spill or area affected. Priorities based on Potential Spill Origin Points are included in this chapter and should be used unless the situation or circumstances dictate otherwise (see Section 4.3.2).
6. As response resources become available, implement the GRP Strategies in order of priority.
7. 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 Spill Origin Points along the Skykomish River and its tributaries; points SKY-A through SKY-H. These points are graphically displayed on area overview map (Figure 4.7) and sector maps, symbolized as red boxes. In establishing response priorities, or selecting an appropriate Spill Origin Point, the downstream movement of spilled oil and the time it takes to mobilize response resources and deploy boom must always 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

Point "SKY-A" – Potential spill origin on Tye River at Stevens Pass Highway crossing.				
Implementation Priority	**Strategy Number**	**Sector Map Page Number**	**Strategy Matrix Page Number**	**Strategy Details Page Number**
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY-S 15.2	4-25	4-30	4A-11
3	SKY-S 16.0	4-25	4-31	4A-13
4	TYE 8.3	4-26	4-32	4A-19

Table 4.4

Point "SKY-B" – Potential spill origin on South Fork of Skykomish River at Stevens Pass Highway crossing.				
Implementation Priority	**Strategy Number**	**Sector Map Page Number**	**Strategy Matrix Page Number**	**Strategy Details Page Number**
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY-S 1.1	4-24	4-30	4A-7
3	SKY-S 6.9	4-25	4-30	4A-9
4	SKY-S 15.2	4-25	4-30	4A-11
5	SKY-S 16.0	4-25	4-31	4A-13

Table 4.5

Point "SKY-C" – Potential spill origin on South Fork Skykomish River at Stevens Pass Highway crossing.				
Implementation Priority	Strategy Number	Sector Map Page Number	Strategy Matrix Page Number	Strategy Details Page Number
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY-S 1.1	4-24	4-30	4A-7
3	SKY-S 6.9	4-25	4-30	4A-9

Table 4.6

Point "SKY-D" – Potential spill origin on South Fork of Skykomish River at railroad crossing.				
Implementation Priority	Strategy Number	Sector Map Page Number	Strategy Matrix Page Number	Strategy Details Page Number
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY 23.2	4-23	4-29	4A-5
3	SKY-S 1.1	4-24	4-30	4A-7
4	SKY 4.0	4-21	4-29	4A-3

Table 4.7

Point "SKY-E" – Potential spill origin on Skykomish River at Stevens Pass Highway crossing.				
Implementation Priority	Strategy Number	Sector Map Page Number	Strategy Matrix Page Number	Strategy Details Page Number
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY 4.0	4-21	4-29	4A-3
3	SKY 23.2	4-23	4-29	4A-5

Table 4.8

Point "SKY-F" – Potential spill origin on Wallace River at railroad bridge crossing.				
Implementation Priority	Strategy Number	Sector Map Page Number	Strategy Matrix Page Number	Strategy Details Page Number
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY 4.0	4-21	4-29	4A-3
3	SKY 3.1	4-21	4-29	4A-1

Table 4.9

Point "SKY-G" – Potential spill origin on Sultan River above river mile 4.7.				
Implementation Priority	**Strategy Number**	**Sector Map Page Number**	**Strategy Matrix Page Number**	**Strategy Details Page Number**
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY 4.0	4-21	4-29	4A-3
3	SUL 0.1	4-22	4-31	4A-15
4	SUL 2.6	4-22	4-31	4A-17
5	SKY 3.1	4-21	4-29	4A-1

Table 4.10

Point "SKY-H" – Potential spill origin on Skykomish River at Highway WA-203 crossing.				
Implementation Priority	**Strategy Number**	**Sector Map Page Number**	**Strategy Matrix Page Number**	**Strategy Details Page Number**
1	WAL 4.2-N	4-23	4-35	4B-1
2	SKY 3.1	4-21	4-29	4A-1
3	SKY 4.0	4-21	4-29	4A-3

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4.4 Response Strategy Locations (Sector Maps)

Figure 4.8 – Map of Sector #1

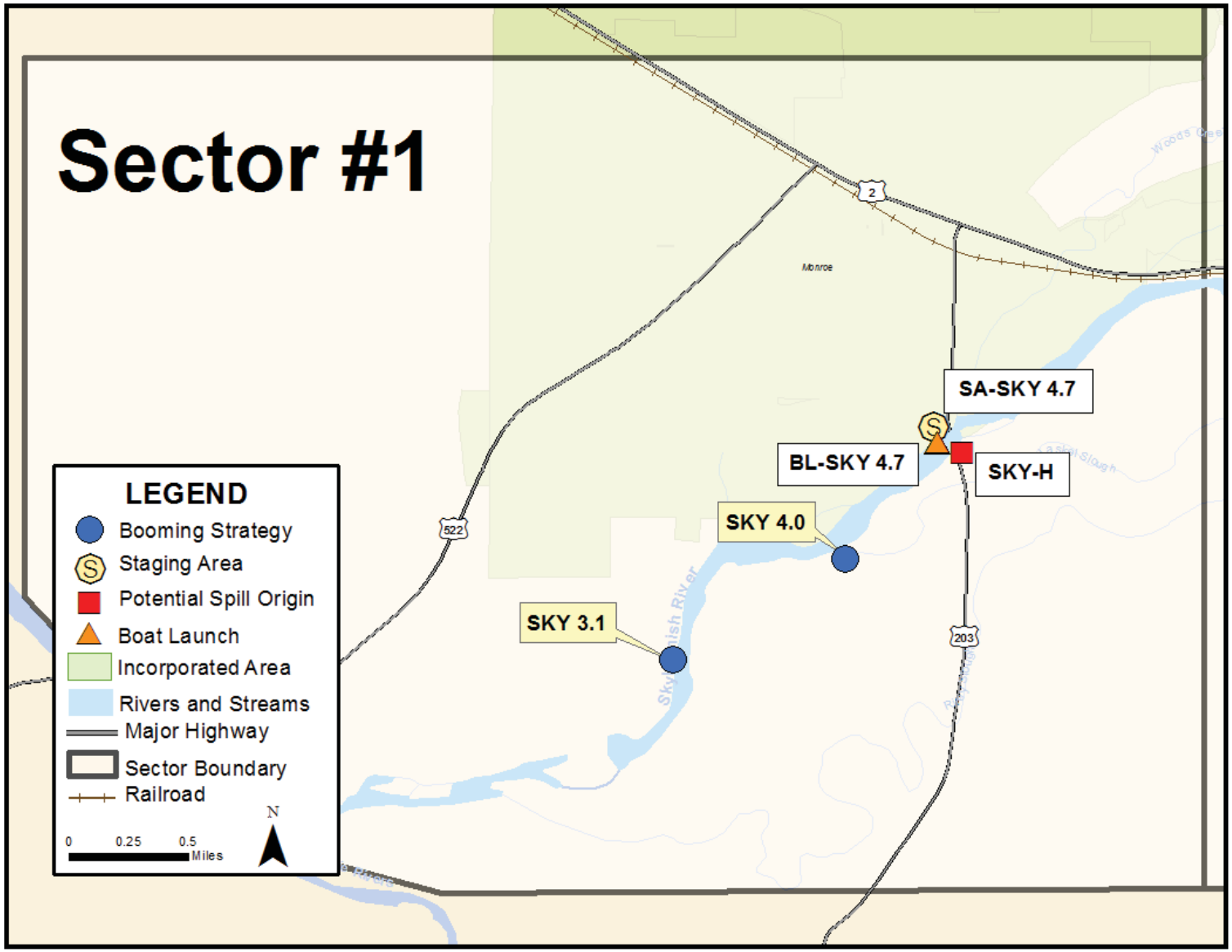


Figure 4.9 – Map of Sector #2

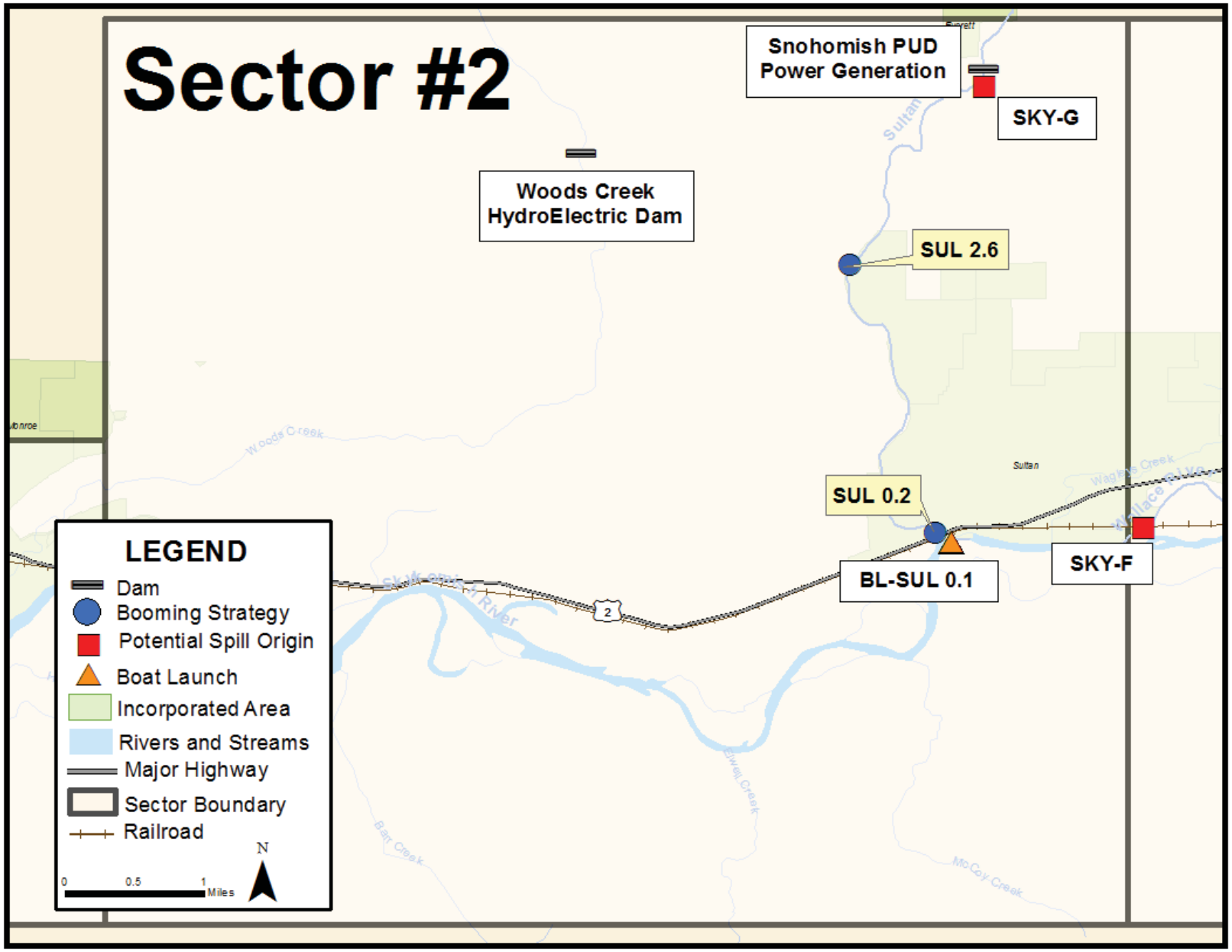


Figure 4.10 – Map of Sector #3

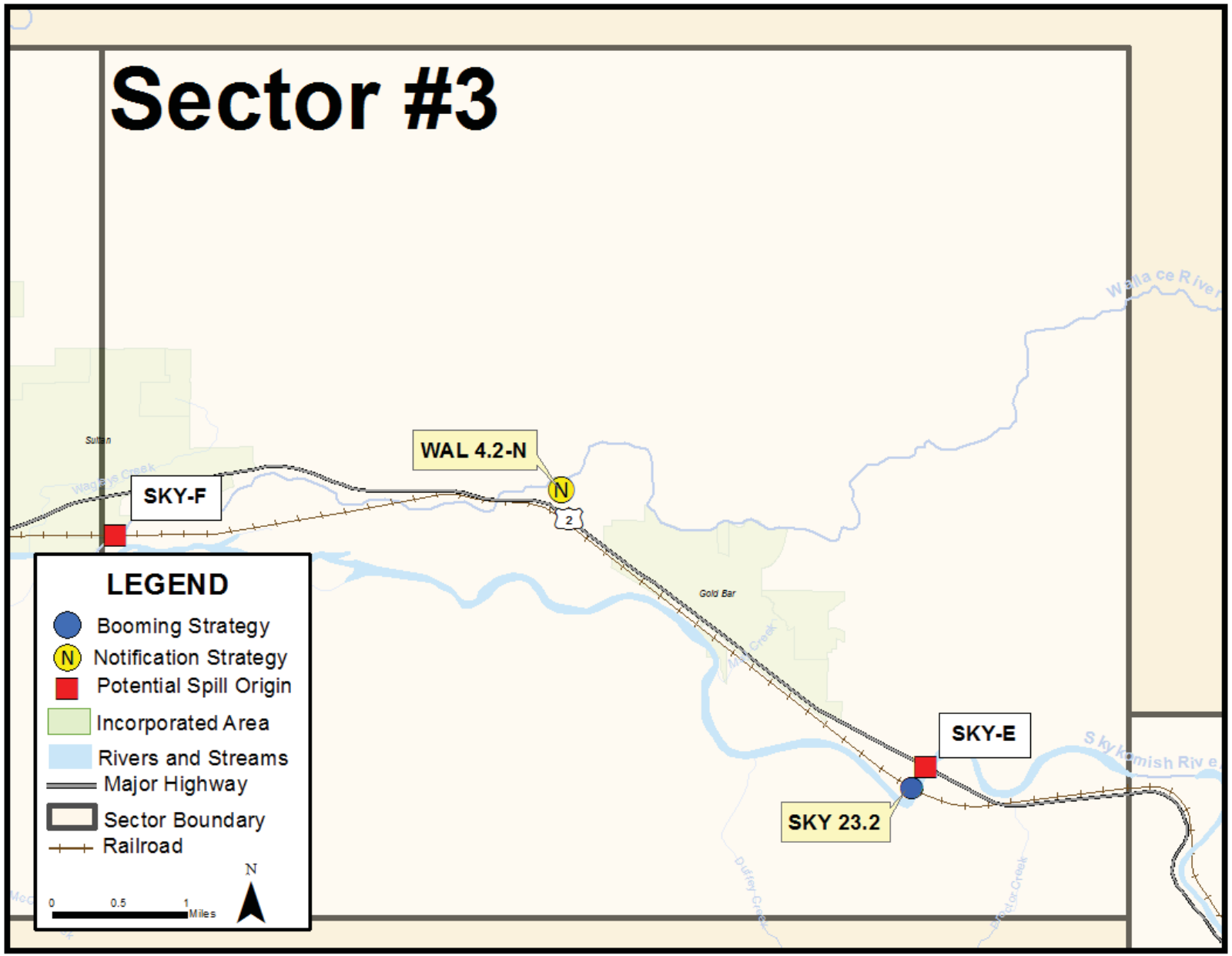


Figure 4.11 – Map of Sector #4

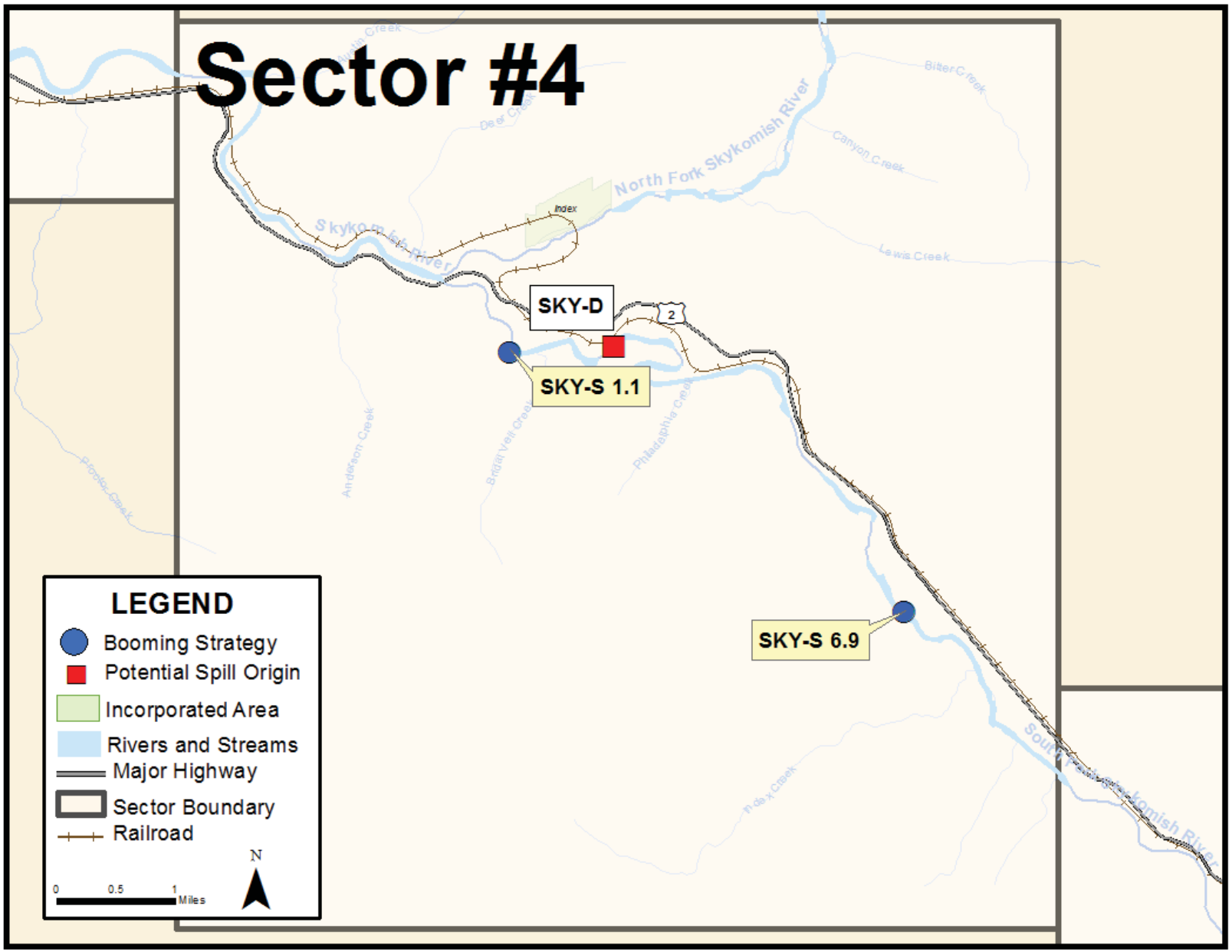


Figure 4.12 – Map of Sector #5

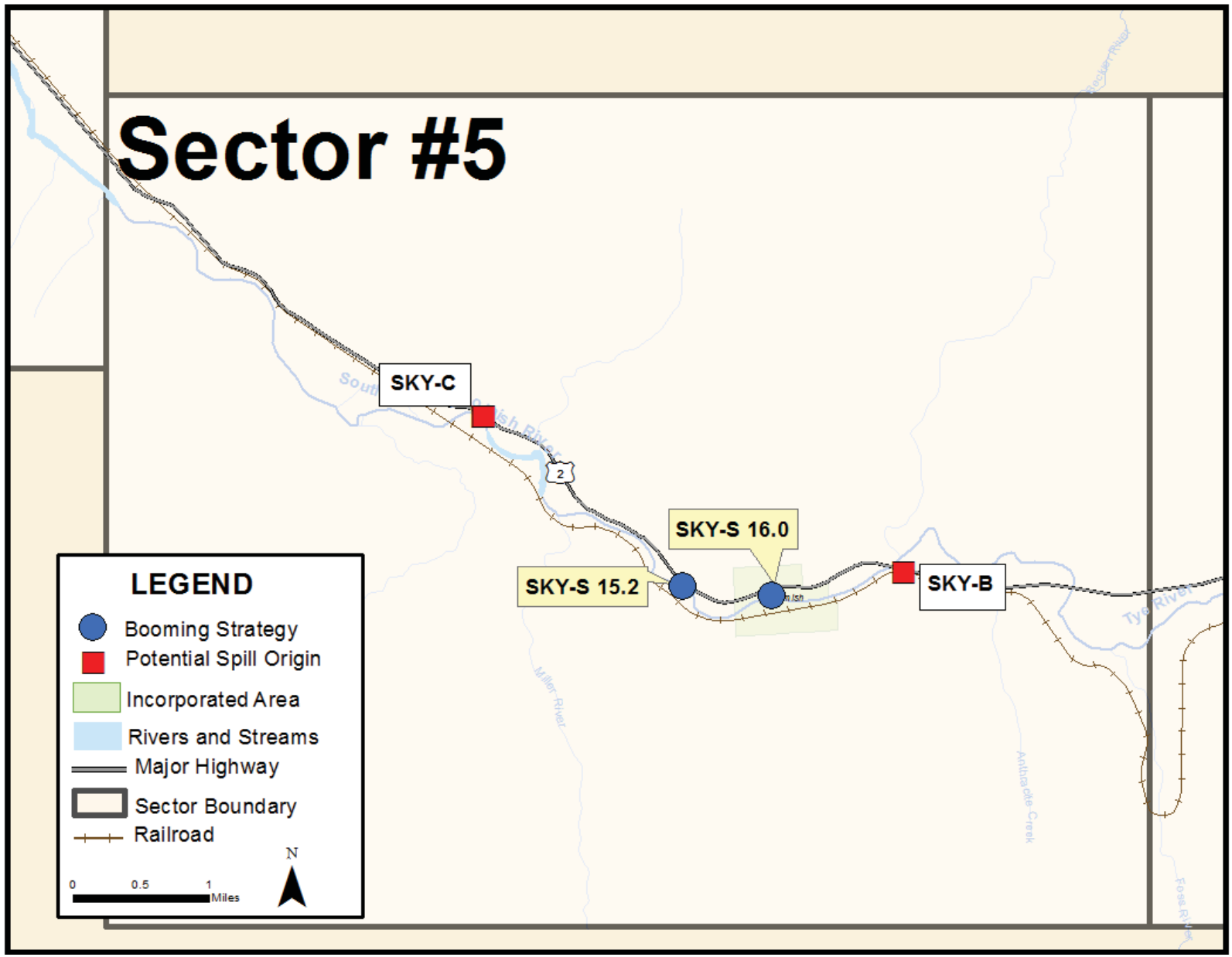
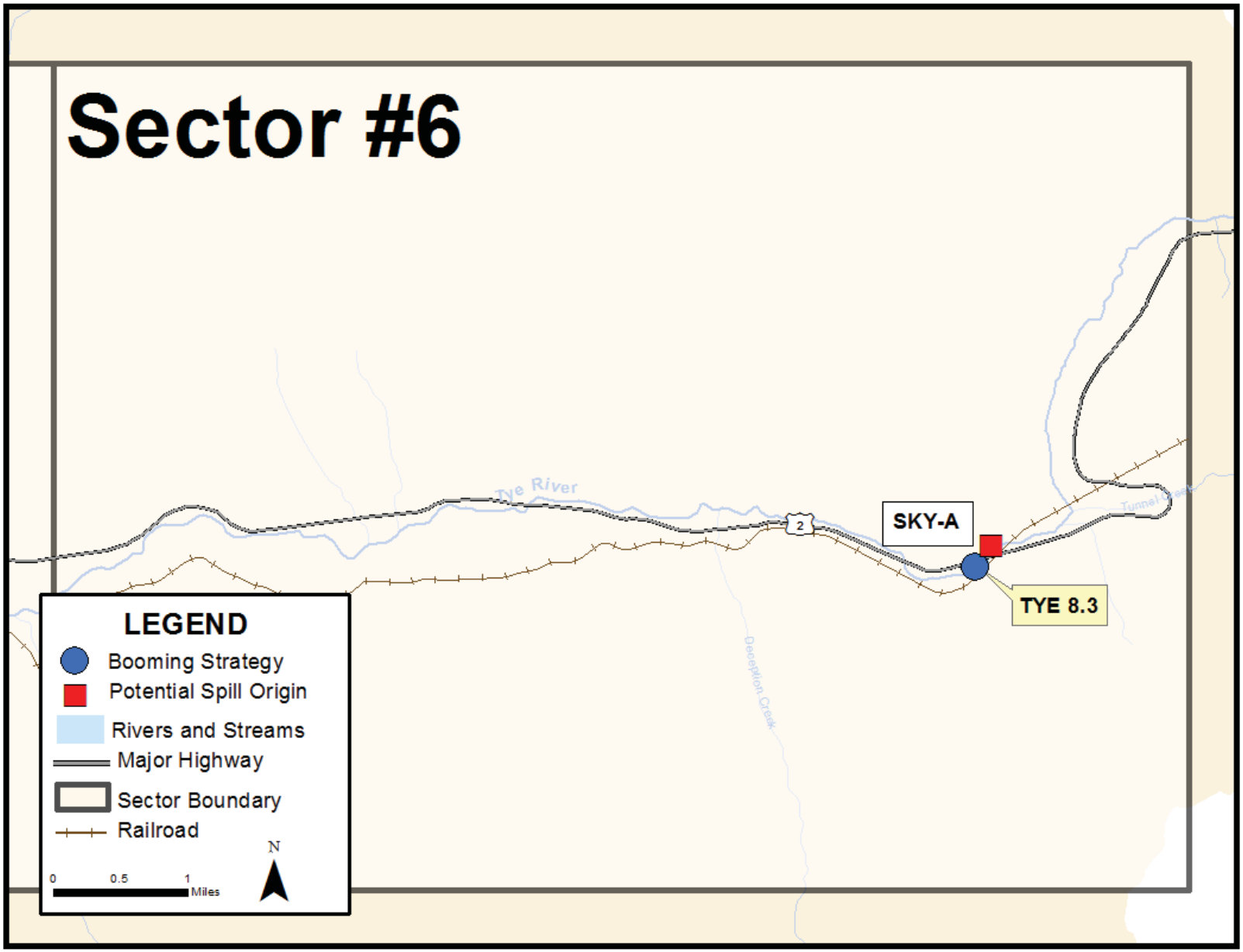


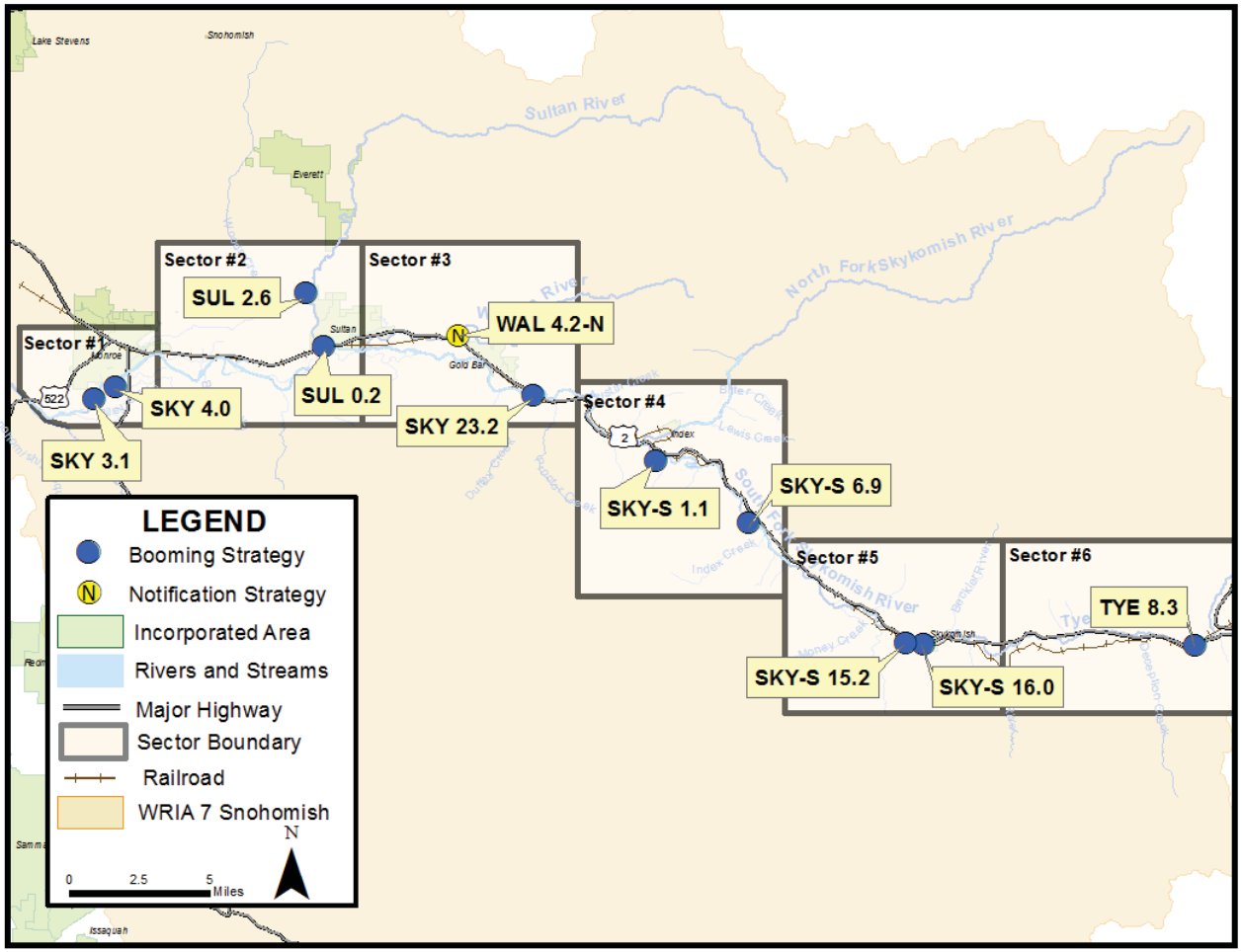
Figure 4.13 – Map of Sector #6



4.5a – Response Strategy Matrices

The following response strategy matrices provide brief information on each strategy shown on the map below. Each strategy begins with three letters denoting the associated waterbody. A fourth letter indicates river fork designation. Numbers specify the river mile of the strategy calculated as the distance from the mouth of the river or creek upstream to the strategy location. Response Strategy Matrices are listed by strategy number in alphanumeric order.

Figure 4.3 – Response Strategies for the WRIA 7 Skykomish River GRP



SKY-S 1.1

Water Body River Mile

SKY= Skykomish River
SKY-S= South Fork Skykomish
SKY-N=North Fork Skykomish
SUL= Sultan River
TYE= Tye River
WAL= Wallace River

WRIA 7 Skykomish River Response Strategies:

SKY 3.1

SKY 4.0

SKY 23.2

SKY-S 1.1

SKY-S 6.9

SKY-S 15.2

SKY-S 16.0

SUL 0.2

SUL 2.6

TYE 8.3

WAL 4.2-N

Strategy Number	Location Waterway	Strategy Type	Boom Length	Boat Req?	StagingArea	Resources at Risk	Comments	Sector Map (Page#)	Strategy Details (Page#)
SKY 3.1	47.832719, -121.995562 Monroe, WA Skykomish River	Deflection	400ft	Yes	Off-Site: Stage at SA-SKY 4.7 (Skykomish River Centennial Park); launch boat from this location (BL-SKY 4.7).	Wetland habitat in channels	Inform on-site property owner/manager before strategy implementation. This strategy is only to be used during high flow or high-high flow, when the channels fill with water. At lower water levels, the channels will remain relatively dry.	4-21	4A-1
SKY 4.0	47.839086, -121.980042 Monroe, WA Skykomish River	Collection	550ft	Yes	Off-Site: Stage at SA-SKY 4.7 and launch boat from BL-SKY 4.7	Downstream habitat	"No Trespassing" sign on river left on east side of 187th Avenue SE. This side of the road is overgrown with thorny bushes and no access to slough.	4-21	4A-3
SKY 23.2	47.837026, -121.659679 Big Eddy State Park, Gold Bar, WA Skykomish River	Diversion, Collection	800ft	No	On-Site: Big Eddy State Park, Stevens Pass Highway, Gold Bar, WA	Downstream habitat	Several large eddies in the area that could be used to benefit collection, depending on river conditions. Use caution when pulling lines under tension; only double-braided lines should be used.	4-23	4A-5

Strategy Number	Location Waterway	Strategy Type	Boom Length	Boat Req?	StagingArea	Resources at Risk	Comments	Sector Map (Page#)	Strategy Details (Page#)
SKY-S 1.1	47.804133, -121.566081 Index, WA South Fork Skykomish River	Collection	300ft	Yes	On-Site: Open area owned by Mt. Index Riversites with paths to river's edge.	Downstream habitat	Private Property: Mt. Index Riversites. Easy access to the river from Mt. Index River Road. The river widens and slows in this area.	4-24	4A-7
SKY-S 6.9	47.773692, -121.49482 Baring, WA South Fork Skykomish River	Collection	300ft	Yes	On-Site: Stage on river right at old house.	Downstream habitat	River access, but overgrown in places. May need pruners for vegetation removal. No access on opposite bank.	4-24	4A-9
SKY-S 15.2	47.711754, -121.34174 Monroe, WA South Fork Skykomish River	Collection	300ft	No	On-Site: Stage Vac-Truck on shoulder of Highway 2.	Downstream habitat	Due to height of roadway above river, a booster pump may be necessary to enhance vacuum truck suction capability. Temporary use of shoulder may be required to implement strategy; at minimum follow WADOT work zone traffic control guidelines.	4-25	4A-11

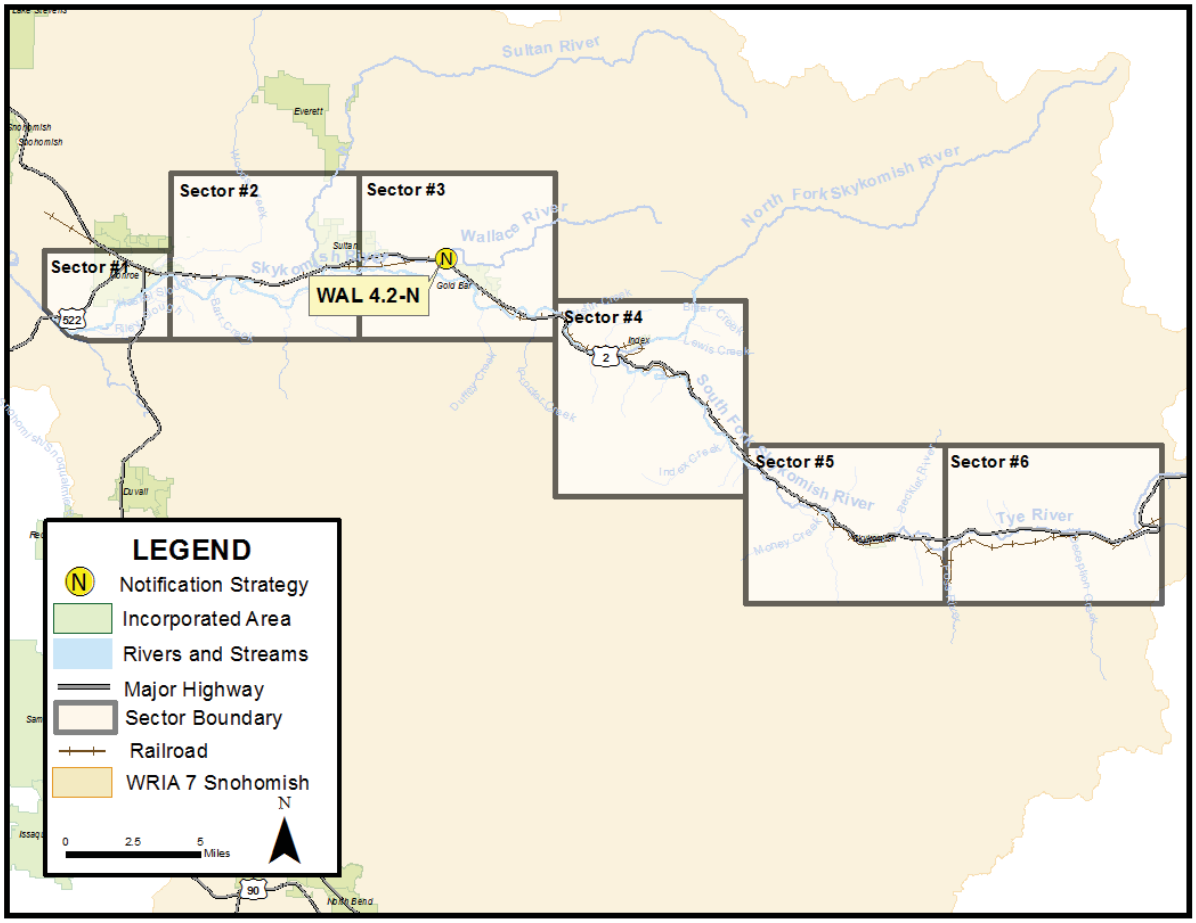
Strategy Number	Location Waterway	Strategy Type	Boom Length	Boat Req?	StagingArea	Resources at Risk	Comments	Sector Map (Page#)	Strategy Details (Page#)
SKY-S 16.0	47.710873, -121.360549 Skykomish, WA South Fork Skykomish River	Collection	550ft	No	On-Site: Stage on south side of bridge.	Downstream habitat	Several eddies could be used to collect based on current and conditions.	4-25	4A-13
SUL 0.2	47.861103, -121.820891 Sportsman Park, Sultan, WA Sultan River	Collection	300ft	Yes	On-Site: WDFW Park with trailerable boat ramp.	Downstream habitat	There is a trail along river from behind Main St. that provides access to river left, but vegetation removal may be necessary.	4-22	4A-15
SUL 2.6	47.888751, -121.834517 Sultan, WA Sultan River	Collection	350ft	Yes	On-Site: Snohomish PUD alternate boat access point.	Downstream habitat	Site is the Snohomish PUD alternate boat access site. Property across the river is privately owned.	4-22	4A-17

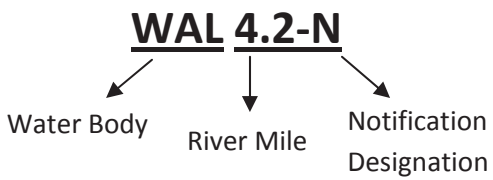
Strategy Number	Location Waterway	Strategy Type	Boom Length	Boat Req?	StagingArea	Resources at Risk	Comments	Sector Map (Page#)	Strategy Details (Page#)
TYE 8.3	47.711343, -121.153107 Near Stevens Pass, WA Tye River	Collection	100ft	No	On-Site: Highway access with space on river left for parking and staging.	Downstream habitat	Sorbent boom recommended; sorbent pads may escape the boom and be deposited downstream. If product flow is heavy, the use of a vacuum truck should be considered but the flow of the river may be too fast or turbid to prevent some entrainment.	4-26	4A-19

4.5b – Notification Strategy Matrices

The following information provides details on notification strategies shown on the map below. Notification strategies are those that require notification of a particular entity such as a dam or fish hatchery. Each notification strategy begins with three letters denoting the associated waterbody. A fourth letter indicates river fork designation. Numbers specify the river mile of the strategy calculated as the distance from the mouth of the river or creek upstream to the strategy location. Strategies end with an "N" to denote a notification-only strategy. Notification Strategy Matrices are listed by strategy number in alphanumeric order.

Figure 4.4 – Notification Strategies for the WRIA 7 Skykomish River GRP





SKY= Skykomish River
SKY-S= South Fork Skykomish
SKY-N=North Fork Skykomish
SUL= Sultan River
TYE= Tye River
WAL= Wallace River

WRIA 7 Skykomish River Notification Strategy Locations:

WAL 4.2-N

Strategy Number	Location Waterway	Strategy Type	Resources at Risk	Implementation	Comments	Sector Map (Page#)	Strategy Details (Page#)
WAL 4.2-N	47.867502, -121.717926 Wallace River Hatchery	Notification	Hatchery water intake on Wallace River. Released juvenile salmon.	CALL: (360) 793-1382-Wallace River Hatchery.	Notify WDFW fish hatchery of spill.	4-23	4B-1

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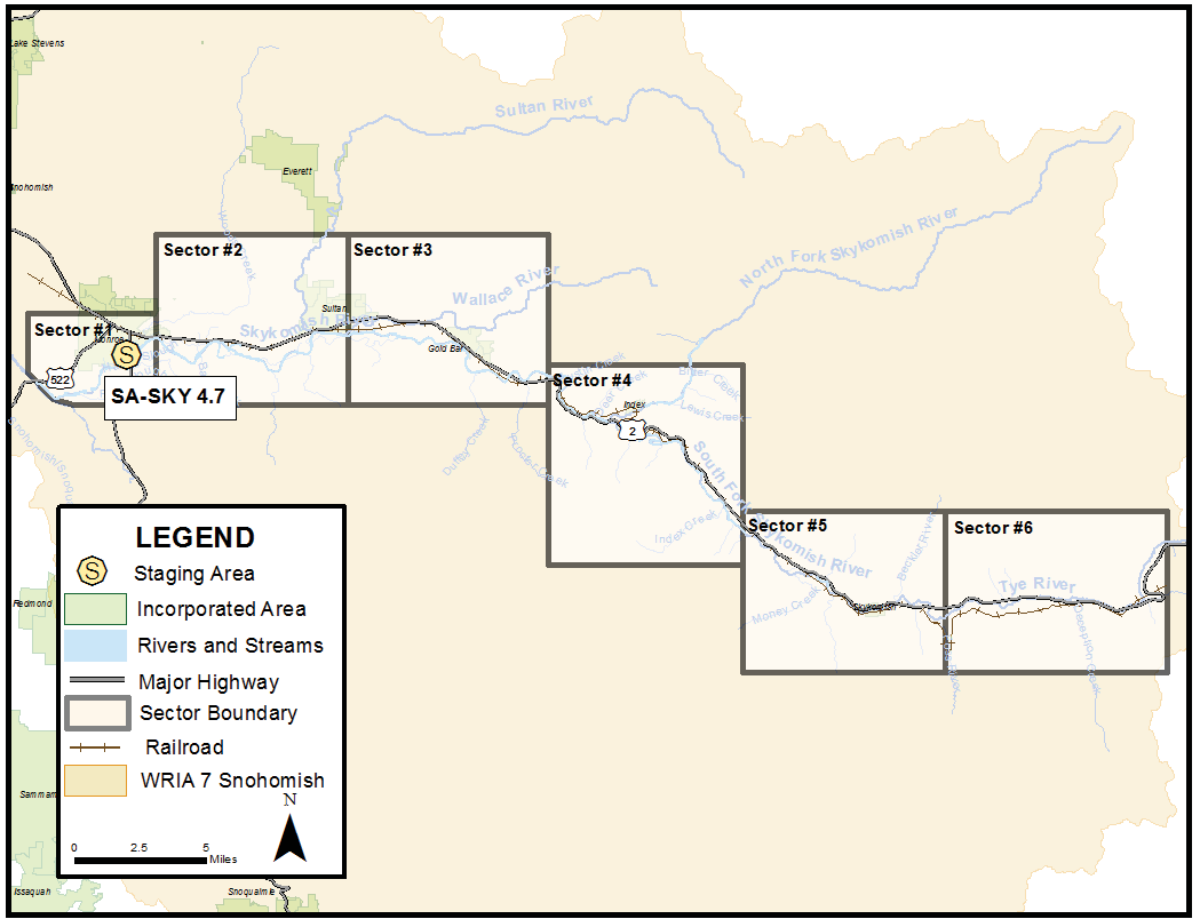
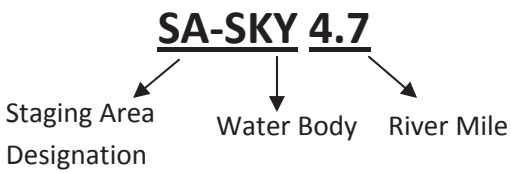
4.5c – Staging Area Matrices

The following information provides details on staging areas that are shown on the map below. The staging areas listed in the matrices are those meant to support the deployment of response strategies that don't have the space or access to stage equipment on-site. Each staging area location begins with the designation "SA" followed by three letters denoting the associated waterbody. A fourth letter indicates river fork designation. Numbers specify the river mile of the strategy calculated as the distance from the mouth of the river or creek upstream to the strategy location.

Figure 4.5 –Staging Area Locations for the WRIA 7 Skykomish River GRP





SKY= Skykomish River
SKY-S= South Fork Skykomish
SKY-N=North Fork Skykomish
SUL= Sultan River
TYE= Tye River
WAL= Wallace River

WRIA 7 Skykomish River Staging Area Locations:

SA-SKY 4.7

Site Number	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page#)	Site Details (Page#)
SA-SKY 4.7	Skykomish River	47.846546, -121.971588	South Lewis Street Monroe, WA 98272	City of Monroe Parks Lead 360-863-4509	SKY 3.1 SKY 4.0	Staging at Skykomish River Park; extra parking and facilities through Highway 203 underpass at Lewis Street Park. Underpass has height restriction: 11ft. 9in.	4-21	4C-1

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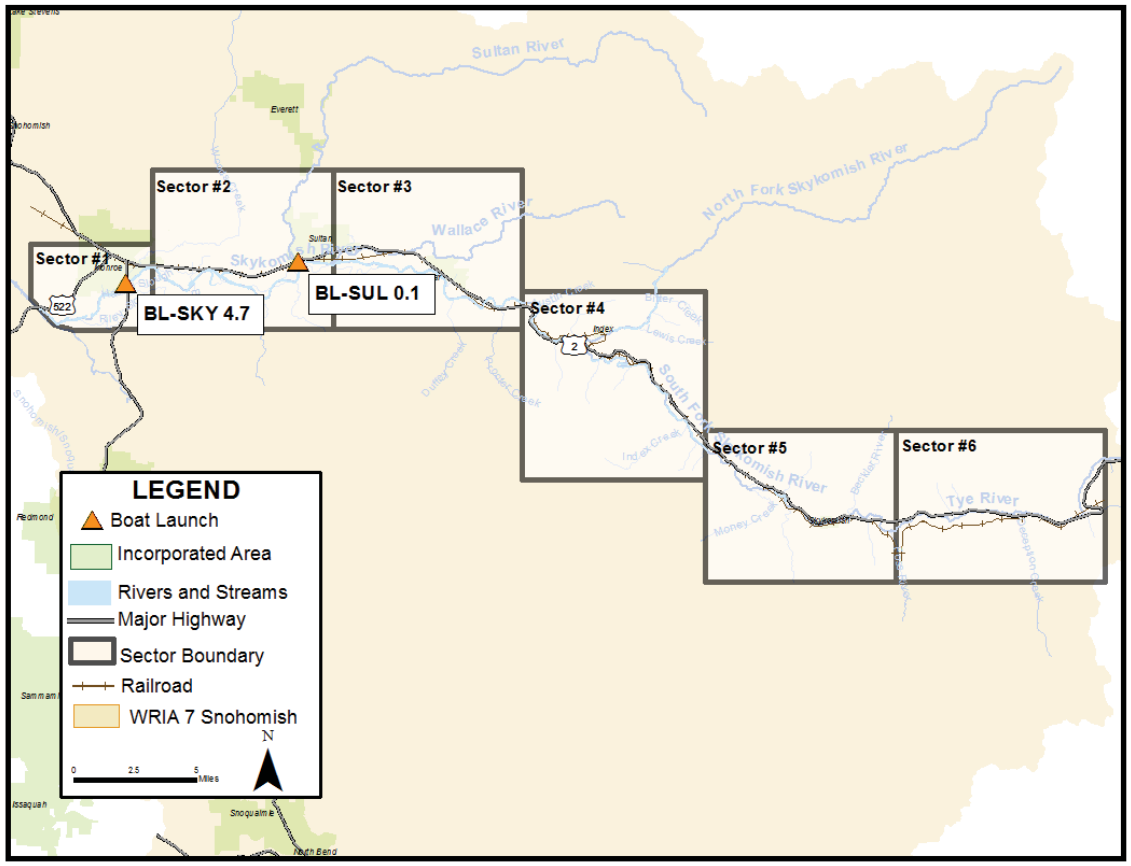
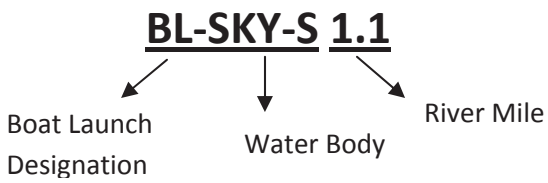
4.5d – Boat Launch Location Matrices

The following information provides details on boat launch locations shown on the map below. These locations do not include strategy sites where only the use of a hand-launch boat is required. Not all locations are public facilities, therefore early contact with property owners and managers may be needed to minimize access delays and resolve user fee issues. Each boat launch location begins with the designation "BL" followed by three letters denoting the associated waterbody. A fourth letter indicates river fork designation. Numbers specify the river mile of the strategy calculated as the distance from the mouth of the river or creek upstream to the strategy location. Boat launches are listed alpha-numerically in the matrices.

Figure 4.6 – Boat Launch Locations for the WRIA 7 Skykomish River GRP





SKY= Skykomish River
SKY-S= South Fork Skykomish
SKY-N=North Fork Skykomish
SUL= Sultan River
TYE= Tye River
WAL= Wallace River

WRIA 7 Skykomish River Boat Launch Locations:

BL-SKY 4.7

BL-SUL 0.1

Site Number	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page#)	Site Details (Page#)
BL-SKY 4.7	Skykomish River Centennial Park	47.846546, -121.971588	South Lewis Street Monroe, WA 98272	City of Monroe Parks Lead 360-863-4509	SKY 3.1 SKY 4.0	Extra parking and facilities through Highway 203 underpass at Lewis Street Park. Underpass has height restriction: 11ft. 9in.	4-21	4D-1
BL-SUL 0.1	Sportsman Park	47.861103, -121.820891	Sportsman Park Albion Street Sultan, WA 98294	WDFW Region 4 16018 Mill Creek Blvd. Mill Creek, WA 98012 (425) 775-1311	SUL 0.2	WDFW Park with trailerable boat ramp. Extreme caution required on-site due to swift current and dangerous undertow associated with confluence.	4-22	4D-3

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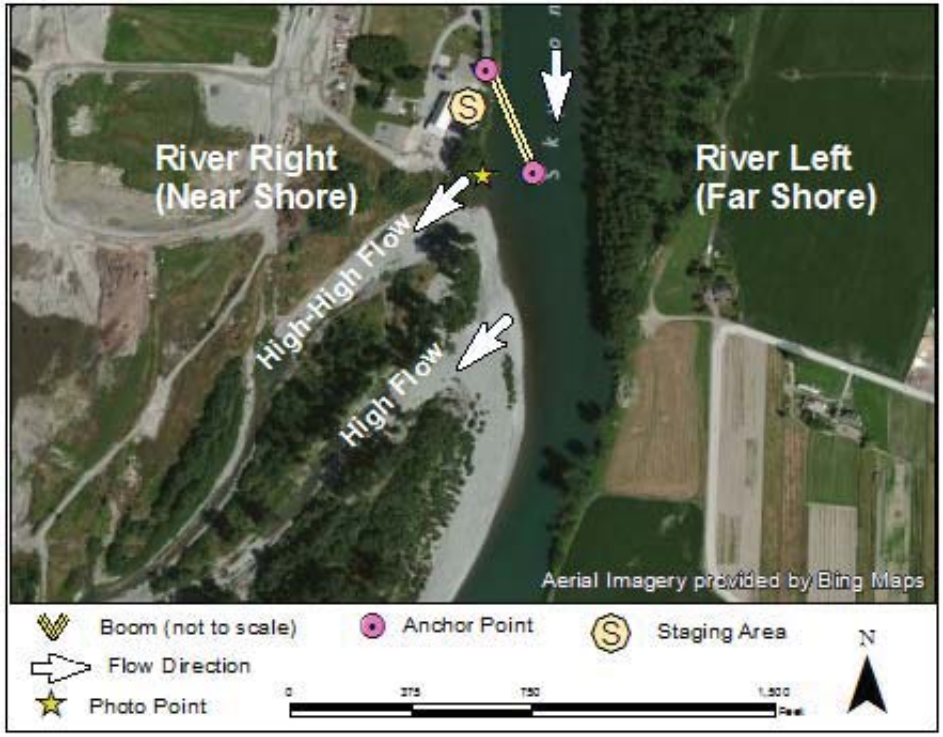
Skykomish River SKY 3.1

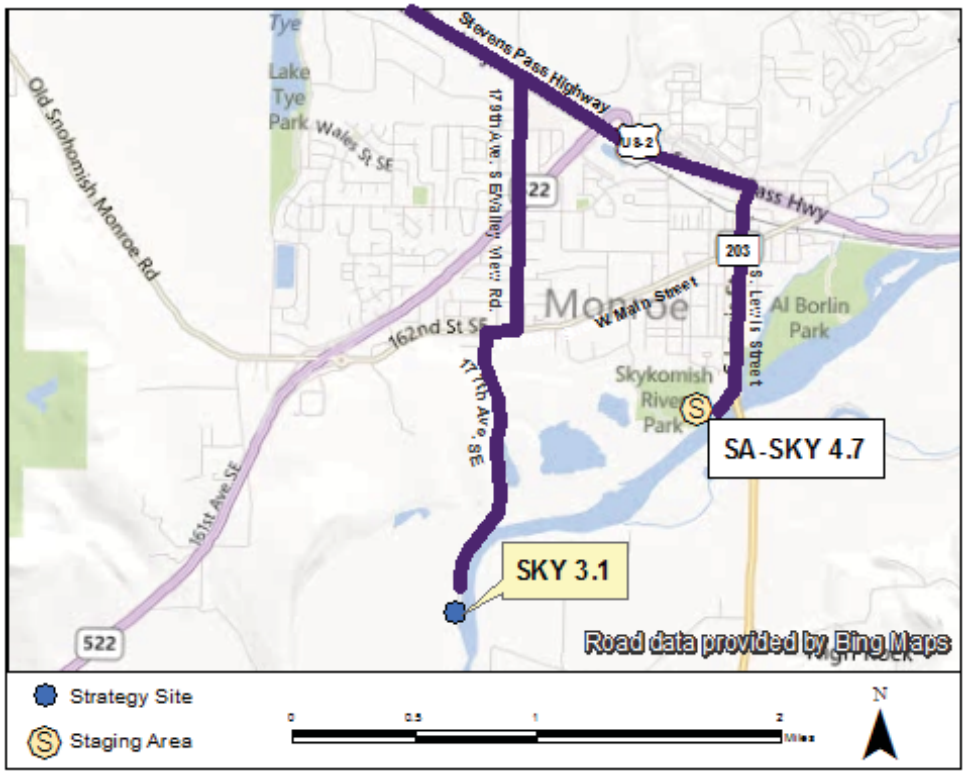
Location	47.832719, -121.995562 Monroe, WA	
Strategy Objective	Deflection	Deflect to keep oil from entering channels on river right.
Implementation	High Flow River Conditions Only: Using workboat, transport 400ft boom downstream 1.5 Miles fm boat ramp at Centennial Park (BL-SKY 4.7). Using line, pass end of boom to crew on shore at river right near the end of Hansen Rd (~N47.83412, W121.99495); shoreside crew anchors boom end to river bank. Boat crew then guides full extent of boom out fm shore & downstream to mid-river, anchoring remaining boom end in place. Use additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or trees to secure boom to river banks.	
Staging Area	Off-Site:	Stage at SA-SKY 4.7 (Skykomish River Centennial Park); launch boat from this location (BL-SKY 4.7).
Site Safety Note	Water Hazard; Slips, Trip, & Fall Hazards; Heavy foliage & trees; Use caution approaching river banks.	
Field Notes	Inform on-site property owner/manager before strategy implementation. This strategy is only to be used during high flow or high-high flow, when the channels fill with water. At lower water levels, the channels will remain relatively dry.	
Watercourse	River - Skykomish River	
Resources at Risk	Wetland habitat in channels	



Recommended Equipment		
400	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Workboat(s) - (jet drive recommended)
8	Each	Anchoring System(s) - (anchor, lines, floats)
400	Feet	Line - 3/8” poly line
2	Each	Heaving Line(s) and Line Throwing Device
1	Each	Towing Bridle(s) - (appropriately sized for boom)
2	Each	Heavy duty pruners (for hand removal of vegetation)
4	Each	Anchoring Post(s) - (shoreside)

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

SKY 3.1 Photo: Facing NE on River Right looking toward river from dry high-flow area.



Site Contact Information

No Information

Nearest Address

To SKY 3.1:
177th Avenue SE
Monroe, WA 98272

To SA-SKY 4.7:
South Lewis Street
Monroe, WA 98272

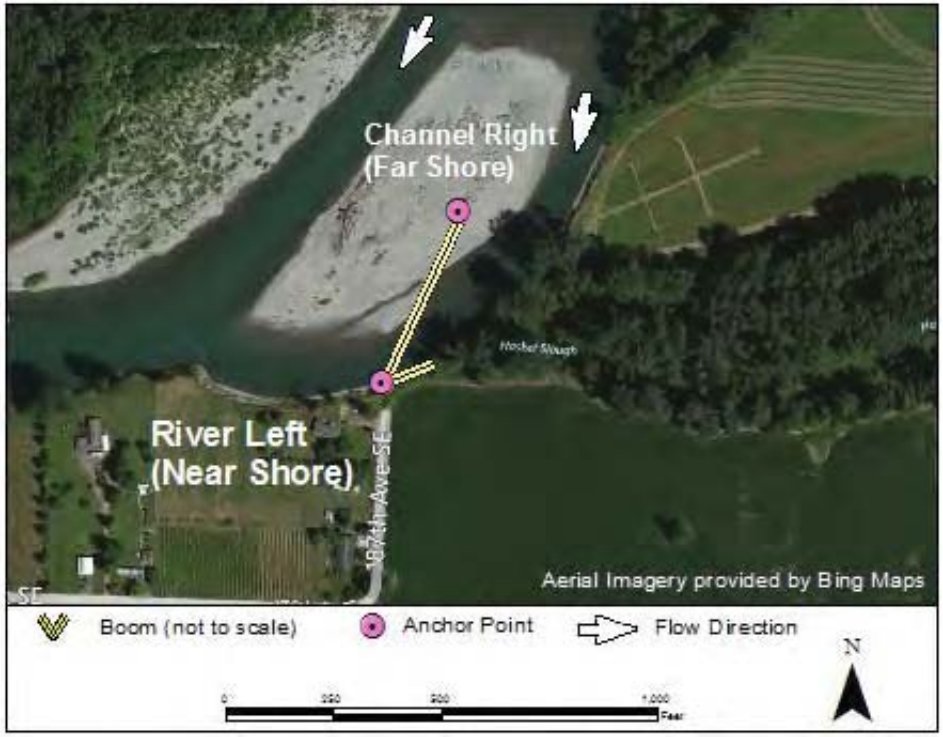
Driving Directions

To SKY 3.1 From US-2E/Stevens Pass Highway:
-Continue east on US-2/Stevens Pass Highway to Monroe, WA.
-Turn right onto 179th Avenue SE/Valley View Road.
-In one mile, turn right on W. Main Street.
-Turn left on 177th Avenue SE and follow for 1 1/4 miles.
-Park in gravel lot near bank project.

To SA-SKY 4.7 From US-2E/Stevens Pass Highway:
-Continue east on US-2/Stevens Pass Highway to Monroe, WA.
-Approximately 2/3 mile from US-2/WA-522 intersection, turn right on WA-203/S. Lewis Street.
-In 2/3 mile, just before WA-203 crosses the Skykomish River, turn right onto gravel road and keep left.
-Continue to parking area/boat ramps or follow road under bridge to Lewis Street Park.

Skykomish River — SKY 4.0

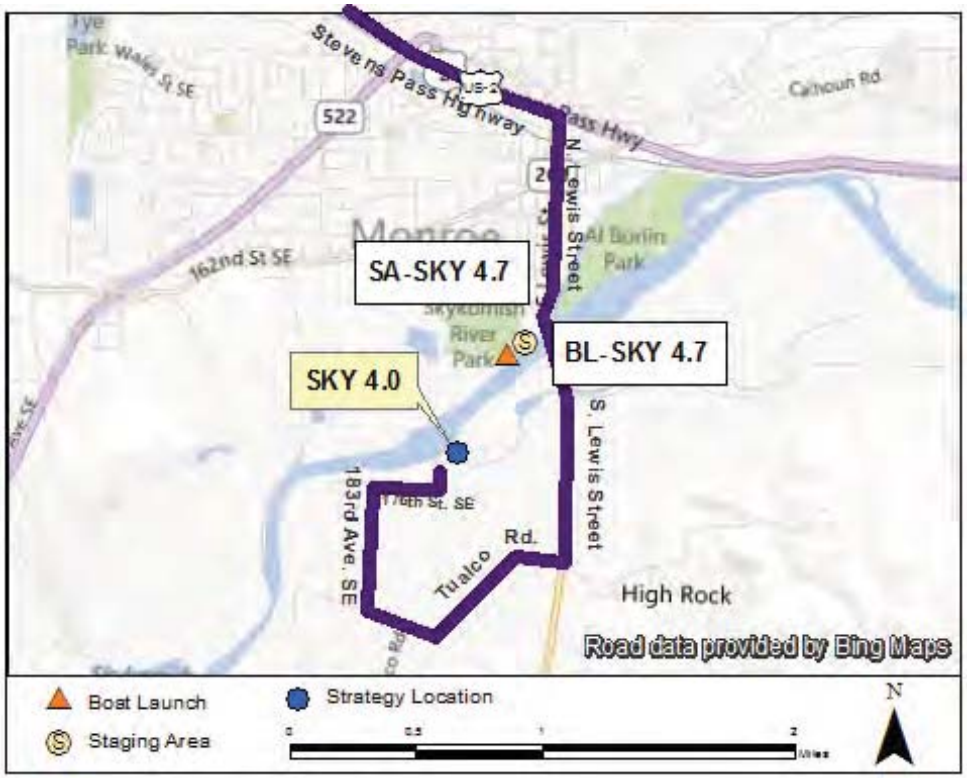
Location	47.839086, -121.980042 Monroe, WA	
Strategy Objective	Collection	Collect oil moving downstream on river channel left.
Implementation	Using workboat, transport 550ft of boom downstream 0.7 Miles fm boat ramp at Centennial Park (BL-SKY 4.7). Strategy is on the left channel of river at this location, near end of 187th Ave SE. Secure boom to channel island (right side of river channel) about 350ft upstream from end of roadway (~N47.84003, W121.97952). Guide boom downstream & across to shoreside crew on channel left (end of 187th Ave SE). Shoreside crew anchors boom end to river bank and forms oil collection pocket. Use lines or additional anchoring systems to keep boom secure in river. Use shoreside anchoring posts or trees to secure boom to river banks.	
Staging Area	Off-Site:	Stage at SA-SKY 4.7 and launch boat from BL-SKY 4.7
Site Safety Note	Steep Banks; Water Hazard; Extreme caution required - trees and submerged debris in river	
Field Notes	"No Trespassing" sign on river left on east side of 187th Avenue SE. This side of the road is overgrown with thorny bushes and no access to slough.	
Watercourse	River Channel - Skykomish River	
Resources at Risk	Downstream habitat	



Recommended Equipment		
550	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Workboat(s) - (jet drive recommended)
9	Each	Anchoring Post(s) - (shoreside)
2	Each	Anchoring Post Driver(s)
500	Feet	Line - 3/8” poly line
2	Each	Heaving Line(s)
1	Each	Towing Bridle(s) - (appropriately sized for boom)

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

SKY 4.0 Photo: Facing NE on River Left looking slightly upstream across river.



Site Contact Information

No Information

Nearest Address

17401 187th Ave SE
Monroe, WA 98272

Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Monroe, WA.
-Approximately 2/3 mile past US-2/WA-522 intersection, turn right onto N. Lewis Street/WA-203S
-In 1 3/4 miles turn right onto Tualco Road.
-Turn right on 183rd Ave. SE/Sargent Road in 1/4 mile after Tualco Road becomes Tualco Loop Road.
-Turn right on 176th St. SE.
-Turn left on 187th Ave. SE and continue until road dead-ends.
-River access is to the left (west side) of the road.

For directions to SA-SKY 4.7 and BL-SKY 4.7, refer to Staging Area 2-Pagers (4C-1) and Boat Launch 2-Pagers (4D-1).

Skykomish River SKY 23.2

Location	47.837026, -121.659679 Big Eddy State Park, Gold Bar, WA	
Strategy Objective	Diversion, Collection	Divert oil moving downstream toward river right for collection.
Implementation	Use Hwy 2 Bridge to pass two 800ft lengths of line between crew on river right and river left, allowing line to span across the river downstream of bridge. Crew on river left connects the end of line to 800ft section of boom. Boom is brought upstream and across river by crew on river left using a power winch, and then secured to bank on downstream side of bridge. Second 800ft line is secured to boom near mid-point (~400ft) with a float, and used by crews on river right & left to adjust the boom angle. Crew on river right anchors downstream boom end to bank & forms oil collection pocket. Additional line systems may be needed.	
Staging Area	On-Site:	Big Eddy State Park, Stevens Pass Highway, Gold Bar, WA
Site Safety Note	Swift current down center of river, with small rapid downstream.	
Field Notes	Several large eddies in the area that could be used to benefit collection, depending on river conditions. Use caution when pulling lines under tension; only double-braided lines should be used.	
Watercourse	River at eddy - Skykomish River	
Resources at Risk	Downstream habitat	

Recommended Equipment		
800	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Vac Truck(s)
12	Each	Anchoring Post(s) - (shoreside)
1	Each	Towing Bridle(s) - (appropriately sized for boom)
2	Each	Heaving Line(s)
2500	Feet	Line - 1/2"" poly line"
2	Each	Float (with line)
1	Each	Power Winch (Portable)

Recommended Personnel	
1	Supervisor(s)
6	Laborer(s)

SKY 23.2 Photo: Facing N on River Left looking upstream toward Hwy 2 bridge and River Right.

Site Contact Information

Washington State Parks
(360) 902-8844

Nearest Address

42819 Stevens Pass Highway
Gold Bar, WA 98251

Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway approximatley 1.85 miles past Gold Bar.
-Take first right after bridge crossing (National Forest Rd. 6021). Sign will say "Big Eddy River Access".
-National Forest Rd. 6021 continues for 1/4 mile to site. Access river through parking lot.

South Fork Skykomish River — SKY-S 1.1

Location	47.804133, -121.566081 Index, WA	
Strategy Objective	Collection	Divert oil to river left for collection.
Implementation	Use shoreside anchor posts to secure end of 300ft section of boom to shore on river left and form collection pocket. Attach float to remaining boom end. Secure end of a 500ft length of line & 300ft length of line to boom end with float. Use hand-launch workboat to transport crew & other end of 500ft line across to river right; keep 300ft length of line on river left. Move lines on river right & left upstream & pull tension on the boom (hand/power winched may be needed). Once deployed, adjust boom angle using the lines, as appropriate for river speed & conditions. Additional line systems may be needed to keep boom secure in river.	
Staging Area	On-Site:	Open area owned by Mt. Index Riversites with paths to river's edge.
Site Safety Note	Field may become muddy during rainy weather. Vacuum truck and vehicles use caution when staging.	
Field Notes	Private Property: Mt. Index Riversites. Easy access to the river from Mt. Index River Road. The river widens and slows in this area.	
Watercourse	River - South Fork Skykomish River	
Resources at Risk	Downstream habitat	

Recommended Equipment		
300	Feet	Boom - B3 (River Boom) or equivalent
1	Unit	Vacuum Truck and Driver
1	Each	Boom Float
2	Each	Towing Bridle(s) - (appropriately sized for boom)
1000	Feet	Line - 3/8"" poly line" (w/ safety clasps)
8	Each	Anchoring Post(s) - (shoreside)
2	Each	Anchoring Post Driver(s)
1	Each	Workboat(s) - (hand-launch)

Recommended Personnel	
1	Supervisor(s)
3	Laborer(s)
1	Boat Operator(s)

SKY-S 1.1 Photo: Facing N downstream from falls on River Left looking downstream

Site Contact Information

Private Property:
Mt. Index Riversites
mircc@mountindexriversites.com
No Phone Available

Nearest Address

49530 Mt. Index River Road
Index, WA

Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on Stevens Pass Highway to Index, WA.
-Turn right at Mt. Index River Road, just before US-2E crosses the South Fork of the Skykomish.
-Site will be on left approximately 1 mile from US-2E/Mt. Index River Road intersection.

South Fork Skykomish River — SKY-S 6.9

Location	47.773692, -121.49482 Baring, WA	
Strategy Objective	Collection	Collect oil to keep it from continuing downstream.
Implementation	Use shoreside anchor posts to secure end of 500ft section of boom to shore on river right & form collection pocket. Attach 500ft line to remaining boom end. Attach float & two (tending) lines near boom's mid-point. Use hand-launch workboat to transport crew, 500ft line, and one tending line upstream and across to river left. On river left, use 500ft line to pull boom out into river and upstream; hand or power winch needed. Secure boom to bank on river left using anchoring posts or trees. Secure tending lines to river bank once the desired boom angle has been achieved. Use additional line systems to keep boom secure in river.	
Staging Area	On-Site:	Stage on river right at old house.
Site Safety Note	Two-foot drop down to river bank. Shore is soft and sandy and may be hazardous for a vac truck.	
Field Notes	River access, but overgrown in places. May need pruners for vegetation removal. No access on opposite bank.	
Watercourse	River - South Fork Skykomish River - Width: 76 Yards (Variable) - Depth: Shallow to hole in middle ~20 feet deep	
Resources at Risk	Downstream habitat	

Recommended Equipment		
300	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Workboat(s) - (hand-launch)
1	Each	Heavy duty pruners (for hand removal of vegetation)
2	Each	Anchoring System(s) - (anchor, lines, floats)
1	Each	Vac Truck(s)
400	Feet	Line - 3/8" poly line

Recommended Personnel	
1	Supervisor(s)
3	Laborer(s)
1	Boat Operator(s)

SKY-S 6.9 Photo: Facing SE on River Right near old house looking upstream toward River Left

Site Contact Information

Walter LeCoque
(360) 677-2510

Nearest Address

63088 NE 196th Street
Baring, WA 98224

Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Baring, WA.
-Turn right at 634th Place NE , immediately after "Entering Baring" sign.
-Turn right onto NE 196th Street.
-Arrive at 63088 NE 196th Street, Baring, WA 98224.

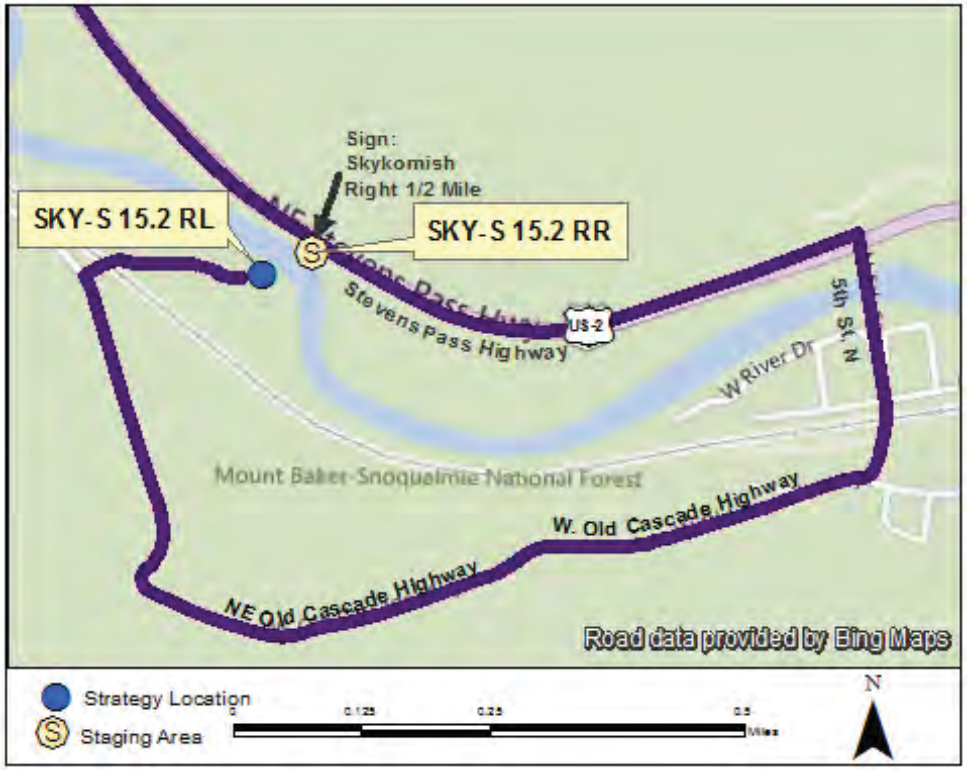
South Fork Skykomish River — SKY-S 15.2

Location	47.711754, -121.34174 Monroe, WA	
Strategy Objective	Collection	Collect oil moving downstream on the Skykomish River from upstream source.
Implementation	Use shoreside anchor posts to secure end of 300ft section of boom to shore on river right & form collection pocket. Attach 400ft line to remaining boom end. Attach float & two (tending) lines near boom's mid-point. Use hand-launch workboat to transport 400ft line and one tending line upstream and across to crew on river left. On river left, use 400ft line to pull boom out into river and upstream; hand or power winch needed. Secure boom to bank on river left using anchoring posts or trees. Secure tending lines to river bank once the desired boom angle has been achieved. Use additional line systems to keep boom secure in river.	
Staging Area	On-Site:	Stage Vac-Truck on shoulder of Highway 2.
Site Safety Note	Roadway Hazard; Water Hazard; Steep Bank; Slips, Trips, Falls.	
Field Notes	Due to height of roadway above river, a booster pump may be necessary to enhance vacuum truck suction capability. Temporary use of shoulder may be required to implement strategy; at minimum follow WADOT work zone traffic control guidelines.	
Watercourse	River - Skykomish River - Width 180 feet (Variable)	
Resources at Risk	Downstream habitat	

Recommended Equipment		
300	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Workboat(s) - (hand-launch)
1000	Feet	Line - 1/2"" poly line"
2	Unit	Hand Bridle(s) and Towing Bridle
12	Each	Anchoring Post(s) - (shoreside)
1	Each	Vac Truck w/ Booster Pump
2	Each	Anchoring Post Driver(s)
1	Each	Hand Winch or Power Winch (Portable)

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

SKY-S 15.2 Photo: Facing SE on River Right looking upstream toward River Left.



Site Contact Information

No Information

Nearest Address

Stevens Pass Highway
Snoqualmie National Forest
Skykomish, WA 98288

Driving Directions

From US-2E/Stevens Pass Highway:

Near Shore Crew:
-Travel southeast on Stevens Pass Highway.
-Approximately 6.5 miles past Baring, WA, exit onto shoulder at "Skykomish- Right 1/2 Mile" sign.

Far Shore Crew:
-Travel southeast on Stevens Pass Highway to Skykomish, WA.
-Turn right onto 5th Street N. and cross bridge.
-Take a right on E Railroad Ave. and then immediate left to stay on 5th Street N.
-Take a right on W. Cascade Highway and follow for approximately 1 mile.
-Take a right onto dirt road. Follow road east 0.15 miles across railroad tracks toward river.

South Fork Skykomish River — SKY-S 16.0

Location	47.710873, -121.360549 Skykomish, WA	
Strategy Objective	Collection	Use access point to collect oil and keep it from continuing downstream.
Implementation	Use shoreside posts to secure end of 300ft boom to bank on river left (4th St N). Attach 300ft line to remaining boom end. Attach a float & two (tending) lines at point on boom ~100ft fm the end that's secured to shore. Walk 300ft line & one tending line across bridge to river right. Use shoreline to walk other tending line upstream on river right. Use 400ft line to pull boom out into river & downstream; winch likely needed. Secure boom to bank on river right using posts or trees, & form collection pocket. Secure tending lines to river banks once desired boom angle is achieved. Use additional lines to keep boom secure in river.	
Staging Area	On-Site:	Stage on south side of bridge.
Site Safety Note	Steep bank with boulders; use caution approaching river.	
Field Notes	Several eddies could be used to collect based on current and conditions.	
Watercourse	River -Skykomish River	
Resources at Risk	Downstream habitat	

Recommended Equipment		
550	Feet	Boom - B3 (River Boom) or equivalent
1000	Feet	Line - 3/8” poly line
8	Each	Anchoring System(s) - (anchor, lines, floats)
4	Each	Anchoring Post(s) - (shoreside); (2) Anchoring post Drivers
2	Each	Heaving Line(s)
1	Each	Vac Truck(s)
1	Each	Hand Bridle(s)
1	Each	Power Winch

Recommended Personnel	
1	Supervisor(s)
4	Laborer(s)

SKY-S 16.0 Photo: Facing SW on River Right, upstream side of Skykomish, WA bridge looking toward River Left.

Site Contact Information

No Information

Nearest Address

5th Street N
Skykomish, WA 98288

Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Skykomish, WA.
-Turn right onto 5th Street N in Skykomish and cross bridge.
-Arrive at staging area on left (facing south).

Sultan River — SUL 0.2

Location	47.861103, -121.820891	Sportsman Park, Sultan, WA
Strategy Objective	Collection	Collect oil on Sultan River before it enters the Skykomish River.
Implementation	Use shoreside anchor posts to secure end of 350ft section of boom to shore on river right & form collection pocket. Attach 400ft line to remaining boom end. Attach float & 2 tending lines near boom mid-point. Use line throwing device or hand-launch boat to transport 400ft line & one tending line upstream and across to crew on river left. On river left, use 400ft line to pull boom out into river and upstream; hand or power winch needed. Secure boom to bank on river left using anchoring posts or trees. Secure tending lines to river bank once desired boom angle has been achieved. Use additional lines to keep boom secure in river.	
Staging Area	On-Site:	WDFW Park with trailerable boat ramp.
Site Safety Note	Swift current at confluence.	
Field Notes	There is a trail along river from behind Main St. that provides access to river left, but vegetation removal may be necessary.	
Watercourse	River at confluence - Sultan River	
Resources at Risk	Downstream habitat	

Recommended Equipment		
300	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Workboat(s) - (hand-launch)
1000	Feet	Line - 3/8” poly line
1	Each	Line throwing gun(s) or device(s)
1	Each	Hand Bridle
1	Each	Power Winch (Portable)
6	Each	Anchoring Post(s) - (shoreside)
2	Each	Anchoring Post Driver(s)

Recommended Personnel	
1	Supervisor(s)
3	Laborer(s)
1	Boat Operator(s)

SUL 0.1 Photo: Facing SE on River Right looking under Hwy 2 bridge at river left and the confluence of the Sultan and Skykomish Rivers.

Site Contact Information

WDFW Region 4
16018 Mill Creek Blvd.
Mill Creek, WA 98012
(425) 775-1311

Nearest Address

Sportsman Park
Albion Street
Sultan, WA 98294

Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on US-2E/Stevens Pass Highway to Sultan, WA.
-Approximately 0.4 miles past Old Owen Road, just before bridge crossing, turn left onto Albion Street.
-Sportsman Park parking lot and boat launch are on right.

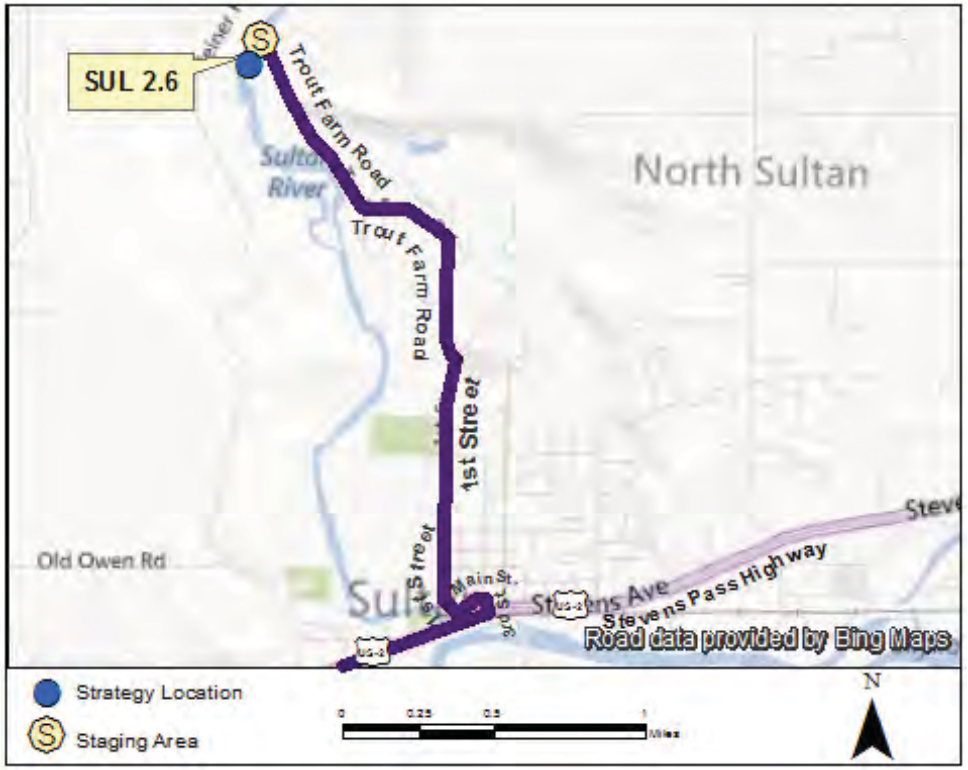
Sultan River — SUL 2.6

Location	47.888751, -121.834517 Sultan, WA	
Strategy Objective	Collection	Collect to keep oil from entering Skykomish River.
Implementation	Use anchor posts to secure end of 300ft section of boom to shore on river left and form collection pocket. Attach 300ft line to remaining boom end. Attach float & 2 tending lines near boom's mid-point. Use hand-launch workboat to transport crew and 300ft line upstream (~250ft) to river right near N47.88937, W121.83429. Use line to pull boom out into river and upstream; hand or power winch needed. Secure boom to bank using posts. Once desired boom angle is achieved, secure tending lines to river banks using posts or trees at points near perpendicular to boom. Notify private property owners. Use additional lines as needed.	
Staging Area	On-Site:	Snohomish PUD alternate boat access point.
Site Safety Note	Watch for submerged branches and rocks when crossing the Sultan River.	
Field Notes	Site is the Snohomish PUD alternate boat access site. Property across the river is privately owned.	
Watercourse	River - Sultan River	
Resources at Risk	Downstream habitat	

Recommended Equipment		
350	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Workboat(s) - (hand-launch)
500	Feet	Line - 3/8" poly line
1	Each	Power Winch
2	Each	Block and Tackles

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

SUL 2.6 Photo: Facing NE at Snohomish PUD location off Trout Farm Road, on River Left looking upstream.



Site Contact Information

Snohomish PUD
Monroe Office
360-794-3900

Nearest Address

12000 Trout Farm Road
Sultan, WA 98294

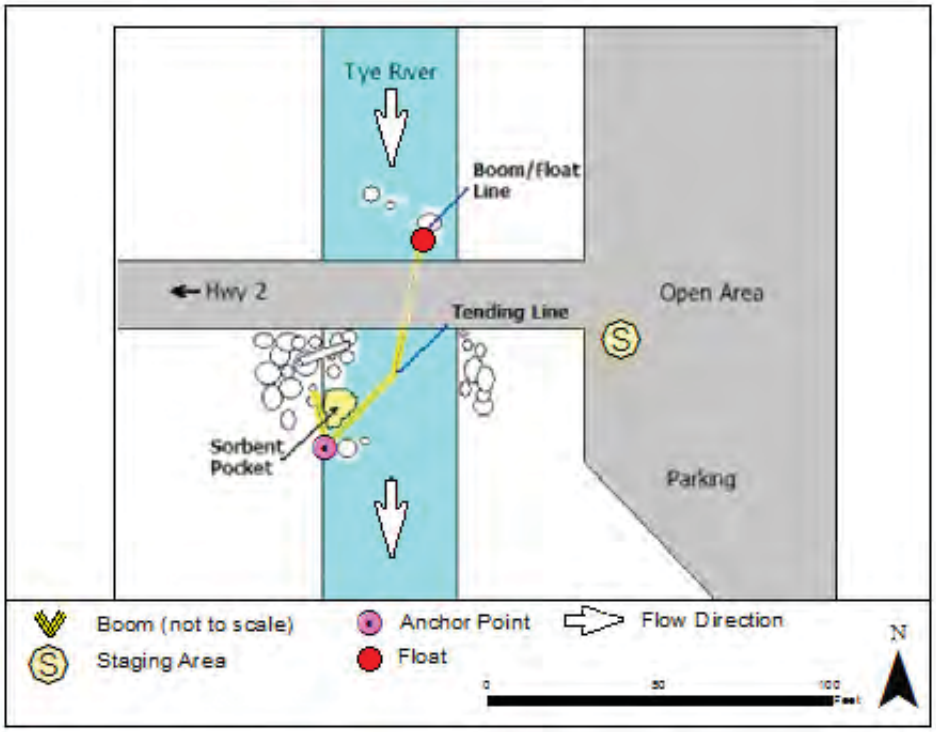
Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Sultan, WA.
-Approximately 0.15 miles from US-2 bridge, turn left onto 3rd Street, and take an immediate left on Main Street.
-After 0.1 mile, Main Street continues right onto 1st Street. Follow 1st Street for 0.85 miles.
-Turn left on Trout Farm Road, across from housing development.

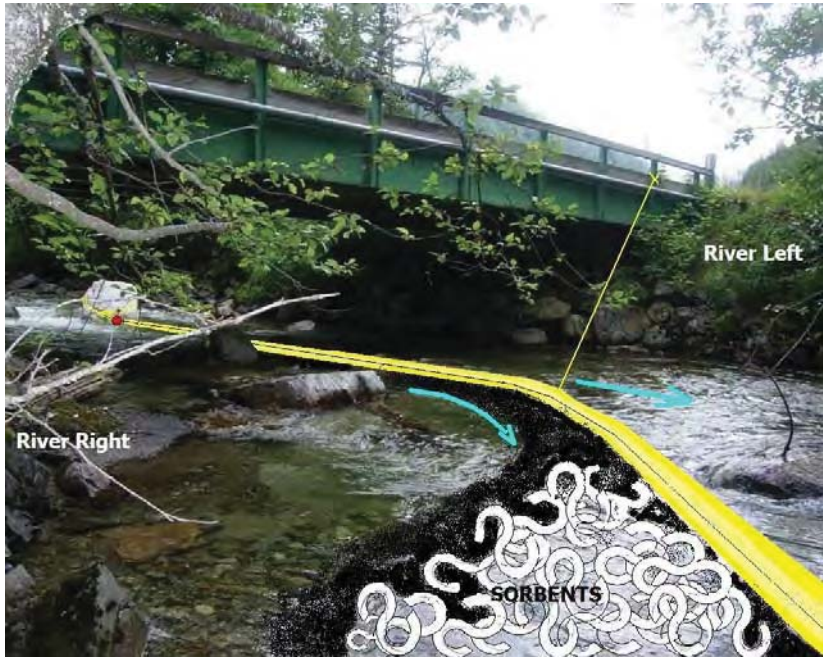
Tye River — TYE 8.3

Location	47.711343, -121.153107 Near Stevens Pass, WA	
Strategy Objective	Collection	Collect oil on Tye River spilled from upstream source
Implementation	Use heaving line to transfer a larger line from bridge to crew upstream on river left. From bridge, attach larger line to 100ft boom end & feed boom fm bridge into river as crew on river left pulls tension, ultimately securing boom end to bank using anchor posts. Attach float on remaining boom end and continue to feed boom fm bridge into river towards river right until all boom is in river. Crew downstream of bridge on river right must use hook or heaving line to snag float & pull it to bank. River right secures boom end to shore and forms collection pocket. Stuff collection pocket with sorbent boom if strategy is to be left unattended.	
Staging Area	On-Site:	Highway access with space on river left for parking and staging.
Site Safety Note	Swift current, steep bank, and slippery moss-covered boulders. Use caution when descending down bank from highway.	
Field Notes	Sorbent boom recommended; sorbent pads may escape the boom and be deposited downstream. If product flow is heavy, the use of a vacuum truck should be considered but the flow of the river may be too fast or turbid to prevent some entrainment.	
Watercourse	River - Tye River	
Resources at Risk	Downstream habitat	

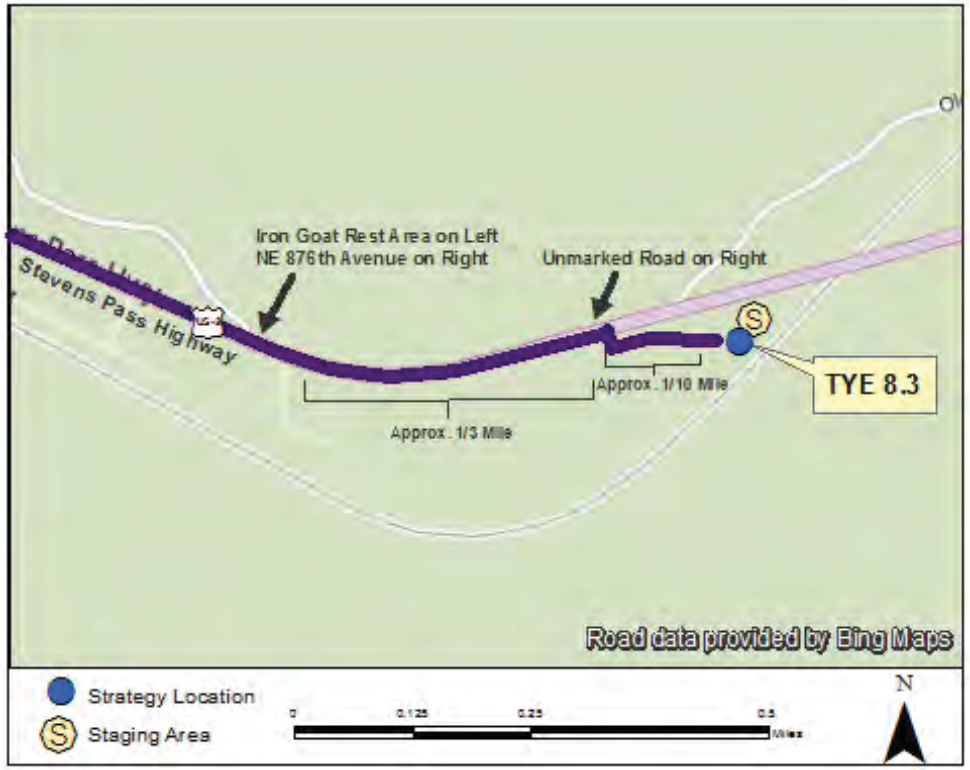


Recommended Equipment		
100	Feet	Boom - B3 (River Boom) or equivalent
2	Each	Heaving Line(s)
200	Feet	Line - 3/8” poly line
2	Each	Towing Bridle(s) - (appropriately sized for boom)
1	Each	Come-Along Winch or Power Winch
200	Feet	Line - 3/8" " poly line" (w/ safety clasps)
4	Each	Anchoring Post(s) - (shoreside)
2	Each	Anchoring Post Driver(s)

Recommended Personnel	
1	Supervisor(s)
4	Laborer(s)



TYE 8.3 Photo: Facing NE on River Right, downstream side of bridge looking upstream toward bridge and River Left.



Site Contact Information

No Information

Nearest Address

Stevens Pass Highway
Snoqualmie National Forest,
Leavenworth, WA 98826

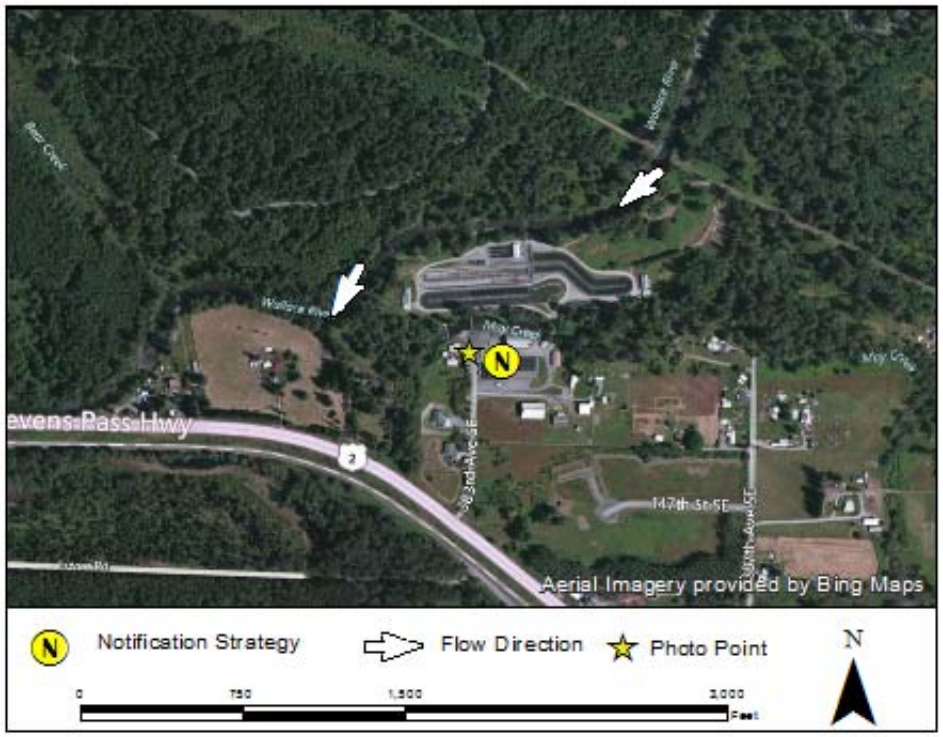
Driving Directions

From US-2E/Stevens Pass Highway:

-Continue east on Stevens Pass Highway past Iron Goat Rest Area (MP 58) on the left and NE 876th Avenue on the right.
-In approximately 1/3 mile, turn right on unmarked road and keep left to continue traveling east.
-Bridge will be approximately 1/10 mile from highway.

Wallace River WAL 4.2-N

Location:	47.867502, -121.717926	Wallace River Hatchery
Strategy Objective:	Notification	Notify WDFW fish hatchery of spill.
Implementation:	CALL: (360) 793-1382-Wallace River Hatchery.	
Field Notes:	Adult spawning: Sept.-Nov.; Move fry to holding ponds: Dec.-Feb.; Release: April-June; Rearing of fish : Year round	
Watercourse:	River - Wallace River	
Resources at Risk:	Hatchery water intake on Wallace River. Released juvenile salmon.	



Communication Process and Action:

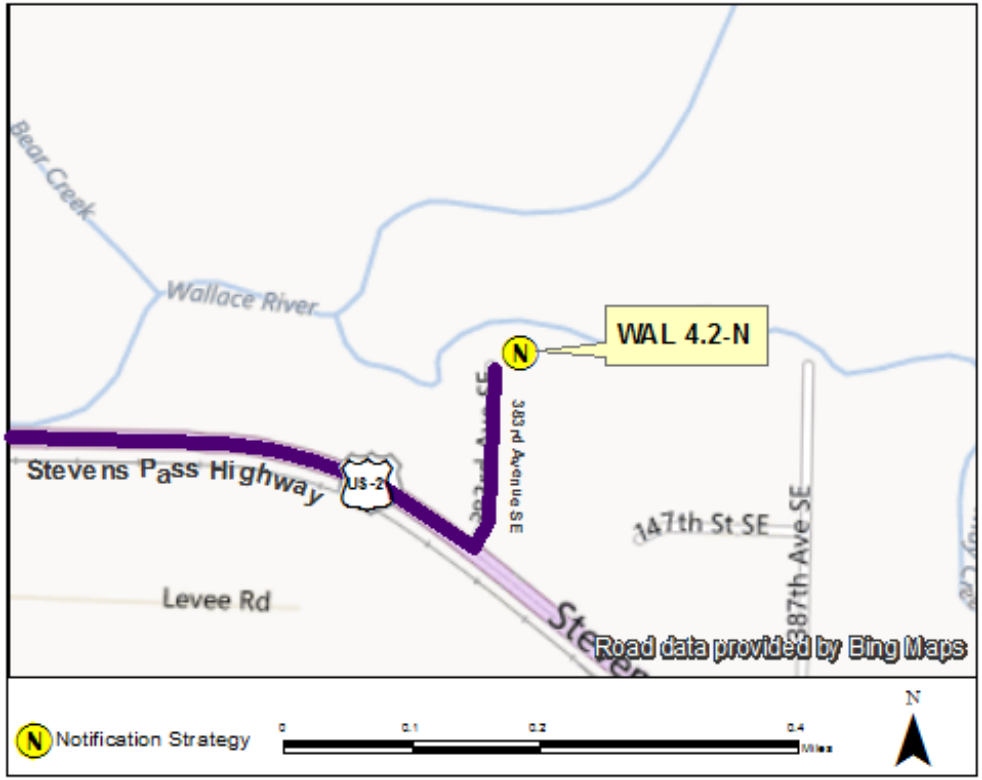
1. Notify WDFW of spills that may affect intakes on the Wallace River or released juvenile salmon using telephone number or fax number below.

2. Request that WDFW make notifications to any other hatcheries in the vicinity that could potentially be impacted by the spill.

14418 383rd Ave SE
Sultan, WA 98294

Phone:(360) 793-1382
Fax: (360) 793-9558

WAL 4.2-N Photo: Facing W on River Left toward office building and hatchery.



Site Contact Information

WDFW
(360) 793-1382

Nearest Address:

14418 383rd Ave SE
Sultan WA, 98294

Driving Directions:

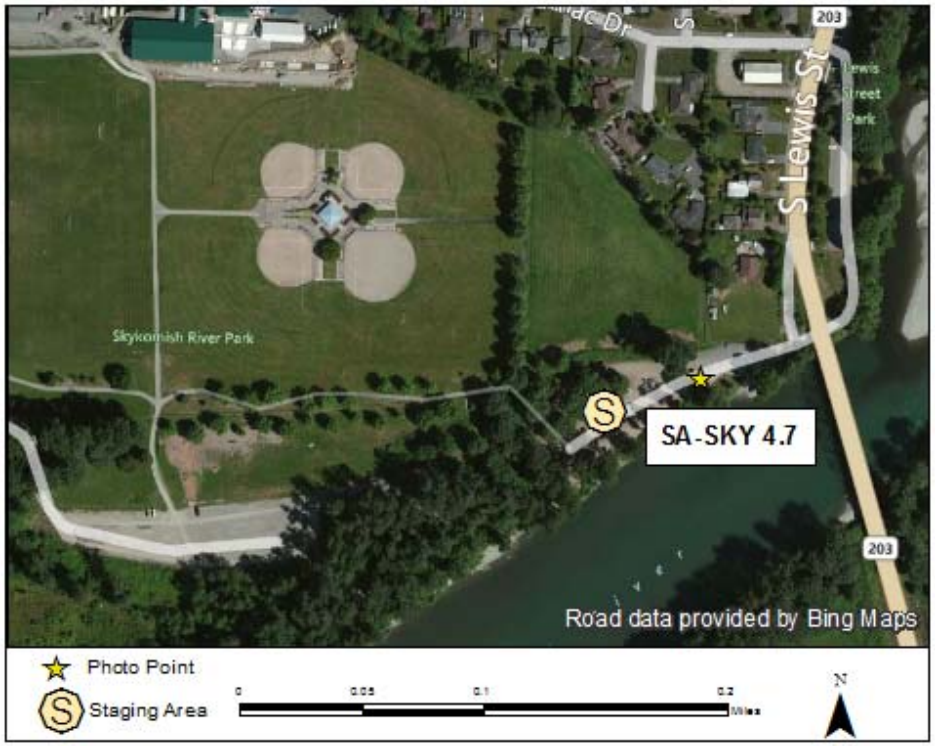
From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Sultan, WA.
-Turn left onto 383rd Avenue SE approximately 1/2 mile after US-2 crosses the Wallace River.
-Arrive at 14418 383rd Ave. SE, Sultan, WA, Wallace River Hatchery.

Skykomish River — SA-SKY 4.7

Staging Area

Location:	47.846546, -121.971588	Skykomish River Centennial Park, Monroe, WA
Comments:	Staging at Skykomish River Park; extra parking and facilities through Highway 203 underpass at Lewis Street Park. Underpass has height restriction: 11ft. 9in.	



Location Information:

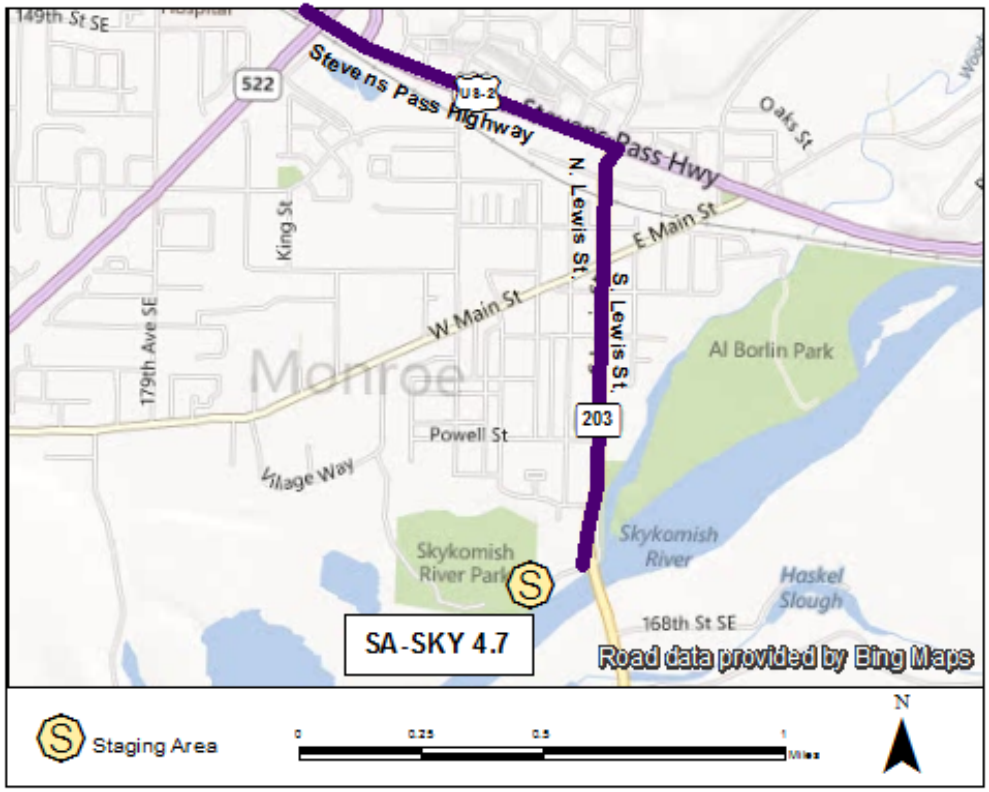
Asset	*Type/Status*	*Amount/Number*
Boat Ramp	Yes	2
Boat Ramp Type	Concrete	2
Boat Dock	No	
Restrooms	Yes/Permanent	1
Power	No	
Water	Yes	
Parking (car)	Yes	10-20
Parking (trailer)	Yes	10-20
Waste Disposal	Yes	
Telephones	No	
Cell Phone Coverage	Unknown	
Estimated Lot Size	SqFt	50000
Lot Cover (primary)	Dirt/Gravel	
Covered Spaces	Yes	
User Fee	Yes	Discovery Pass Req'd

GRP Response Strategies Served:

SKY 3.1
SKY 4.0

Staging Area

SA-SKY 4.7 Photo: Looking SW on River Right looking at parking lot adjacent to river.



Site Contact Information

City of Monroe Parks Lead
360-863-4509

Nearest Address:

South Lewis Street
Monroe, WA 98272

Driving Directions:

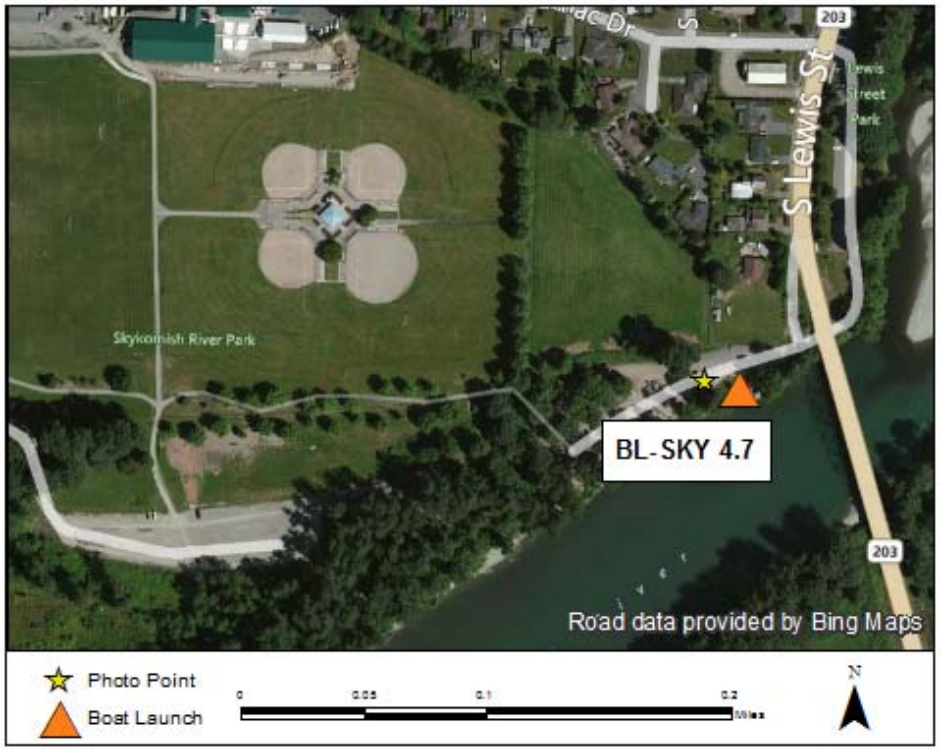
From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Monroe, WA.
-Approximately 2/3 mile past US-2/WA-522 intersection, turn right on Highway 203/S. Lewis Street.
-In 2/3 mile, just before WA-203 crosses the Skykomish River, turn right onto gravel road and keep left.
-Continue to parking area/boat ramps or follow road under bridge to Lewis Street Park.

Skykomish River Centennial Park — BL-SKY 4.7

Boat Launch Location

Location:	47.846546, -121.971588	Monroe, WA
Comments:	Extra parking and facilities through Highway 203 underpass at Lewis Street Park. Underpass has height restriction: 11ft. 9in.	



Location Information:

Asset	*Type/Status*	*Amount/Number*
Boat Ramp	Yes	2
Boat Ramp Type	Concrete	2
Boat Dock	No	
Restrooms	Yes/Permanent	1
Power	No	
Water	Yes	
Parking (car)	Yes	20
Parking (trailer)	Yes	20
Waste Disposal	Yes	
Telephones	No	
Cell Phone Coverage	Unknown	
Estimated Lot Size	SqFt	50000
Lot Cover (primary)	Dirt/Gravel	
Covered Spaces	Yes	
User Fee	Yes	Discovery Pass Req'd

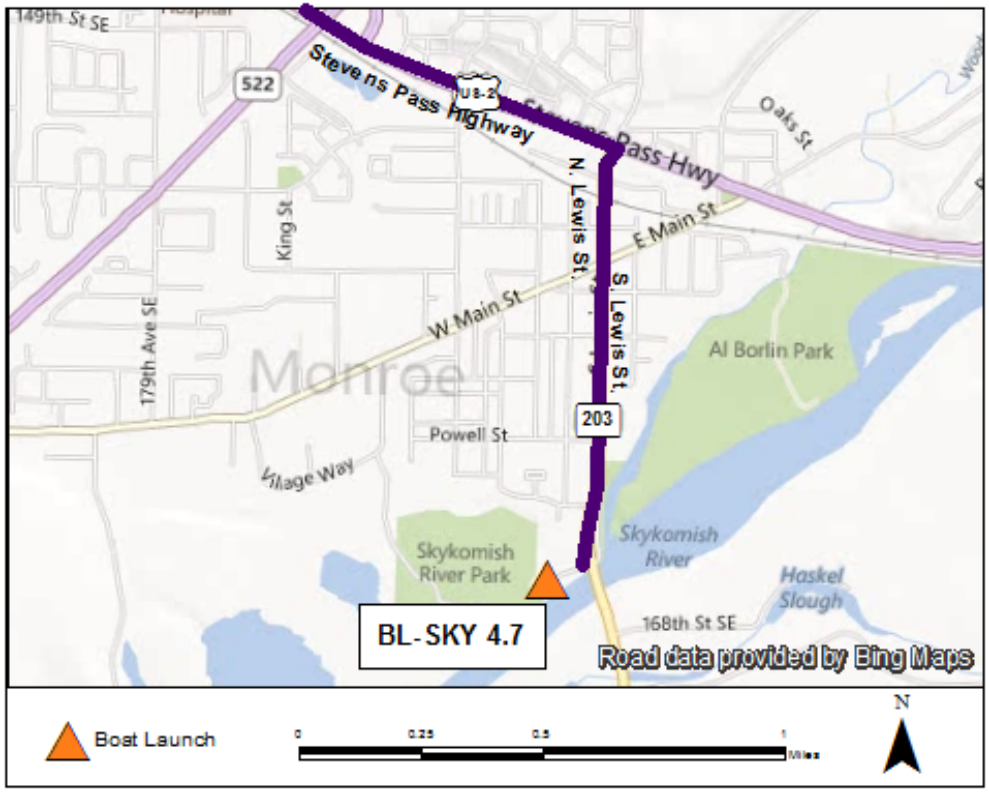
GRP Response Strategies Served:

SKY 3.1
SKY 4.0

Skykomish River Centennial Park — BL-SKY 4.7

Boat Launch Location

BL-SKY 4.7 Photo: Facing SW on River Right looking at boat ramp and downstream.



Site Contact Information

City of Monroe Parks Lead
360-863-4509

Nearest Address:

South Lewis Street
Monroe, WA 98272

Driving Directions:

From US-2E/Stevens Pass Highway:

-Continue east on US-2/Stevens Pass Highway to Monroe, WA.
-Approximately 2/3 mile from US-2/WA-522 intersection, turn right on US-203/S. Lewis Street.
-In 2/3 mile, just before US-203 crosses the Skykomish River, turn right onto gravel road and keep left.
-Continue to parking area/boat ramps or follow road under bridge to Lewis Street Park.

Sportsman Park — BL-SUL 0.1

Boat Launch Location

Location:	47.861103, -121.820891	Sultan, WA
Comments:	WDFW Park with boat ramp. Extreme caution required on-site due to swift current and dangerous undertow associated with confluence.	

Location Information:

Asset	*Type/Status*	*Amount/Number*
Boat Ramp	Yes	2
Boat Ramp Type	Dirt/Gravel	
Boat Dock	No	
Restrooms	No	
Power	No	
Water	No	
Parking (car)	Yes	20
Parking (trailer)	Yes	20
Waste Disposal	No	
Telephones	No	
Cell Phone Coverage	Unknown	
Estimated Lot Size	SqFt	60000
Lot Cover (primary)	Dirt/Gravel	
Covered Spaces	Yes	1
User Fee	Yes	WDFW Use Permit

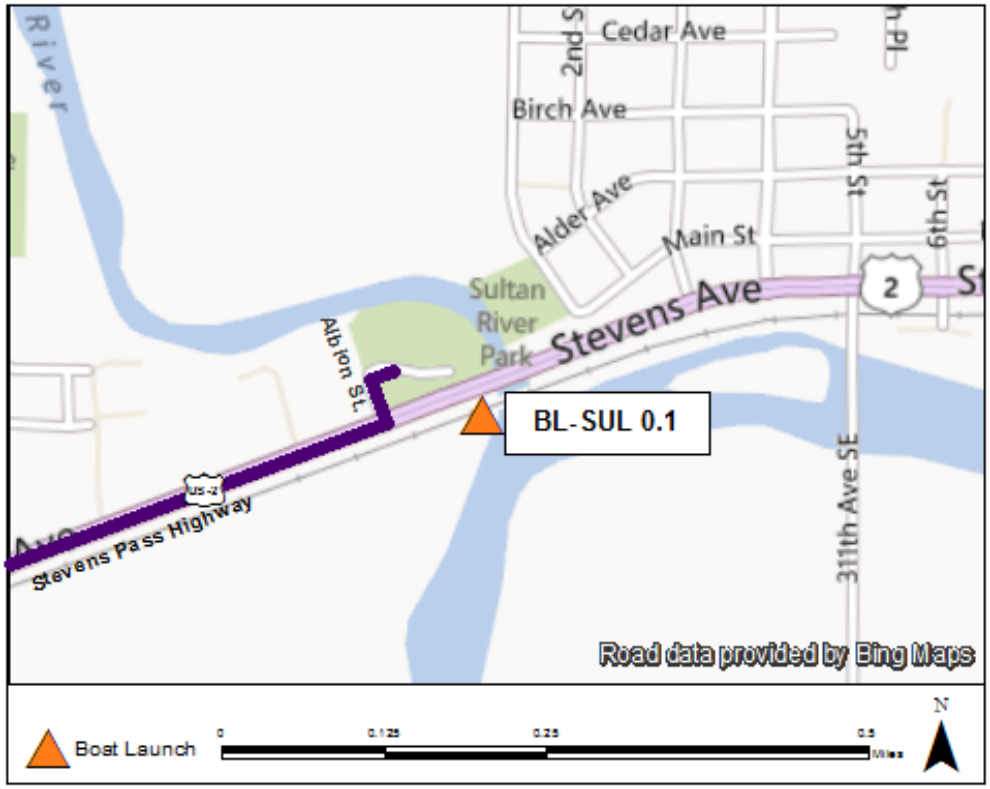
GRP Response Strategies Served:

SUL 0.2

Sportsman Park — BL-SUL 0.1

Boat Launch Location

BL-SUL 0.1 Photo: Facing SE on river right looking under Hwy 2 bridge toward railroad bridge, river left, and confluence of Sultan and Skykomish rivers.



Site Contact Information

WDFW Region 4
16018 Mill Creek Blvd.
Mill Creek, WA 98012
(425) 775-1311

Nearest Address:

Sportsman Park
Albion Street
Sultan, WA 98294

Driving Directions:

From US-2E/Stevens Pass Highway:

-Continue east on US-2E/Stevens Pass Highway to Sultan, WA.
-Approximately 0.4 miles past Old Owen Road and just before bridge crossing, turn left onto Albion Street.
-Sportsman Park parking lot and boat launch are on right.

WRIA 7
Geographic Response Plan

Chapter 5 – Shoreline Countermeasures

5.1 - Chapter Introduction

This Chapter is intended to serve as a tool for countermeasure contingency planning and implementation for shorelines within the WRIA 7 area. Shoreline countermeasure processes evolve to reflect increasingly efficient treatment techniques. Accordingly, the following information may change as new information is developed. At this time, complete shoreline-type mapping has not been performed for WRIA 7. Until this effort is undertaken, photographs representing example shoreline types in the geographic area are provided on the following pages. These shoreline types can be matched with the shoreline countermeasures matrices in Appendix 5A to help determine what response cleanup action is appropriate for the type of oil spilled.

5.2 - Oil Countermeasures Matrices

Shoreline countermeasures after an incident are a critical element in determining the environmental impact, injury, and damages from spilled oil. Local response organizations and agencies have developed mechanisms for identifying shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and for resolving problems as the treatment progresses. Ultimately, the Northwest Area Committee will develop a manual and a series of matrices as tools for shoreline countermeasures in the Pacific Northwest. The Northwest Area Shoreline Countermeasures Manual and Matrices will be included as a technical appendix to the Northwest Area Contingency Plan (Section 9420). The Northwest Area Contingency Plan can be obtained electronically from the RRT/NWAC web site at http://www.rrt10nwac.com.

Each section of the shoreline countermeasures manual will be adapted to the specific environments, priorities, and treatment methods appropriate to the planning area. These elements will provide the information needed to select cleanup methods for specific combinations of shoreline and oil types.

5.3 - Shoreline Type Photos

Photographs of typical shorelines found in the WRIA 7 GRP area are contained in Appendix 5B of this Chapter. A full list of shoreline types can be found within the tables in Appendix 5A. Additional information on shoreline type classifications can be found in the Shoreline Assessment Job Aid available as a publication on National Oceanographic and Atmospheric Administration's web site at http://response.restoration.noaa.gov.

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 Very Light Oils

Shoreline Type →	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
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														
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, or cleaning														
Nutrient enhancement														
Microbial addition														

R = Recommend (May be Preferred Alternative)

C = Conditional (Refer to NW Shoreline Countermeasures Manual – NWACP Section 9640)

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 9320 - Northwest Area Permit and Consultation Guide

*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 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 Light Oils

Shoreline Type →	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
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
ALTERNATIVE METHODS*														
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 NW Shoreline Countermeasures Manual – NWACP Section 9640)

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 9320 - Northwest Area Permit and Consultation Guide

*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 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-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
CONVENTIONAL METHODS														
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
ALTERNATIVE METHODS*														
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 NW Shoreline Countermeasures Manual – NWACP Section 9640)

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 9320 - Northwest Area Permit and Consultation Guide

*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 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 Medium Oils

Shoreline Type →	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
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
ALTERNATIVE METHODS*														
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 NW Shoreline Countermeasures Manual – NWACP Section 9640)

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 9320 - Northwest Area Permit and Consultation Guide

*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 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.*

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Appendix 5B – Shoreline Type Photographs

Shoreline Type 1A: Exposed rocky banks

Shoreline Type 1B: Exposed, solid man-made structures

Shoreline Type 1C: Exposed rocky cliffs with boulder talus base

Shoreline Type 2A: Rocky shoals; bedrock ledges

No Photograph Available

Shoreline Type 3B: Exposed, eroding banks in unconsolidated sediments

Shoreline Type 4: Sandy bars and gently sloping banks

Shoreline Type 5: Mixed sand and gravel bars and gently sloping banks

Shoreline Type 6A: Gravel bars and gently sloping banks

Shoreline Type 6B: Riprap

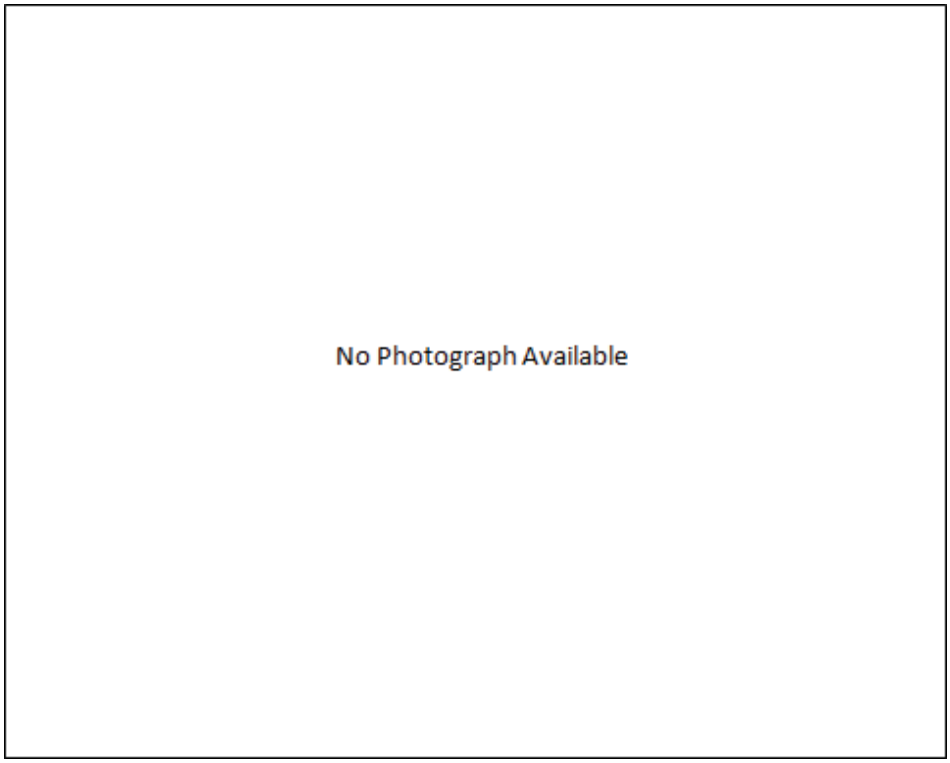
Shoreline Type 8B: Sheltered, solid man-made structures

Shoreline Type 9B: Vegetated low banks

Shoreline Type 10B: Freshwater marshes

Shoreline Type 10C: Swamps

Shoreline Type 10D: Srub-shrub wetlands



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Chapter 6 – Resources at Risk

6.1 Chapter Introduction

This chapter highlights some of the more sensitive resources at risk within the GRP region that may be affected by an oil spill. This material is presented with enough detail to give general information about the area during the first phase of a spill response. During an actual incident, more information about resources at risk will be available from the Environmental Unit in the Planning Section.

The information given in this chapter is intended for use in:

- Giving resource at risk "context" to responders and clean up personnel in the first stages of a response.
- Briefing ICS personnel unfamiliar with the general natural resource concerns in the GRP area.
- Providing background material for media presentations and public outreach associated with a spill incident.

This summary of sensitive resources is followed by general information related to spill response.

6.2 Natural Resources at Risk - Summary

The WRIA 7 GRP (Snohomish/Skykomish/Snoqualmie River basins) affords a wide variety of aquatic, riparian, and upland habitats. These varied habitats support a complex diversity of wildlife species, including large and small mammals; passerine birds, raptors, upland birds, and waterfowl; reptiles; and amphibians. Some species are resident throughout the year; others are migratory either within the subbasin or, in many cases, seasonally migrate outside the subbasin. Populations of certain species are tenuous and their future presence in the subbasin will require improved information and decisive management actions. Many wildlife species found in the subbasin are classified as threatened, endangered, sensitive, or of special concern under the federal Endangered Species Act or under Washington State guidelines.

Sensitive species that may occur within this area, at some time of year, include the following federal and, or state listed species. These are designated as 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: Bald eagle [FCo/SS], Golden eagle [SC], Peregrine falcon [FCo/SS], Northern spotted owl [FT/SE], Purple martin [SC]

Mammals: Wolverine [FC/SC]

Fish: Bull trout [FT/SC], Coastal Cutthroat trout [FCo], Pacific steelhead [FT], Puget Sound Chinook salmon [FT/SC], Pacific lamprey [FCo], River lamprey [FCo/SC], Western brook lamprey [FCo]

Reptiles: Pacific Pond Turtle [FCo/SE],

6.2.1 - General Resource Concerns

6.2.1a Habitats:

- The brackish ***tidal marshes*** found in the northern part of the GRP serve a number of important ecological functions and support large numbers of benthic and epibenthic organisms. Many species of birds and fish utilize these marshes as foraging areas.
- The ***brackish sloughs and backwater channels*** provide feeding and resting areas for waterfowl and herons and are rearing areas for juvenile fish.
- ***Wetlands*** in this region also include tidal freshwater areas along the main stem of the Snohomish and forested fresh water swamps along the edges and upper end of the estuary. All wetland types support a diverse array of bird, insect and fish and wildlife species.
- ***Islands*** provide important nesting habitat for a variety of bird species, as well as habitat for a variety of mammals. Gravel bars provide spawning habitat for Chinook salmon.
- ***Stream mouths*** are concentration areas for anadromous fish and are feeding areas for a variety of marine birds.
- ***Riparian vegetation*** is heavily used by a variety of wildlife and may also improve nearshore fish habitat.
- ***Human-made structures*** such as pilings, rock jetties or log rafts may be used as roosting or nesting areas for a variety of marine birds and raptors.

6.2.1b Fish & Shellfish:

- Juvenile and/or adult ***salmonids*** (including ***Chinook [FT/SC]***, ***coho***, ***chum, pink*** (even and odd year), ***sockeye***, ***cutthroat trout*** (resident and coastal), ***steelhead [FT]***, and

bull trout [FT/SC]) are present in the river system throughout the year. Thousands of juvenile salmonids use estuarine waters as a rearing and foraging area each year as they prepare for migration to the ocean. Returning adult salmonids support significant tribal, commercial and recreational fisheries.

- ***Anadromous and Euryhaline fish*** (other than salmonids) in this region include: ***pacific lamprey [FCo], river lamprey [FCo], green sturgeon [FT], white sturgeon,*** and the ***starry flounder.***
- Resident fish present year-round in freshwater portions of the river include ***rainbow trout, large scale sucker, largemouth bass, western brook lamprey, mountain whitefish, sculpin, three spine stickleback, yellow perch, eastern brook trout, pumpkinseed, crappie, pike minnow, peamouth,*** and ***sunfish.***

6.2.1c Wildlife:

- ***Bald eagles*** [ST] and ***Great Blue herons*** are nesting residents and may be found year-round throughout the region. There are several ***Peregrine falcon*** nests in the region; this species is more commonly found as a winter and spring visitor to the lower estuary but is also present in the upper Skykomish basin.
- The lower reach of Snohomish River (in the vicinity of Ebey Island) supports significant ***waterfowl concentrations*** from fall through spring. Hundreds to thousands of geese, swans and dabbling ducks may occupy this region during this period. Both resident and migratory waterfowl heavily utilize the islands, sloughs, wetlands and adjacent uplands of the region from fall through spring. The islands in this sub-region also provide nesting habitat for resident waterfowl.
- The Snohomish River estuary supports migrating ***shorebirds*** such as dunlin and sandpipers during migration periods (April-October).
- The upper reaches of the Skykomish River and its tributaries provide breeding habitat during the winter and spring months for ***harlequin ducks***. ***Osprey, golden eagle [SC],*** and ***northern spotted owl [FT/SE]*** are also found in this same general area.
- ***Resident and migratory songbirds*** heavily utilize riparian habitats year-round and are susceptible to oiling if riparian vegetation and shorelines become contaminated.
- ***Mammals*** common to the region include deer, elk, beaver, river otter, mink and raccoon. ***Wolverine [FC/SC]*** and ***mountain goat*** are also present in the upper Skykomish basin.

6.2.2 - Specific Geographic Areas of Concern

Snohomish River, RM 0.6 (downstream of Ferry Baker Island) to RM 20.5 (Hwy 522 bridge)

This is the tidally influenced section of the river system. The lower section contains extensive wetlands and intertidal habitats that form rearing habitat for juvenile salmonids and concentration areas for migratory and wintering waterfowl. Riverside public lands in this reach include: Langus Riverfront Park, WDFW Spencer Island, Rotary Park, Field's Riffle Park, Cady Park, Bob Heirman Wildlife Park, Lord Hill Regional Park.

Below is a table of restoration sites in WRIA 7 that are of specific concern during a response.

Project Name	latitude	longitude
Qwuloolt Marsh Restoration	48.044444	-122.156944
Union Slough Dike Breach	48.000000	-122.166666
Smith Island Estuarine Restoration Project	48.022309	-122.170029
Howarth Park and Snohomish County Beach Nourishment	47.963527	-122.241263

6.3 – Cultural Resources at Risk Summary

Culturally sensitive sites are present within the WRIA 7 GRP area. Due to the sensitive nature of this information, details regarding the location and type of cultural resources present are not included in this document. Information on Cultural and Historic Preservation provided in NWACP Section 4313 must be considered and should be followed during a response. Washington Department of Archaeology and Historic Preservation (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. 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, an archaeologist from the appropriate tribe, state archaeologist, and 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. The Incident Commander and Cultural Resource Specialist must be notified immediately if any person monitoring work activities or involved in a spill response believes that they have encountered cultural resources. The area covered by the work stoppage must be adequate enough 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 the Department of Archaeology and Historic Preservation (WDAHP) believes that the discovery is a cultural resource, the Incident Commander must 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.

- NWACP Section 4313 (Cultural and Historic Preservation) must be followed.

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.

6.4 – Economic Resources at Risk Summary

Socio-economic sensitive resources are facilities or locations that rely on a body of water to be economically viable. Because of their location, they could be severely impacted if an oil spill were to occur. Economically sensitive resources are separated into three categories: critical infrastructure, water dependent commercial areas, and water dependent recreation areas. A listing of Economic Resources at Risk in the WRIA 7 GRP area is available in Appendix 6A of this document.

6.5 - General information

6.5.1 Flight restriction zones: Flight restriction zones may be recommended by the Environmental Unit to minimize disturbance or injury to wildlife during an oil spill. By keeping a safe distance and altitude from identified sensitive areas, pilots can decrease the risk of aircraft/ bird collisions, prevent the accidental hazing of wildlife into oiled areas, and prevent abandonment of nests or marine mammal pupping areas.

The Air Operations Branch (Operations Section) will manage all aircraft operations related to a response and will coordinate the establishment of any Flight Restriction Zones as appropriate. Environmental Unit (Planning Section) staff will work with the Air Operations Branch Director to resolve any conflicts that arise between flight activities and sensitive resources.

6.5.2 Hazing: The Wildlife Hazing Group within the Wildlife Branch of Operations (Operations Section) handles wildlife hazing operations. These are actions intended to

minimize injuries to wildlife by keeping animals away from the oil and cleanup operations. Hazing includes acoustic or visual deterrent devices, boats, aircraft or other tools. The Wildlife Branch works with state and federal agencies, and the Environmental Unit (Planning Section), to develop hazing plans as appropriate.

6.5.3 Oiled wildlife: Capturing oiled wildlife may be hazardous to both personnel and the affected animals. Incident personnel should not try to approach or capture oiled wildlife but should report any observations of oiled wildlife to the Wildlife Branch (Operations Section).

6.5.4 Pre-cleaning of shorelines: "Pre-cleaning" refers to the temporary removal/repositioning of material (typically organic) from a shoreline before it is affected by an oil spill. *Before* starting any beach pre-cleaning, the Operations Section should provide the Environmental Unit Leader (Planning Section) with a list of beaches (with location descriptions) being considered for pre-cleaning. Environmental Unit staff will report back to the Operations Section with an evaluation of the proposed beach pre-cleaning.

WRIA 7
Socio-Economic Resources at Risk

A. Critical Infrastructure

A1 - Drinking Water Intakes				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
Spada Lake Reservoir	Sulton, WA		Snohomish PUD	(425) 783-8800
Tolt Reservoir	Tolt River, WA		Daniel Huang	(206) 333-4192

A2 - Energy/Power Generation Water Intakes (Lock & Dams Included)				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
Culmback Dam	Sulton, WA		Jackson Hydroelectric Project	(425) 783-8800
Snoqualmie Falls Project	Snoqualmie, WA		PSE Bellevue	(800) 562-1482
Tolt Dam	Carnation, WA		Daniel Huang	(206) 333-4192
Woods Creek	Monroe, WA		Snohomish PUD	(425) 783-1000
Youngs Creek Hydro Project	Sultan, WA		Snohomish PUD	(425) 783-1000

A3 - Federal or State Water Projects or Irrigation Channels for Agriculture				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
No information				

B. Water Dependent Commercial Areas

B1 - Industrial Intakes				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
No information				

B2 - Agricultural Irrigation Intakes				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
No information				

B3 - Aquaculture				
Name	**Location**	**Company Address**	**Contact**	**Phone**
Tulalip Tribe		6406 Marine Dr Tulalip, WA 98271	www.tulaliptribes-nsn.gov	(800) 869-8287

B4 - Marinas				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
Dagmars Marina	1871 Ross Ave, Everett, WA 98201	N 48*01'48" W 122*17'44"	Email: dagmarsmarina@clearwire.net Website: www.dagmarsmarina.com	(425) 259-6124
Seacrest Marina	4020 34th Ave NE Everett, WA 98201	N 48.033359 W 122.186122	Seacrestmarina.com	

B5 - Commercial Fishing and Shellfish Harvest Areas				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
No information				

B6 - Fish Hatcheries (Federal, State, and Private)				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
Reiter Pond	45300 Reiter Road Goldbar WA, 98251		Doug Hatfield	(425)775-1311 x109
Tokul Creek	37501 SE Fall City-Snoqualmie Rd Fall City WA, 98204		Doug Hatfield	(425)775-1311 x109
Wallace River	14418 383rd Ave SE Sultan WA, 98294		Doug Hatfield	(425)775-1311 x109

B7 - Specially Designated Residential, Commercial, & Industrial Areas (Includes Floating Homes & Live Aboard Marinas)				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
Port of Everett	1700 W Marine View Dr. Everett, WA 98201	N 47* 59' 45" W 122* 13' 00"	Website: www.portofeverett.com	(425) 259-6001

C. Water Dependent Recreational Areas

C1 - Boating Areas		
General Location	**Lat/Long** (Approximate Center Point)	**Remarks**
Private boating is prevalent	Throughout the area.	

C2 – Public Recreation Areas				
Name	**Location/Address**	**Lat/Long**	**Contact**	**Phone**
No information				

C3 – Sport Fishing Areas	
Name	**General Location/Remarks**
Sport fishing occurs seasonally	Throughout the area.

C4 – Parks & Beaches (National, State, & Local)				
City	**Park Name**	**Address**	**Contact**	**Phone**
Carnation, WA	Nick Loutsis Park	32401 E Entwistle St Carnation, WA 98014		
Carnation, WA	Tolt-McDonald Park	NE 40th St Carnation, WA 98014		(206) 205-5275
Carnation, WA	Valley Memorial Park	Stossel Ave NE Carnation, WA 98014		(425) 333-4192
Duval, WA	Depot Park	SR 203 and Stewart St		
Duval, WA	Judd Park	28406 NE 149th Pl Duval, WA 98019		
Duval, WA	McCormick Park	26200 NE Stephens St Duval, WA 98019		(425) 788-3434
Everett, WA	Langus Riverfront Park	400 Smith Island Rd Everett, WA 98201		(425) 257-8300
Everett, WA	Rotary Park	3505 Lowell Snohomish R Rd Everett, WA 98208		
Everett, WA	Spencer Island Park	4th St E Everett, WA 98205		(425) 508-6614
Fall City, WA	Fall City Community Park	Fall City, WA		
Gold Bar, WA	Salmon Falls Park	1st Ave Gold bar, WA 98251		
Goldbar, WA	Wallace Falls State Park	14503 Wallace lake Rd Goldbar, WA 98251		
Monroe, WA	Al Borlin Park	Monroe, WA 98272		

C4 – Parks & Beaches (continued)				
City	**Park Name**	**Address**	**Contact**	**Phone**
Monroe, WA	Skykomish River Centennial Park	Monroe, WA 98272		
North Bend, WA	EJ Roberts Park	500 Thrasher Ave NE North Bend, WA 98045		
North Bend, WA	Si View Park	400 SE Orchard Dr North Bend, WA 98045		(425) 831-1900
Snohomish, WA	Bob Heirman Wildlife Preserve at Thomas' Eddy	14913 Connelly Rd Snohomish, WA 98290		
Snohomish, WA	Lord Hill Regional Park	12500 150th St SE Snohomish, WA 98290		
Snohomish, WA	Field's Riffle Park	Lowell-Snohomish River Road Snohomish, WA 98296		
Snohomish, WA	Kia-Ha-Ya Park	1st St Snohomish, WA 98290		
Snohomish, WA	Caddy Park	Maple Ave Snohomish, WA 98290		
Snoqualmie, WA	Centennial Park	39903 SE Park St Snoqualmie, WA 98065		(425) 831-5784
Snoqualmie, WA	Three Forks Natural Area	39912 SE Park St Snoqualmie, WA 98065		(425) 888-1555
Snoqualmie, WA	Kings Lake Bog Natural Area	Snoqualmie, WA	Kelly Heintz	(360) 825-1631
Snoqualmie, WA	Railroad Community Park	7971 Railroad Ave SE Snoqualmie, WA 98065		

C4 – Parks & Beaches (continued)				
City	**Park Name**	**Address**	**Contact**	**Phone**
Snoqualmie, WA	Riverview Park	3900 SE Park St Snoqualmie, WA 98065		(425) 831-5784
Snoqualmie, WA	Sandy Cove Park	7970 Falls Ave SE Snoqualmie, WA 98065		(425) 888-1555
Snoqualmie, WA	Snoqualmie Community Park	35016 SE Ridge St Snoqualmie, WA 98065		(425) 831-5784
Sultan, WA	Sportsman Park	Stevens Ave Sultan, WA 98294		(360)793-2231
Sultan, WA	Reese Park	Sultan, WA 98294		

C5 – National Historical Reserve		
General Location	**Lat/Long** (Approximate Center Point)	**Remarks**
No information		

C6 – National River Reach (Designated as Recreational)		
General Location	**Lat/Long** (Approximate Center Point)	**Remarks**
No information		

WRIA 7
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 creating 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 the appendices in Chapter 4A & 4B). 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.wrrl.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.

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 Facilities
- 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 Rehab Facilities & Cleaning

7.3 Logistical Resource Details:

Aircraft Support - Helicopters & Fixed Wing			
City/Location	Name/Information	Address	Contact & Other Information
Darrington, WA	Hi Line Helicopters Inc	47225 Sauk Prairie Rd, Darrington, WA 98241	Phone: (360) 436.1302
Everett, WA	Regal Air	10217 31st Ave W # C51, Everett, WA 98204	Phone: (425) 353.9123
Everett, WA	Northway Aviation	10108 32nd Ave West, Bldg C-3, Everett, WA 98204	Phone: (425) 742.7003 email: contact@northwayaviation.com
Snohomish, WA	Snohomish Flying Services	9900 Airport Way, Snohomish, WA 98296	Phone: (360) 568-1541 Fax: (360) 568-6034 Email: snofly1@harveyfield.com

Airports & Air Fields			
City/Location	Name	Address	Contact & Other Information
Arlington, WA	Arlington Municipal Airport	18204 59th DR.NE, Arlington, WA 98223	Phone:(360) 403-3470
Darrington, WA	Darrington Municipal Airport	Arlington-Darrington Rd Darrington, WA 98241	Phone: (360) 436-1454
Everett, WA	Snohomish County Airport – Paine Field	3220 100th St SW Ste A Everett, WA 98204	Phone: (425) 353-2110
Snohomish, WA	Harvey Airfield	9900 Airport Way Snohomish, WA 98296	Phone:(360) 568-1541

Ambulance Services (Air & Ground)			
City/Location	Company Name	Address	Contact & Other Information
Everett, WA	Rural/Metro Ambulance	5810 23rd Drive West, Suite 100, Everett, WA 98203	Phone: (888) 991-7555

Boat Cleaning Facilities			
City/Location	Name	Address	Contact & Other Information
Edmonds, WA	Port of Edmonds Boat Yard	336 Admiral Way, Edmonds WA 98020	Phone: (425) 775-4588
Everett, WA	Port of Everett Marina	1205 Craftsman Way Everett, WA 98201	Phone: (425) 259-6001

Command Posts (Fixed & Mobile)			
City/Location	Name	Address	Contact & Other Information
No information			

Communications			
City/Location	Name	Address	Contact & Other Information
No information			

Cultural Resource Support			
City/Location	Name	Address	Contact & Other Information
Seattle, WA	Historical Research Associates, Inc.	1904 Third Ave., Ste 240 Seattle, WA 98101	Phone: (206) 343-0226 Website: http://hrassoc.com/
Everett, WA	Snohomish County Historical Preservation Commission	3000 Rockefeller MS 411 Everett, WA 98201	Phone: (425) 388-3186 Website: http://www1.co.snohomish.wa.us/County Services/HistoricCultural/
Everett, WA	Everett Maritime Museum	2418 California St. Everett, WA 98201	Phone: (425) 259-2685 Email: evtmaritimemuseum@gmail.com
Olympia, WA	Washington Department of Archaeology & Historic Preservation	1063 S. Capitol Way Suite 106, Olympia, WA 98501	Phone: (360) 586-3065
Concrete, WA	Equinox Research & Consulting	41507 South Skagit Highway Concrete, WA 98237	Kelly R. Bush Phone: (360) 826-4930 Email: kelrbush@equinoxerci.com Website: http://equinoxerci.com/

Environmental & Conservation Groups			
City/Location	Name	Address	Contact & Other Information
Arlington, WA	Sarvey Wildlife Care Center	PO Box 3590 Arlington, WA 98223	Phone: (360) 435-4817 Email: margie@sarveywildlife.org
Everett, WA	Adopt a Stream Foundation	600 128th St. SE Everett, WA 98208	Phone: (425) 316-8592 Email: NOSPAMaasf@streamkeeper.org
Everett, WA	OceanGate Foundation	1111 80th St. SW Everett, WA 98203	Phone: (425) 939-8409 Email: Guillermo@oceangatefoundation.org
Everett, WA	Salish Sea Habitat	1928 Pucker Avenue Everett, WA 98201	Phone: (425) 259-2685 Email: pellegrinisalishseahabitat@gmail.com
Everett, WA	Stilly Snohomish Fisheries Enhancement Task Force	PO Box 5006 Everett, WA 98206	Phone: (425) 252-6686 Email: salmon@stillysnofish.org
Marysville, WA	Project Seawolf Coastal Protection	PO Box 929 Marysville, WA 98270	Phone: (425) 879-4676 Email: info@projectseawolf.org
San Francisco, CA	Sierra Club Snohomish Group	85 Second Street San Francisco, CA 94105	Phone: (425) 743-5628 Website: www.sierraclub.org
Seattle, WA	Pacific Marine Research	PO Box 31137 Seattle, WA 98103	Phone: (206) 361-1919 Email: janatpmr@comcast.net
Snohomish, WA	Sustainable Fisheries Foundation	601A Rainer St Snohomish, WA 98290	Phone: (360) 862-1255 Email: cleve.stewart@amec.com
Snohomish, WA	Pilchuck Audubon Society	1429 Avenue D Snohomish, WA 98290	Phone: (425) 252-0926 Website: www.pilchuckaudubon.org

Fire Departments			
City/Location	Name	Address	Contact & Other Information
Edmonds, WA	Edmonds Fire Department	121 5th Ave Edmonds, WA 98020	Phone: (425) 771-0215
Everett, WA	Everett Fire Department	2811 Oakes Ave Everett, WA 98201	Phone: (425) 257-8100
La Conner, WA	La Conner Fire Department	204 Douglas St. La Conner, WA 98257	Phone: (360) 466-3515
Mukilteo, WA	Mukilteo Fire Department	10400 47th Place West Mukilteo, WA 98275	Phone: (425) 348-3591
Snohomish, WA	Snohomish County Fire Dep.	1205 SW Lake Roesiger Rd. Snohomish, WA 98290	Phone: (360) 568-1954

Food Services/Catering			
City/Location	Name	Address	Contact & Other Information
Everett, WA	Barry's Catering	1606 Hewitt Ave. Everett, WA 98201	Phone: (425) 252-5036 Email: mkbarryscatering@aol.com
Everett, WA	Rose's Classic Catering LLC	3227 Norton Avenue Everett, WA 98201	Phone: (425) 772-2292 Email: info@rosesclassiccateringllc.com
Everett, WA	Red Rock Subs	3514 Broadway Everett, WA 98201	Phone: (425) 252-2786 Email: info@redrocksubs.com
Everett, WA	Karl's Bakery & Café	2814 Wetmore Avenue Everett, WA 98201	Phone: (425) 252-1774 Email: contact@karls-bakery.com
Everett, WA	Quiznos Sandwich Restaurants	3625 Broadway Suite B Everett, WA 98201	Phone: (425) 258-9496

Hospitals & Medical Centers			
City/Location	Facility Name	Address	Contact & Other Information
Arlington, WA	Cascade Valley Hospital	330 S. Stillaguamish Ave Arlington, WA	Phone: (360) 435-2133 Website: http://www.cascadevalley.org/
Edmonds, WA	Stevens Hospital	21601 76th Avenue W Edmonds	Phone: (425) 640-4000 Website: www.stevenshealthcare.org
Everett, WA	Providence General Medical	1321 Colby Everett, WA	Phone: (425) 261-2000 ER: (425) 261-3000 Website: www.providence.org

Hotels/Motels, Berthing Accommodations			
City/Location	Facility Name	Address	Contact & Other Information
Everett, WA	Best Inn	1122 Broadway Everett, WA 98201	Phone: (425) 252-8000 Website: daysinn.com
Everett, WA	Holiday Inn	3105 Pine St Everett, WA 98201	Phone: (866) 700-1188 Website: holidayinn.com
Everett, WA	Best Western Cascadia Inn	2800 Pacific Ave Everett, WA 98201	Phone: (425) 258-4141 Website: book.bestwestern.com
Everett, WA	Travelodge Everett City Center	3030 Broadway Everett, WA 98201	Phone: (425) 259-6141 Website: Travelodge.com
Everett, WA	Inn at Port Gardner	1700 West Marine View Dr. Everett, WA 98201	Phone: (425) 252-6779 Website: innatportgardner.com

Marinas, Ports, Docks			
City/Location	Facility Name	Address	Contact & Other Information
Everett, WA	10th Street Marina Boat Launch	10thSt. & W. Marine View Everett, WA 98201	Phone: (425) 257-8300 Email: parks@ci.everett.wa.us
Everett, WA	Port of Everett	1700 W Marine View Dr. Everett, WA 98201	Phone: (425) 259-6001 Website: www.portofeverett.com
Mukilteo, WA	Mukilteo Lighthouse Park Public Boat Launch	609 Front Street Mukilteo, WA 98275	Phone: (425) 263-8180
Tulalip, WA	Tulalip Marina Launch	Tulalip Bay	Phone: (360) 716-4563

Military Bases/Installations			
City/Location	Installation Name	Nearest Address	Contact & Other Information
Everett, WA	Naval Station Everett	2000 W Marine View Dr, Everett, WA 98207-0001	Phone: (425) 304-3000

Office Equipment Supply & Rental			
City/Location	Name	Address	Contact & Other Information
Everett, WA	Everett Office Furniture	2931 Broadway Everett, WA 98201	Phone: (425) 257-3242 Website: everettofficefurniture.com
Everett, WA	Office Interiors and Supplies	2002 Madison Street Everett, WA 98201	Phone: (425) 355-3500 Website: officeinteriorsinc.com
Everett, WA	Office Depot	10115 Evergreen Way Everett, WA 98201	Phone: (425) 513-0515 Website: officedepot.com

Oil Spill Response Contractors

City/Location	Name	Address	Contact & Other Information
Bellingham, WA	Matrix Service Inc.	3810 Bakerview Spur Bellingham, WA 98226	Phone: (360) 685-2000 Website: www.martixservice.com
Everett, WA	MP Environmental Services, Inc	3400 34th Avenue Everett, WA 98205	Phone: (800) 442-6334 Website: www.mpenviro.com
Everett, WA	MSRC	Everett, WA	Phone: (425) 252-1300 Phone 2: (800) 645-7745 Website: www.msrc.org
Seattle, WA	NRC	9520 10th Ave South, Suite 150 Seattle, WA 98108	Phone: (206) 607-3000 Website: www.nrcc.com
Longview, WA	Cowlitz Clean Sweep, Inc	55 International Way Longview, WA 98632	Phone: (888) 423-6316 Website: www.pnecorp.com/ccs.html
Seattle, WA	Marine Vacuum Services, Inc	1516 South Graham Street Seattle, WA 98124	Phone: (206) 762-0240 Website: www.marinevacuum.com
Seattle, WA	Global Diving & Salvage	3840 W Marginal Way SW Seattle, WA 98106	Phone: (206) 623-0621 Website: www.gdiving.com

Outdoor Recreation Groups, Companies, & Organizations

City/Location	Name	Address	Contact & Other Information
Everett, WA	Everett Mountaineers	PO Box 1848 Everett, WA 98206	Website: everettmountaineers.org
Everett, WA	Mosquito Fleet	1724 W Marine View Dr. Everett, WA 98201	Phone: (800) 888-2535
Everett, WA	The North Sound Sea Kayaking Association	PO Box 1523 Everett, WA 98206	Phone: (360) 652-5429 Website: nsseakayaker.homestead.com
Seattle, WA	Washington Water Trails Association	4649 Sunnyside Ave N #307 Seattle, WA 98103	Phone: (206) 545-9161 Website: www.wwta.org

Park Facilities

City/Location	Name	Address	Contact & Other Information
Everett, WA	Harborview Park	W Mukilteo Blvd Everett, WA	
Everett, WA	Howarth Park	1127 Olympic Blvd Everett, WA	Phone: (425) 257-8300
Everett, WA	10th Street Marine Park	10th St. Everett, WA	

Park Facilities (continued)

City/Location	Name	Address	Contact & Other Information
Everett, WA	Jetty Island Park	The jetty East of 10th Street Marine Park	
Mukilteo, WA	Mukilteo Lighthouse	609 Front St Mukilteo, WA 98275	Phone: (425) 263-8180

Rental Equipment - Industrial/Commercial

City/Location	Name	Address	Contact & Other Information
Everett, WA	Total Rental	9217 Evergreen Way Everett, WA 98204	Phone: (425) 353-4102 Website: totalrental1.com
Everett, WA	Hertz Equipment Rental	3516 McDougall Avenue Everett, WA 98201	Phone: (425) 303-6900 Website: www.hertzequip.com
Everett, WA	RSC Equipment Rental	2810 Highland Avenue Everett, WA 98201	Phone: (425) 259-6108 Website: rscrental.com
Marysville, WA	Ace Equipment Rentals	14904 Smokey Point Blvd. Marysville, WA 98271	Phone: (360) 568-3900 Website: www.aceequipmentrentals.com

Response Equipment Cache Locations

Resource	Owner	Address	Contact & Other Information
WRRL	Genwest	http://www.wrrl.us	Database of Response Equipment maintained and updated regularly.

Security Services

City/Location	Name	Address	Contact & Other Information
Everett, WA	Whatcom Security Agency	1902 120th PL SE, Suite 203 Everett, WA 98208	Phone: (425) 316-8700 Website: www.whatcomsecurity.com
Nationwide	National Security Services, LLC	Nationwide	Phone: (888) 386-4068 Website: www.GuardsToGo.com

Support Personnel - Local/Emergency			
City/Location	Name	Address	Contact & Other Information
Edmonds, WA	Edmonds Police Department	250 5th Ave. N Edmonds, WA 98020	Phone: (425) 771-0200
Everett, WA	Everett City Hall	3002 Wetmore Everett, WA 98201	Phone: (425) 257-8700 Website: www.ci.everett.wa.us
Everett, WA	Everett City Police	3002 Wetmore Everett, WA 98201	Phone: (425) 257-8400 Email: police@ci.everett.wa.us
Everett, WA	Snohomish County DEM	3509 109th St. SW Everett, WA 98204	Phone: (425) 388-5060
Everett, WA	Snohomish County Sheriff	3000 Rockefeller Ave. Everett, WA 98201	Phone: (425) 388-3411 Website: sheriff.snoco.org

Tribal Resources			
City/Location	Name	Address	Contact & Other Information
Tulalip, WA	The Tulalip Tribes	6406 Marine Drive Tulalip, WA 98271	Phone: (360) 651-4000 Website: www.tulaliptribes-nsn.gov
Darrington, WA	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98241	Phone: (360) 436-1031 Website: www.sauk-suiattle.com
Olympia, WA	Northwest Indian Fisheries Commission	6730 Martin Way E Olympia, WA 98516	Phone: (360) 753-8659 Website: nwifc.org

Transportation			
City/Location	Name	Address	Contact & Other Information
Everett, WA	Lucky Taxi	Everett, WA	Phone: (425) 317-1111
Everett, WA	Farwest Taxi	Everett, WA	Phone: (425) 609-3030 Email: tamirak@gmail.com
Everett, WA	American Checker Taxi	2803 Maple St Everett, WA 98201	Phone: (425) 259-3333
Everett, WA	Nelson Petroleum	1125 80th St. SW Everett, WA 98203	Phone: (800) 562-9882 Website: www.nelsonpetroleum.com
Renton, WA	Shuttle Express	800 SW 16th St. Renton, WA 98057	Phone: (425) 981-7000 Email: sales@shuttleexpress.net Website: www.shuttleexpress.com
Seattle, WA	First Student Charters	2001 W Garfield Street Seattle, WA 98119	Phone: (206) 957-2039
Snohomish, WA	Chinook Charter Services	721 Avenue D, #207 Snohomish, WA 98290	Phone: (425) 259-3262 Email: bob@chinookbus.com Website: www.chinoobus.com

Wildlife Equipment Owners			
City/Location	Name	Address	Contact & Other Information
Everett, WA	Marine Spill Response Corporation (MSRC)	Mobile Oiled Wildlife Mobile Rehabilitation Unit	Phone: (425) 252-1300 Website: www.msrc.org
Seattle, WA	National Response Corporation Environmental Services (NRCES)	Mobile Oiled Wildlife Mobile Rehabilitation Unit	Phone: (800) 337-7455 Website: www.nrces.com
Portland, OR	Clean Rivers Cooperative	Mobile Oiled Wildlife Mobile Rehabilitation Unit	Phone: (503) 220-2040 Website: www.cleanriverscooperative.com

Wildlife Response Contractors			
City/Location	Name	Address	Contact & Other Information
Anacortes, WA	Focus Wildlife	P.O. Box 944 Anacortes, WA 98221	Phone: (800) 578-3048 Website: www.focuswildlife.net
Friday Harbor, WA	Islands' Oil Spill Association	P.O. Box 2316 Friday Harbor, WA 98250	Phone: (360) 378-5322 Website: http://iosaonline.org/
Astoria, OR	International Bird Rescue	1526 Franklin Avenue Astoria, OR 97103	Phone: (888) 447-1743 Website: www.bird-rescue.org

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.	· Bulldozer/Motor Grader (1) · Equipment Operators (1) . Support Personnel/Workers (1) · Plastic or Geotextile Sheeting	· High Wave Energy · Large Tidal Range · Strong Along Shore Currents
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.	· Support Personnel/Workers (5) · Stakes & Tie-Down Cord · Plastic/Geotextiles (3 meter width rolls)	· Low Sloped shoreline · High spring tides · Large storms
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.	<u>Per 30 Meters of Barrier</u>: · Support Personnel/Workers (2) · Wire mesh (70 meters x 2 meters) · Sorbents (30 square meters) · Stakes (20) · Fasteners, Support Lines, Stakes	· Waves > 25 cm (~ 9.8") · Currents > 0.5 m/s (~ 1.6ft/s, ~1kt) · Tidal range > 2 meters (~ 6.5ft)
Inlet Dams	A dam is constructed across the channel using local soil or beach sediments to exclude oil from entering channel	· Loader (1) · Equipment Operators (1) . Support Personnel/Workers (1+) . Shovels (1 for each worker)	· Waves > 25 cm (~ 9.8") · Tidal range exceeding dam height · Freshwater Outflow

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.	For 150 Meters Slick: · Work Boats (2) · Boom - 280 meters (~918ft) · Personnel/Boat Operators (2) · Personnel/Boat Crew (2) · Personnel/Boom Tenders (4) · Tow lines, drogues, connectors	· High winds · Swells > 2 meters (~6.5ft) · Breaking Waves > 50 cm (~19.6") · Currents > 1.0 m/s (~ 3.3ft/s, ~2kts)
Exclusion Booming	Boom is deployed across or around sensitive areas & anchored in place. Approaching oil is deflected or contained by boom.	Per 300 meters of Boom: · Work Boat (1) · Boom - 300 meters (~984ft) · Personnel/Boat Operators (1) · Personnel/Boat Crew (1) · Personnel/Boom Tenders (3) · Anchors (6) · Anchor Lines, Buoys, etc.	· Currents > 0.5 m/s (~ 1.6ft/s, ~1kt) · Breaking waves > 50 cm (~19.6") · Water depth > 20 meters (~65fft)
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.	Single Boom (0.75 m/s knot current) (~2.5ft/s) · Work Boat (1) · Boom - 60 meters (~197ft) · Personnel/Boat Operators (1) · Personnel/Boat Crew (1) · Personnel/Boom Tenders (3) · Anchors (3) · Anchor Lines, Buoys, Recovery Unit	· Currents > 1.0 m/s (~ 3.3ft/s, ~2kts) · Breaking waves > 50 cm (~19.6")
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.	Single Boom (0.75 m/s knot current) (~2.5ft/s) · Work Boat (1) · Boom - 60 meters (~197ft) · Personnel/Boat Operators (1) · Personnel/Boat Crew (1) · Personnel/Boom Tenders (3) · Anchors (3) · Anchor Lines, Buoys, Recovery Unit	· Currents > 1.0 m/s (~ 3.3ft/s, ~2kts) · Breaking waves > 50 cm (~19.6")

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.	Self-propelled (None) Towed · Boom - 200 meters (~656ft) · Work Boats (2) · Personnel/Boat Operators (2) · Personnel/Boat Crew (2) · Personnel/Boom Tenders (4) · Tow Lines, Bridles, Connectors Portable · Hoses - 30 meters discharge (~98ft) · Oil Storage - 2000 liters (~528 gal)	· High winds · Swells > 2 m (~6.5ft) · Currents > 1.0 m/s (~ 3.3ft/s, ~2kts) · Breaking waves > 50 cm (~19.6")

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. Current speed dependent. Vessel traffic dependent.	Single diversion boom Current < 2 knots use boom skirt of 12 inches if no waves. Current > 2 knots use boom skirt of 6 inches or less if no waves
Currents over 2 knots	Cascade boom • 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 Vessel traffic dependant	Single diversion boom Current < 2 knots: Use boom skirt of 12 inches Current > 2 knots: Use boom skirt of 6 inches or less
Currents over 2 knots	Cascading diversion boom Use short skirts, short boom lengths and sufficient overlap
Collection areas available on both sides	Chevron booms Open for vessel traffic Closed if no traffic
Currents less than 2 knots and river is wide	Single diversion boom Exclusion boom for sensitive areas 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 100 Feet (seconds)	Velocity (ft/sec)	Max. Boom Deflection Angle (degrees)	Boom for 100 Foot Profile to Current (feet)	Anchors if Placed Every 50 Feet (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

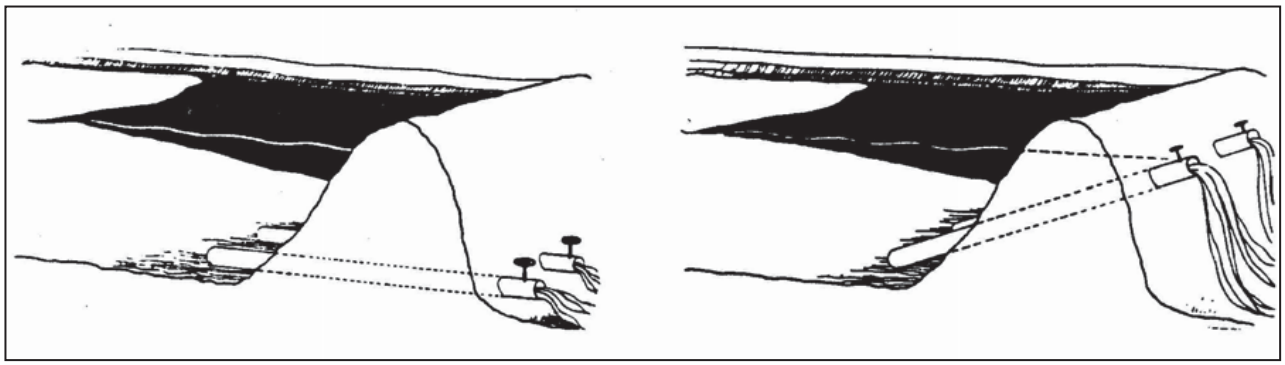
capable of withstanding the forces and the boom must have a tension member capable of high loads. If the boom is extended behind the tow boat and pulled free in the current, there is only the frictional drag along the boom. Because this drag is a function of the boat speed, proper motor size becomes 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

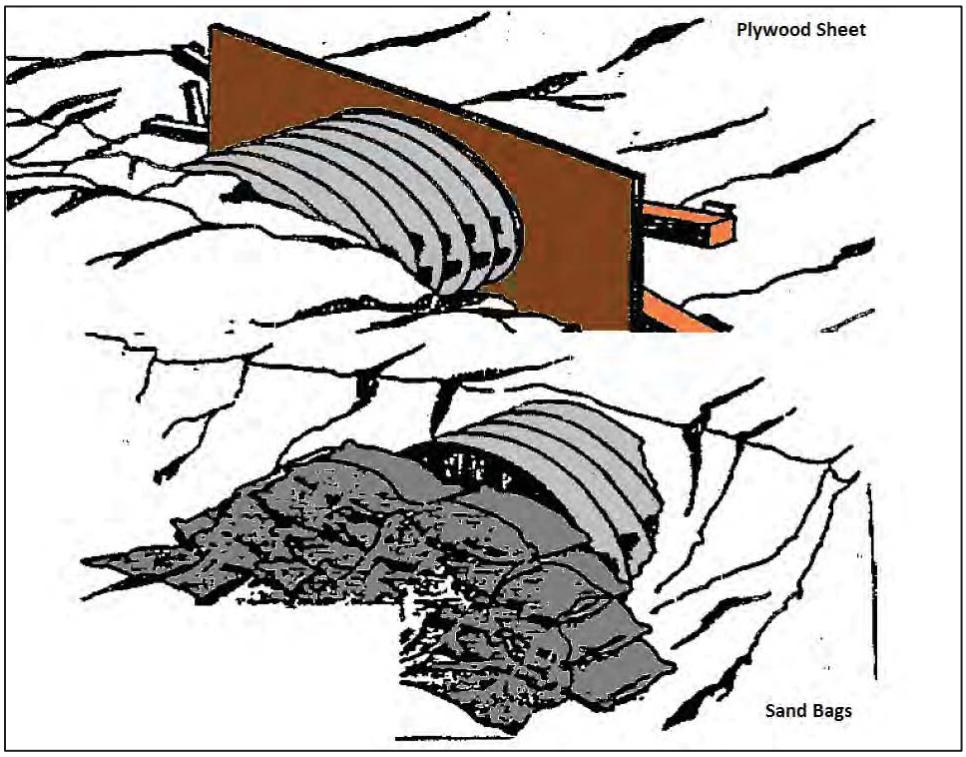
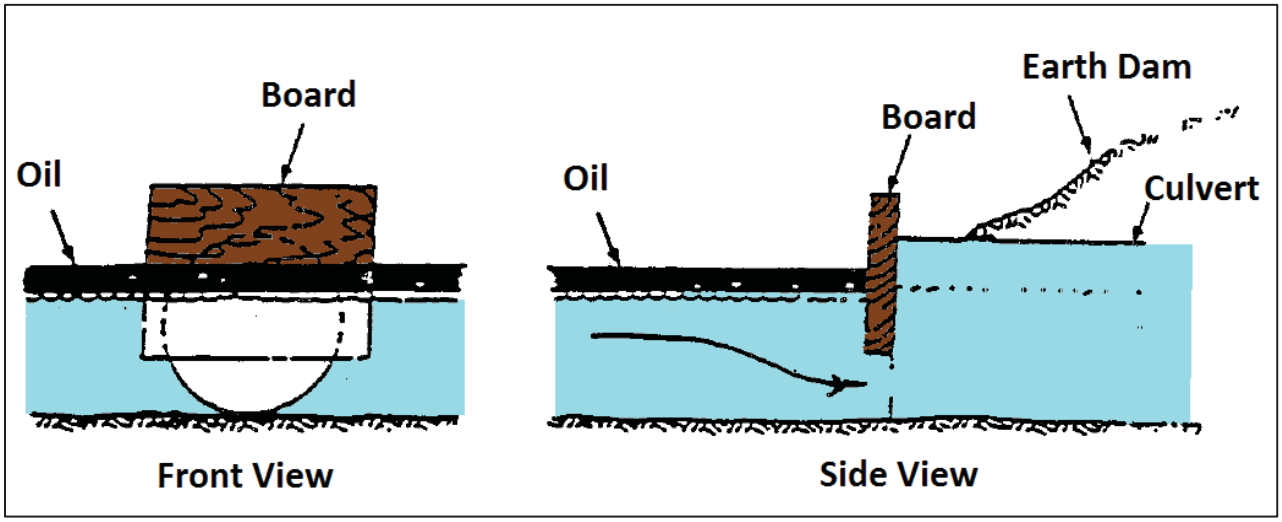


Figure A-3: Culvert weir



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Appendix C

Comments, Corrections, or Suggestions

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

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

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

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

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

GRP Comment Form

Mail Completed Form to:

U.S. Environmental Protection Agency
Region 10
Office of Environmental Cleanup
1200 Sixth Avenue
Room ECL-116
Seattle, WA 98101

Washington State Department of Ecology
Spills Program (GRPs)
P.O. Box 47600
Olympia, WA 98504-7600

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