<< Go Back

SAMISH RIVER

Geographic Response Plan

(SAMR-GRP)

CHAPTER 4

Response Strategies and Priorities

June 2017

Before you print this document

This chapter and its appendices, as well as the appendix at the end of Chapter 6, are provided in "landscape" page orientation. The detailed 2-page information sheets for response strategies, notification strategies, staging areas, and boat launch locations in appendices 4A though 4D (pages 63-132) have been designed for duplex printing (front and back side of paper), "open to top" configuration.

4.1 CHAPTER INTRODUCTION

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

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

4.1.1 On-site Considerations

Before Deploying a GRP Strategy (Questions to Ask)

- Are conditions safe? Response managers and responders must first determine if efforts to implement a response strategy would pose an undue risk to worker safety or the public, based on conditions present during the time of the emergency. No strategy should be implemented if doing so would threaten public safety or present an unreasonable risk to the safety of responders.
- Has initial control and containment been sufficiently achieved? Control and containment of the spill at or near the source are always higher priorities than the deployment of GRP response strategies, especially when concurrent response activities are not possible.
- How far downstream or out into the river environment is the spilled oil likely to travel before response personnel will be ready and able to deploy GRP response strategies?

- Are permits required? Consult the Northwest Area Contingency Plan Permit Summary Table (NWACP Section 9401) for information specific to your location and circumstance.
- Will equipment or vehicles need to be staged on or near a roadway? If so, traffic control may be required. Contact the Washington State Patrol, or local, county, municipality, or tribal police for assistance. At minimum, Washington Department of Transportation (WSDOT) guidelines for work zone traffic control should be followed when working on or near a roadway.
    - Sedro-Woolley Police Department (360) 855-0111
    - Skagit County Sheriff's Office (360) 416-1911
    - Upper Skagit Indian Tribe (360) 854-7090
    - Washington State Patrol - District 7 (360) 654-1204
    - Whatcom County Sheriff's Office (360) 778-6600

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.
- 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. For information about non-floating oil spill response, refer to the *Non-Floating Oil Spill Response Tool* in the Northwest Area Contingency Plan (NWACP), Section 9412.

After Strategy Implementation (Things to Understand)

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

Water Speed and Boom Deflection Angle

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

Table 4-1: Water Speed Drift Measurement Table

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

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

4.1.2 Historical River Flow Ranges

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

Table 4-2: Historical Streamflow for the Samish River

Monthly average flow in Cubic Feet per Second (cfs)		
	Samish River near Burlington **USGS 12201500** (data from 1943 to 2016)	**Friday Creek above hatchery** **Ecology 03C060** (data from 2005 to 2015)
Jan	523	212
Feb	430	98
Mar	358	121
Apr	296	92
May	191	80
Jun	113	33
Jul	59	14
Aug	39	8
Sep	46	11
Oct	138	43
Nov	350	149
Dec	436	149

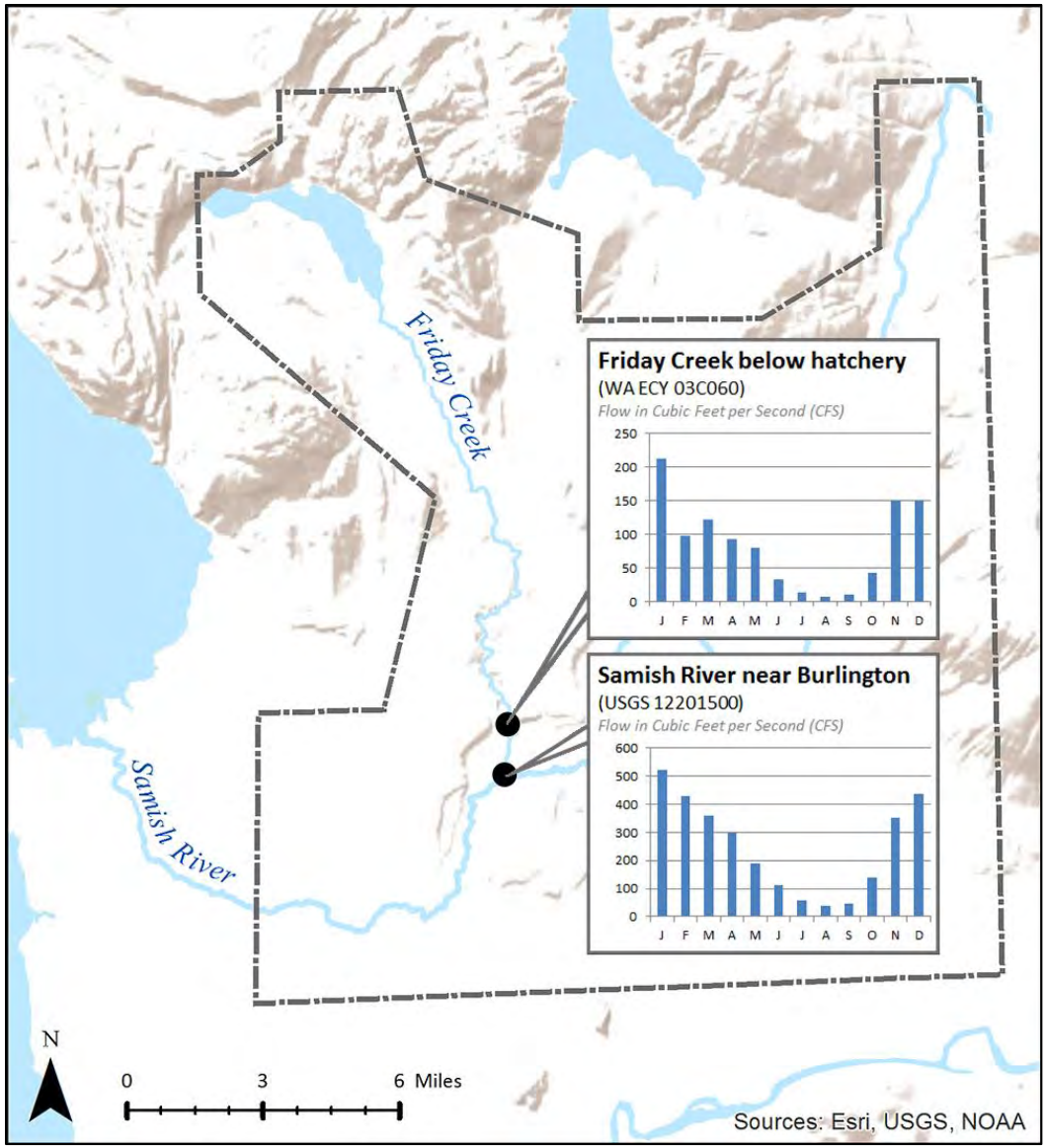


Figure 4-1: Mean Monthly Discharge Measurements for Samish River and Friday Creek

4.2 AREA OVERVIEW MAPS

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

The following area maps are provided for reference:

- Response Strategy Locations
- Notification Strategy Locations
- Staging Area Locations
- Boat Launch Locations
- Potential Oil Spill Origin Point Locations

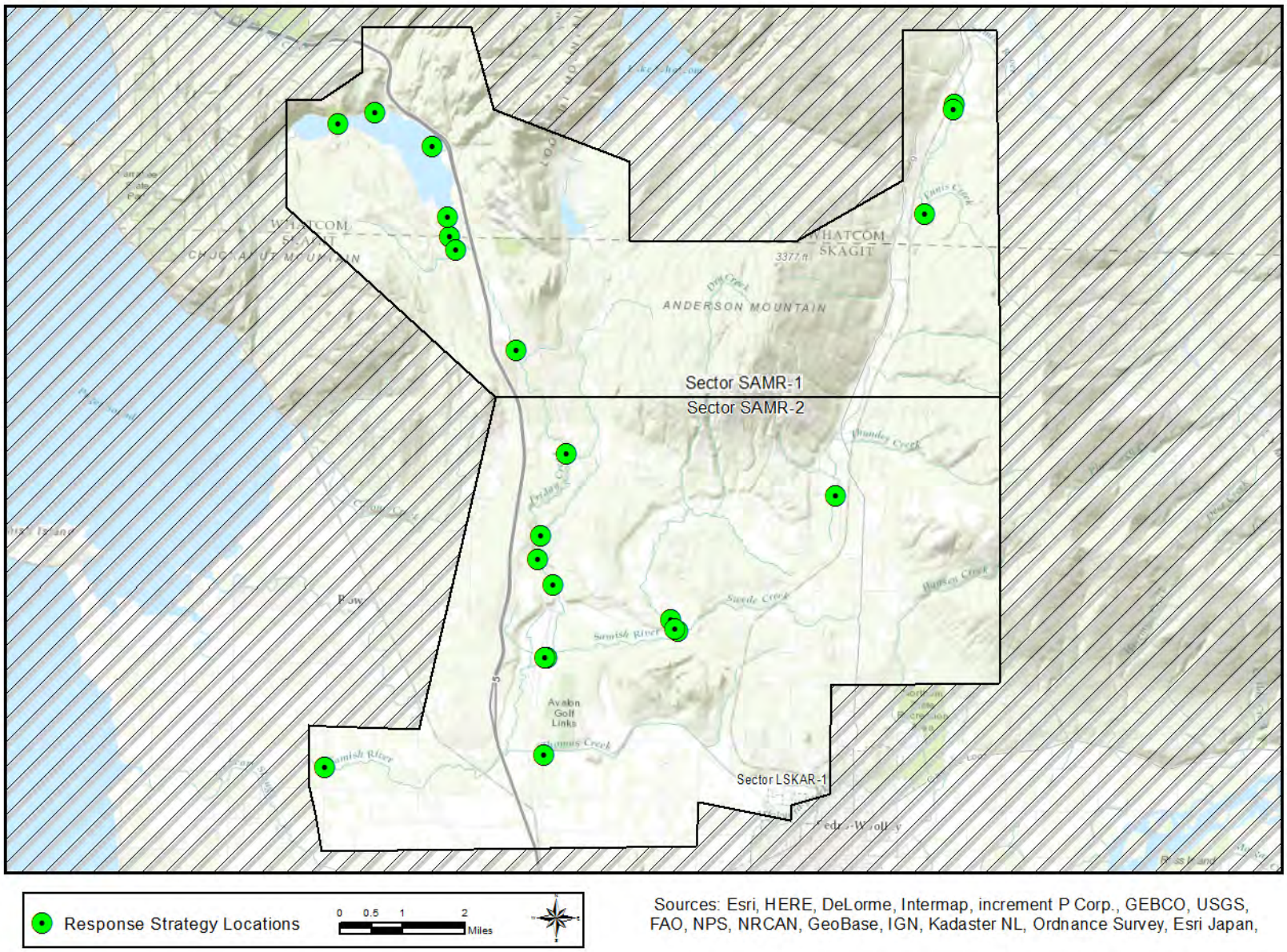


Figure 4-2: Response Strategy Locations

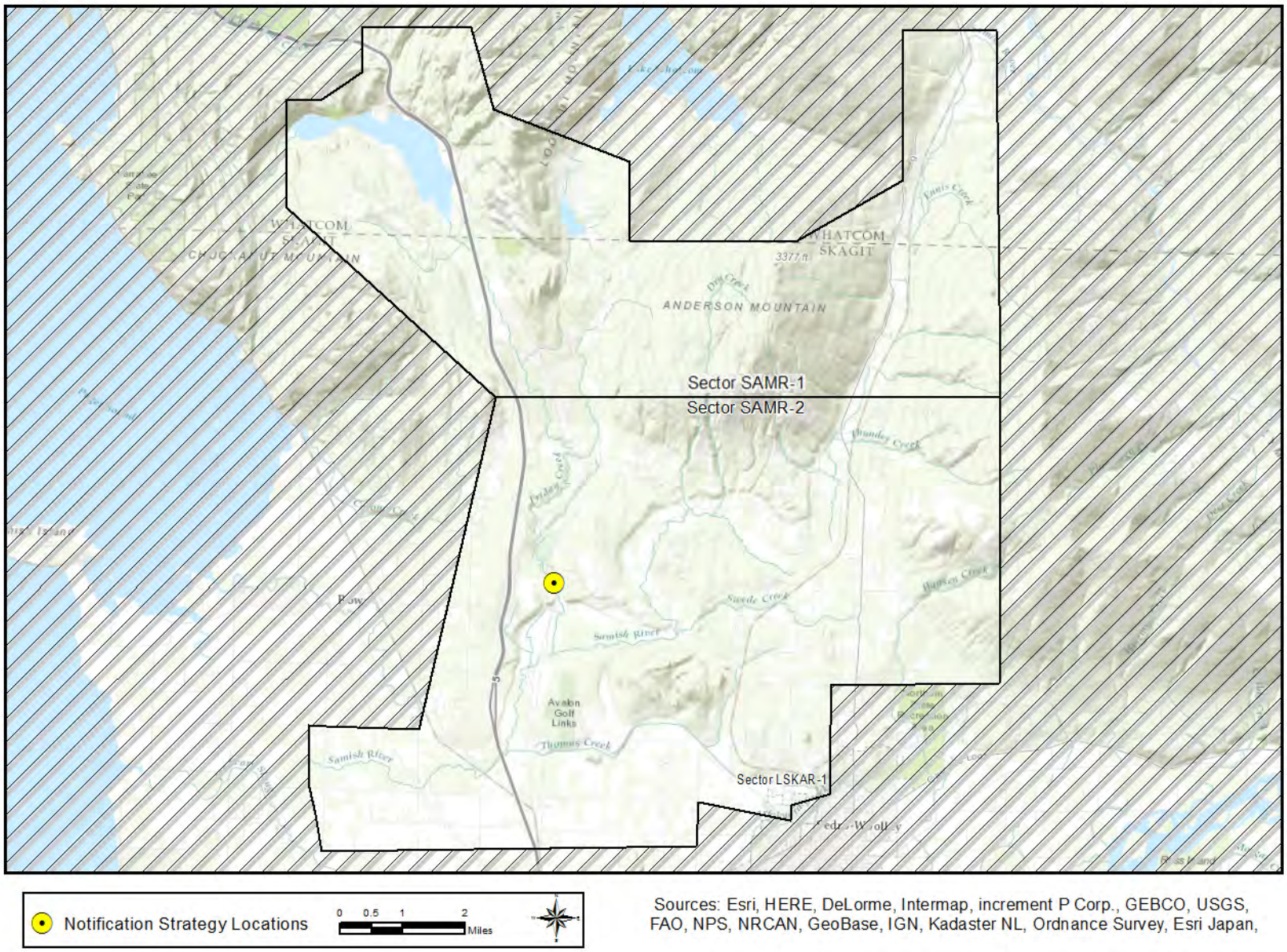


Figure 4-3: Notification Strategy Locations

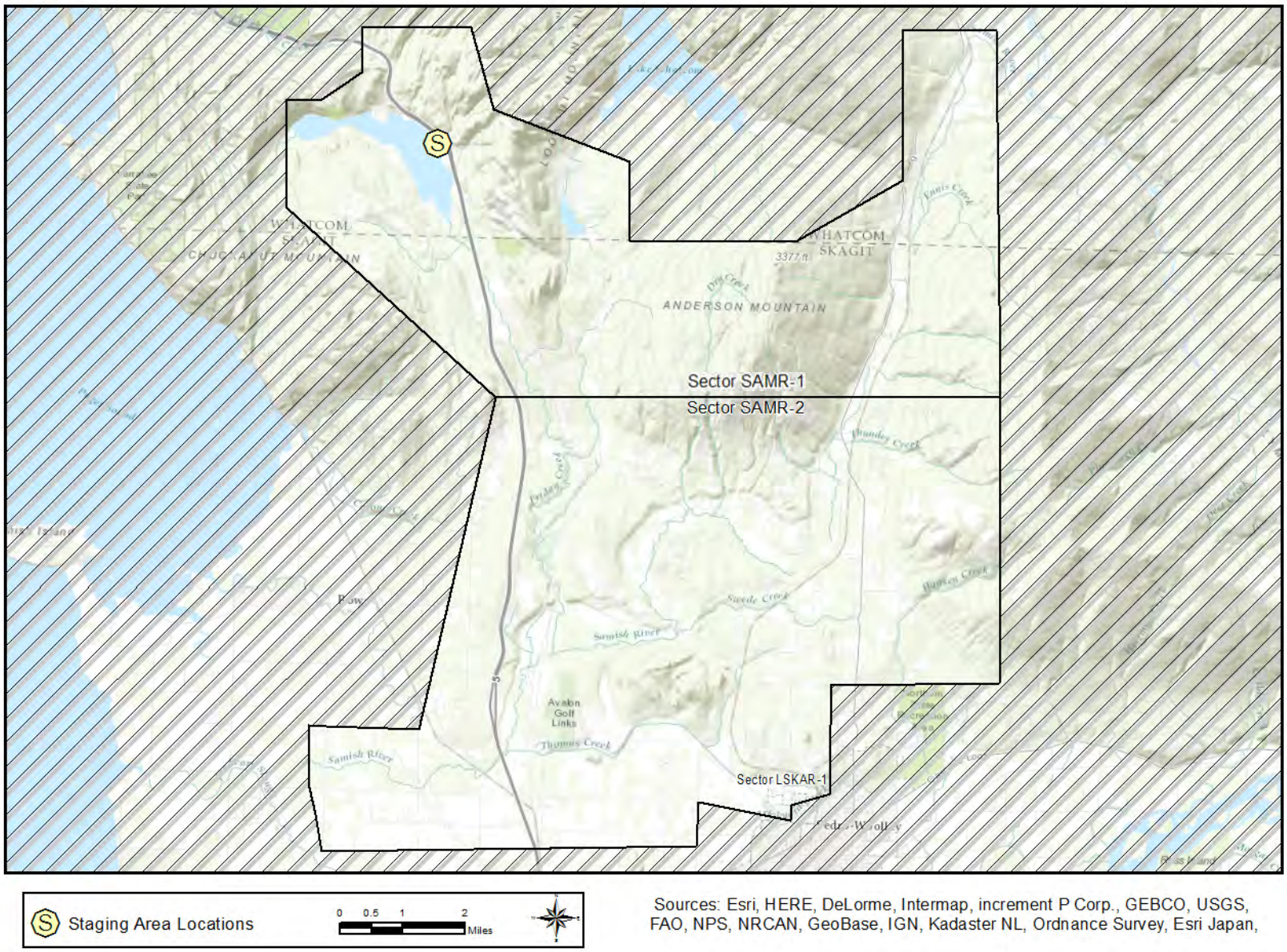


Figure 4-4: Staging Area Locations

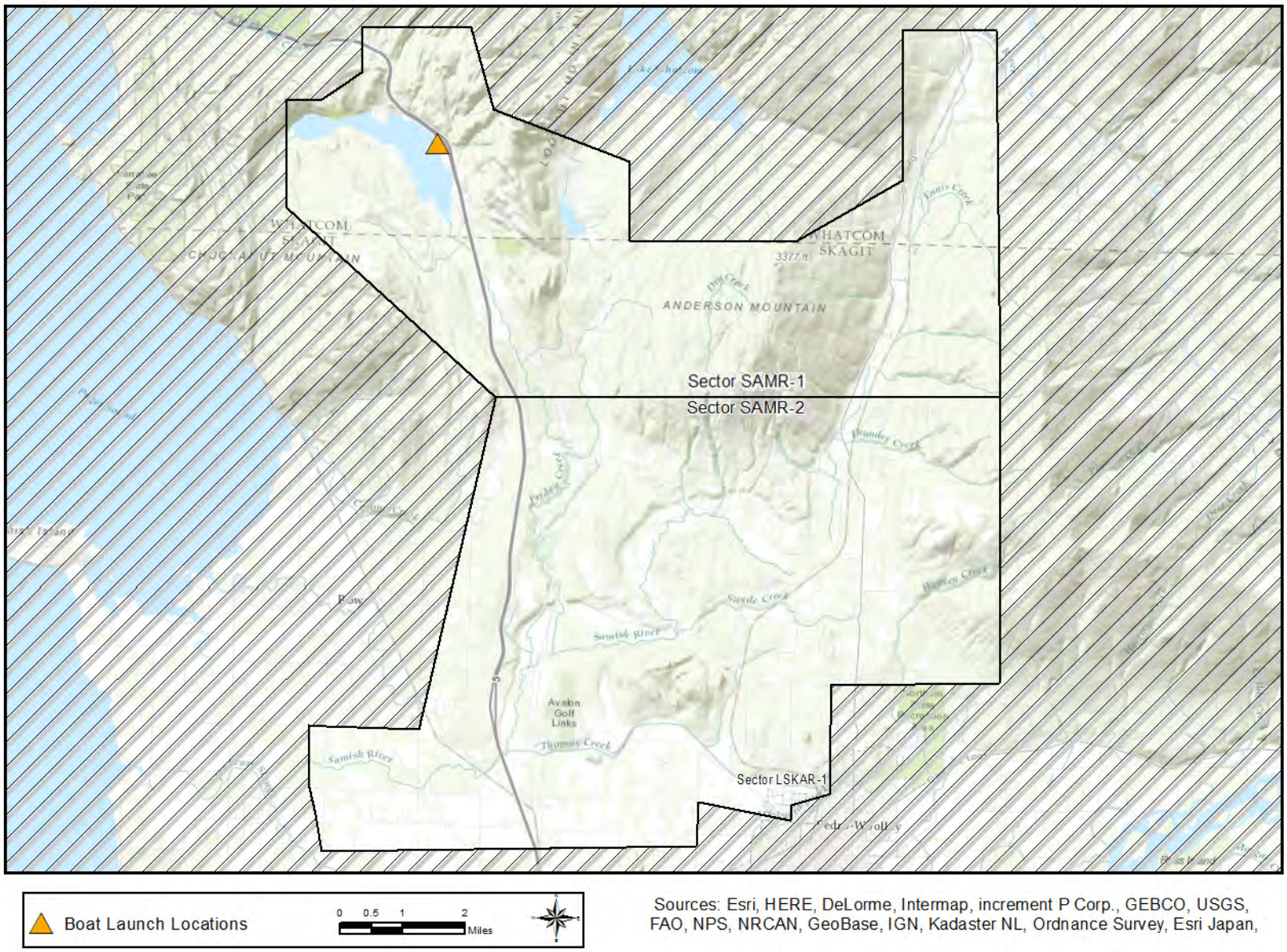


Figure 4-5: Boat Launch Locations

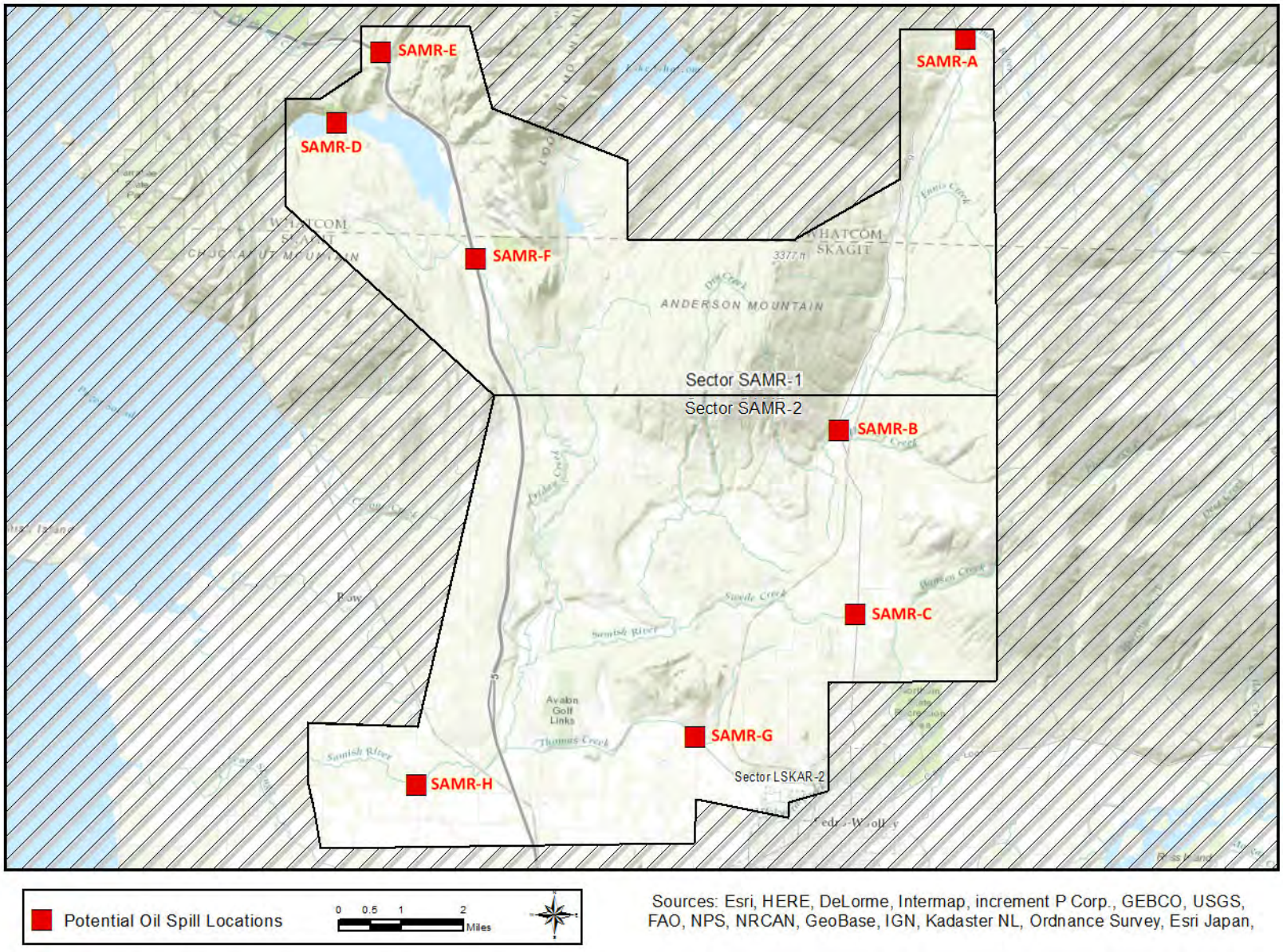


Figure 4-6: Potential Oil Spill Origin Point Locations

4.3 STRATEGY AND RESPONSE PRIORITIES

4.3.1 General Response Priorities

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

- Safety is always the number one priority. Do not implement GRP strategies or take actions that will unduly jeopardize public, worker, or personal safety.
- Notify local public health and safety personnel.
- Control and contain the source of the spill; mobilize resources to the spill location. Source control and containment are always a higher priority than the implementation of GRP strategies.
- Determine the priority or order GRP strategies should be implemented based on the location of the spill or affected area. Priorities based on POSOPs are included in this chapter and should be used unless the situation or circumstances dictate otherwise (see Section 4.3.2).
- As response resources become available, implement the GRP Strategies in order of priority or as necessary based on the scenario, trajectory, or conditions of the day.
- Permits may be required. Consult the Northwest Area Contingency Plan Permit Summary Table (NWACP Section 9401) for information.

4.3.2 Strategy Priorities based on Potential Oil Spill Origin Points

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

These points are displayed on area overview and sector maps as red boxes. In establishing priorities during a response, or selecting an appropriate POSOP, the downstream and/or tidal movement of spilled oil and the time it takes to mobilize and deploy response resources must be considered. Generally, on streams, creeks, and rivers, GRP strategies should first be implemented downstream, well beyond the furthest extent of the spill, with deployments continuing upstream towards the spill source and in some cases slightly beyond. POSOPs are alphabetically designated.

The following tables provide the strategy implementation order for Potential Oil Spill Origin Points in the Samish River GRP: points SAMR-A through SAMR-H. The priority tables provided in this section were developed using a combination of variables, including: notification time, travel time for responders and equipment, average and seasonal flow rates, average winds, deployment time, proximity to the spill source, trustee input, the relative priority of the resources at risk, and other considerations. Because oil spilled in this planning area may be carried downstream and impact an adjacent GRP area, these priority tables include several strategies from the San Juan Islands/North Puget Sound GRP. The 2-pagers for those strategies have also been included in Appendix 4A for convenience.

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

<< Go Back

Table 4-3: SAMR-A (BNSF Bridge at Samish River ~SAMR-28.1)

SAMR-A (BNSF Bridge at Samish River ~SAMR-28.1)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**SAMR-27.0**	24	31	75
2	**SAMR-26.9**	24	31	73
3	**SAMR-25.0**	24	31	71
4	**SAMR-19.6**	25	30	69
5	**SAMR-13.1**	25	30	67
6	**SAMR-12.9**	25	30	65
7	**SAMR-10.35**	25	30	63
8	**SAMR-10.3**	25	29	61
9	**SAMR-4.8**	25	29	59

<< Go Back

Table 4-4: SAMR-B (Highway 9 Bridge ~SAMR-20.9)

SAMR-B (Highway 9 Bridge ~SAMR-20.9)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**SAMR-13.1**	25	30	67
2	**SAMR-12.9**	25	30	65
3	**SAMR-19.6**	25	30	69
4	**SAMR-10.3**	25	29	61
5	**SAMR-10.35**	25	30	63
6	**SAMR-4.8**	25	29	59

<< Go Back

Table 4-5: SAMR-C (Highway 9 at Swede Creek ~SWDC-3.9/SAMR-12.8)

SAMR-C (Highway 9 at Swede Creek ~SWDC-3.9/SAMR-12.8)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**SWDC-0.1**	25	32	79
2	**SAMR-10.35**	25	30	63
3	**SAMR-10.3**	25	29	61
4	**SAMR-4.8**	25	29	59
5	**NPS-43**	See NPS-GRP	See NPS-GRP	NPS-GRP

<< Go Back

Table 4-6: SAMR-D (Lake Samish Bridge ~LKSAM-0.5/6.9)

SAMR-D (Lake Samish Bridge ~LKSAM-0.5/6.9)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**LKSAM-4.0**	24	29	57
2	**LKSAM-2.7**	24	29	55
3	**LKSAM-0.5**	24	28	53
4	**FRIC-9.6**	24	28	51
5	**FRIC-7.1**	24	28	49
6	**FRIC-4.5**	25	28	47
7	**FRIC-2.4**	25	27	45

<< Go Back

Table 4-7: SAMR-E (Silver Creek at I-5 ~SLVRC-1.2/LKSAM-1.1)

SAMR-E (Silver Creek at I-5 ~SLVRC-1.2/LKSAM-1.1)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**LKSAM-4.0**	24	29	57
2	**LKSAM-2.7**	24	29	55
3	**LKSAM-0.5**	24	28	53
4	**FRIC-9.6**	24	28	51
5	**SLVRC-0.0**	24	31	77
6	**FRIC-7.1**	24	28	49
7	**FRIC-4.5**	25	28	47
8	**FRIC-2.4**	25	27	45
9	**FRIC-1.7**	25	27	43

Table 4-8: SAMR-F (Friday Creek at I-5 ~FRIC-9.1)

SAMR-F (Friday Creek at I-5 ~FRIC-9.1)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**FRIC-1.7**	25	27	43
2	**FRIC-1.3**	25	27	41
3	**FRIC-2.4**	25	27	45
4	**FRIC-4.5**	25	28	47
5	**FRIC-7.1**	24	28	49
6	**SAMR-10.3**	25	29	61
7	**SAMR-10.35**	25	30	63
8	**SAMR-4.8**	25	29	59
9	**NPS-43**	See NPS-GRP	See NPS-GRP	NPS-GRP

Table 4-9: SAMR-G (Thomas Creek at Kelleher Rd ~THOM-3.5/SAMR-8.4)

SAMR-G (Thomas Creek at Kelleher Rd ~THOM-3.5/SAMR-8.4)				
Implementation Priority	**Strategy Number**	**Sector Map**	**Strategy Matrix**	**Strategy Details**
1	**THOM-0.7**	25	32	81
2	**SAMR-4.8**	25	29	59
3	**NPS-43**	See NPS-GRP	See NPS-GRP	NPS-GRP
4	**NPS-44**	See NPS-GRP	See NPS-GRP	NPS-GRP
5	**NPS-45**	See NPS-GRP	See NPS-GRP	NPS-GRP

Table 4-10: SAMR-H (Samish River at Chuckanut ~SAMR-6.5)

SAMR-H (Samish River at Chuckanut ~SAMR-6.5)				
Implementation Priority	**Strategy Number**	Sector Map	Strategy Matrix	Strategy Details
1	**NPS-43**	See NPS-GRP	See NPS-GRP	NPS-GRP
2	**SAMR-4.8**	25	29	59
3	**NPS-44**	See NPS-GRP	See NPS-GRP	NPS-GRP
4	**NPS-45**	See NPS-GRP	See NPS-GRPA	NPS-GRP

4.4 SECTOR MAPS (STRATEGY LOCATIONS)

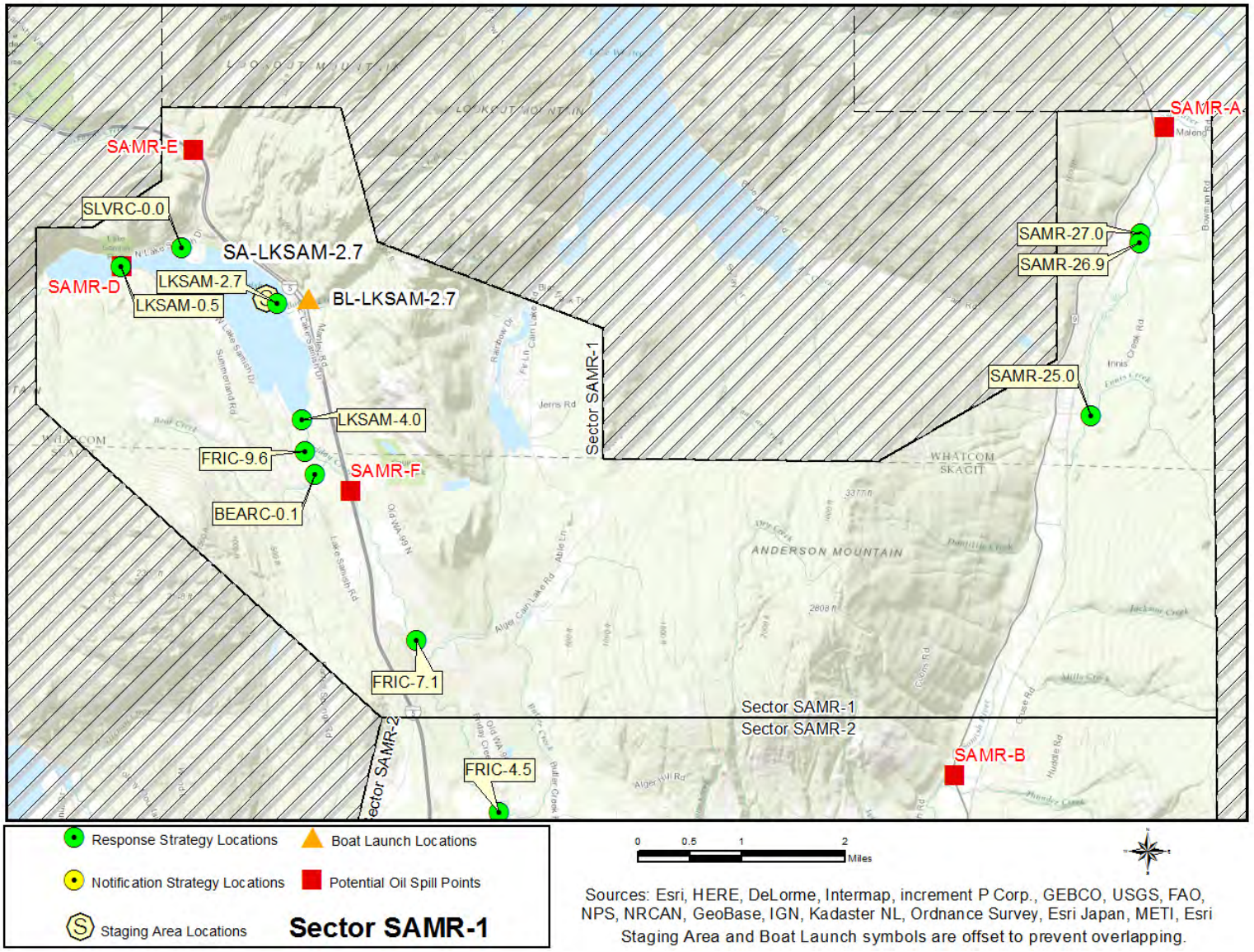


Figure 4-7: Sector Map SAMR-1

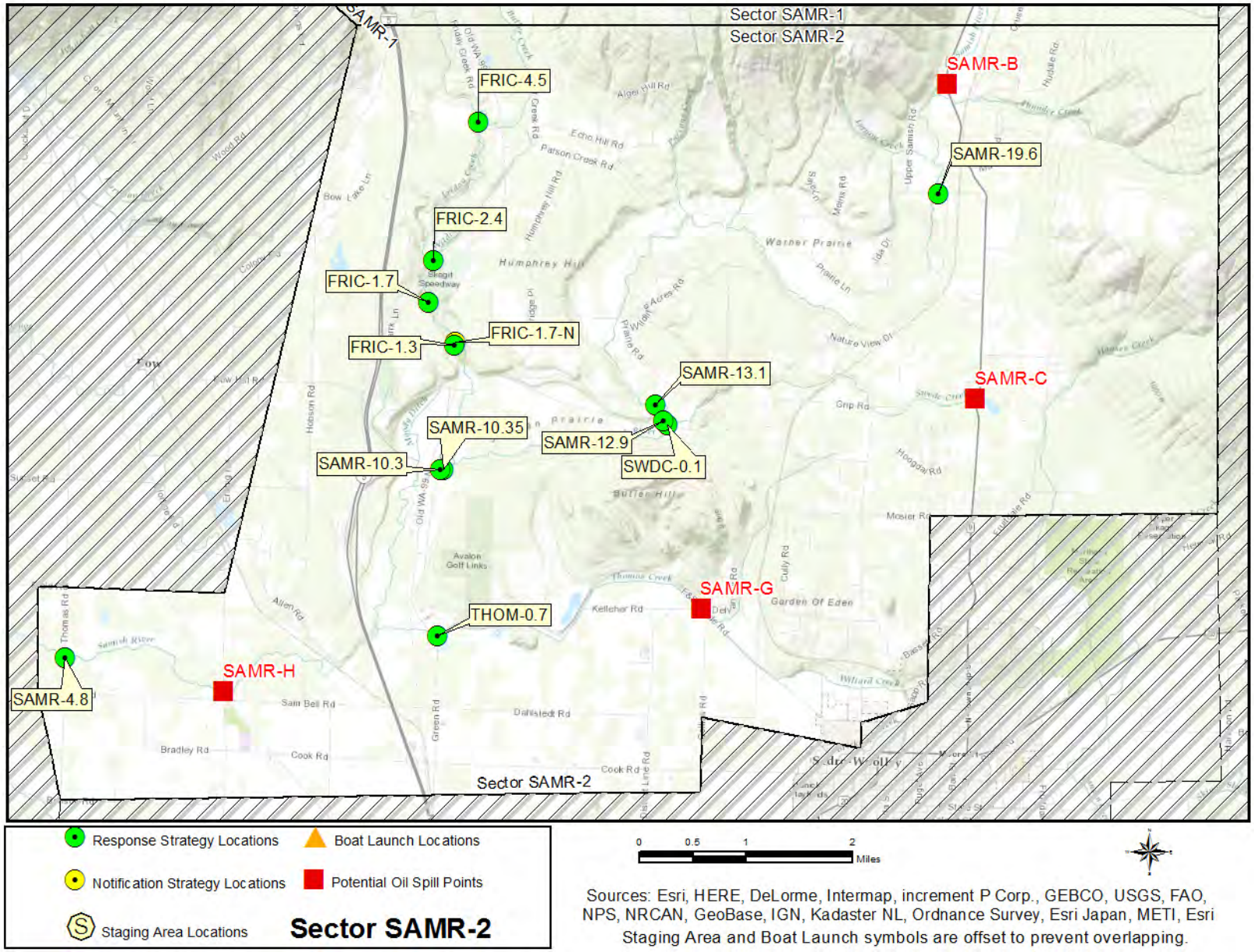
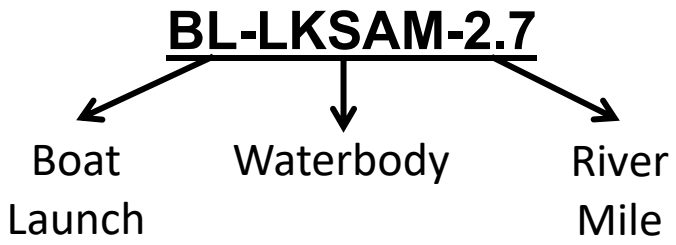


Figure 4-8: Sector Map SAMR-2

4.5 MATRICES

4.5.1 Naming Conventions (Short Names)

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



Associated waterbody short name designations used within the Samish River GRP include:

BEARC = Bear Creek

FRIC = Friday Creek

LKSAM = Lake Samish

SAMR = Samish River

SLVRC = Silver Creek

SWDC = Swede Creek

THOM = Thomas Creek

<< Go Back

4.5.2 Response Strategy Matrices

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
BEARC-0.1	Bear Creek at Samish Water District 48.64214 -122.36995	Collection	Boom 100ft, Sorbent 100ft	No	Onsite Stage onsite, on access road around settling ponds.	Fish Hatchery, Fish Ladder(s), Salmonids, T&E Species, Water Intakes	SW corner of Samish Water District settling ponds. May have to cut fence to access site. Use waders to access opposite bank, plywood for stability in mud. Use caution if anchoring to trees (shallow roots).	25	39
FRIC-1.3	Friday Creek at Pomona Grange Park 48.56477 -122.33283	Collection	Boom 200ft	No	Onsite Stage onsite at Pomona Grange Park.	Fish Ladder(s), Public Lands/Facilities, Raptors, Salmon (Coho, Chinook and Chum), T&E Species	Bridge is private road to hatchery, close road to visitors while deploying. Hatchery outfall is just upstream of bridge. Quiet pool-like section 30 ft downstream from bridge probably best collection point.	25	41
FRIC-1.7	Friday Creek Hatchery Intake/Fish Ladder 48.57040 -122.33824	Exclusion	Boom 100ft, Sorbent 100ft	No	Onsite Stage onsite at gravel work area.	Fish Hatchery, Fish Ladder(s), Salmon (Coho, Chinook and Chum), T&E Species, Water Intakes	Fast moving water. Heavy vegetation and eroding shore. Logs/trees in channel may prevent boom placement, if so continue deploying sorbent and plywood as able.	25	43
FRIC-2.4	Friday Creek near Daisy Lane (KM FR-2.3) 48.57622 -122.33742	Collection	Boom 100ft	No	Onsite Stage onsite in nearby yards. Lane closure may be required.	Fish Ladder(s), Raptors, Riparian Habitat, Salmon (Coho, Chinook and Chum), T&E Species	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Quiet road with some shoulder. Low lawns on NE corner and access on all corners of bridge/creek.	25	45

<< Go Back

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
FRIC-4.5	Friday Creek at Donovan Park (KM FR-4.3) 48.59520 -122.32898	Collection	Boom 100ft	No	OnsiteStage onsite at Donovan Park.	Fish Hatchery, Fish Ladder(s), Salmonids, T&E Species, Water Intakes	Butler Creek comes through southern culvert under road, then merges with Friday Creek (northern culvert) 60 ft west of road. Room to deploy multiple parallel booms if flow is high.	25	47
FRIC-7.1	Friday Creek at Lake Samish Rd (KM FR-6.8) 48.61926 -122.34804	Collection	Boom 200ft, Sorbent 200ft	No	Onsite Stage onsite in private backyard and gravel driveway. Lane closure may be required.	Fish Hatchery, Public Recreation Site/Area, Salmon (Coho, Chinook and Chum), T&E Species, Water Intakes	CRUDE OIL PIPELINE IN AREA. Contact Kinder Morgan before deploying to obtain permit. Follow WSDOT work zone traffic control guidelines when working on or near roadway.	24	49
FRIC-9.6	Friday Creek at Nulle Rd 48.64516 -122.37203	Collection	Boom 200ft	No	Onsite Stage onsite on shoulder of Nulle Rd. Lane closure is required.	Fish Hatchery, Fish Ladder(s), Salmonids, T&E Species, Water Intakes	Low bridge and small narrow shoulder along road. Tribal fish gates/screen on upstream side of bridge may impact stream flow. Follow WSDOT work zone traffic control guidelines when working on or near roadway.	24	51
LKSAM-0.5	Lake Samish Bridge (BP 021-1) 48.67080 -122.41236	Exclusion	Boom 300ft	Yes	Remote Stage and launch from WDFW Lake Samish Boat Ramp (SA-LKSAM-2.7).	Diving Duck Concentrations, Raptors, Salmon (Coho, Chinook and Chum), Shellfish, T&E Species, Waterfowl	PETROLEUM PIPELINE IN AREA. Contact BP before deploying to obtain permit Could be deployed on foot using bridge but makes most sense to use boat.	24	53

<< Go Back

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LKSAM-2.7	Lake Samish Boat Ramp Collection 48.66615 -122.37733	Collection	Boom 1000ft	Yes	OnsiteStage onsite at WDFW boat launch.	Diving Duck Concentrations, Lake Habitat, Salmon (Coho, Chinook and Chum), Shellfish, T&E Species, Water Intakes, Waterfowl	Wide sand & gravel beach south of ramp. Heavy vegetation north of ramp, with much smaller workspace. High lake level may cover beach.	24	55
LKSAM-4.0	Lake Samish at Friday Creek mouth (KM LS-0.2) 48.64960 -122.37276	Collection	Boom 600ft	Yes	Remote Stage and launch from WDFW Lake Samish Boat Ramp (SA-LKSAM-2.7).	Fish Hatchery, Riparian Habitat, Salmon (Coho, Chinook and Chum), T&E Species, Water Intakes	Easiest access via boat. Private homes and docks have lakeside access but east shore has steep drops from hill to water. Flat yards along west shoreline off Shallow Shore Rd.	24	57
SAMR-4.8	Samish River at Thomas Rd 48.52091 -122.41118	Collection	Boom 300ft, Sorbent 200ft	No	Onsite Stage onsite using gravel/grass levee roads.	Forage Fish Spawning Area, Raptors, Salmon, Seal Haulout Area, T&E Species, Waterfowl and Shorebird Concentrations, Wetland Habitat	Some road shoulder and levee road along river. Setback levee on north bank, slope to water is short. Water-level access under bridge and multiple spots along bank. Should not be tidal influence unless king tides.	25	59
SAMR-10.3	WDFW Intake Exclusion 48.54769 -122.33501	Exclusion	Boom 100ft, Sorbent 200ft	No	Onsite Stage onsite at WDFW hatchery facility.	Fish Hatchery, Salmon - Chinook, T&E Species, Water Intakes	DO NOT APPROACH SPILLWAY. In summer water may be very low. Gravel beds change constantly. Calm pool of water above spillway. WDFW site active in Mar-May (juveniles) and Sept/Oct (adults).	25	61

<< Go Back

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
SAMR-10.35	Samish River at WDFW diversion dam 48.54775 -122.33463	Collection	Boom 300ft	Yes	OnsiteStage onsite at WDFW hatchery facility.	Fish Hatchery, Fish Ladder(s), Riparian Habitat, Salmon (Coho, Chinook and Chum), T&E Species, Water Intakes	DO NOT APPROACH SPILLWAY. Pool above spillway is quiet but not deep, boat needs to be very shallow (or a raft). WDFW site active in Mar-May (juveniles) and Sept/Oct (adults).	25	63
SAMR-12.9	Samish River at Grip Road 48.55492 -122.28963	Collection	Boom 100ft	No	Onsite Stage onsite on west side of bridge. Lane closure may be required.	Fish Hatchery, Raptors, Riparian Habitat, Salmon, T&E Species, Wetlands	Can access low banks on either side of bridge, but river right (west of bridge) has pull-off from north lane of Grip Rd that fits a pickup truck. Staging on river left difficult: unstable ground, heavy vegetation.	25	65
SAMR-13.1	Samish River at Prairie Rd 48.55716 -122.29108	Collection	Boom 100ft	No	Onsite Stage onsite at field NW of site. Lane closure may be required.	Fish Hatchery, Riparian Habitat, Salmon (Coho, Chinook and Chum), T&E Species, Wetland Habitat	Bridge is low, in high water do not try to walk under bridge. Blackberry may hinder access to river right. Follow WSDOT work zone traffic control guidelines when working on or near roadway.	25	67
SAMR-19.6	Samish River at Prairie Rd near Blank Rd. 48.58686 -122.23423	Collection	Boom 100ft	No	Onsite Stage onsite, using field on southwest bank. Lane closure may be required.	Raptors, Salmon Concentrations and Habitat, T&E Species, Wetlands	Flat fields with shoulder on west side of bridge. Gravel sandbar and deep pool at Point B. Landowner lives in house just east of site.	25	69

<< Go Back

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
SAMR-25.0	Samish River at Wickersham St 48.65283 -122.20547	Collection	Boom 200ft, Sorbent 100ft	No	Onsite Stage onsite on road surface. Lane closure is required.	Critical Wetland Area, Raptors, Reptiles and Amphibians, T&E Species, Waterfowl	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Keep equipment and personnel on paved areas to reduce impact on endangered species. Water may flow over road.	24	71
SAMR-26.9	Samish River at Innis Creek Rd 48.67726 -122.19597	Collection	Boom 200ft, Sorbent 200ft	No	OnsiteStage onsite on road surface. Lane closure is required.	Critical Wetland Area, Raptors, Reptiles and Amphibians, T&E Species, Waterfowl	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Keep equipment and personnel on paved areas to reduce impact on endangered species.	24	73
SAMR-27.0	Samish River at Doran Rd 48.67850 -122.19580	Collection	Boom 200ft, Sorbent 200ft	No	Onsite Stage onsite on road surface. Lane closure is required.	Critical Wetland Area, Raptors, Reptiles and Amphibians, T&E Species, Waterfowl	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Keep equipment and personnel on paved areas to reduce impact on endangered species.	24	75
SLVRC-0.0	Lake Samish at Silver Creek (KM SI-0.0) 48.67349 -122.39909	Collection	Boom 100ft, Sorbent 200ft	No	Onsite Stage onsite on private road. Lane closure may be required.	Diving Duck Concentrations, Lake Habitat, Raptors, Salmon (Coho, Chinook and Chum), Shellfish, T&E Species, Waterfowl	Narrow paved private street accessing half a dozen homes. Upstream side of road is trees/veg, no homes. Follow WSDOT work zone traffic control guidelines when working on or near roadway.	24	77

<< Go Back

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
SWDC-0.1	Swede Creek at Grip Rd 48.55454 -122.28872	Collection	Boom 100ft, Sorbent 100ft	No	Onsite Stage onsite in Skagit Land Trust gravel parking lot, 50 ft west of culvert. Lane closure is required.	Raptors, Riparian Habitat, Salmon, T&E Species	Close westbound lane of Grip Rd - no shoulder. Follow WSDOT work zone traffic control guidelines when working on or near roadway. Stone culvert passing under road. Swede empties into Samish River just downstream.	25	79
THOM-0.7	Thomas Creek at Green Rd 48.52496 -122.33495	Collection	Boom 200ft, Sorbent 100ft	No	OnsiteStage onsite at shoulder of Green Rd bridge. Lane closure may be required.	Riparian Habitat, Salmon, T&E Species, Waterfowl	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Wetland area, ground may be muddy off paved surfaces. Slow-moving creek adjacent (not connected) to restoration ponds.	25	81

<< Go Back

4.5.3 Notification Strategy Matrices

Notification Strategy	Location	Strategy Type	Resources at Risk	Implementation	Comments	Sector Map (Page #)	Strategy Details (Page#)
FRIC-1.7-N	WDFW Samish Fish Hatchery on Friday Creek 48.56512 -122.33255	Notification	Fish Hatchery, Fish Ladder(s), Water Intakes	Call WDFW Samish Fish Hatchery at 360-724-3131 and inform them of any significant oil spill or potential spill that impacts or threatens to impact the hatchery water intake on Friday Creek, so they can take action to protect the resources under their control, including the protection of the water intake and fish ladder near this location.	Notify Samish Fish Hatchery so they can take action to protect their water intake	25	85

<< Go Back

4.5.4 Staging Area Matrices

Staging Area	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
SA-LKSAM-2.7	Lake Samish Boat Launch	48.66678 -122.37655	597 E Lake Samish Dr Bellingham, WA 98229	Washington Department of Fish and Wildlife Region 4 16018 Mill Creek Boulevard Mill Creek, WA 98012-1296 425-775-1311	LKSAM-0.5, LKSAM-4.0	Coordinate use of staging area with Washington Department of Fish & Wildlife Region 4; call 425-775-1311; if after-hours leave message.	24	89

<< Go Back

4.5.5 Boat Launch Matrices

Boat Launch	Name	Position	Nearest Address	Contact	Strategies Served	Comments	Sector Map (Page #)	Strategy Details (Page#)
BL-LKSAM-2.7	Lake Samish Boat Launch	48.66678 -122.37655	597 E Lake Samish Dr Bellingham, WA 98229	Washington Department of Fish and Wildlife Region 4 16018 Mill Creek Boulevard Mill Creek, WA 98012-1296 425-775-1311	LKSAM-0.5, LKSAM-2.7, LKSAM-4.0	Coordinate use of boat launch with Washington Department of Fish & Wildlife Region 4; call 425-775-1311; if after-hours leave message.	24	93

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APPENDIX 4A

Response Strategy 2-Pagers

<< Go Back

RESPONSE STRATEGIES LIST

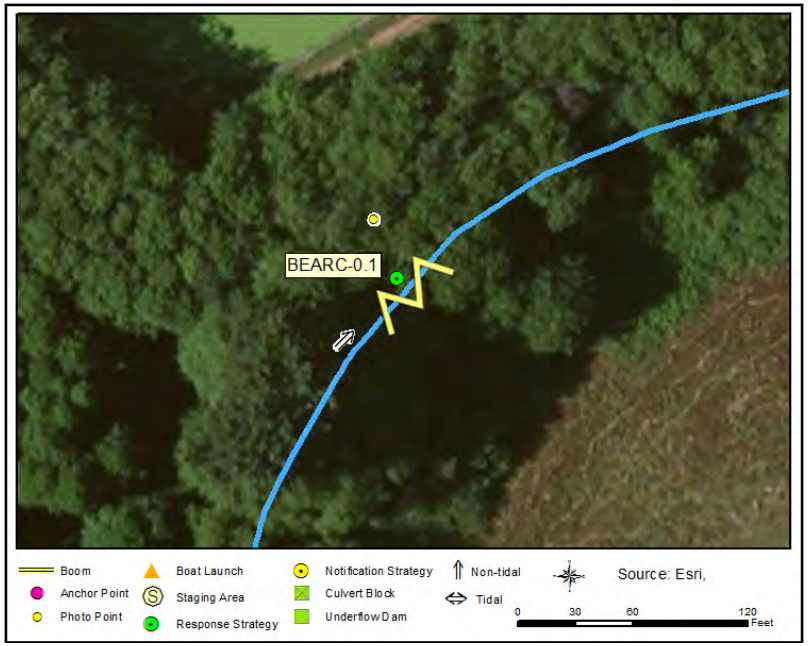
BEARC-0.1	FRIC-1.3	FRIC-1.7	FRIC-2.4
FRIC-4.5	FRIC-7.1	FRIC-9.6	LKSAM-0.5
LKSAM-2.7	LKSAM-4.0	SAMR-4.8	SAMR-10.3
SAMR-10.35		SAMR-13.1	SAMR-19.6
SAMR-25.0	SAMR-26.9	SAMR-27.0	SLVRC-0.0
	THOM-0.7		

<< Go Back

Bear Creek at Samish Water District BEARC-0.1

Position - Location:	48° 38.525', -122° 22.189'	48° 38' 31.5", -122° 22' 11.3"	48.64208, -122.36981	Bellingham

Strategy Objective:	Collection : Collect oil moving downstream on Bear Creek
Implementation:	Deploy one length of hard boom across Bear Creek. Deploy multiple lengths of sorbent/sweep across creek, upstream of hard boom. Use shoreside anchoring systems or existing features to secure boom to banks. Replace saturated sorbents as needed.
Staging Area:	Onsite : Stage onsite, on access road around settling ponds.
Site Safety:	Heavy Equipment; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation; Unstable Trees; Area May Flood.
Field Notes:	SW corner of Samish Water District settling ponds. May have to cut fence to access site. Use waders to access opposite bank, plywood for stability in mud. Use caution if anchoring to trees (shallow roots).
Watercourse:	Creek - Bear Creek
Resources at Risk:	Fish Hatchery, Fish Ladder(s), Salmonids, T/E Species, Water Intakes



Recommended Equipment

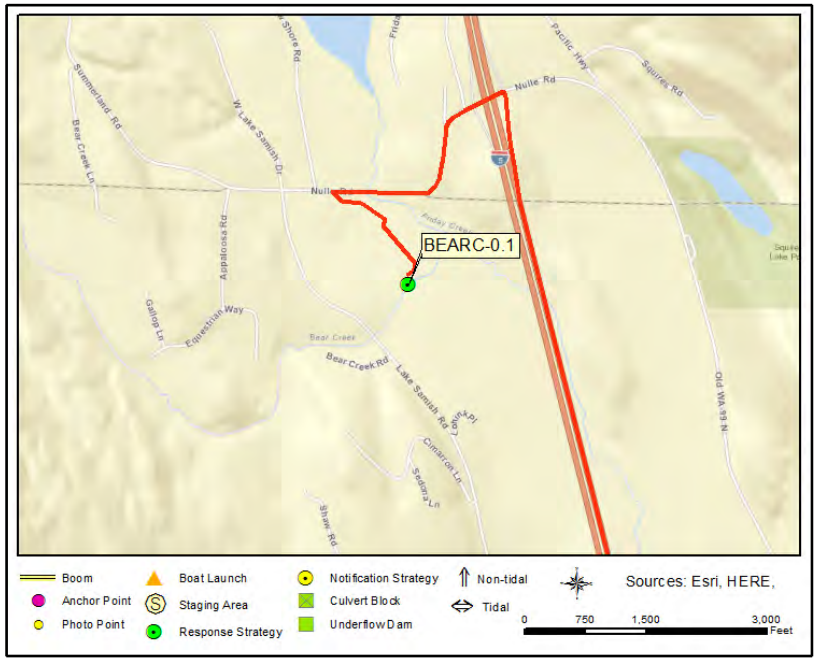
2	Each	Anchoring System(s)- Shoreside
1	Each	Bolt Cutters
100	Feet	Boom - B3 (River Boom) or equivalent
100	Feet	Boom - Sorbent
1	Each	Machete(s) - (or other vegetation cutting tool)
2	Each	Plywood sheets (4ft x 8ft)
1	Each	Vac Truck or Skimmer and Storage
1	Each	Waders

Recommended Personnel

2	Laborer
1	Supervisor

Bear Creek at Samish Water District BEARC-0.1

BEARC-0.1 Photo: From creek left, facing S downstream towards creek right at strategy location. Taken at low winter water.



Site Contact

Samish Water District #1
Emergency Contact : Landowner

Bellingham, WA 98229
360-410-0357

Nearest Address

2195 Nulle Rd
Bellingham, WA 98229-9329

Driving Directions

1. From Seattle, take I-5 North towards Whatcom County
2. At exit 242 take ramp on the right to Nulle Rd. toward S. Lake Samish (0.26 miles)
3. Turn left on Nulle Rd (0.43 miles)
4. Turn left into parking lot at 2195 Nulle Rd, 98229-9329. Sign for Samish Water District #1.
5. Go S through gate along access road towards ponds; site is in SW corner.

<< Go Back

Friday Creek at Pomona Grange Park FRIC-1.3

Position - Location:	48° 33.886', -122° 19.970'	48° 33' 53.2", -122° 19' 58.2"	48.56477, -122.33283	Burlington

Strategy Objective:	Collection : Collect oil moving downstream on Friday Creek
Implementation:	Secure 100 ft section of boom to shore on creek left, at/near Point A (just downstream of bridge to WDFW hatchery). Extend boom downstream and across to creek right, and secure to shore on creek right at/near Point B (Pomona Grange Park). Vac-truck or skimmer/storage collection at Point B. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow.
Staging Area:	Onsite : Stage onsite at Pomona Grange Park.
Site Safety:	Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Bridge is private road to hatchery, close road to visitors while deploying. Hatchery outfall is just upstream of bridge. Quiet pool-like section 30 ft downstream from bridge probably best collection point.
Watercourse:	Creek - Friday Creek (downstream of hatchery intake/fish ladder)
Resources at Risk:	Fish Ladder(s), Public Lands/Facilities, Raptors, Salmon (Coho, Chinook and Chum), T/E Species

Recommended Equipment

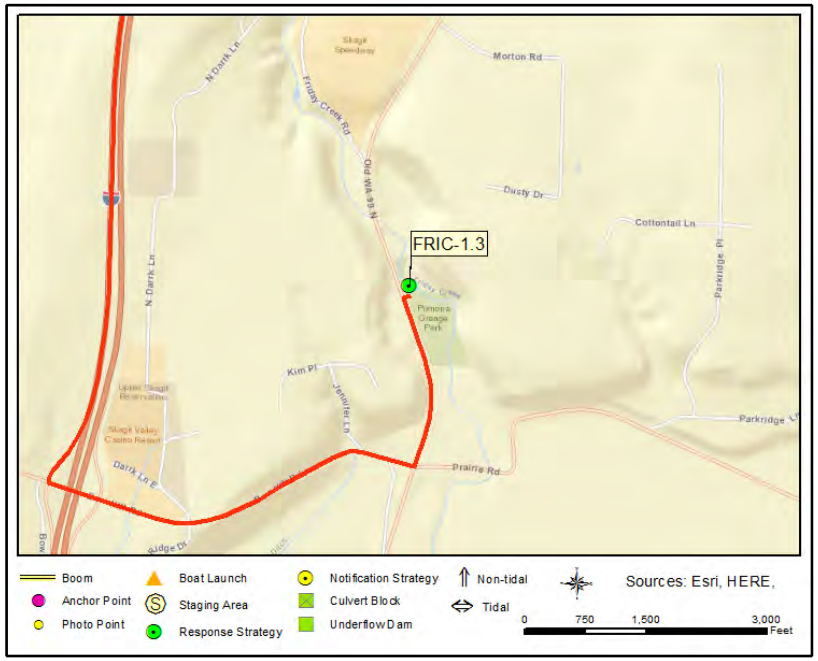
2	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Line - 1/2" poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

2	Laborer
1	Supervisor

Friday Creek at Pomona Grange Park FRIC-1.3

FRIC-1.3 Photo: From creek right, facing NE upstream towards creek left at strategy location. Taken at low winter water.



Site Contact

WDFW Samish Fish Hatchery
Land/Property Contact :
360-724-3131

Skagit County Parks and Recreation Department
Land/Property Owner : Weekday Office
360-416-1350

Nearest Address

5585 Old Highway 99 N
Burlington, WA 98233

Driving Directions

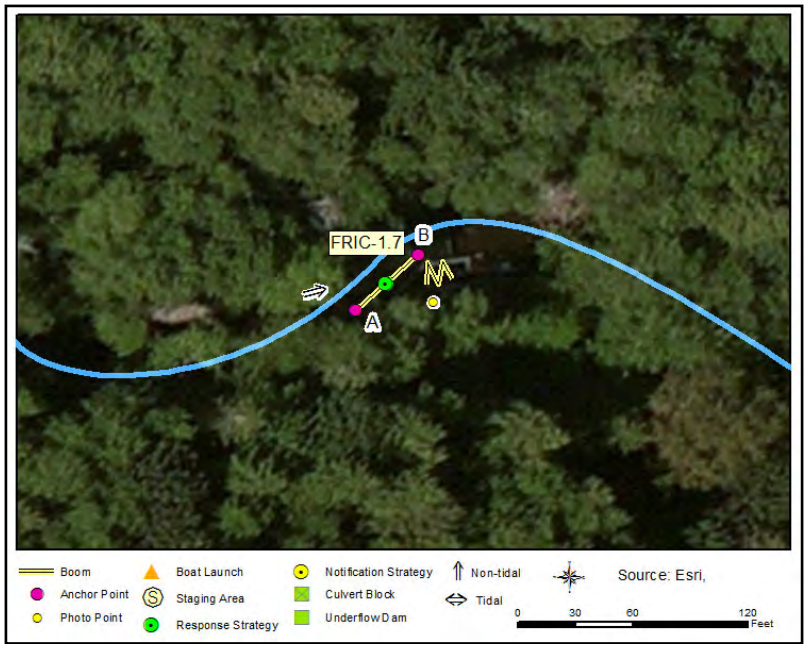
1. From Bellingham, head South on I-5 towards Burlington.
2. At exit 236 bear right onto ramp to Bow Hill Rd toward Bow-Edison (0.22 miles)
3. Turn left on Bow Hill Rd (0.92 miles)
4. Turn left on Old WA-99 N (Old Highway 99 North Rd) (0.45 miles)
5. Turn right into gravel lot at 5585 Old Highway 99 N, 98233, on the right - sign for Pomona Grange Park or WDFW hatchery.

<< Go Back

Friday Creek Hatchery Intake/Fish Ladder FRIC-1.7

Position - Location:	48° 34.227', -122° 20.297'	48° 34' 13.6", -122° 20' 17.8"	48.57045, -122.33828	Burlington

Strategy Objective:	Exclusion : Keep oil out of fish ladder and hatchery water intake.
Implementation:	Secure 100 ft section of boom to shore on creek right, at/near Point A (~30ft upstream of fish ladder). Use walkway to extend boom across upstream entrance of fish ladder and secure to existing structure, at/near Point B (at edge of spillway). Deploy multiple lengths of sorbent on downstream side of hard boom, across fish ladder and water intake. Use plastic-wrapped plywood sheets to block outside screens of water intake grating. Use shoreside anchoring systems or existing features to secure boom to banks. Replace saturated sorbents as needed.
Staging Area:	Onsite : Stage onsite at gravel work area.
Site Safety:	Water Hazard (PFD Required); Rusty Metal Walkway; Eroding Banks; Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Fast moving water. Heavy vegetation and eroding shore. Logs/trees in channel may prevent boom placement, if so continue deploying sorbent and plywood as able.
Watercourse:	Creek - Friday Creek (at WDFW fish ladder)
Resources at Risk:	Fish Hatchery, Fish Ladder(s), Salmon (Coho, Chinook and Chum), T/E Species, Water Intakes



Recommended Equipment

2	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
100	Feet	Boom - Sorbent
100	Feet	Line - 3/8” poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
200	Feet	Plastic Sheeting
8	Each	Plywood sheets (4ft x 8ft)

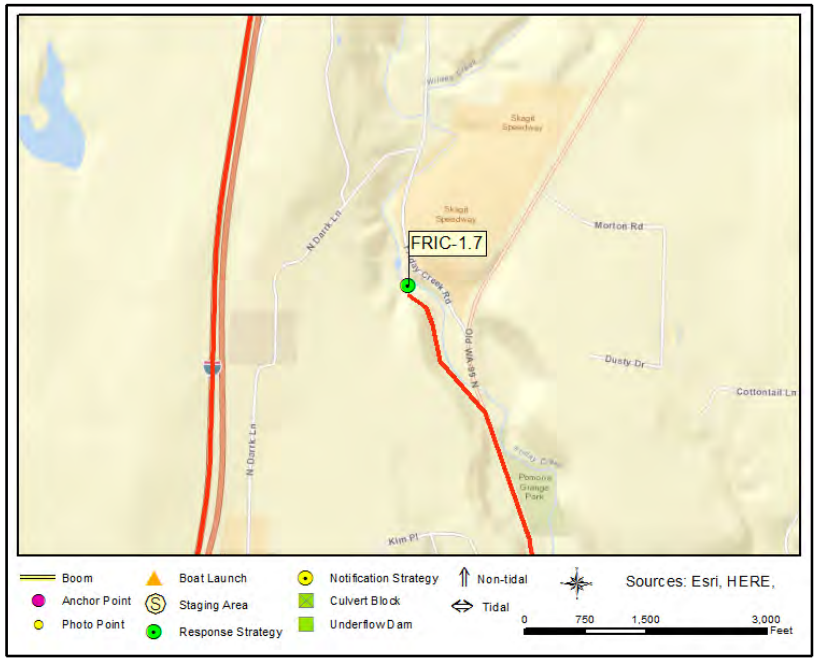
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Friday Creek Hatchery Intake/Fish Ladder FRIC-1.7

FRIC-1.7 Photo: From creek right on top of water intake, facing NW upstream towards log boom and top of fish ladder. Taken at low winter water.



Site Contact

WDFW Samish Fish Hatchery
Primary Contact :
360-724-3131

Washington Department of Fish and Wildlife
Secondary Contact : Region 4
425-775-1311

Nearest Address

5585 Old Highway 9 N
Burlington, WA 98233

Driving Directions

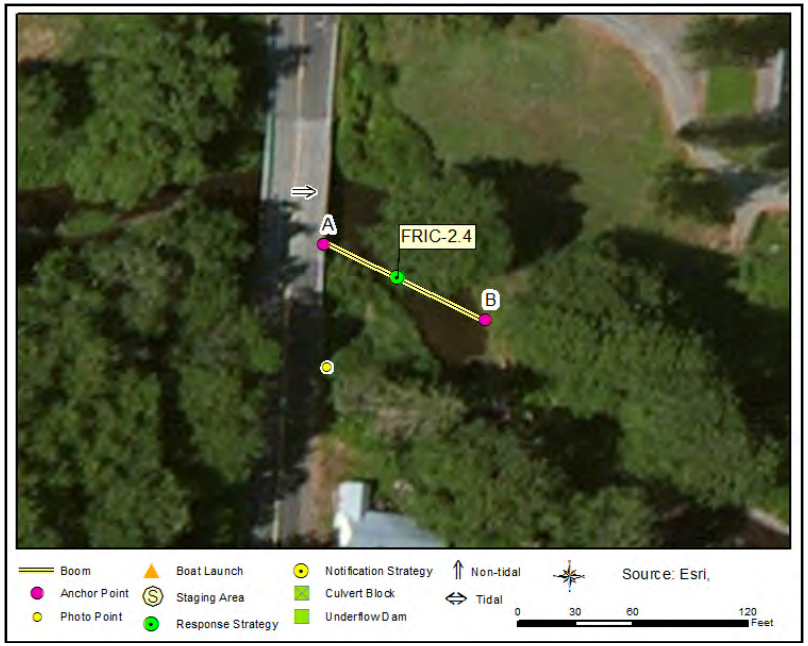
1. From Bellingham, head South on I-5 towards Burlington.
2. At exit 236 bear right onto ramp to Bow Hill Rd toward Bow-Edison (0.22 miles)
3. Turn left on Bow Hill Rd (0.92 miles)
4. Turn left on Old WA-99 N (Old Highway 99 North Rd) (0.45 miles)
5. WDFW Fish Hatchery is located at 5585 Old Highway 9 N, on the right.
6. Water intake (response site) is the next left after the hatchery onto a unmarked dirt road with locked gate. Bring WDFW staff or cut lock. Intake is at the end of the road (1/2 mile).

<< Go Back

Friday Creek near Daisy Lane (KM FR-2.3) FRIC-2.4

Position - Location:	48° 34.568', -122° 20.246'	48° 34' 34.1", -122° 20' 14.7"	48.57614, -122.33743	Burlington

Strategy Objective:	Collection : Collect oil moving downstream on Friday Creek
Implementation:	Secure 100 ft section of boom to shore on creek right, at/near Point A (downstream edge of Friday Creek Rd bridge). Extend boom downstream and across to creek left, and secure to shore on creek left at/near Point B (~80ft downstream of road). Vac-truck or skimmer/storage collection at Point B from bridge or driveway. Use shoreside anchoring systems or existing features to secure boom tc banks. Adjust boom angles as needed based on streamflow.
Staging Area:	Onsite : Stage onsite in nearby yards. Lane closure may be required.
Site Safety:	Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Quiet road with some shoulder. Low lawns on NE corner and access on all corners of bridge/creek.
Watercourse:	Creek - Friday Creek
Resources at Risk:	Fish Ladder(s), Raptors, Riparian Habitat, Salmon (Coho, Chinook and Chum), T/E Species



Recommended Equipment

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

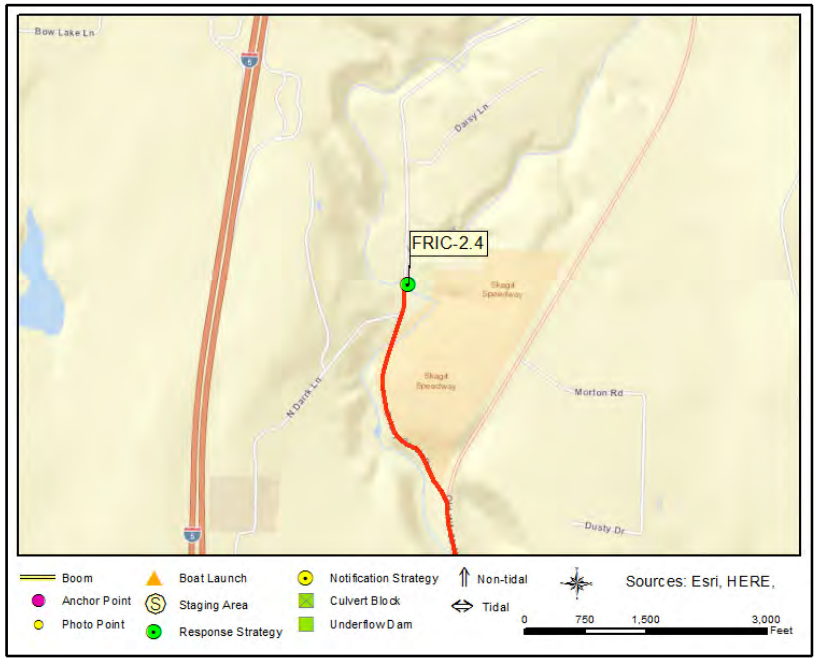
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Friday Creek near Daisy Lane (KM FR-2.3) FRIC-2.4

FRIC-2.4 Photo: From creek right, facing N towards strategy location on downstream side of road bridge. Taken at low winter water.



Site Contact

Skagit County Public Works
Primary Contact :

Mount Vernon, WA 98273
360-416-1400

Nearest Address

4789 Friday Creek Rd
Burlington, WA 98233

Driving Directions

1. From Seattle, take I-5 North past Mount Vernon
2. At exit 236 bear right onto ramp to Bow Hill Road (0.25 miles)
3. Turn right on Bow Hill Rd (0.79 miles)
4. Turn left on Old WA-99 N (Old Highway 99 North Rd) (0.72 miles)
5. Bear left on Friday Creek Rd (LM Abbey Rd) (0.54 miles)
6. Finish at 4789 Friday Creek Rd, 98233, on the right

Friday Creek at Donovan Park (KM FR-4.3) FRIC-4.5

Position - Location:	48° 35.711', -122° 19.744'	48° 35' 42.7", -122° 19' 44.6"	48.59519, -122.32906	Burlington

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

Implementation: Secure 200 ft section of boom to shore on creek right, at/near Point A (~100ft downstream of Friday Creek Road). Extend boom downstream, and across creek, and secure to shore on creek left at/near Point B (~150ft downstream of road) in a "J" configuration. Vac-truck or skimmer/storage collection at Point B. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow.

Staging Area: Onsite: Stage onsite at Donovan Park.

Site Safety: Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation; Public Park.

Field Notes: Butler Creek comes through southern culvert under road, then merges with Friday Creek (northern culvert) 60 ft west of road. Room to deploy multiple parallel booms if flow is high.

Watercourse: Creek - Friday Creek

Resources at Risk: Fish Hatchery, Fish Ladder(s), Salmonids, Water Intakes

Recommended Equipment

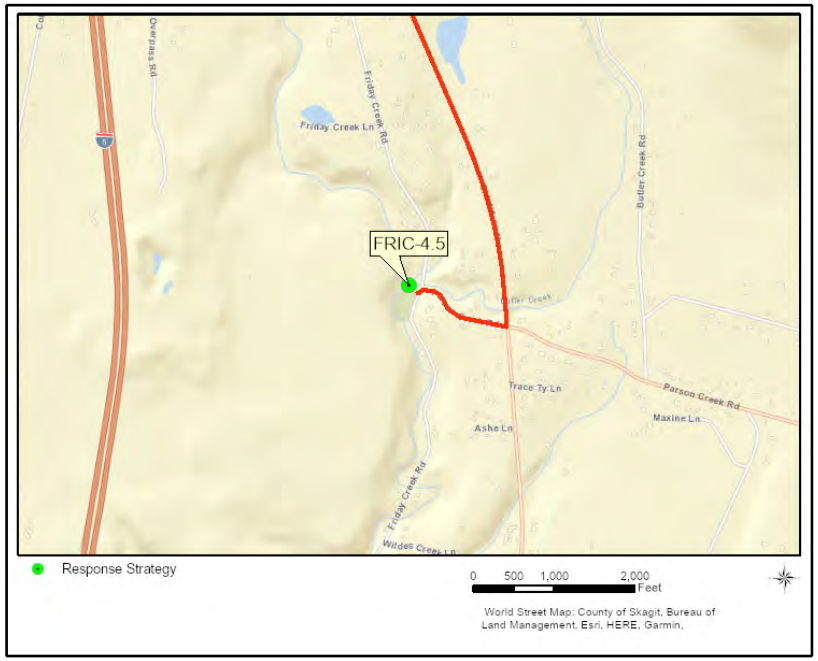
2	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Line throwing gun(s) or device(s)
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

2	Laborer
1	Supervisor

Friday Creek at Donovan Park (KM FR-4.3) FRIC-4.5

FRIC-4.5 Photo: From creek left at Point B, facing N upstream towards creek right at strategy location. Taken in June.



Site Contact

Skagit County Parks and Recreation Department
Land/Property Owner : Weekday Office
1730 Continental Place
Mt Vernon, WA 98273
360-416-1350

Nearest Address

3494 Friday Creek Road
Burlington, WA 98233

Driving Directions

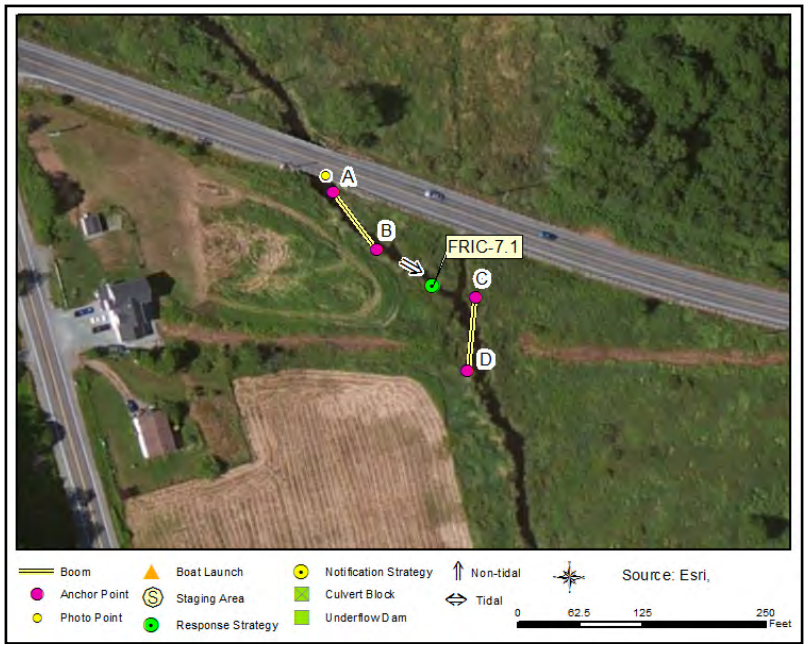
1. From Bellingham, head South on I-5 towards Skagit County.
2. At exit 240 take ramp on the right toward Alger (0.21 miles)
3. Turn left on Lake Samish Rd (0.86 miles)
4. Turn right on Old WA-99 N (Old Highway 99 North Rd) (1.96 miles)
5. Turn right on Parson Creek Rd (0.23 miles)
6. At Friday Creek Rd drive straight across into Donovan Park lot (slightly left). 3494 Friday Creek Road, 98233

<< Go Back

Friday Creek at Lake Samish Rd (KM FR-6.8) FRIC-7.1

Position - Location:	48° 37.141', -122° 20.856'	48° 37' 8.5", -122° 20' 51.4"	48.61902, -122.34760	Bow

Strategy Objective:	Collection : Collect oil moving downstream on Friday Creek
Implementation:	Secure 100 ft boom to shore on creek left, at/near Point A (at roadside). Using bridge, extend boom downstream and across creek and secure to shore on creek right, at/near Point B (~50 ft downstream of bridge). Deploy additional length of boom ~50ft downstream from first strategy. Deploy multiple lengths of sorbent downstream of hard boom. Vac-truck or skimmer/storage collection from gravel driveway or bridge. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow.
Staging Area:	Onsite : Stage onsite in private backyard and gravel driveway. Lane closure may be required.
Site Safety:	Crude Oil Pipeline; Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	CRUDE OIL PIPELINE IN AREA. Contact Kinder Morgan before deploying to obtain permit. Follow WSDOT work zone traffic control guidelines when working on or near roadway.
Watercourse:	Creek - Friday Creek
Resources at Risk:	Fish Hatchery, Public Recreation Site/Area, Salmon (Coho, Chinook and Chum), T/E Species, Water Intakes



Recommended Equipment

4	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Boom - Sorbent
200	Feet	Line - 1/2" poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

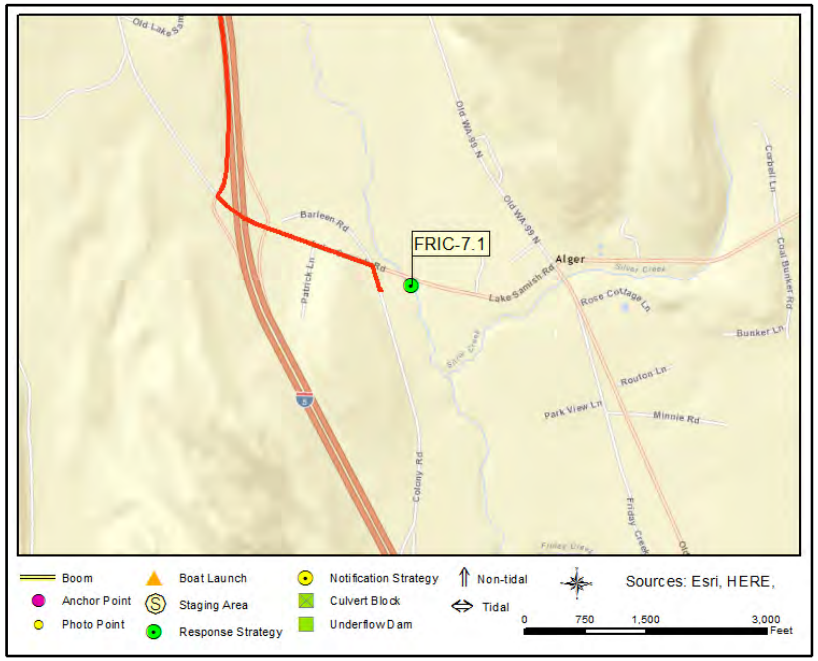
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Friday Creek at Lake Samish Rd (KM FR-6.8) FRIC-7.1

FRIC-7.1 Photo: From road bridge on creek left at Point A, facing S, downstream, towards creek right at strategy location. Taken at low winter water.



Site Contact

Kinder Morgan Trans Mountain Pipeline
Pre-Notification Required : 24/7 Control Center
888-876-6711

Skagit County Public Works
Secondary Contact :
360-416-1400

Nearest Address

18772 Colony Rd
Bow, WA 98232

Driving Directions

1. From Bellingham, head South on I-5 towards Skagit County
2. At exit 240 take ramp on the right toward Alger (0.21 miles)
3. Turn left on Lake Samish Rd (0.41 miles)
4. Turn right on Colony Rd (0.06 miles)
5. The first driveway on the left is 18772 Colony Rd, 98232, use this property for staging, deployment & collection.

<< Go Back

Friday Creek at Nulle Rd FRIC-9.6

Position - Location:	48° 38.712', -122° 22.321'	48° 38' 42.7", -122° 22' 19.3"	48.64520, -122.37202	Bellingham

Strategy Objective:	Collection : Collect oil moving downstream on Friday Creek
Implementation:	Secure 100 ft length of boom to shore on creek left, at/near Point A (~20 ft upstream of bridge). Use bridge to extend boom across creek and secure to shore on creek right, at/near Point B (upstream of fish trap). Deploy additional length of hard boom downstream of roadway. Vac-truck or skimmer/storage collection from roadway. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow.
Staging Area:	Onsite : Stage onsite on shoulder of Nulle Rd. Lane closure is required.
Site Safety:	Road Hazard; Displaced Campers; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation
Field Notes:	Low bridge and small narrow shoulder along road. Tribal fish gates/screen on upstream side of bridge may impact stream flow. Follow WSDOT work zone traffic control guidelines when working on or near roadway.
Watercourse:	Creek - Friday Creek (drains from Lake Samish)
Resources at Risk:	Fish Hatchery, Fish Ladder(s), Salmonids, T/E Species, Water Intakes

Recommended Equipment

4	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Line - 1/2" poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

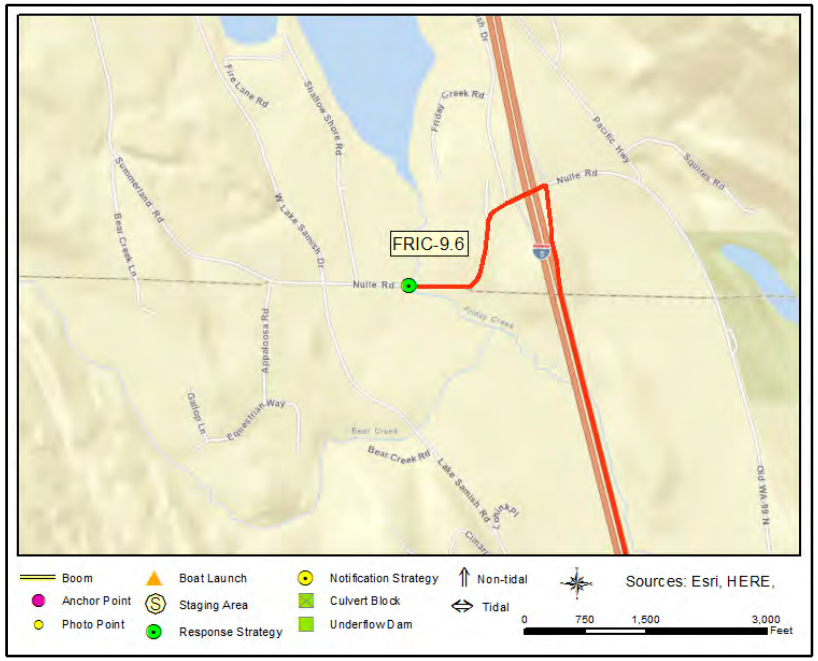
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Friday Creek at Nulle Rd FRIC-9.6

FRIC-9.6 Photo: From creek left under road bridge, facing N upstream towards creek right at strategy location. Taken at average spring water.



Site Contact

Samish Water District #1
Emergency Contact : Landowner

Bellingham, WA 98229
360-410-0357

Nearest Address

2195 Nulle Rd
Bellingham, WA 98229

Driving Directions

1. From Seattle, take I-5 North towards Whatcom County.
2. At exit 242 take ramp on the right to Nulle Rd. toward S. Lake Samish (0.26 miles)
3. Turn left on Nulle Rd (0.43 miles)
4. Finish at Friday Creek bridge crossing near 2195 Nulle Rd, 98229.

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(From Bellingham, take exit 242 and turn right on Nulle Rd.)

Lake Samish Bridge (BP 021-1) LKSAM-0.5

Position - Location:	48° 40.241', -122° 24.727'	48° 40' 14.4", -122° 24' 43.6"	48.67068, -122.41212	Bellingham

Strategy Objective: Exclusion : Keep oil out of western section of Lake Samish

Implementation: Using workboat, secure 300 ft section of boom to shore on south bank, at/near Point A (48.6703, -122.412; west side of road bridge). Extend boom northwest and secure to shore on north bank, at/near Point B (48.671, -122.4122; beach at county park). Use shoreside anchoring systems or existing features to secure boom to banks. Use anchoring systems as needed to keep boom secure in water. Adjust boom angles as needed based on winds and currents. PETROLEUM PIPELINE IN AREA. Contact BP before deploying to obtain permit Could be deployed on foot using bridge but makes most sense to use boat.

Staging Area: Remote: Stage and launch from WDFW Lake Samish Boat Ramp (SA-LKSAM-2.7).

Site Safety: Petroleum Pipeline; Traffic Hazard; Water Hazard (PFD Required); Public Park: Swimmers and Boaters; Slips, Trips, Falls.

Field Notes: Inspections are required for all watercraft operating on Lake Samish, including non-motorized, hand-carried watercraft. All watercraft must display a valid aquatic invasive species permit. Please call (360) 778-7975. Additonal Info: www.whatcomboatinspections.com

Watercourse: Lake - Lake Samish

Resources at Risk: Diving Duck Concentrations, Raptors, Salmon (Coho, Chinook and Chum), Shellfish, T/E Species, Waterfowl

Recommended Equipment

2	Each	Anchoring System(s) - (anchor, lines, floats)
2	Each	Anchoring System(s)- Shoreside
300	Feet	Boom - B2 (Contractor Boom) or equivalent
1	Each	Vac Truck or Skimmer and Storage (if collection)
1	Each	Workboat(s) - of adequate size for type and amount of boom

Recommended Personnel

1	Boat Operator
2	Laborer
1	Supervisor

Lake Samish Bridge (BP 021-1) LKSAM-0.5

LKSAM-0.5 Photo: From north shore of Lake Samish at county park (Point B), looking S towards south shore at strategy location. Taken at average winter water.

Site Contact

BP Olympic Pipeline
Pre-Notification Required : Emergency line
888-271-8880

Whatcom County Parks and Recreation
Land/Property Owner : Land owner
360.778.5850

Nearest Address

711 E Lake Samish Dr
Bellingham, WA 98229

Driving Directions

1. From Bellingham, head South on I-5 towards Lake Samish.
2. At exit 246 take ramp on the right toward N Lake Samish (0.19 miles)
3. Turn left on N Lake Samish Dr (0.76 miles)
4. Turn left to stay on N Lake Samish Dr (1.24 miles)
5. Turn right into paved lot at 711 E Lake Samish Dr, 98229. Signs for WDFW boat launch.

Lake Samish Boat Ramp Collection — LKSAM-2.7

Position - Location:	48° 39.964', -122° 22.722'	48° 39' 57.8", -122° 22' 43.3"	48.66606, -122.37870	Bellingham

Strategy Objective: Collection : Collect oil from Lake Samish

Implementation: Using workboat, secure 1000 ft section of boom to shore, at/near Point A (just south of boat ramp). Extend boom west into the lake and anchor near B (48.6655, -122.3807). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on conditions of the day. Use anchoring systems as needed to keep boom secure in water. Vac-truck or skimmer/storage collection at Point A. Wide sand & gravel beach south of ramp. Heavy vegetation north of ramp, with much smaller workspace. High lake level may cover beach.

Staging Area: Onsite: Stage onsite at WDFW boat launch.

Site Safety: Water Hazard (PFD Required); Private Homes Nearby; Public Boat Launch; Slips, Trips, Falls; Heavy Vegetation.

Field Notes: Inspections are required for all watercraft operating on Lake Samish, including non-motorized, hand-carried watercraft. All watercraft must display a valid aquatic invasive species permit. Please call (360) 778-7975. Additonal Info: www.whatcomboatinspections.com

Watercourse: Lake - Lake Samish

Resources at Risk: Salmonids, Shellfish, Water Intakes, Waterfowl

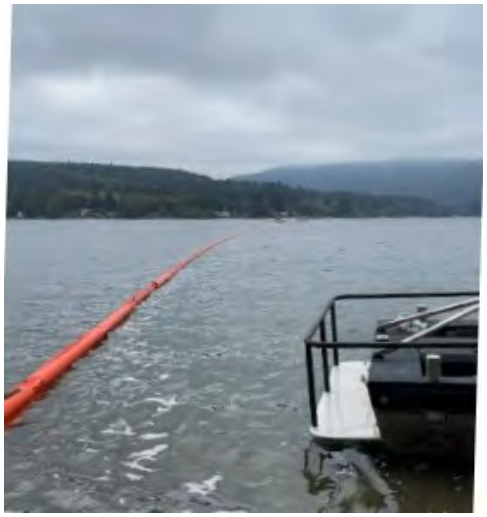
Recommended Equipment

6	Each	Anchoring System(s) - (anchor, lines, floats)
1	Each	Anchoring System(s)- Shoreside
1000	Feet	Boom - B2 (18" to 42")
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage
1	Each	Workboat(s) - of adequate size for type and amount of boom

Recommended Personnel

1	Boat Operator
3	Laborer
1	Supervisor

Lake Samish Boat Ramp Collection LKSAM-2.7



LKSAM-2.7 Photo: From boat ramp, looking at deployed strategy. Photo taken during drill in September 2025.

Site Contact

Washington Department of Fish and Wildlife
Land/Property Contact : Region 4
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
425-775-1311

Nearest Address

711 E Lake Samish Dr
Bellingham, WA 98229

Driving Directions

1. From Bellingham, head South on I-5 towards Lake Samish.
2. At exit 246 take ramp on the right toward N Lake Samish (0.19 miles)
3. Turn left on N Lake Samish Dr (0.76 miles)
4. Turn left to stay on N Lake Samish Dr (1.24 miles)
5. Turn right into paved lot at 711 E Lake Samish Dr, 98229. Signs for WDFW boat launch.

Lake Samish at Friday Creek mouth (KM LS-0.2) LKSAM-4.0

Position - Location:	48° 38.980', -122° 22.367'	48° 38' 58.8", -122° 22' 22.0"	48.64966, -122.37278	Bellingham

Strategy Objective: Collection : Collect oil from Lake Samish before it enters Friday Creek

Implementation: Using workboat, secure 600 ft of boom to shore on west bank, at anchor point A (southern dock with green posts). Angle boom east across lake and secure to eastern shore, at anchor point C (end of concrete retaining wall). Near boom midpoint, pull boom north to form a chevron and set anchor (point B). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on conditions of the day. Use anchoring systems as needed to keep boom secure in water. Potential to skim oil near anchor point A.

Staging Area: Remote: Stage and launch from WDFW Lake Samish Boat Ramp (SA-LKSAM-2.7).

Site Safety: Water Hazard (PFD Required); Private Homes Nearby; Private Docks; Slips, Trips, Falls; Heavy Vegetation.

Field Notes: Inspections are required for all watercraft operating on Lake Samish, including non-motorized, hand-carried watercraft. All watercraft must display a valid aquatic invasive species permit. Please call (360) 778-7975. Additonal Info: www.whatcomboatinspections.com

Watercourse: Lake - Lake Samish (near drainage into Friday Creek)

Resources at Risk: Fish Hatchery, Riparian Habitat, Salmonids, Water Intakes

Recommended Equipment

4	Each	Anchoring System(s) - (anchor, lines, floats)
2	Each	Anchoring System(s)- Shoreside
600	Feet	Boom - B2 (18" to 42")
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage (if collection)
1	Each	Workboat(s) - shallow-water

Recommended Personnel

1	Boat Operator
3	Laborer
1	Supervisor

Lake Samish at Friday Creek mouth (KM LS-0.2) LKSAM-4.0

LKSAM-4.0 Photo: From lake, looking south toward strategy.
Photo taken during drill in September 2025.

Site Contact

No Information
Not Determined :

Nearest Address

215 Friday Creek Rd
Bellingham, WA 98229

Driving Directions

1. From Bellingham, head South on I-5 towards Lake Samish.
2. At exit 242 bear right onto ramp to Nulle Rd toward S Lake Samish (0.18 miles)
3. Turn right on Nulle Rd and immediately turn right on E Lake Samish Dr (0.24 miles)
4. Turn left on Friday Creek Rd (0.2 miles)
5. Finish at 215 Friday Creek Road, 98229, on the right.

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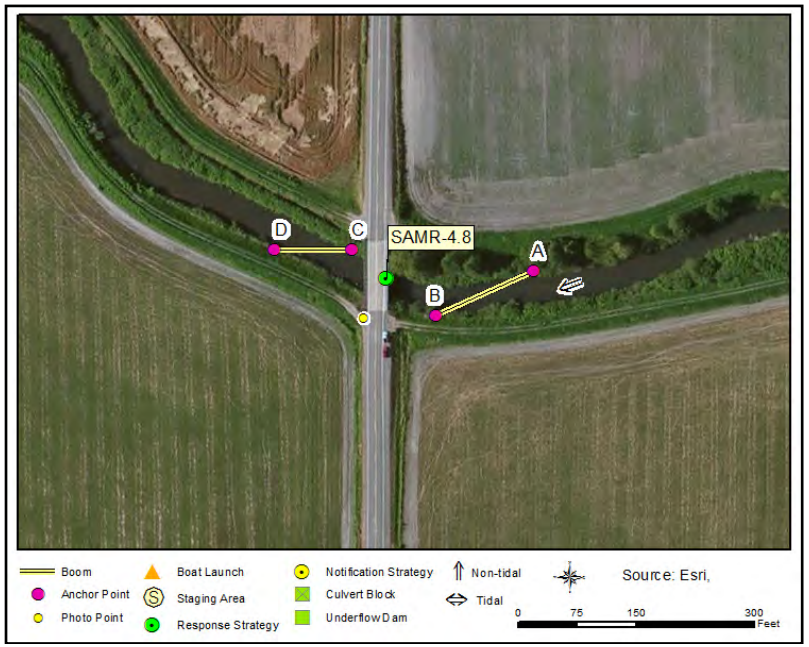
Boat launch is located <1 mi N at 711 E Lake Samish Dr.

<< Go Back

Samish River at Thomas Rd SAMR-4.8

Position - Location:	48° 31.255', -122° 24.671'	48° 31' 15.3", -122° 24' 40.2"	48.52091, -122.41118	Bow

Strategy Objective:	Collection : Collect oil moving downstream on the Samish River
Implementation:	Secure 200 ft section of boom to river right, at/near Point A (~175ft upstream of Samish Road bridge). Extend boom downstream and across bridge, securing to shore on river left, at/near Point B (roadside). Similarly, deploy additional length of boom on downstream side of Samish Road bridge. Deploy multiple lengths of sorbent boom on downstream side of hard boom. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow. Vac-truck or skimmer/storage collection from Thomas Rd shoulder.
Staging Area:	Onsite : Stage onsite using gravel/grass levee roads.
Site Safety:	Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Some road shoulder and levee road along river. Setback levee on north bank, slope to water is short. Water-level access under bridge and multiple spots along bank. Should not be tidal influence unless king tides.
Watercourse:	River - Samish River
Resources at Risk:	Forage Fish Spawning Area, Raptors, Salmon, Seal Haulout Area, T/E Species, Waterfowl and Shorebird Concentrations, Wetland



Recommended Equipment

4	Each	Anchoring System(s)- Shoreside
300	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Boom - Sorbent
200	Feet	Line - 1/2" poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

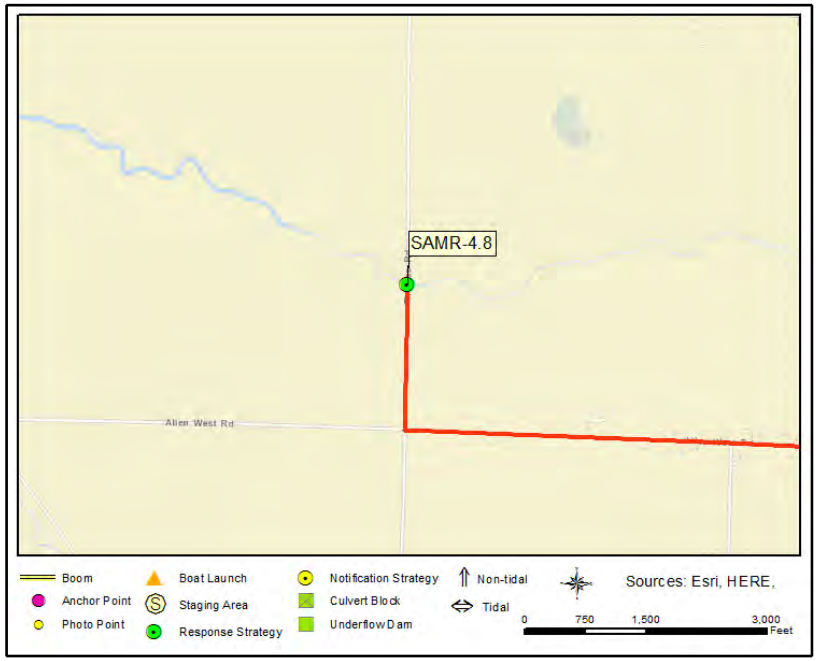
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Samish River at Thomas Rd SAMR-4.8

SAMR-4.8 Photo: From river left, facing NW downstream towards river right at strategy location. Taken at high spring water.



Site Contact

Skagit County Public Works
Primary Contact :
360-416-1400

Nearest Address

8598 Thomas Rd
Bow, WA 98232

Driving Directions

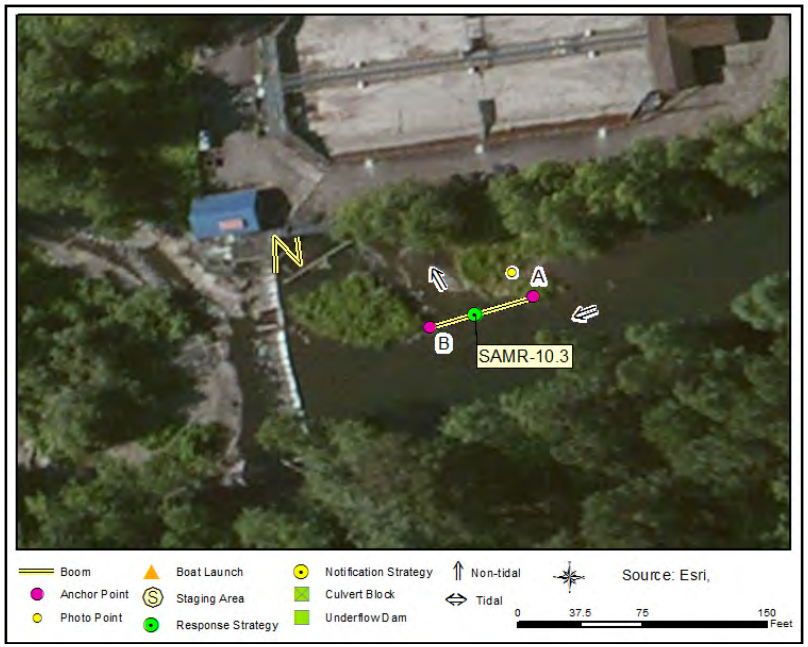
1. From Bellingham, head South on I-5 S towards Sedro-Woolley.
2. At exit 232 take ramp on the right to Cook Road toward Sedro-Woolley (0.19 miles)
3. Turn right on Cook Rd (1.26 miles)
4. Bear right on Chuckanut Dr (WA-11) (0.65 miles)
5. Bear left on Allen West Rd (1.55 miles)
6. Turn right on Thomas Rd (0.35 miles)
7. Finish at 8598 Thomas Rd, 98232, on the left.

<< Go Back

WDFW Intake Exclusion SAMR-10.3

Position - Location:	48° 32.861', -122° 20.099'	48° 32' 51.6", -122° 20' 5.9"	48.54768, -122.33498	Burlington

Strategy Objective:	Exclusion : Keep oil out of the side channel that feeds the WDFW water intake
Implementation:	Secure 100 ft section of boom to shore on river right, at/near A (48.5477, -122.33484; upstream of side channel leading to intake). Using workboat, extend boom across intake channel and secure other end of boom to shore, at/near Point B (48.5477, -122.3351; island on river right). Deploy multiple lengths of sorbent on downstream side of hard boom. Replace saturated sorbents as needed.
Staging Area:	Onsite : Stage onsite at WDFW hatchery facility.
Site Safety:	Water Hazard (PFD Required); Dam Spillway; Logs and Debris in Channel; Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	DO NOT APPROACH SPILLWAY. In summer water may be very low. Gravel beds change constantly. Calm pool of water above spillway. WDFW site active in Mar-May (juveniles) and Sept/Oct (adults).
Watercourse:	River - Side Channel - Samish River (side channel above diversion dam)
Resources at Risk:	Fish Hatchery, Salmon - Chinook, T/E Species, Water Intakes



Recommended Equipment

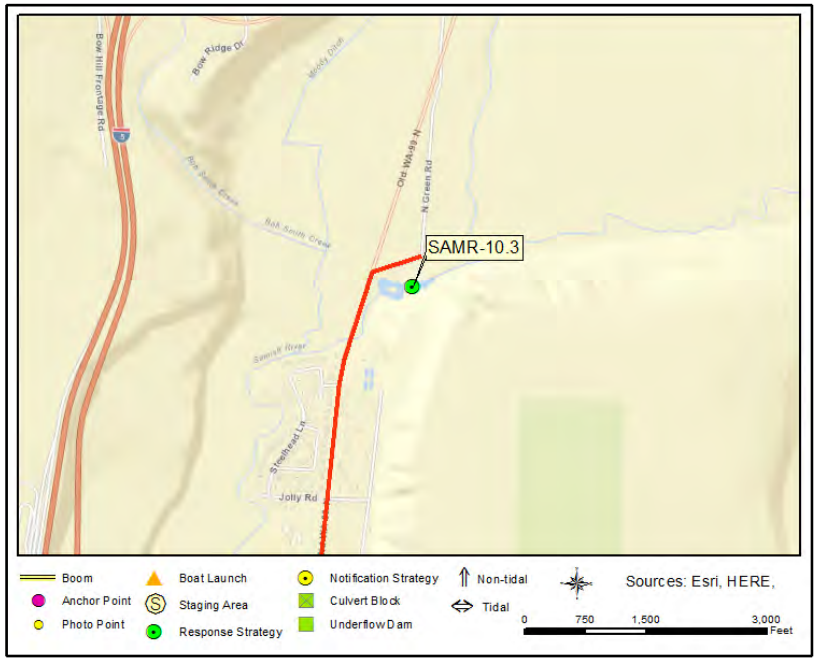
2	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Boom - Sorbent
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Workboat(s) - shallow-water

Recommended Personnel

1	Boat Operator
2	Laborer
1	Supervisor

WDFW Intake Exclusion SAMR-10.3

SAMR-10.3 Photo: From river right on upstream bank of side channel (Point A), facing W downstream towards strategy location. Taken at high spring water.



Site Contact

WDFW Samish Fish Hatchery
Primary Contact :
360-724-3131

Washington Department of Fish and Wildlife
Secondary Contact : Region 4
425-775-1311

Nearest Address

6597 N Green Rd
Burlington, WA 98233

Driving Directions

1. From Seattle, take I-5 North towards Burlington.
2. At exit 218 take ramp on the right and go on Starbird Rd. (14.25 miles)
3. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
4. Turn right on Cook Rd (0.07 miles)
5. Turn left on Old WA-99 N (Old Highway 99 North Rd) (2.82 miles)
6. Turn right on N Green Rd (0.16 miles)
7. Take the next right through the gate to the WDFW facility.

<< Go Back

Samish River at WDFW diversion dam SAMR-10.35

Position - Location:	48° 32.865', -122° 20.063'	48° 32' 51.9", -122° 20' 3.8"	48.54775, -122.33438	Burlington

Strategy Objective:	Collection : Collect oil moving downstream on the Samish River
Implementation:	Using workboat, secure 300 ft boom to shore on river right, at/near Point B (48.5776, -122.3349; upstream of side channel). Extend boom across the river and upstream, securing to shore on river left, at/near Point A (48.5478, -122.3339; ~350ft upstream of spillway). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow. Use anchoring systems as needed to keep boom secure in water. Vac-truck or skimmer/storage collection at Point B. If current is too high for safe boat deployment, use boom vane instead.
Staging Area:	Onsite : Stage onsite at WDFW hatchery facility.
Site Safety:	Water Hazard (PFD Required); Dam Spillway; Logs and Debris in Channel; Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	DO NOT APPROACH SPILLWAY. Pool above spillway is quiet but not deep, boat needs to be very shallow (or a raft). WDFW site active in Mar-May (juveniles) and Sept/Oct (adults).
Watercourse:	River - Above a Dam - Samish River (at WDFW hatchery diversion dam)
Resources at Risk:	Fish Hatchery, Fish Ladder(s), Riparian Habitat, Salmon (Coho, Chinook and Chum), T/E Species, Water Intakes

Recommended Equipment

2	Each	Anchoring System(s)- Shoreside
300	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage
1	Each	Vane - Boom Vane
1	Each	Workboat(s) - shallow-water

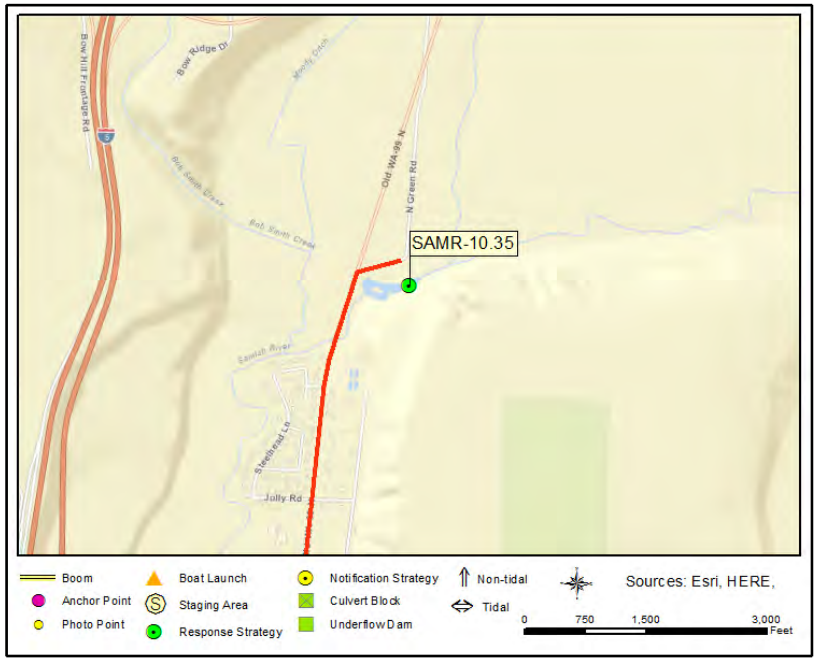
Recommended Personnel

1	Boat Operator
2	Laborer
1	Supervisor

<< Go Back

Samish River at WDFW diversion dam SAMR-10.35

SAMR-10.35 Photo: From river right (Point B), facing E upstream towards river left at strategy location. Taken at high spring water.



Site Contact

WDFW Samish Fish Hatchery
Primary Contact :
360-724-3131

Washington Department of Fish and Wildlife
Secondary Contact : Region 4
425-775-1311

Nearest Address

6595 N Green Rd
Burlington, WA 98233

Driving Directions

1. From Seattle, take I-5 North towards Sedro-Woolley
2. At exit 218 take ramp on the right and go on Starbird Rd. (14.25 miles)
3. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
4. Turn right on Cook Rd (0.07 miles)
5. Turn left on Old WA-99 N (Old Highway 99 North Rd) (2.82 miles)
6. Turn right on N Green Rd (0.14 miles)
7. Take the next right at the WDFW gate. Site is behind fish ponds.

Samish River at Grip Road — SAMR-12.9

Position - Location:	48° 33.302', -122° 17.377'	48° 33' 18.1", -122° 17' 22.6"	48.55503, -122.28962	Sedro Woolley

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

Implementation: Secure 100 ft section of boom to shore on river right, at/near Point B (~60ft upstream of Grip Rd bridge). Use bridge to extend boom across river and upstream, and secure other end to shore on river left, at/near Point A. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow. Vac-truck or skimmer/storage collection at Point B.

Staging Area: Onsite: Stage onsite on west side of bridge. Lane closure may be required.

Site Safety: Traffic Hazard; Beaver Pits; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.

Field Notes: Keep equipment and personnel on paved areas to reduce impact on endangered species. River right (west of bridge) has pull-off from north lane of Grip Rd that fits a pickup truck. Staging on river left difficult: unstable ground, heavy vegetation.

Watercourse: River - Samish River

Resources at Risk: Fish Hatchery, Raptors, Riparian Habitat, Salmonids, Wetlands

Recommended Equipment

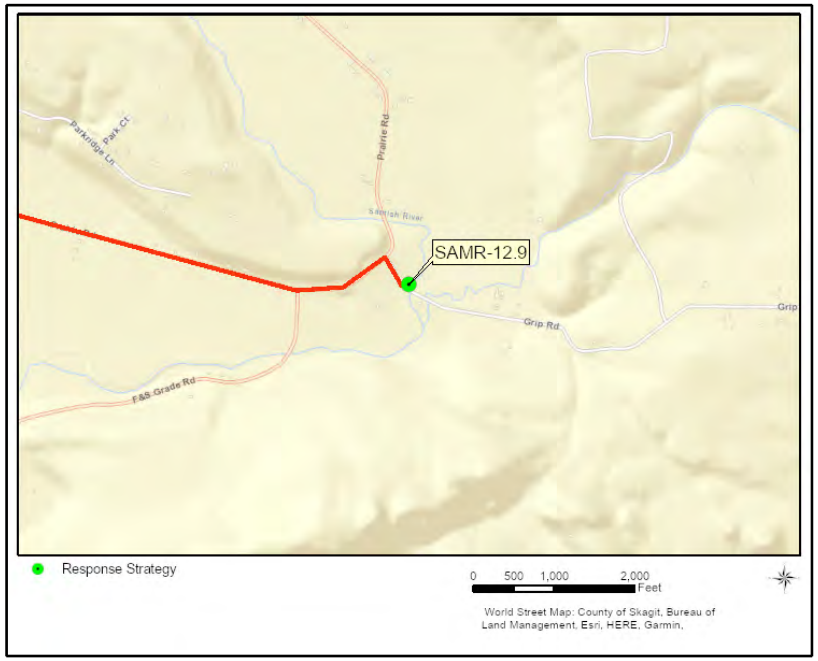
2	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
300	Feet	Line - 1/2" poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage
1	Each	Winch - Power Winch

Recommended Personnel

2	Laborer
1	Supervisor

Samish River at Grip Road SAMR-12.9

SAMR-12.9 Photo: From river right (Point B), facing NE upstream towards river left at strategy location. Taken at low winter water.



Site Contact

Skagit Land Trust
Land/Property Owner : Land owner

Mount Vernon, WA 98273
360-428-7878

Nearest Address

21026 Grip Rd
Sedro Woolley, WA 98284

Driving Directions

1. From Seattle, take I-5 North past Mt Vernon
2. At exit 236 bear right onto ramp to Bow Hill Road (0.25 miles)
3. Turn right on Bow Hill Rd (0.79 miles)
4. Road continues as Prairie Rd (2.12 miles)
5. Turn right on Grip Rd (0.08 miles)
6. There is a small unmarked pull off just before the bridge on the left, with room for a single car. There is additional gravel/dirt space in front of a gate just past the bridge on the left, room for 2-3 cars. Signs for Skagit Land Trust / Tope Ryan property.

Samish River at Prairie Rd — SAMR-13.1

Position - Location:	48° 33.430', -122° 17.471'	48° 33' 25.8", -122° 17' 28.3"	48.55716, -122.29119	Sedro-Woolley

Strategy Objective: Collection : Collect oil moving downstream on Samish River

Implementation: Secure 100 ft section of boom to shore on river left, at/near Point A (~80ft upstream of bridge). Use bridge to extend boom across river, and secure other end to shore on river right, at/near Point B (roadside). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow. Collect oil using a vac truck or skimmer/storage at B.

Staging Area: Onsite: Stage onsite at field NW of site. Lane closure may be required.

Site Safety: Traffic Hazard; Water Hazard (PFD Required); Low Bridge; Slips, Trips, Falls; Heavy Vegetation.

Field Notes: Keep equipment/personnel on paved areas to reduce impact on endangered species. In high water do not try to walk under bridge. Blackberry may hinder access to river right. Follow WSDOT work zone traffic control guidelines when working on/near roadway.

Watercourse: River - Samish River

Resources at Risk: Fish Hatchery, Riparian Habitat, Salmonids, Wetlands

Recommended Equipment

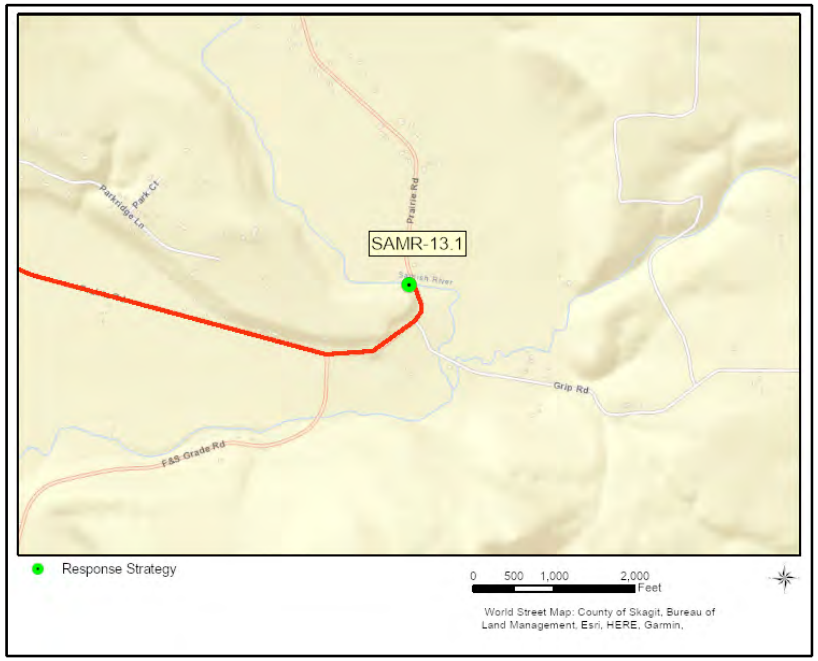
2	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
1	Each	Line throwing gun(s) or device(s)
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Pump(s)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

2	Laborer
1	Supervisor

Samish River at Prairie Rd SAMR-13.1

SAMR-13.1 Photo: From river left (Point B), facing S towards river right at strategy location. Taken at high spring water.



Site Contact

Skagit County Public Works
Primary Contact :
360-416-1400

Skagit Land Trust
Alternate Contact : Land owner
360-428-7878

Nearest Address

20419 Prairie Rd
Sedro-Woolley, WA 98284

Driving Directions

1. From Seattle, take I-5 North towards Mt Vernon
2. At exit 218 take ramp on the right and go on Starbird Rd. (17.83 miles)
3. At exit 236 bear right onto ramp to Bow Hill Road (0.25 miles)
4. Turn right on Bow Hill Rd (0.79 miles)
5. Continue on Prairie Rd (1.89 miles)
6. Turn left at F&S Grade Rd to stay on Prairie Rd (0.34 miles)
7. Just past Grip Rd intersection, look for bridge over Samish River and turn left onto small gravel farm access.

Samish River at Prairie Rd near Blank Rd — SAMR-19.6

Position - Location:	48° 35.211', -122° 14.053'	48° 35' 12.7", -122° 14' 3.2"	48.58685, -122.23422	Sedro-Woolley

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

Implementation: Secure 100 ft section of boom to shore on river left, at/near Point A (roadside). Use bridge to extend boom across river, and secure to shore downstream on river right, at/near Point B (~30 ft downstream of bridge). Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow. Vac-truck or skimmer/storage collection at Point B.

Staging Area: Onsite: Stage onsite, using field on southwest bank. Lane closure may be required.

Site Safety: Traffic Hazard; Water Hazard (PFD Required); Swimmers; Slips, Trips, Falls; Heavy Vegetation.

Field Notes: Keep equipment and personnel on paved areas to reduce impact on endangered species. Flat fields with shoulder on west side of bridge. Gravel sandbar and deep pool at Point B. Landowner lives in house just east of site.

Watercourse: River - Samish River

Resources at Risk: Raptors, Salmonids, Wetlands

Recommended Equipment

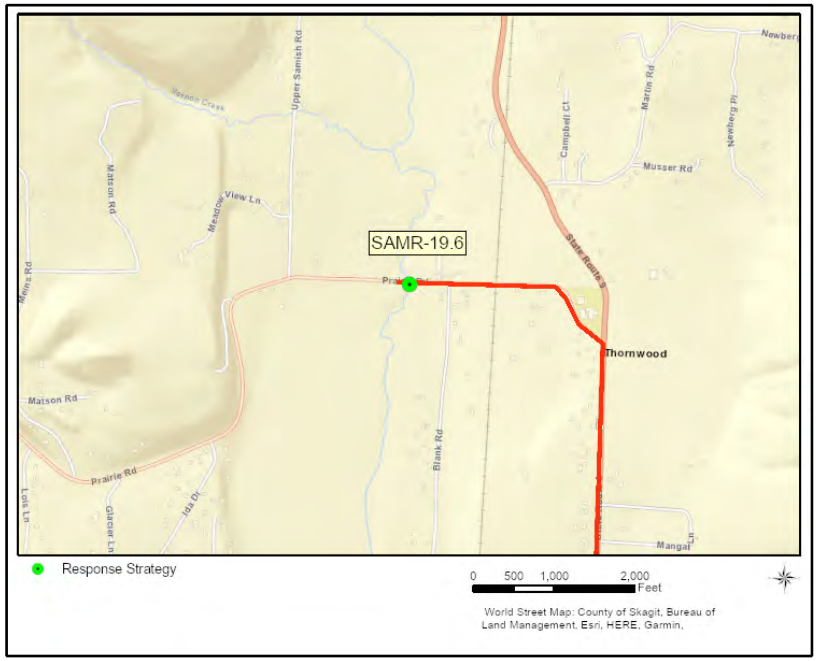
2	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Line - 3/8” poly line
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

2	Laborer
1	Supervisor

Samish River at Prairie Rd near Blank Rd SAMR-19.6

SAMR-19.6 Photo: From river right (Point B), facing NE upstream towards river left at strategy location. Taken at high spring water.



Site Contact

Skagit County Public Works
Primary Contact :
360-416-1400

Nearest Address

23636 Prairie Rd
Sedro-Woolley, WA 98284

Driving Directions

1. From Seattle, take I-5 North towards Burlington.
2. At exit 218 take ramp on the right and go on Starbird Rd. (14.25 miles)
3. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
4. Turn right on Cook Rd (4.21 miles)
5. At roundabout, take the second exit to proceed on Cook Rd (0.13 miles)
6. At roundabout, take the second exit to proceed on North Cascades Scenic Hwy (WA-20) (0.34 miles)
7. At roundabout, take the second exit to proceed on WA-9 (WA-20 E) (0.74 miles)
8. Turn left at Moore St / Township St to stay on WA-9 (N Township St) (5.18 miles)
9. Turn left on Prairie Rd (0.55 miles)
10. Finish at 23636 Prairie Rd, 98284, on the left

<< Go Back

Samish River at Wickersham St SAMR-25.0

Position - Location:	48° 39.170', -122° 12.326'	48° 39' 10.2", -122° 12' 19.6"	48.65283, -122.20544	Acme

Strategy Objective:	Collection : Collect oil moving downstream on the Samish River
Implementation:	Deploy hard boom on upstream side of bridge over creek on Wickersham St. Deploy multiple lengths of sorbent boom on downstream side of hard boom and on downstream side of roadway bridge. Use anchor posts, trees, or existing structures to secure boom to creek banks. Replace saturated sorbents as needed. If product collecting beyond capacity sorbents can handle, use vac-truck or skimmer/storage for collection from roadway near bridge. Keep vehicles and heavy equipment on paved areas and limit foot traffic on grass/shoulder.
Staging Area:	Onsite : Stage onsite on road surface. Lane closure is required.
Site Safety:	Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Keep equipment and personnel on paved areas to reduce impact on endangered species. Water may flow over road.
Watercourse:	River - Samish River (wetland: low flow year-round)
Resources at Risk:	Critical Wetland Area, Raptors, Reptiles and Amphibians, T/E Species, Waterfowl

Recommended Equipment

4	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B2 (Contractor Boom) or equivalent
100	Feet	Boom - Sorbent
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

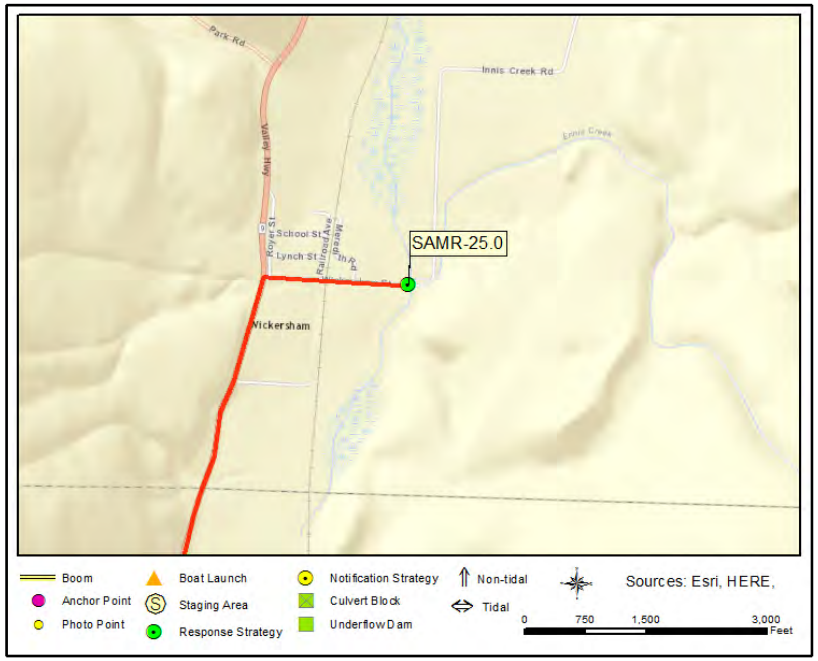
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Samish River at Wickersham St SAMR-25.0

SAMR-25.0 Photo: From river right (Point B), facing ENE upstream towards river left at strategy location. Taken at high spring water.



Site Contact

Whatcom County Public Works
Primary Contact :
360-778-6200

Whatcom Land Trust
Alternate Contact : Property owner
360.650.9470

Nearest Address

5278 Wickersham St
Acme, WA 98220

Driving Directions

1. From Seattle, take I-5 North towards Sedro-Woolley.
2. At exit 218 take ramp on the right and go on Starbird Rd. (14.25 miles)
3. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
4. Turn right on Cook Rd (4.21 miles)
5. At roundabout, take the second exit to proceed on Cook Rd (0.13 miles)
6. At roundabout, take the second exit to proceed on North Cascades Scenic Hwy (WA-20) (0.34 miles)
7. At roundabout, take the second exit to proceed on WA-9 (WA-20 E) (0.74 miles)
8. Turn left at Moore St / Township St to stay on WA9 (N Township St) (10.23 miles)
9. Turn right on Wickersham St (0.34 miles)
10. Site is at low bridge before road curves to the right.

<< Go Back

Samish River at Innis Creek Rd SAMR-26.9

Position - Location:	48° 40.636', -122° 11.758'	48° 40' 38.1", -122° 11' 45.5"	48.67726, -122.19597	Acme

Strategy Objective:	Collection : Collect oil moving downstream on the Samish River
Implementation:	Deploy hard boom on upstream side of bridge over creek on Innis Creek Rd. Deploy multiple lengths of sorbent boom on downstream side of hard boom and on downstream side of roadway bridge. Use anchor posts, trees, or existing structures to secure boom to creek banks. Replace saturated sorbents as needed. If product collecting beyond capacity sorbents can handle, use vac-truck or skimmer/storage for collection from roadway near bridge. Keep vehicles and heavy equipment on paved areas and limit foot traffic on grass/shoulder.
Staging Area:	Onsite : Stage onsite on road surface. Lane closure is required.
Site Safety:	Rail Crossing Nearby; Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Keep equipment and personnel on paved areas to reduce impact on endangered species.
Watercourse:	River - Samish River (wetland: low flow year-round)
Resources at Risk:	Critical Wetland Area, Raptors, Reptiles and Amphibians, T/E Species, Waterfowl

Recommended Equipment

4	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B2 (Contractor Boom) or equivalent
200	Feet	Boom - Sorbent
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

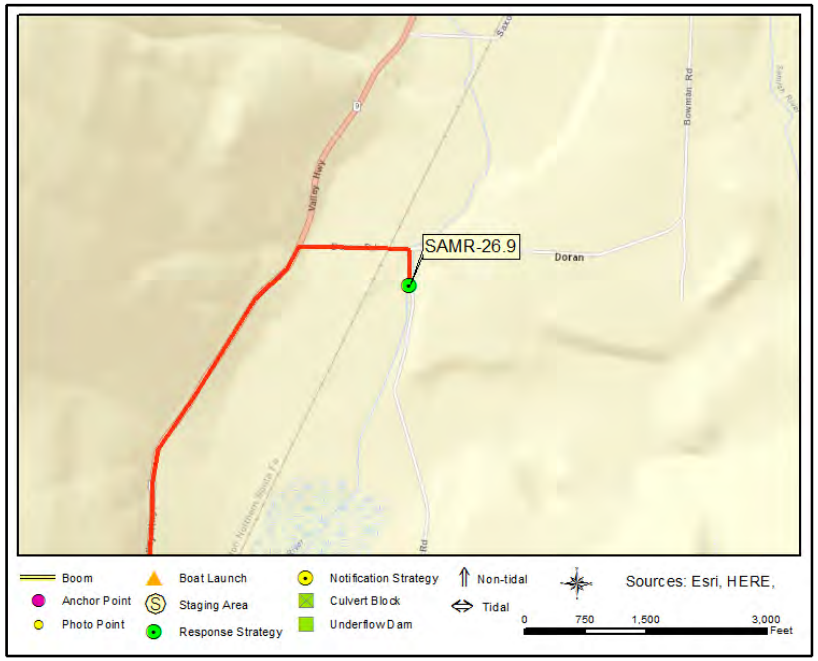
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Samish River at Innis Creek Rd SAMR-26.9

SAMR-26.9 Photo: From river left (Point D), facing N towards river right at strategy location, downstream of bridge. Taken at high spring water.



Site Contact

Whatcom Land Trust
Land/Property Owner : Property owner
412 N. Commercial St.
Bellingham, WA 98227
360.650.9470

Nearest Address

978 Innis Creek Rd
Acme, WA 98220

Driving Directions

1. From Seattle, take I-5 North towards Sedro-Woolley.
2. At exit 218 take ramp on the right and go on Starbird Rd. (14.25 miles)
3. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
4. Turn right on Cook Rd (4.21 miles)
5. At roundabout, take the second exit to proceed on Cook Rd (0.13 miles)
6. At roundabout, take the second exit to proceed on North Cascades Scenic Hwy (WA-20) (0.34 miles)
7. At roundabout, take the second exit to proceed on WA-9 (WA-20 E) (0.74 miles)
8. Turn left at Moore St / Township St to stay on WA9 (N Township St) (12.13 miles)
9. Turn right on Doran Rd (Doren Rd) (0.26 miles)
11. Take the first right on Innis Creek Rd (0.08 miles)
12. Site is at small bridge crossing over Samish River.

<< Go Back

Samish River at Doran Rd SAMR-27.0

Position - Location:	48° 40.710', -122° 11.748'	48° 40' 42.6", -122° 11' 44.9"	48.67850, -122.19580	Acme

Strategy Objective:	Collection : Collect oil moving downstream on the Samish River
Implementation:	Deploy hard boom on upstream side of bridge over creek on Doran Rd. Deploy multiple lengths of sorbent boom on downstream side of hard boom and on downstream side of roadway bridge. Use anchor posts, trees, or existing structures to secure boom to creek banks. Replace saturated sorbents as needed. If product collecting beyond capacity sorbents can handle, use vac-truck or skimmer/storage for collection from roadway near bridge. Keep vehicles and heavy equipment on paved areas and limit foot traffic on grass/shoulder.
Staging Area:	Onsite : Stage onsite on road surface. Lane closure is required.
Site Safety:	Rail Crossing Nearby; Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Keep equipment and personnel on paved areas to reduce impact on endangered species.
Watercourse:	River - Samish River (wetland: low flow year-round)
Resources at Risk:	Critical Wetland Area, Raptors, Reptiles and Amphibians, T/E Species, Waterfowl

Recommended Equipment

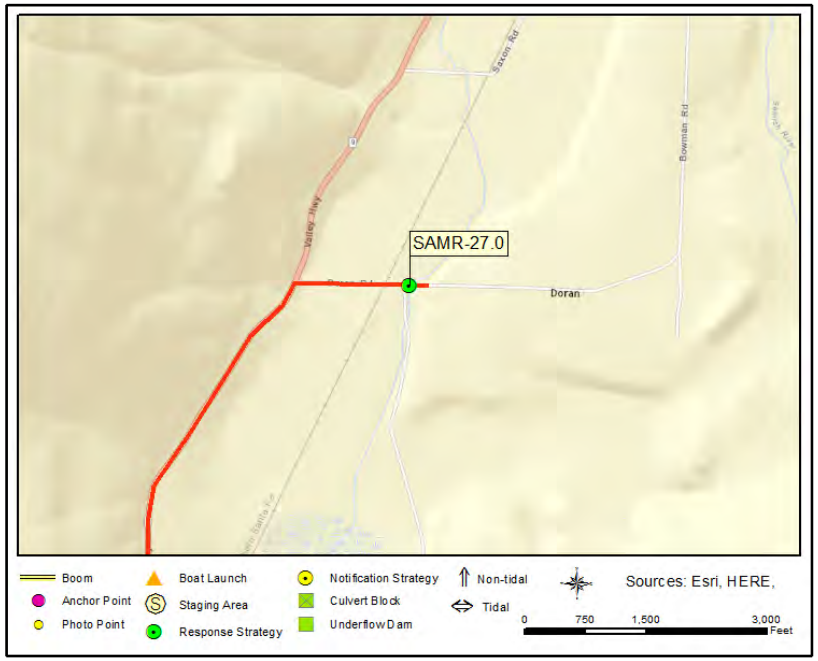
4	Each	Anchoring System(s)- Shoreside
200	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Boom - Sorbent
1	Each	Machete(s) - (or other vegetation cutting tool)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

2	Laborer
1	Supervisor

Samish River at Doran Rd SAMR-27.0

SAMR-27.0 Photo: From river right (Point A), facing E towards river left at strategy location, downstream of bridge. Taken at high spring water.



Site Contact

Whatcom County Public Works
Primary Contact :
360-778-6200

Whatcom Land Trust
Alternate Contact : Property owner
360.650.9470

Nearest Address

5453 Doran Rd
Acme, WA 98220

Driving Directions

1. From Seattle, take I-5 North towards Sedro-Woolley.
2. At exit 218 take ramp on the right and go on Starbird Rd. (14.25 miles)
3. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
4. Turn right on Cook Rd (4.21 miles)
5. At roundabout, take the second exit to proceed on Cook Rd (0.13 miles)
6. At roundabout, take the second exit to proceed on North Cascades Scenic Hwy (WA-20) (0.34 miles)
7. At roundabout, take the second exit to proceed on WA-9 (WA-20 E) (0.74 miles)
8. Turn left at Moore St / Township St to stay on WA9 (N Township St) (12.13 miles)
9. Turn right on Doran Rd (Doren Rd) (0.32 miles)
10. Site is just past railroad crossing at small bridge over Samish River.

Lake Samish at Silver Creek (KM SI-0.0) SLVRC-0.0

Position - Location:	48° 40.409', -122° 23.953'	48° 40' 24.6", -122° 23' 57.2"	48.67349, -122.39921	Bellingham

Strategy Objective:	Collection : Collect oil moving downstream on Silver Creek
Implementation:	Deploy one length of hard boom across creek, upstream of Greene Point Road. Deploy multiple lengths of sorbent across creek. If time allows, use plywood and plastic to create culvert block or underflow dam on upstream side of culvert, as needed based on stream flow conditions. If product collecting beyond capacity sorbents can handle, use vac-truck or skimmer/storage for collection. Narrow paved private street accessing half a dozen homes. Upstream side of road is trees/veg, no homes. Follow WSDOT work zone traffic control guidelines when working on or near roadway.
Staging Area:	Onsite: Stage onsite on private road. Lane closure may be required.
Site Safety:	Traffic Hazard; Water Hazard (PFD Required); Private Homes Nearby; Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Inspections are required for all watercraft operating on Lake Samish, including non-motorized, hand-carried watercraft. All watercraft must display a valid aquatic invasive species permit. Please call (360) 778-7975. Additonal Info: www.whatcomboatinspections.com
Watercourse:	Creek - Silver Creek
Resources at Risk:	Diving Duck Concentrations, Lake Habitat, Raptors, Salmon (Coho, Chinook and Chum), Shellfish, T/E Species, Waterfowl

Recommended Equipment

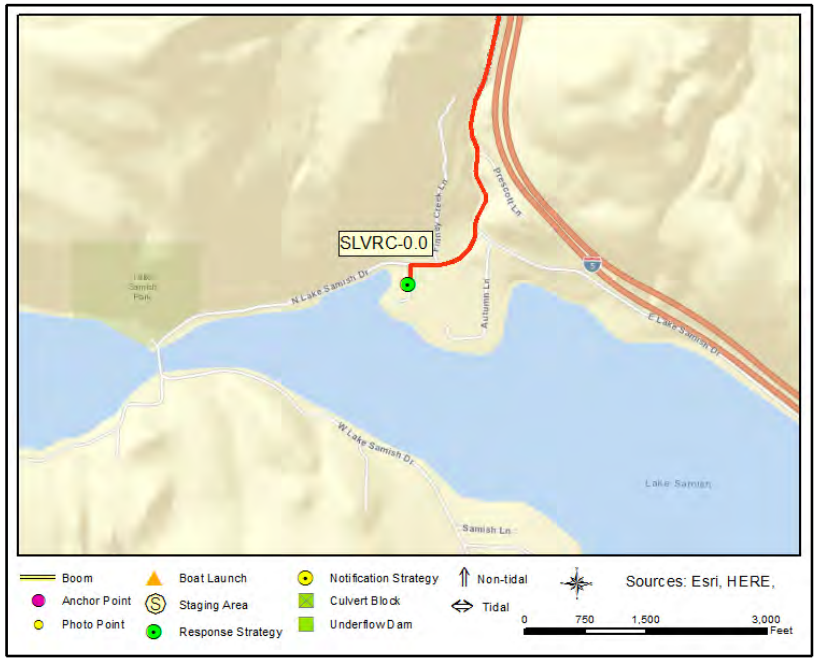
4	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
200	Feet	Boom - Sorbent
1	Assort	Fill material (sand, earth, gravel, sandbags)
1	Each	Machete(s) - (or other vegetation cutting tool)
20	Feet	Plastic Sheeting
2	Each	Plywood sheets (4ft x 8ft)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

3	Laborer
1	Supervisor

Lake Samish at Silver Creek (KM SI-0.0) SLVRC-0.0

SLVRC-0.0 Photo: From creek left, facing NW downstream towards creek right at strategy location. Taken at low winter water.



Site Contact

Whatcom County Public Works
Primary Contact :
360-778-6200

Nearest Address

6 Greene Point Road
Bellingham, WA 98229

Driving Directions

1. From Bellingham, head South on I-5 towards Lake Samish
2. At exit 246 take ramp on the right toward N Lake Samish (0.19 miles)
3. Turn left on N Lake Samish Dr (0.76 miles)
4. Bear right to stay on N Lake Samish Dr (0.2 miles)
5. Turn left on Greene Pt (Greene Point Rd) (0.04 miles)
6. Finish at 6 Greene Point Road, 98229, on the right

Swede Creek at Grip Rd — SWDC-0.1

Position - Location:	48° 33.272', -122° 17.323'	48° 33' 16.3", -122° 17' 19.4"	48.55454, -122.28872	Sedro-Woolley

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

Implementation: Deploy one length of hard boom across creek, upstream of Grip Road. Deploy multiple lengths of sorbent across creek, upstream of hard boom. If time allows, use plywood and plastic to create culvert block or underflow dam on upstream side of culvert, as needed based on stream flow conditions. Replace saturated sorbents as needed. If product collecting beyond capacity sorbents can handle, use vac-truck or skimmer/storage for collection at Grip Rd.

Staging Area: Onsite: Stage onsite in Skagit Land Trust gravel parking lot, 50 ft west of culvert. Lane closure is required.

Site Safety: Traffic Hazard; Beaver Pits; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.

Field Notes: Keep equipment/personnel on paved areas to reduce impact on endangered species. Close westbound lane of Grip Rd - no shoulder. Follow WSDOT work zone traffic control guidelines. Stone culvert passing under road. Empties into Samish River downstream.

Watercourse: Creek - Swede Creek

Resources at Risk: Raptors, Riparian Habitat, Salmonids

Recommended Equipment

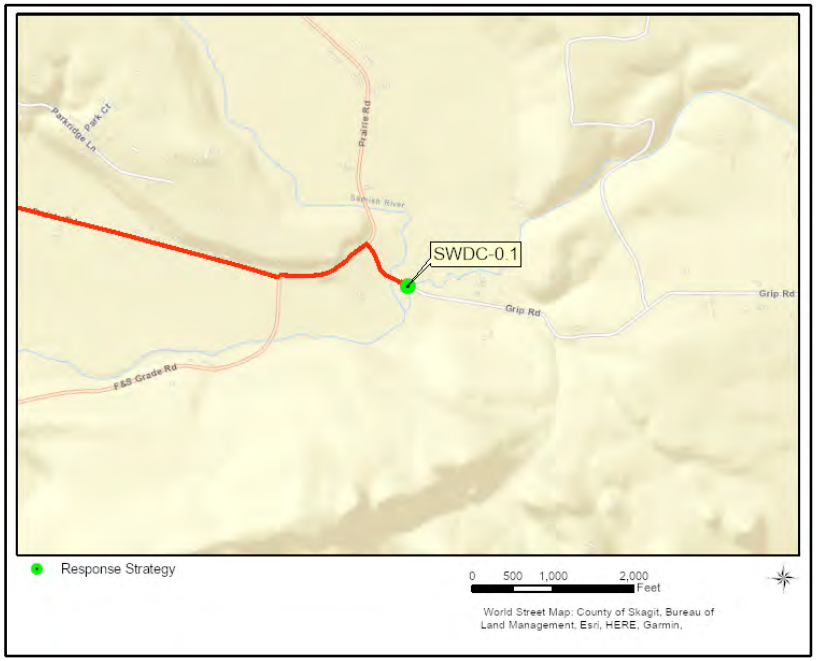
2	Each	Anchoring System(s)- Shoreside
100	Feet	Boom - B3 (River Boom) or equivalent
100	Feet	Boom - Sorbent
1	Assort	Fill material (sand, earth, gravel, sandbags)
1	Each	Machete(s) - (or other vegetation cutting tool)
20	Feet	Plastic Sheeting
2	Each	Plywood sheets (4ft x 8ft)
1	Each	Vac Truck or Skimmer and Storage

Recommended Personnel

3	Laborer
1	Supervisor

Swede Creek at Grip Rd SWDC-0.1

SWDC-0.1 Photo: From creek left, facing N upstream towards strategy location. Side channel entering from right. Taken at low winter water.



Site Contact

Skagit Land Trust
Land/Property Contact : Land owner

Mount Vernon, WA 98273
360-428-7878

Nearest Address

21063 Grip Rd
Sedro-Woolley, WA 98284

Driving Directions

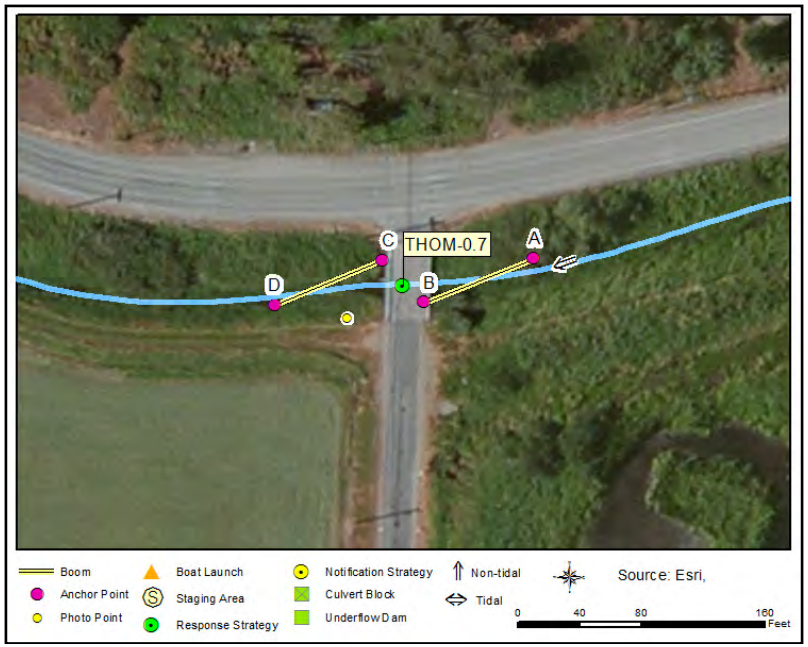
1. From Seattle, take I-5 North past Mt Vernon
2. At exit 236 bear right onto ramp to Bow Hill Road (0.25 miles)
3. Turn right on Bow Hill Rd (0.79 miles)
4. Continue on Prairie Rd (1.89 miles)
5. Turn left at F&S Grade Rd to stay on Prairie Rd (0.28 miles)
6. Turn right on Grip Rd (0.1 miles)
7. Finish at 21063 Grip Rd, 98284, on the left.
8. Small pull-off/gate for Tope Ryan Conservation Area. Swede Creek culvert is 50 ft east of gate.

<< Go Back

Thomas Creek at Green Rd THOM-0.7

Position - Location:	48° 31.501', -122° 20.088'	48° 31' 30.1", -122° 20' 5.3"	48.52502, -122.33480	Burlington

Strategy Objective:	Collection : Collect oil moving downstream on Thomas Creek
Implementation:	Secure 100 ft section of boom to shore on creek right, at/near Point A (~50ft upstream of Green Road bridge). Use bridge to extend boom across creek and downstream, and secure to shore on creek left, at/near Point B (roadside). Deploy additional length of hard boom downstream of roadway. Deploy multiple lengths of sorbent boom on downstream side of hard boom. Use shoreside anchoring systems or existing features to secure boom to banks. Adjust boom angles as needed based on streamflow. Vac truck or skimmer/storage collection from Green Rd shoulder.
Staging Area:	Onsite : Stage onsite at shoulder of Green Rd bridge. Lane closure may be required.
Site Safety:	Traffic Hazard; Water Hazard (PFD Required); Slips, Trips, Falls; Heavy Vegetation.
Field Notes:	Follow WSDOT work zone traffic control guidelines when working on or near roadway. Wetland area, ground may be muddy off paved surfaces. Slow-moving creek adjacent (not connected) to restoration ponds.
Watercourse:	Creek - Thomas Creek
Resources at Risk:	Riparian Habitat, Salmon, T/E Species, Waterfowl



Recommended Equipment

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

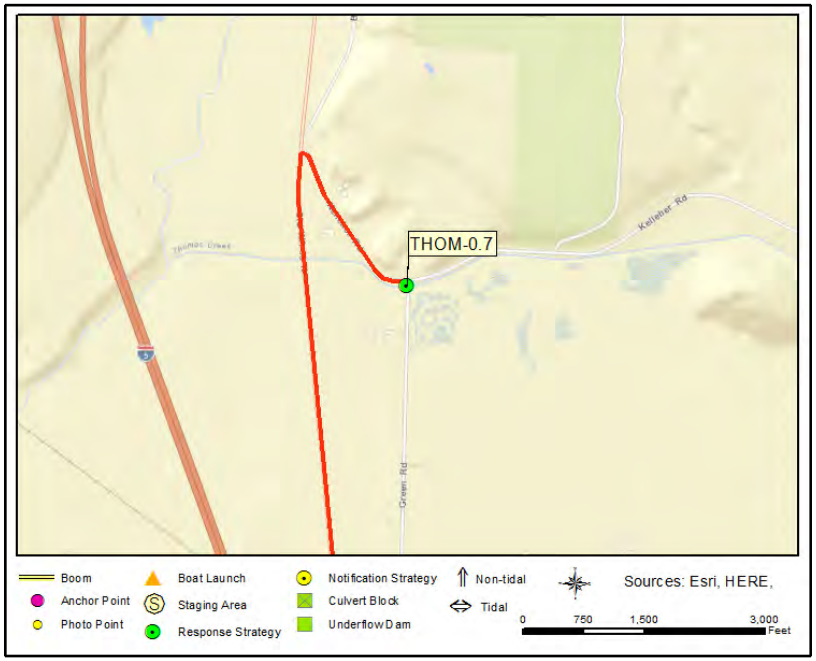
Recommended Personnel

2	Laborer
1	Supervisor

<< Go Back

Thomas Creek at Green Rd THOM-0.7

THOM-0.7 Photo: From creek left, facing N upstream towards creek right at strategy location. Downstream side of Green Road. Taken at low winter water.



Site Contact

Skagit Land Trust
Land/Property Owner : Land owner

Mount Vernon, WA 98273
360-428-7878

Nearest Address

8312 Green Rd
Burlington, WA 98233

Driving Directions

1. From Seattle, take I-5 North towards Mt Vernon
2. At exit 232 bear right onto ramp to Cook Road toward Sedro-Woolley (0.26 miles)
3. Turn right on Cook Rd (200 feet)
4. Make the next left on Old Highway 99/Belleville Rd (1.5 miles)
5. Turn right on Kelleher Rd (0.2 mi)
6. Turn right onto Green Rd (50 feet)
7. Finish near 8312 Green Rd, 98233. Site is at bridge just off Kelleher Rd.

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Note: Green Road is need of repair. Hwy 99 to Kelleher is much faster than taking Cook Rd straight to Green Rd.

APPENDIX 4B

Notification Strategy 2-Pagers

<< Go Back

NOTIFICATION STRATEGIES – LIST

FRIC-1.7-N

<< Go Back

WDFW Samish Fish Hatchery on Friday Creek — FRIC-1.7-N

Position - Location:	48° 33.907', -122° 19.953'	48° 33' 54.4", -122° 19' 57.2"	48.56512, -122.33255	Burlington

Strategy Objective: Notification : Notify Samish Fish Hatchery so they can take action to protect their water intake

Implementation: Call WDFW Samish Fish Hatchery at 360-724-3131 and inform them of any significant oil spill or potential spill that impacts or threatens to impact the hatchery water intake on Friday Creek, so they can take action to protect the resources under their control, including the protection of the water intake and fish ladder near this location.

Field Notes: Water intake and fish ladder are located at Friday Creek RM 1.7, half a mile upstream of the actual hatchery location.

Watercourse: Creek - Friday Creek

Resources at Risk: Fish Hatchery, Fish Ladder(s), Water Intakes

Communication Process and Action:

Call WDFW Samish Fish Hatchery at 360-724-3131 and inform them of any significant oil spill or potential spill that impacts or threatens to impact the water intake and fish ladder on Friday Creek. The hatchery will determine what action(s) they need to take to protect their hatchery. Actions by WDFW might include shutting down their water intake pumps and closing intake valves.

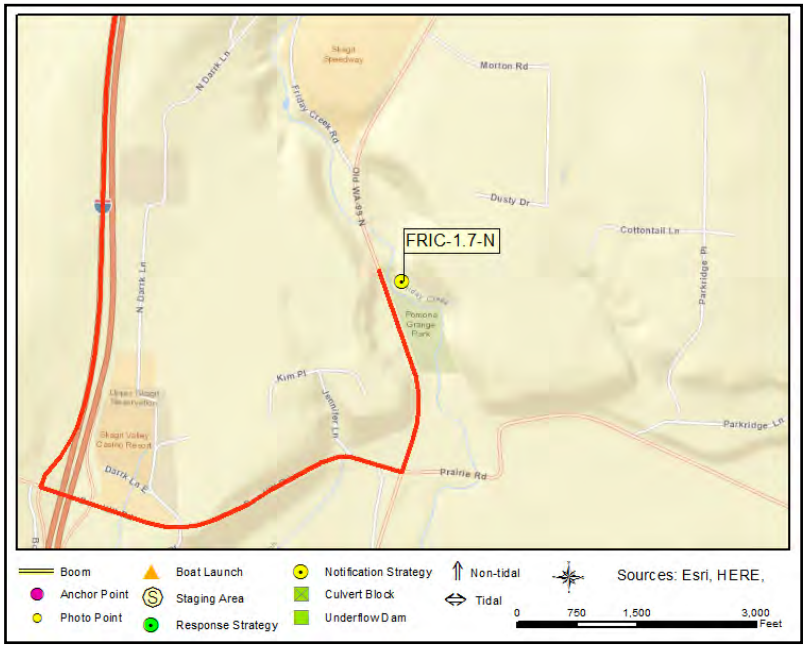
If there is no answer at the hatchery, try the regional hatchery manager at 425-775- 1311 or page the WDFW oil spill team at 360-534-8233.

Implementation of response strategy FRIC-1.7 by contractors is also an option to further protect the intakes and fish ladder from oiling. Ask the hatchery staff to unlock the gate to the intake's access road if possible. Contractors will cut off padlock if needed.

<< Go Back

WDFW Samish Fish Hatchery on Friday Creek FRIC-1.7-N

FRIC-1.7-N Photo: From Friday Creek right, looking N at fish ladder and spillway at water intake diversion dam.



Site Contact

WDFW Samish Fish Hatchery
Primary Contact :
360-724-3131

Washington Department of Fish and Wildlife
Secondary Contact : Region 4
425-775-1311

Nearest Address

5585 Old Highway 99
Burlington, WA 98233

Driving Directions

1. From Bellingham, head South on I-5 towards Burlington.
2. At exit 236 bear right onto ramp to Bow Hill Rd toward Bow-Edison (0.22 miles)
3. Turn left on Bow Hill Rd (0.92 miles)
4. Turn left on Old WA-99 N (Old Highway 99 North Rd) (0.49 miles)
5. Finish at 5585 Old Highway 99, 98233, on the right - this is the hatchery itself.
6. To access water intake, continue past hatchery and take first left onto unmarked dirt road with gate. Intake is at the end of the road.

APPENDIX 4C

Staging Area 2-Pagers

STAGING AREAS - LIST

SA-LKSAM-2.7

**Staging Area from the San Juan Islands/North Puget Sound GRP that's included in this appendix

<< Go Back

Lake Samish Boat Launch SA-LKSAM-2.7

Staging Area

Position - Location:	48° 40.007', -122° 22.593'	48° 40' .4", -122° 22' 35.6"	48.66678, -122.37655	Bellingham

Comments: Coordinate use of staging area with Washington Department of Fish and Wildlife Region 4; call 425-775-1311; if after-hours leave message.

GRP Response Strategies Served:

LKSAM-4.0, LKSAM-0.5

Location Information

Asset	Type/Status	Amount/Number
Boat Dock(s)	No	
Boat Ramp(s)	Concrete, Solid	1
Cell Phone Coverage	Yes	Verizon & Sprint 3G
Covered Spaces	No	
Estimated Lot Size		10000 SqFt
Fuel	No	
Lot Cover (Primary)	Asphalt	
Parking - Car	Marked	5
Parking - Trailer	Marked	20
Power	No	
Restroom	Restroom - Vault	1
User Fee	Yes	Discover Pass Required
Waste Disposal	None	
Water (potable)	No	

<< Go Back

Lake Samish Boat Launch SA-LKSAM-2.7

SA-LKSAM-2.7 Photo: South of boat launch looking N.

Site Contact

Washington Department of Fish and Wildlife
Land/Property Owner : Region 4
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
425-775-1311

Nearest Address

597 E Lake Samish Dr
Bellingham, WA 98229

Driving Directions

1. From Seattle, take I-5 North towards Whatcom County.
2. At exit 242 take ramp on the right to Nulle Rd. toward S. Lake Samish (0.26 miles)
3. Turn left on Nulle Rd (0.11 miles)
4. Turn right on E Lake Samish Dr (1.2 miles)
5. Turn left into boat launch parking lot at 597 E Lake Samish Dr, 98229. Sign for WDFW boat launch.

APPENDIX 4D

Boat Launch 2-Pagers

<< Go Back

BOAT LAUNCHES – LIST

BL-LKSAM-2.7

<< Go Back

Lake Samish Boat Launch BL-LKSAM-2.7

Boat Launch Location

Position - Location:	48° 40.007', -122° 22.593'	48° 40' .4", -122° 22' 35.6"	48.66678, -122.37655	Bellingham

Comments: Coordinate use of boat launch with Washington Department of Fish and Wildlife Region 4; call 425-775-1311; if after-hours leave message.

Location Information

Asset	Type/Status	Amount/Number
Boat Dock(s)	No	
Boat Ramp(s)	Concrete, Solid	1
Cell Phone Coverage	Yes	Verizon & Sprint 3G
Covered Spaces	No	
Estimated Lot Size		10000 SqFt
Fuel	No	
Lot Cover (Primary)	Asphalt	
Parking - Car	Marked	5
Parking - Trailer	Marked	20
Power	No	
Restroom	Restroom - Vault	1
User Fee	Yes	Discover Pass Required
Waste Disposal	None	
Water (potable)	No	

GRP Response Strategies Served:

LKSAM-4.0, LKSAM-0.5, LKSAM-2.7

Lake Samish Boat Launch BL-LKSAM-2.7

SA-LKSAM-2.7 Photo: South of boat launch looking N.

Site Contact

Washington Department of Fish and Wildlife
Land/Property Owner : Region 4
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
425-775-1311

Nearest Address

597 E Lake Samish Dr
Bellingham, WA 98229

Driving Directions

1. From Seattle, take I-5 North towards Whatcom County.
2. At exit 242 take ramp on the right to Nulle Rd. toward S. Lake Samish (0.26 miles)
3. Turn left on Nulle Rd (0.11 miles)
4. Turn right on E Lake Samish Dr (1.2 miles)
5. Turn left into boat launch parking lot at 597 E Lake Samish Dr, 98229. Sign for WDFW boat launch.