

Comparison of Geographic Response Plan (GRP) Approaches: US Coast Guard, EPA Regions 5, 9, 10

(Prepared by UMRBA, Draft-2/6/08)

Background: Use and Development of Geographic Response Plans

Geographic Response Plans (GRPs) are site-specific strategies for the initial response to a spill of oil or oil products on water. They are created to provide guidelines for responders in the event of a spill, which significantly reduces the time needed to make decisions during the initial response. A GRP provides the responders with essential information about the site, the equipment needed to carry out an effective response, access details, and other information. The goal of a GRP is to ensure that the response to a spill is fast and effective, and that sensitive resources are protected.

A GRP contains a set of planned response strategies that are designed to give responders important information about particular sites so that damage to sensitive resources is minimized in the first few hours following a spill. These can be actions to control, contain, redirect, or collect the spilled material. The strategies are designed to be flexible, letting responders adjust actions to meet the needs of current conditions, such as water levels or weather.

A GRP is developed as a planning process. Representatives from various levels of government, responders, resource specialists, and industry work together to identify spill risks and sensitive resources. Participants identify resource priorities and possible strategies for particular locations. Then potential sites are visited in the field to verify the preliminary approaches. Many factors are considered, such as river conditions, shoreline and resource sensitivity to oil, seasonal weather changes, equipment availability, site access, and more. Modifications are made as needed, and further details can be added to hone the strategy. Some sites may be added or dropped from the list of strategies as a part of the field verification.

Many factors are considered when locations are identified for the development of possible response strategies. To begin, there must be sensitive resources present that would be at risk in the event of a spill. The potential exposure to a spill should be considered. For example, plant species living in estuarine areas are at greater risk than those living above the water line. There must also be some significant risk of the occurrence of a spill. Various potential sources should be identified, such as pipelines or oil transfer facilities. Once an area is identified for consideration, planners can evaluate site-specific qualities that can determine what type of response would be effective. This can include resource qualities such as habitat sensitivity to oil, presence of threatened and endangered species, or presence of a drinking water intake; or practical qualities such as accessibility, hydrologic conditions, or responder safety.

Purpose of GRP Comparison

The GRPs considered in this document were all generally developed as discussed above. A further examination of each follows which provides a detailed comparison of the specific approaches taken. The US Coast Guard strategies are from the West Lake Superior Area Contingency Plan; EPA Region 5 strategies have been developed in tandem with the Inland Sensitivity Atlas; EPA Regions 9 and 10 strategies are developed by the states within the region. The purpose of this comparison

document is to allow each approach to benefit from what has been learned in other efforts, facilitate further strategy development and, where appropriate, to encourage common approaches.

An opportunity exists to pursue more consistency in response strategies, as the four approaches compared in this document all share similar basic information. Each is laid out slightly differently from the rest, but similarly enough that small adjustments could bring them into step. Common elements provide the core information independently deemed key by participants in each of the regions. This set provides a clear minimum threshold of information that should be included. Some information, such as stream flow data or equipment caches, is not available for all areas. However, noting the absence of such data may in itself be useful for planners and responders.

United States Coast Guard (USCG) Geographic Response Plans

The USCG strategies discussed here are incorporated in the Western Lake Superior Area Contingency Plan (ACP). The strategies extend from Grand Marais, MN to Marquette, MI, and include Isle Royale. Of primary concern are points at which streams enter the Lake and the Duluth/Superior harbor. The Coast Guard developed these strategies in coordination with federal, state, and local government agencies, cleanup contractors, and responsible party resources in 2006.

The ACP comprises numerous documents, each a separate section. Details provided in the ACP cover all aspects of response. This includes incident command structure and procedures, and the roles of participants within the response hierarchy; details of operation participants, organization, and locations; details of logistical participants and organization; financial sources and methods for acquiring funds; marine firefighting methods and organizations; agencies and organizations involved in logistics and planning, potential spill sources and historic spill records.

Priorities for the ACP are “aimed at preventing any spilled product from reaching the large rivers (especially sensitive areas), and notifying potable water users of possible contamination.” General response methods are given for creek, river, bay, and open lake situations. Shoreline types in the response area are given a brief description.

For GRPs, an overview map identifies numbered map tiles. These are referenced in the strategy tables, which are ordered by tile number. The Coast Guard used the Inland Sensitivity Atlas map tiles for reference. A location name is given to identify the strategy. Narrative comments contain all the information recorded from field visits, even for sites at which no action was deemed necessary or possible. Information includes strategy, recommended boom length, sensitive resources, site priority, accessibility, staging, and other details.

Appendices provide information about procedures and actions to be taken with regard to fish habitats, vessel and cargo salvage, and sensitive species.

Availability:

Web: <http://homeport.uscg.mil/mycg/portal/ep/home.do> , click Port Directory, choose Duluth from the pulldown port selection. The ACP link is on the right side of the page. (This site creates a temporary link that times out below the main page.)

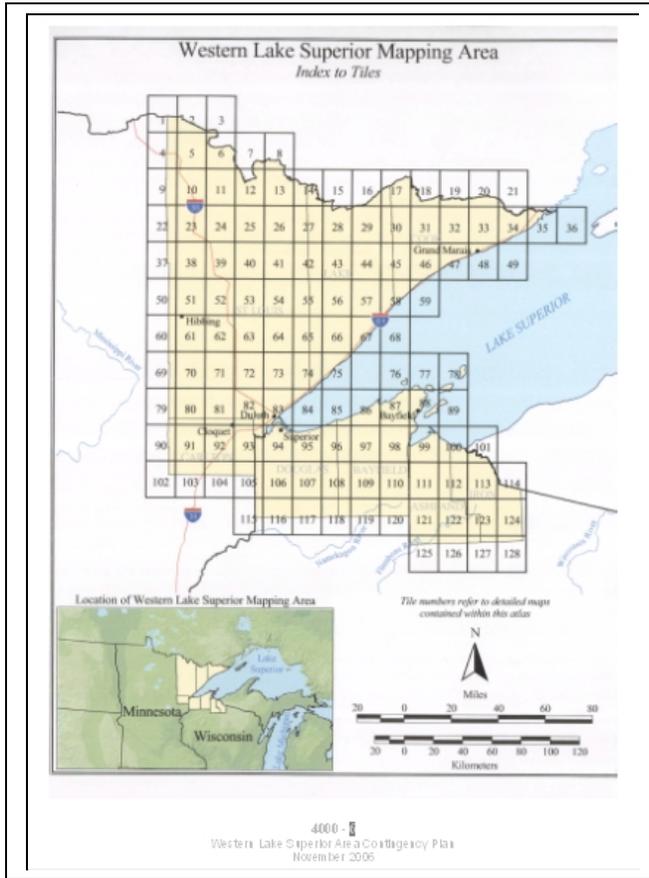
CD/DVD: ?

Contact Person(s)/Contact Points:

Marine Safety Unit Duluth (09-33262)
600 S Lake Ave.
Duluth, MN 55802
Primary Phone: (218) 720-5286
Emergency Phone: (218) 522-0707
Fax Number: (218) 720-5258

Quick Link <http://homeport.uscg.mil/duluth>

USCG Example: Western Lake Superior Area Contingency Plan



USCG locator map

DULUTH/SUPERIOR HARBOR (MINNESOTA & WISCONSIN)

Tile or Map No. #	Location:	Comments:
#83 & #94	Duluth/Superior Harbor.	<p><u>Staging areas:</u></p> <ul style="list-style-type: none"> • Park Point Launch • Loons Foot Landing • Power Squadron Dock • Under Blatnik Bridge at Rice's Point (Port Authority, Duluth, MN) or Connor's Point (Superior, WI) <p><u>Key sensitive areas that need booming:</u></p> <ul style="list-style-type: none"> • <u>Barker's Island.</u> Need approx. 50 feet of boom near the northwestern portion of the island and approx. 300 feet near the southeastern portion of the island. • <u>Hog Island.</u> Need approx. 100 feet of boom deployed along the western portion of the island. This boom will connect with the Lakehead Pipeline dock, which is approx. the same distance away. Approx. 300 feet of boom deployed along the southeastern portion of the island. This boom will join with the Burlington Northern Ore dock approx. the same distance away. This exclusinary boom set-up will provide protection for sensitive local fish and wildlife areas. • <u>Interstate Island.</u> This island is between the central harbor and the St. Louis River and is considered a sensitive area due to migratory birds that inhabit it at various times of the year. Sorbent boom probably would be the best protection strategy for this island and deflection boom to prevent impact of oil. <p><u>Natural Collection Areas:</u> Consider setting deflection boom to guide the oil into the following areas:</p> <ul style="list-style-type: none"> • Deploy approx. 1000 feet of boom off the pier adjacent to Superior Fiber Products, Inc. This collection point is located north of the Cutler-Magner dock, which is also a projection collection point.

4000 - 10
Western Lake Superior Area Contingency Plan
November 2005

USCG strategies

United States Environmental Protection Agency, Region 5 (EPA Region 5)

EPA Region 5 strategies have been developed for the Twin Cities area, the Quad Cities, and St. Louis over the period of 2001 to 2007. This has been done in cooperation with various federal, state, and local agencies. In general, the strategies have been created as a supplement to Sub-Area Contingency Plans and are incorporated by reference into those plans. For the St. Croix River, strategies were also developed as part of contingency planning in a threatened and endangered species recovery plan.

While each set of EPA Region 5 strategies were developed in a slightly different manner, the general process is as described in this paragraph. Initially, participants for strategy development are identified and typically include US EPA, US Fish and Wildlife Service, State Environmental Agencies, response contractors, any other local response personnel. Participants initially meet to identify features in and near the river that are critical in spill response. This includes potential spill sources, boat launches, sensitive resources, cleanup areas, and more. Later, field visits are undertaken to evaluate the suitability of sites for response action. Field data and photographs are compiled in common formats.

Although created separately and formatted uniquely, each of the four Region 5 strategy sets contain the same essential information for responders. Initially, with the exception of St. Louis and St. Croix River strategies, all were presented as pages of narrative text under common headings. The St. Louis and St. Croix strategies were formatted to match the recently revised Inland Sensitivity Atlas (ISA) approach, as described below. Other strategies will also be formatted in this fashion as they are incorporated into the Atlas.

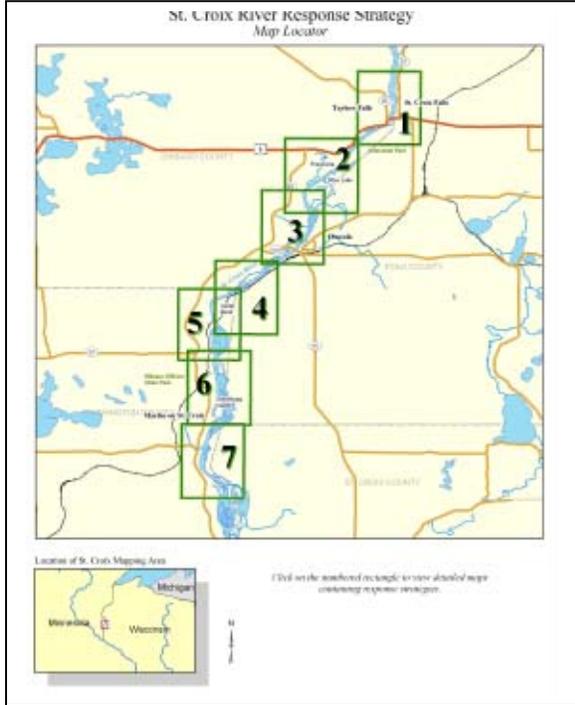
The strategies are incorporated into the ISA by assembling the information for each in a more succinct database format. The content remains the same, but text is simplified. Within the ISA, each strategy becomes a GIS point feature. Containment and collection, diversion, exclusion, and “other” types have unique icons and identifiers. The overview map is hyperlinked to map tiles. In the latest version of the ISA, data for individual features will be directly accessible on the maps. These are also linked to the tabular data, organized by map tile. All strategies are assembled in an appendix for quick reference.

The St Croix and St. Louis strategies were also compiled as a stand-alone, interactive product product. For these products, an overview map is hyperlinked to map tiles. Strategies are displayed with the ISA icons. Each is hyperlinked to a page with a data table and photographs. The ISA database format is used. Both the stand-alone and ISA formats are linked to the Tactics Manual. This document is an altered version of the Alaska Clean Seas manual, modified to emphasize riverine conditions and remove tactics developed for tundra. It provides an overview of general methods for responding to a spill in various conditions.

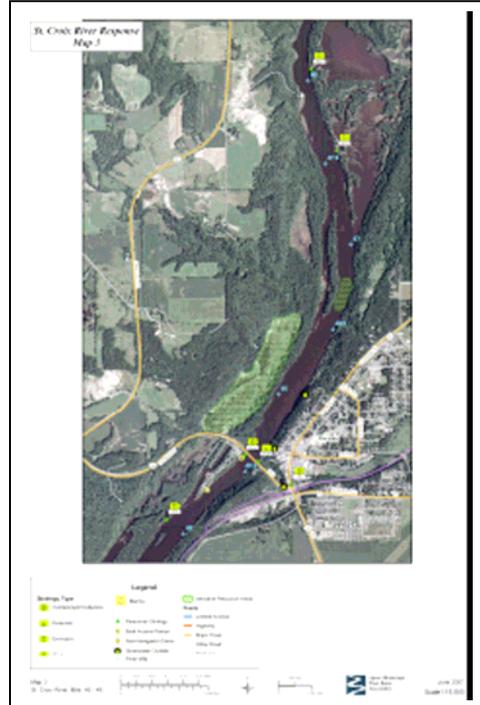
Availability:

Web: No availability. An ISA overview is available at <http://www.umn.edu/isa.htm>.

2) Presentation in Stand-Alone Products



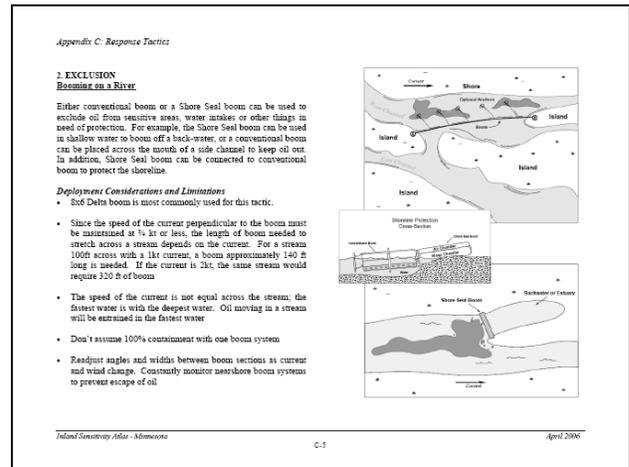
Locator Map



Aerial Photo



Strategy Page



Tactics Manual

United States Environmental Protection Agency, Region 9 (EPA Region 9)

EPA Region 9 strategies have been developed for Lake Tahoe, the Carson River, the Truckee River, and the Walker River between 2005 and 2006. They were developed in cooperation with numerous local, state, tribal, and federal government agencies. The Nevada Division of Environmental Protection maintains the GRPs. The GRP is an operational plan and a planning document, and establishes objectives. These are to describe emergency response organization, establish prompt and efficient notification procedures, identify strategies, define responsibilities, establish lines of authority, facilitate aid, and address funding issues.

The GRP first addresses incident response steps, from initial notification through spill response and public notification. Extensive contact information is included. Site strategies are preceded by general response approaches, river flow data, and other considerations.

Strategy page headings are described in detail. The pages are listed in geographic order. Each strategy page includes a photo, if available. All pages include narrative descriptions of the site, strategy, and comments. Other information and a priority ranking are also included.

The GRPs describe the river basins, administrative areas covered by the basin, and the general geographic area. The river basin hydrology is described in more detail. Key landmarks, tributaries, elevations, diversion and irrigation structures, and other considerations are outlined.

A matrix summarizing the administrative resources, equipment, and responsibilities is provided. Each agency in the matrix is then described in moderate detail.

Location maps are documents separate from the GRP. An index or overview map places the strategies in a basin-wide context and identifies detail map locations. Detail maps contain base map elements, site strategies, and sensitive species information. Maps for the part of the basin in California contain specific species names and occurrences. Those in Nevada are generalized in both type and location.

Availability:

Web: NV DEP main response page <http://ndep.nv.gov/bca/response.htm>.

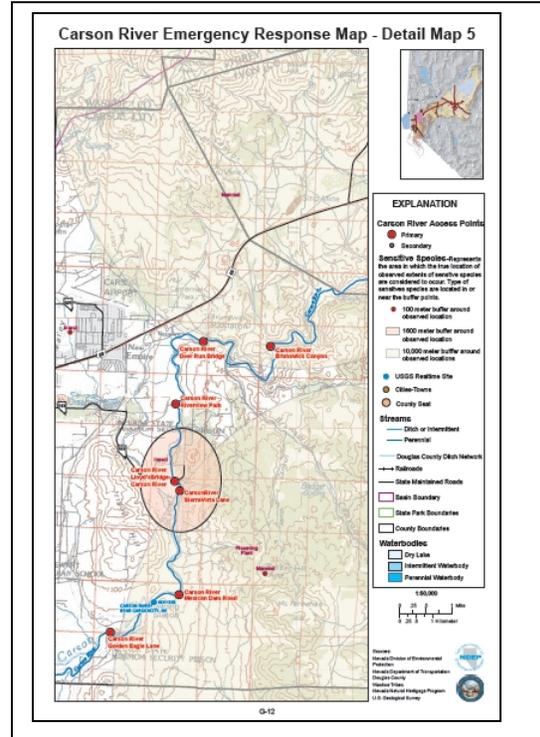
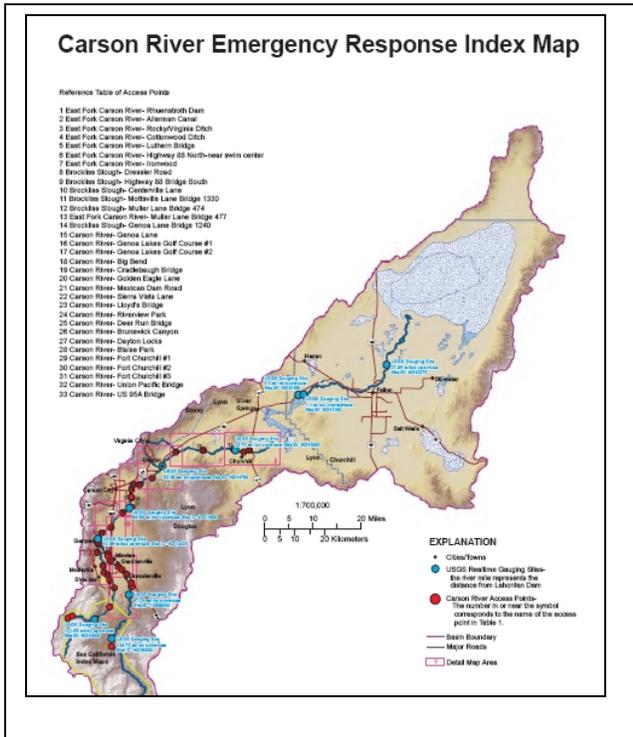
CD/DVD:

Contact Person(s)/Contact Points:

Nevada Division of Environmental Protection
Bureau of Corrective Actions
901 S. Stewart St., Suite 4001
Carson City, NV 89701-5249

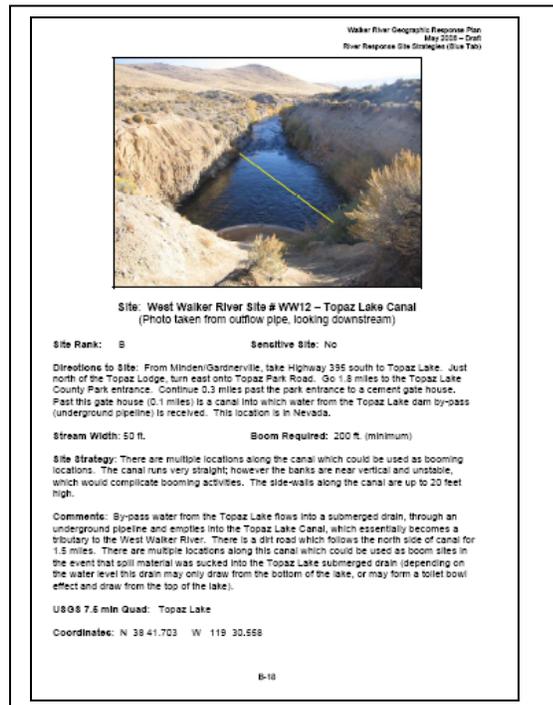
US EPA Region 9 Examples:

Walker River http://ndep.nv.gov/bca/emergency/walker_river_plan06.pdf



Region 9 locator map

Region 9 map



Region 9 strategy

United States Environmental Protection Agency, Region 10 (EPA Region 10)

EPA Region 10 strategies have been developed for the coastal zone of the States of Washington and Oregon, the Columbia River, Puget Sound, and other inland riverine areas. Work was begun in 1996, and continues to be developed. Both the EPA and states maintain the GRPs.

Washington and Oregon maintain GRPs for their coastal areas and associated drainage areas and the lower Columbia River. EPA Region 10 maintains GRPs for other inland waterways. According to Region 10, “GRPs ... are prepared through the efforts of the Washington Department of Ecology, Idaho and Oregon Departments of Environmental Quality, Idaho State Emergency Response Commission, the US Coast Guard, and the US EPA.” They are developed in workshops that involve “federal, state, and local oil spill emergency response experts; representatives from tribes, industry, ports, and environmental organizations; pilots; and response contractors.”

The first goal in the development of strategies is to identify resources, physical features, and conditions that may affect a spill response. Second, participants develop strategies based on resources identified and equipment considerations. Once strategies have been developed, additional logistical support is identified.

A GRP is a complete document or set of documents that outline all considerations that should be taken by responders. A description of the area is given to provide the scope of the region that been evaluated. Physical features and basic geologic history are briefly described. The hydrology of the area is described in greater detail, including landmarks, features, drainage, administrative areas, groundwater, and flow conditions.

A general overview of response considerations follows. Elements of the GRP (i.e. maps, tables, strategies) are described in general terms for the user.

An overview map for each geographic sector is hyperlinked to specific strategies identified on the map. Following the overview map is a table that details all strategies. Like the overview map icons, the strategy numbers are hyperlinked to the specific strategies. The EPA strategies have an aerial photo locator map and a simple base map, including suggested boom placement. A hyperlink leads to a site-specific table. This is the same information as the table mentioned above, but only for one site. Photos are included if available. Washington State strategies present the above information in a different graphic format, plus equipment recommendations and flow data.

Protection and collection priorities are available for some areas. The Northwest Area Contingency Plan outlines approaches for countermeasures depending on shoreline type. GRPs outline suggested actions for different spilled materials by shoreline type within geographic area.

Each GRP describes key species and habitats present in its geographic area. General procedures for dealing with archaeological and historical finds are also described. A table of logistical information is also available in the GRP. This includes response equipment, access locations, and contacts. Booming and other response techniques are described briefly.

Availability:

Web: Washington Ecology

<http://www.ecy.wa.gov/programs/spills/preparedness/GRP/introduction.htm>

EPA Region 10

http://www.rrt10nwac.com/geo_plans.htm

CD/DVD: Inland GRPs can be ordered from:
 Andrew Maguire
 Ecology & Environment, Inc.
 720 Third Ave
 Suite 1700
 Seattle, WA 98104
 206-624-9537
amaguire@ene.com

Contact Person(s)/Contact Points:

<http://www.ecy.wa.gov/programs/spills/preparedness/GRP/introduction.htm>

Marine GRPs contact John Williams (email link at bottom of page)

Inland GRPs contact Dan McDonald (email link at bottom of page)

US EPA Region 10 Examples

Examples: Spokane River (EPA)

[http://www.rtt10nwac.com/files/grp/spokane_river/Final Spokane_GRP.pdf](http://www.rtt10nwac.com/files/grp/spokane_river/Final_Spokane_GRP.pdf)

Nisqually River (WA Ecology)

<http://www.ecy.wa.gov/programs/spills/preparedness/GRP/Nisqually%20River/Nisqually%20River%20GRP%203-03%20F.pdf>

Ebey Slough upstream of Allen Creek Confluence #1 EB1-0.82-Average 4.85

Site Location: N 48° 2.185' W 122° 9.800'; Sector Map 7-1

Strategy Objective: Exclusion - Exclude product from tidal channel.

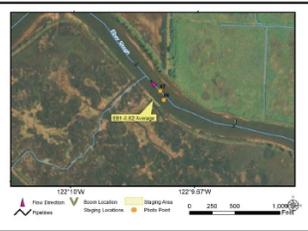
Implementation: Exclude product by anchoring boom from shore across the mouth parallel to Ebey Slough. Northwest of this creek (~40 yds) is another small creek that should be lined with ~50ft of sorbent boom.

Site Safety Note: Bank drops off to deep water at high tide.

Staging Area: Boat, laborers and equipment launch from (BL-275) NC-28-staging

Resources Targeted: shore birds, salmonids (anadromous), freshwater wildlife, sensitive habitat

Watercourse Description: Ebey Slough side channel, Field Visit Width ~ 9,00ft, Field Visit Depth ~ 20,00ft



Recommended Equipment	Description
50 ft	1/2" DM Braided Propylene Line w Safety Clips
1 each	Boat(s)
2 each	Hand Bridle(s)
200 ft	River Boom
2 each	Wing Anchor(s)

Recommended Personnel	
1	Boat Operator (s)
2	Laborer (s)

Status: Visited and Not Treated 10/18/2006

Snohomish (WRIA 7) GRP, Version 1.00 4-85

Spokane River Geographic Response Plan

Table 4a. Sector 1 (Strategy: SPR 21.75 - SPR 28.25, SGC 6.5 - SGC 1.75, CRC 6.5) - Booming Strategies and Resources Protected

Booming Strategy	Booming Strategy	Number of Booms and Length of Booms	Strategy Implementation	Staging Area	Site Access	Resources Protected	Comments	Status	Last Log (WASRD BARN)
SPR 21.75	Collection	4(100')	Anglo collection booms from private residences	Private property at end of Blaney Slough	From 1000 ft west of Blaney Slough, west on Taylor Slough to north on Field Ridge Rd, west on Taylor Rd, north on Blaney Slough	Downstream habitat	Private lot that supports nesting of Lake Sturgeon	Completed	01/24/07, 01/28/07
SPR 23.5	Collection	1(100')	Anglo collection boom from industrial to collect product water tankage	On detection line near water station and power transmission	Boat 2, south on Spruce St, south on Spruce St, south on Spruce St, west on Littlefield Rd, west on Washington-Clyde Park Rd, west on Washington-Clyde Park Rd	Wetlands, downstream habitat	Protect water station that supports 2-7 Lake Sturgeon on north side of Washington-Clyde	Completed	01/21/07, 01/26/07
SPR 24.25	Collection	1(100')	Anglo collection boom from Spokane Valley development	Spokane Valley development	From 100 ft west on River 2, south on River 2, south on Spruce St, south on Spruce St, south on Littlefield Rd, west on Washington-Clyde Park Rd, west on Washington-Clyde Park Rd	Downstream habitat	Staging area and boat ramp on north side	Completed	01/23/07, 01/28/07
SPR 26.15	Collection	4(100')	Anglo collection booms from area at driveway off Charles St	Charles St ramp	From 100 ft west on River 2, south on River 2, south on Spruce St, south on Spruce St, south on Charles St, west on Littlefield Rd, west on Washington-Clyde Park Rd, north on Charles St, north on Charles St	Downstream habitat	Downstream boat ramp that supports 2-7 Lake Sturgeon on north side, at 0.75 miles downstream on north side	Completed	01/23/07, 01/28/07

44 1 February 2006

Washington strategy page 1

Washington table

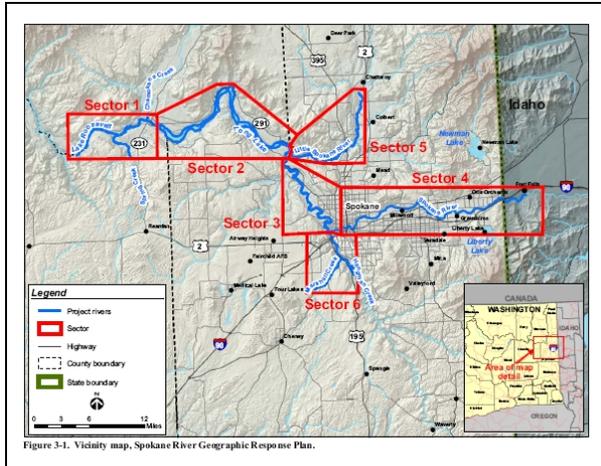


Figure 3-1. Vicinity map, Spokane River Geographic Response Plan.

Region 10 locator map

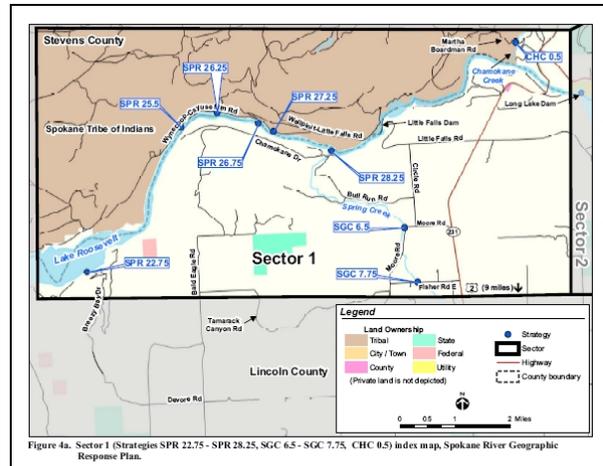
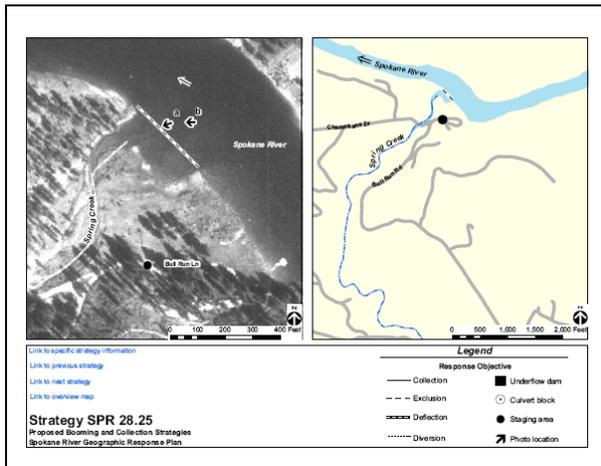
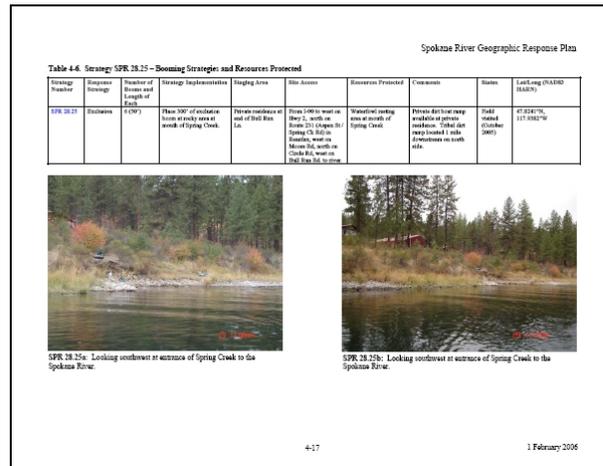


Figure 4a. Sector 1 (Strategies SPR 22.75 - SPR 28.25, SGC 6.5 - SGC 7.75, CHC 0.5) index map, Spokane River Geographic Response Plan.

Region 10 map



Region 10 strategy page 1



Region 10 strategy page 2

Comparison of GRP Content

User Interface

1. Map

	USCG	EPA Region 5	EPA Region 9	EPA Region 10
<i>Locator map</i>	Yes	Yes, linked to tiles	Yes	Yes, linked to tiles
<i>Map tiles</i>	No	Yes, linked to strategies	Yes	Yes, linked to strategies

2. Site-Specific Strategy Details

	USCG	EPA Region 5	EPA Region 9	EPA Region 10
<i>Lat/Long</i>	No	Yes	Yes	Yes
<i>Directions to site</i>	Infrequently	Yes – text description	Yes – text description	Yes – map and text description
<i>Detailed strategy description</i>	Yes	Yes	Yes	Yes
<i>Associated table or matrix</i>	No	Yes	No	Yes
<i>Boom requirements</i>	Yes	Yes	Yes	Yes
<i>Photos of site</i>	No	Yes	Yes	Yes
<i>Site contact info</i>	Infrequently	Yes	No	Yes
<i>Target resources</i>	Yes	Yes	Yes	Yes
<i>Other information</i>	Shore types	Shore types, river miles	USGS quad, stream width	Staging area, recommended equipment, mean monthly stream flow and velocity, safety note

3. Other information available for all strategies

	USCG	EPA Region 5	EPA Region 9	EPA Region 10
	Emergency contact info	Emergency contact info	Emergency contact info	Emergency contact info
	Shore type descriptions	Inland Sensitivity Atlas (extensive resource data)	Detailed watershed description	Sensitive resource descriptions
	Some staging areas			Staging area details
	General strategy approaches	Tactics Manual (modified Alaska Clean Seas doc)		General strategy approaches
			Mean monthly flow rates, some velocity data	Current chip log, general boom requirements

Tables

	USCG	EPA Region 5	EPA Region 9	EPA Region 10
	Tile ID	Site ID		Site ID
	Name	Water body, river mile		(Site ID)
				Status
	Location	Location		Location
	Comments	Strategy		Response Objective
	(Comments)	Boom feet		Boom feet
	(Comments)	Comments		Strategy details
	(Comments)	(Comments)		Staging area
	(Comments)	(Comments)		Resources