

5. RESPONSE CAPABILITIES

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5.1 INTRODUCTION

The purpose of this chapter is to provide an overview of the response capabilities of NRC that address planning standards issued in WAC 173-182 (2013) for specific planning areas (Figure 5-1). This chapter provides indications of mobilization times, spill response equipment and support available for regional and cascaded response, and cross references to the NRC PRC application.

5.2 MOBILIZATION AND TRAVEL

NRC provides in-state response personnel and equipment for rapid activation and mobilization to NRC Plan covered locations in Washington. NRC SMT personnel are located in the Puget Sound region and are available to mobilize within 1 hour for response. Primary and alternate staffing for the NRC Plan ICS Command Staff and Planning, Operations, Logistics and Finance Sections, including Chiefs and Branch, Group and/or Unit leaders are provided in Table 3-1.

The NRC Plan provides Covered Vessels with spill response capabilities from NRC and its subcontractor IOSA which are both Washington State approved PRCs.

Response times can be estimated from equipment locations to response areas using mileages and speed-time-distance tables (Figure 5-2 and Table 5-1). Spill response resources maintained by NRC include readily mobile systems, either on water (response vessels) or on trailers for immediate mobilization.

For the purposes of estimating response time of NRC resources, the following alternative speeds over water have been approved by Ecology:

- 25 knots for Fast Response Vessels (FRVs)
- 10 knots for the OSRV Cape Flattery, OSRV Columbia
- 8.75 knots for OSRV Ironwood
- 6 knots for the Island Viking towing the barge Kenny

The alternative travel speeds for these vessels are based on actual vessel movements documented by NRC. Records with details of these vessel movements and times have been submitted to Ecology. For planning purposes, the over water travel speeds of the other NRC vessels would be 5 knots and the travel speeds of equipment over land is assumed to be 35 miles per hour, as per the planning standard (WAC 173-182-350 (4)).

Figure 5-1 Geographic Areas for OSR Planning Standards (highlighted in orange)



Table 5-1 Distances (nautical miles) for locations in Puget Sound

BELLINGHAM	18															
BOUNDARY (RS)	44 ½	45 ½														
BOUNDARY (LK)																
EVERETT	61	74	99 ½	59 ½												
FERNDALE (1)	22	23 ½	25 ½		78											
MARCH POINT	2 ½		47		63											
MUKILTEO	57 ½	70 ½	96 ½	56 ½	3 ½	74 ½										
OLYMPIA	116 ½	129 ½	155	115		133 ½	118 ½									
POINT WELLS	57	70	96	56	15	74	59	12 ½								
PORT ANGELES	43 ½	56 ½	82	30	62	60 ½	45 ½	59	118	58 ½						
PORT GAMBLE	49 ½	62 ½	88 ½	48 ½	26 ½	67	51 ½				21	51				
PORT TOWNSEND	29				34 ½		31 ½	31	90	36 ½	35 ½	23				
SEATTLE	71	84	110	70	29 ½	88		25 ½	51 ½	13 ½	72 ½	33 ½	44 ½			
TACOMA	91 ½	104 ½	130 ½	90 ½	50	108 ½			36 ½	33 ½	93 ½	53 ½	65	27 ½		
	A N A C O R T E S	B E L L I N G H A M	B O U N D A R Y (RS)	B O U N D A R Y (LK)	E V E R E T T	F E R N D A L E (1)	M A R C H P O I N T	M U K I L T E O	O L Y M P I A	P O I N T W E L L S	P O R T A N G E L E S	P O R T G A M B L E	P O R T T O W N S E N D	S E A T T L E		

(RS) Rosario Straits, (LK) Lime Kiln Point, Ferndale (1) is midway between BP and Phillips66 Terminals.

5.3 GENERAL CAPABILITIES

General capabilities to provide oil spill response capabilities for vessels of opportunity, aerial surveillance, Group 5 oils, dispersants application, in-situ burning, storage, technical manuals and the emergency response towing vessel are discussed in the following.

5.3.1 Vessels of Opportunity (VOO)

WAC 173-182-317 Covered Vessel Planning standards for vessels of opportunity.

NRC has updated its PRC Application to include NRC VOO Program details pursuant to the requirements for Regions 1-6. This update includes the list of NRC Region 1-6 VOOs, VOO training requirements and mobilization procedures. NRC is committed to calling out NRC VOO Program participants to support booming, recovery and/or logistical support as appropriate and to VOO participation in drills specific to the tactics the VOO may support.

The NRC VOO program administrator maintains the list of NRC VOO participants including contact information and makes available to on-duty supervisors and response manager. VOOs will be contacted as needed for emergency response by the NRC VOO program administrator, on-duty supervisor or response manager. Vessels in the NRC VOO program are also entered into the Ecology VOO database. NRC will verify VOO participant database information on an annual basis. NRC VOO contracts, training records and materials are maintained in the NRC Seattle office by the VOO program administrator and made available to Ecology upon request.

5.3.2 Aerial Surveillance

WAC 173-182-321 Covered Vessel Planning Standards for Aerial Surveillance

NRC provides Aerial Surveillance capabilities as required by July 14, 2014 as described in the NRC PRC Application approved December 2013. In addition, the NRC PRC Application July 14, 2014 update includes additional resources information meeting the Aerial Spotters and Equipment requirements and the November 2016 update added aerial observation capabilities required by January 14, 2016.

NRC Observation Personnel are trained in:

- ASTM assessment techniques – “Standard Practice for Reporting Visual Observations of Oil on Water”
- Expertise in the estimation of slick size, thickness, and quantity
- NOAA’s “Open Water Oil Identification Job Aid for Aerial Observation”
- NOAA’s “Characteristic Coastal Habitats” guide

NRC Aerial Observers are also:

- Capable of supporting oil spill removal operations continuously for three 10-hour operational periods during the initial 72 hours of the discharge
- Trained in Aerial Oil Surveillance Training provided by U.S. Coast Guard (USCG) D13 – District Response Advisory Team (DRAT)

In the event that aerial assets are needed, NRC would contract with one of the aircraft companies in Table 5-2 below.

Table 5-2 Aircraft Companies for Aerial Observations

NAME	TYPE	CONTACT
Kenmore Air Seattle, WA	Float plane	425-486-1257
NW Seaplanes Renton, WA	Float plane	425-277-1590
Classic Helicopters Seattle, WA	Helo	206-767-0515
Hillsboro Hillsboro, WA	Helo and Fixed Wind	800-891-3790

NRC also has access to over 70 Spotter Aircraft throughout the United States at 48 different aircraft staging bases. All aircraft staging bases meet the specifics of individual NRC contracted aircraft requirements, including runway composition, runway length and optimal proximity to possible spill event sites.

NRC has a contract in place with AeroVironment, Inc. (AV), providing NRC with access to aerial assets that meet the best achievable technology for aerial oil surveillance, including the capability to provide a strategic picture of the overall spill; assist in location of slicks when they are not visible by persons operating at, or near, the water's surface or at night; extend the hours of clean-up operations to include darkness and poor visibility; identify oceanographic and geographic features toward which oil may migrate.

AV provides NRC with access to the Puma All Environment with Digital Data Link (Puma AE DDL) Unmanned Aerial Vehicle (UAV). The 12-hour response time frame will be met by prepositioning some equipment at NRC Seattle in combination with mobilizing on commercial flights additional equipment and personnel from AV's location in California. Once on scene, the Puma AE platform provides an immediate ability to deliver Intelligence, Surveillance, and Reconnaissance (ISR) to support aerial surveillance objectives.

The Federal Aviation Administration (FAA) has issued AV's PUMA a 'Section 333' authorization and associated Certificate of Authorization (COA) for flight in the U.S. airspace system for both day and nighttime operations providing 24-hour aerial surveillance capabilities. Flights are generally limited to under an altitude of 200 feet, with 400 feet possible under specific authorizations.

UAS platforms are ideally suited for aerial surveillance and monitoring capabilities in the event of an oil spill incident. Utilizing the AV UAV for these operations provides geo-referenced, real-time imagery and HD photos. The Puma AE DDL operators use the Ground Control Station GCS to control the aircraft and aircraft sensors, process and display all incoming sensor data, and observe video images received in real time. The GCS is compatible with AV's Family of SUAS that includes the Raven B, Shrike VTOL and Wasp AE platforms. The GCS includes the following functions for daytime and nighttime operations:

- Mission planning
- Moving map
- UAV control
- Sensor control
- Storage and processing of data

The GCS can also be used as Remote Video Terminal (RVT). Integrating GCS units in the RVT Mode with other assets (Boats, Vehicles, Oil Platforms and land based locations) enabling personnel other than those individuals located at the Puma AE's command and control position, to view, analyze and react to the data provided from the Puma AE mission.

See the NRC PRC Application for more detailed information about aerial surveillance capabilities and resources available through NRC and its vendors and subcontractors.

5.3.3 Group 5 Oils

WAC 173-182-324 Planning Standards for Group 5 Oils

NRC has the capability to detect and map subsurface oil by:

- performing sampling

- conducting visual observations
- utilizing sorbent drops and snares

NRC can contain group 5 oils with:

- over 55,000 feet of boom in a variety of sizes
- numerous roles of sausage boom and bales of sweep
- seven miles of snare
- water jets to corral and contain oil

NRC has the capability to recover group 5 oils with:

- 36 pumps/submersible pumps
- six 70 bbl vacuum trucks
- four 120 bbl vacuum trucks
- 7 thousand bales of snare
- 15 thousand feet of sorbents on hand with access to more
- nets and trawls

See the NRC PRC Application for more detailed information about Group 5 Oils capabilities and resources available through NRC and its vendors and subcontractors.

5.3.4 Dispersants

WAC 173-182-325 Planning standards for dispersants.

NRC utilizes Nalco Corexit 9500A housed in Seattle and Portland. Specific guidelines, policy, authorization procedures (including application for dispersant use) are provided in Section 9404 of the NWACP. It is the policy of the Northwest Area Committee that SMART protocols would be followed to monitor and document dispersant application and effectiveness. Aerial surveillance aircraft would be used to monitor application with possible monitoring support from vessels operating in the area.

The NWACP Dispersant Use Zone Summary is as follows:

Dispersant Pre- Approval Zone

- Marine waters 3 to 200 nautical miles from the coastline or an island shoreline except for waters designated as a part of a National Marine Sanctuary and the Makah Tribe Usual and Accustom marine area or waters within three miles of the border of the Country of Canada, or the State of California.

Dispersant Case-by-Case Approval Zone

- All Marine waters that are both within 3 nautical miles from the coastline or an island shoreline and greater than 10 fathoms (60 feet) in depth

- Waters designated as a part of a National Marine Sanctuary and waters that are part of the Makah Tribe Usual and Accustom marine area which are also greater than 10 fathoms (60 feet) in depth
- The Strait of Juan de Fuca and North Puget Sound from Point Wilson to Admiralty Head and north, and greater than 10 fathoms (60 feet) in depth.
- Marine waters within 3 miles of the borders of the State of California, Makah Tribe Usual and Accustom marine area, and the country of Canada

No Dispersant Use Zones

- Marine waters that are both less than three nautical miles from the coastline and less than or equal to 10 fathoms (60 feet) in depth
- Marine waters south of a line drawn between Point Wilson (48° 08' 41" N, 122°45' 19" W) and Admiralty Head (48° 09' 20" N, 122 40' 70" W)
- Freshwater environments

Figure 5-2 provides the Region 10 RRT Dispersant Pre-approval Area Map. Specific dispersant planning standards for representative NRC Plan Covered Vessels are summarized in Table 5-3.

Figure 5-2 Region 10 RRT Dispersant Pre-approval Area Map

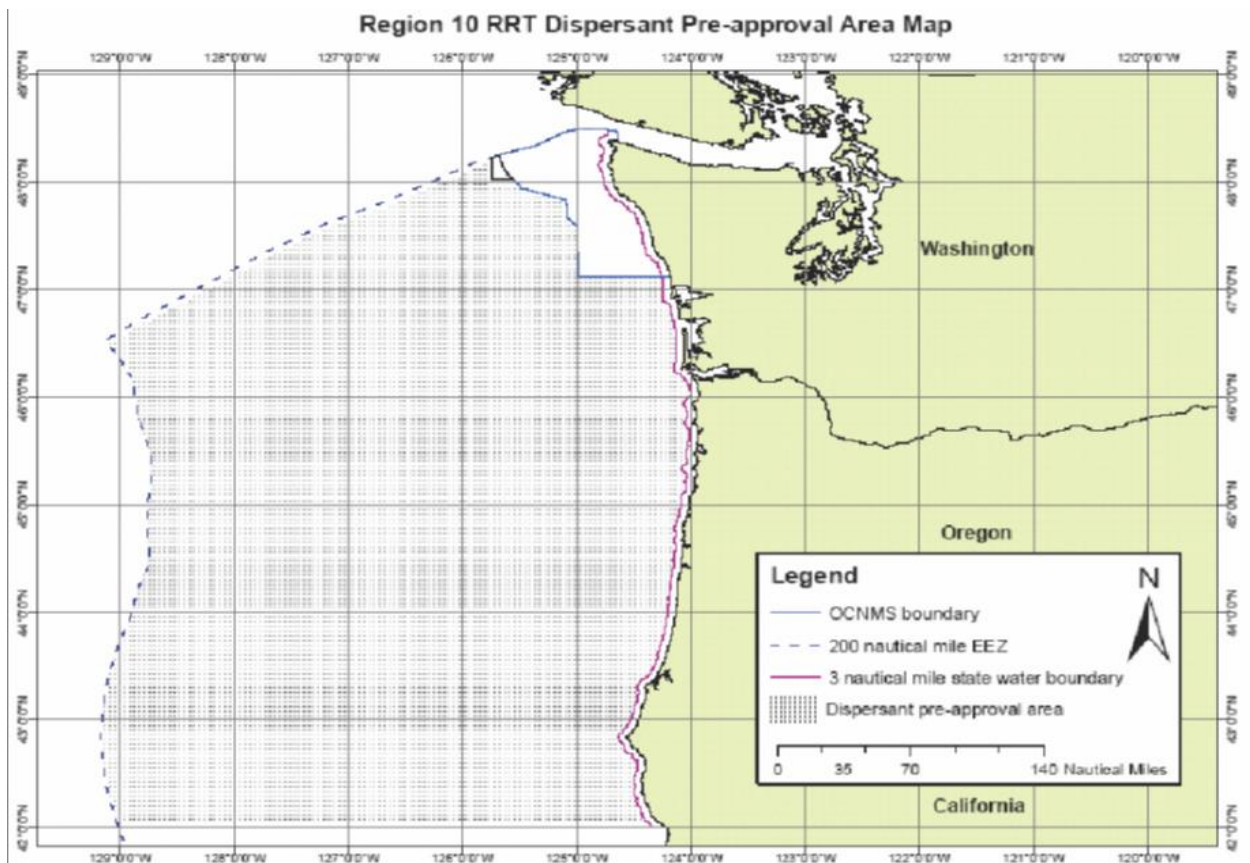


Table 5-3 Dispersant Planning Standards for NRC Covered Vessels

Covered Vessel Type	Operating Area	WCS Volume (bbl)	Planned Dispersant Volume (bbl)
Tanker	Outer Coast, SJD, N. Puget Sound	100,000	Assume 1:20 application; based on treating 5,000bbl/day (cap) = 250 bbl/day
Fishing Vessel	All WA Marine Waters	9,000 to 10,000	Dispersant application not likely because most carry non-persistent diesel as fuel
Cargo Vessel	All WA Marine Waters	100,000	Assume 1:20 application; based on treating 5,000bbl/day (cap) = 250 bbl/day

See the NRC PRC Application for more detailed information about dispersant capabilities and resources available through NRC and its vendors and subcontractors.

5.3.5 In Situ Burning (ISB)

WAC 173-182-330 Planning Standards for In Situ Burning

Under conditions of the NWACP, ISB is considered a viable response option provided criteria regarding oil properties, environmental conditions, and risk assessment are met. The NWACP states:

“While no geographic areas have been excluded from the consideration to use in-situ burning, it is very unlikely that it would be approved in a heavily populated area such as inner Puget Sound because of the increased potential for exposing people to high levels of particulates. However, even in highly populated areas, burning may still be approved in unique circumstances, especially when the volatiles from the unburned oil pose a serious threat to human health.”

Under the NWACP, Section 4621, ISB is pre-approved for use in those areas which are more than 3 miles from population. The use of ISB in all other areas is to be decided on a case-by-case basis.

A primary consideration in the decision to burn is the protection and safety of human life. The authority to approve a burn rests with the Unified Command, who must determine that an application to burn conforms to the NWACP guidelines. The decision to burn or not burn must be made expeditiously. Specific guidelines, policy, authorization procedures (including application for ISB) are provided in the NWACP. SMART Protocols typically would be followed to monitor and document ISB application and effectiveness.

See the NRC PRC Application for more detailed information about ISB capabilities and resources available through NRC and its vendors and subcontractors.

5.3.6 Storage

WAC 173-182-335 Planning Standards for Storage

NRC meets the recovered oil and oily waste storage requirements through several sources:

1. NRC equipment, including storage barges, shallow water barges and bladders (see Section 5.4, below)
2. In order to meet the requirements of WAC 173-182-335 for dedicated on-water storage available within 24-hours, NRC has chartered the Kenny, a 30,783 Barrel tank barge moored in Duwamish River, Seattle, WA. The barge will be towed by the Island Viking at the alternate speed of 8 knots. NRC has also added four (4) Shallow Water Barge sets – two (2) in Portland, one (1) in Seattle and one (1) in Grays Harbor – which provide a total of 952 barrels additional on-water storage.
3. NRC LOIs with tank barge operators committing to provide barges for temporary storage on an as available basis
4. On-shore temporary storage capabilities resources through LOIs with frac tanks and/or with facilities transferring oil to/from a Covered Vessel.

NRC storage equipment information is available in the Western Response Resource List, available on-line at www.wrri.us/index.html.

NRC has access to more than 35 barges of opportunity with varying storage capacities that operate in Washington State (see Appendix B for LOIs, list of contact information for initiating deployment in case of a spill and barge capacity spreadsheet). Barges of opportunity will be mobilized as needed through direct phone request from NRC to the relevant operator(s).

NRC also has access to shoreside storage through LOI agreements. Mobile storage tanks can be deployed to locations throughout Washington State. Approximately 1 million gallons of portable land-based storage is available from Baker Tanks in Washington and another 1 million in Oregon, within 24 hours of notification. An additional 200,000 bbls of shoreside storage could be available in Aberdeen, WA through the LOI between NRC and Imperium Renewables (see Appendix B).

5.3.7 Technical Manuals

WAC 173-182-349 Covered Vessel Plan Holders Technical Manuals

PLACEHOLDER for new requirements due January 2016

5.3.8 Neah Bay Emergency Response Towing Vessel (ERTV)

The Neah Bay Emergency Response Towing Vessel (ERTV) is stationed at Neah Bay and available to respond to vessel emergencies. For information and description of the ERTV, see Appendix E of this Plan.

5.3.9 Shoreline Cleanup

WAC 173-182-349 Covered Vessel Planning Standards for Shoreline Cleanup

As described in detail in the NRC PRC Application and on the WRRL, as well as in 6.8 Shoreline Cleanup, NRC the capability to provide shoreline clean-up within 24 hours as well as to support 14 additional days of shoreline clean-up.

5.4 PRIMARY RESPONSE CONTRACTOR APPLICATION

5.4.1 PRC Application

NRC maintains a PRC application with Ecology. NRC also maintains an agreement with the Island Oil Spill Association (IOSA) providing resident spill response resources, to meet the 2 and 3 hour planning standards, for the San Juan Islands. Lists of selected NRC and IOSA response resources are provided in Appendix A.

In order to meet the 4-hour planning standards for Neah Bay (WAC 173-182-395), San Juan County (WAC 173-182-370), Grays Harbor (WAC 173-182-405) and Commencement Bay Quartermaster Harbor WAC 173-182-380 NRC has staged DESMI Speed Sweeps in Neah Bay on the NRC Cape Flattery, in Anacortes on a trailer and at NRC Seattle on a trailer which is dedicated to the NRC WA Plan.

For a complete directory and listing of response resources from NRC and IOSA, refer to the WWRL database available on-line at www.wrri.us/index.html.

Through this prepositioned response equipment and ready response personnel, the recovery and storage planning standard requirements are met for the WCD amounts in the planning standard areas covered by the NRC Plan as described in Section 1.4, with the exception of the recovery and storage requirements in the Neah Bay Staging Area at hour 6. An alternative planning standard is used for the coverage of the Neah Bay Staging Area recovery and storage 6 hour requirements. This alternative planning standard is described in the next section.

Figure 5-3 Overview of NRC Spill Response Resources

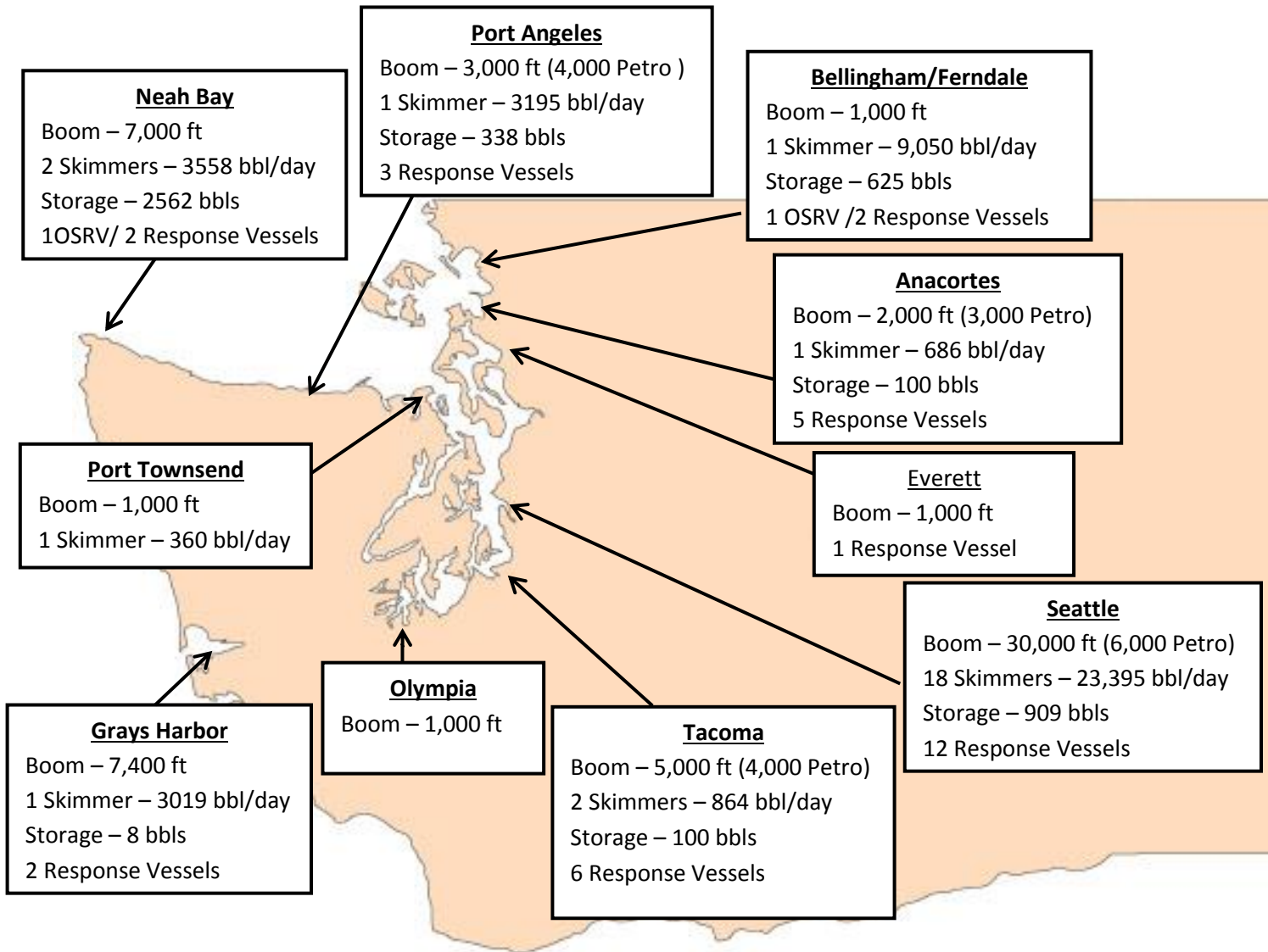


Figure 5-4 Overview of IOSA Spill Response Resources



5.4.2 Neah Bay Staging Area – Alternative Planning Standard

Due to infrastructure limitations in Neah Bay, NRC complies with the following alternative planning standard. This alternative planning standard applies to the 6 hour storage requirements for the Neah Bay Staging Area (WAC 173-182-395).

Recovery has been increased through the deployment of a Neah Bay On-Water Recovery Task force, utilizing three skimming systems. These skimmers will be the Aquaguard RBS-40, the Aquaguard RBS-10 and a new state-of-the-art Elastec X-150 skimmer. A task force diagram depicting the deployment of these skimming systems is enclosed in Appendix A. These skimmers are staged in Neah Bay, stored aboard the OSRV Cape Flattery, and ready for rapid deployment.

An Elastec X-150 skimmer uses grooved disc technology to achieve high efficiency recovery. The Elastec X-150 is the production version of the skimmer that won the X-Prize competition in 2011 for the most efficient skimmer with a documented recovery efficiency of over 90.1% in waves. This competition was held under rigorous standards, under a variety of induced conditions at the OHMSETT test facility.

Information on this skimmer and the efficiency results from the X-Prize testing are contained in Appendix A. The Elastec X-150 skimmer has a nameplate pumping capacity of 660 gpm or 22,629 bbl/day. Ecology has granted an alternative EDRC for this skimmer of 9,428 bbl/day.

Having the Elastic X-150 skimmer staged in Neah Bay provides the capability to quickly mobilize this skimmer, recovering oil with high efficiency early on in the response since this will be one of the first skimmers to respond to an incident in the vicinity of this staging area. The X-150 will be deployed as an advancing skimming system from a Shallow Water Barge (described below), tended by the FRV 7. The NRC workboat Red Rocket will tend boom to increase the sweep width of this skimming system. The X-150 skimmer will be rigged directly into the boom at the collection point and recover oil as the vessel moves forward. The deployment and operation of this skimming system will utilize 4 response personnel. Additionally, enhanced skimming will be implemented to increase effective sweep width through use of the NRC Robalo and a Makah vessel of opportunity (VOO), deploying 1,000 ft of boom to collect and concentrate oil for recovery by the X-150 skimmer. The Shallow Water Barge will provide the storage for this skimming system.

The Aquaguard RBS 40 drum skimmer (EDRC 2,427 bbl/day) will be deployed from the OSRV Cape Flattery. The deployment of this skimmer will be over the side of the vessel utilizing boom in a V-sweep configuration to collect and concentrate the oil. The deployment and operation of this skimming system will utilize 4 response personnel. Oil collected by this system will be stored in the vessel's 320 bbl capacity onboard storage tanks.

The third skimmer, the Aquaguard RBS 10 (EDRC 862 bbl/day) will be deployed from the FRV4 with boom in a J-configuration to increase effective sweep width and to collect and concentrate the oil. The deployment and operation of this skimming system will utilize 4 response personnel. Oil collected by this system will be stored in the 100 barrel dracone, also staged in Neah Bay.

Under measures for this Alternative Planning standard, resident skimming EDRC capability at Neah Bay was increased from 2,427 bbl/day to 12,517 bbl/day, a 416% increase.

On water storage capability has been enhanced with the staging of a Shallow Water Barge (SWB) in Neah Bay. After a thorough examination of options to place a barge in Neah Bay, a SWB (38.5 ft long x 16 ft wide, 249 bbl capacity) was determined to be the practical option to increase resident storage, given the current infrastructure in Neah Bay. This SWB is staged in the water for rapid deployment, moored alongside the OSRV Cape Flattery or in a slip at the Neah Bay marina. The SWB adds 249 bbls of resident in-water storage to Neah Bay. Other resident storage in Neah Bay includes 320 bbls of onboard storage on the OSRV Cape Flattery, the 100 bbl CanFlex dracone staged on the OSRV Cape Flattery and the nine 238 barrel fabric storage tanks staged at Neah Bay on a trailer. This totals 2,811 bbls of storage resident in Neah Bay. In addition to this resident storage in Neah Bay, within Hour 6 an additional 576 bbls of storage could be provided by the CanFlex tanks in Port Angeles and the SWB sets staged in Seattle. This is a total of 3,387 bbls of storage that could have arrived by Hour 6. Based on skimmer EDRC, this is more than enough storage to accommodate the oil recovered at Hour 6 by the 3 skimmers resident in Neah Bay.

Beyond Hour 6 and before the next planning standard increment (12 hours), 2,400 bbls of LOI storage from vacuum trucks and shoreside tanks could have arrived. Before Hour 10, an LOI tug and barge from Port Angeles could provide an additional 21,000. For planning purposes by Hour 12 an additional 625 bbls of storage from the OSRV Columbia and 30,000 bbls from an LOI barge could be provided.

The NRC Cascading Schedule for the Neah Bay Staging Area is contained in Appendix A and provides further details of the NRC equipment that could be cascaded in to support oil spill response operations.

In addition to the new the response measures described above, the OSRV Ironwood, another large open water capable vessel, staged in Astoria, OR, will also be made available as a response resource for the Neah Bay Staging Area. This vessel's capability would include 100 feet of ocean boom and a Crucial Disc skimmer with 1,440 bbl/day EDRC. Using a 1 hour mobilization time with a travel distance of 167 NM from Astoria, OR to the Neah Bay Staging Area and a transit speed of 10 kts, the vessel would plan to be on-scene in 17.7 hours of initiating mobilization. This resource would be in addition to NRC resources already in place planned to meet the 12, 24 and 48 hour requirements.

Credit for prevention measures: The Neah Bay Emergency Response Towing Vessel, described in Section 5.3.10 and Appendix E, funded in part by NRC Covered Vessels, is staged in this area and provides an opportunity for early intervention in incidents that pose a threat of a spill. This affords increased environmental protection though prevention.

Taken in total and in light of current infrastructure limitations in Neah Bay, the increases in resident skimming capacity and storage capacity, the addition of Shallow Water Barge sets in Seattle (1), Portland (2) and Grays Harbor (1), plus the presence of the ERTV in Neah Bay, constitutes an alternative planning standard for the 6 hour storage requirement that provides an equivalent or higher level of protection in terms of spill preparedness and response compared with the minimum requirements of WAC 173-182-395.

5.4.3 Grays Harbor Area – Alternative Planning Standard

The NRC Plan Grays Harbor Alternative applies to tank vessels transiting through Grays Harbor (WAC 173-182-405) to and while berthed and conducting transfer operations at Imperium Renewables (WAC 173-182-355).

The Alternative is a combination of oil spill prevention and preparedness measures provided by NRC and Imperium Renewables that provide a higher level of protection than the requirements of these regulations. The Alternative meets the requirements cited in WAC 173-182-620, Alternative method of Evaluating Planning Standards. The following measures together constitute the Alternative and are implemented each time a tank ship transits through Grays Harbor to and while berthed and conducting transfer operations at Imperium Renewables:

- Advanced notice of vessel arrivals and cargo volumes on board vessels are provided to Imperium, Imperium's contractors and the Department of Ecology in order to organize the prevention and preparedness measures prior to vessel arrival and transfer operations begin.
- Tug escorts are provided for all tank vessels entering Grays Harbor and calling at Imperium: At least one escort tug will meet an arriving tank vessel at the Grays Harbor entrance and escort it to the Hoquiam River where two tugs (escort and assist) assist the vessel during mooring procedures. This is above and beyond any regulatory requirements and a prevention measure that ensures assist tugs are in place as the vessels transit through the harbor.
- Imperium maintains contracts with both NRC and Cowlitz Clean Sweep (CCS). Each of these contractors has their equipment listed on the Western Response Resource List (WRRL). All WRRL equipment listed by these contractors is available for call out if a spill occurs at Imperium.
- Pre-booming of oil transfers will occur when it is safe and effective to do so.
- During transfers, Imperium will move the following personnel and equipment in place for rapid and aggressive response should a spill occur. An NRC skimmer vessel and a CCS boom vessel are re-positioned to temporary moorage at Imperium facility during transfers.
- Imperium provides storage through access to their facility shoreside storage tanks. Shoreside storage is also available as portable tanks accessed under the letter of intent between NRC and Baker Tanks Continental, Inc. Under this agreement, over 8,000 barrels of storage could be provided within 12 hours and 18,000 barrels within 24 hours.
- NRC Shallow Water Barge sets with capacity of 480 barrels are on standby in Grays Harbor during transfers providing immediate access to on-water storage. NRC maintains a letter of intent with Brusco Tug and Barge. The barge sets will be mobilized to support skimming operations using the Brusco tugs available under this agreement. The barges can also be used to cascade storage resources, transfer recovered waste to shore and avoid delays in recovery.
- NRC has also added four (4) Shallow Water Barge sets Harbor – two (2) in Portland, one (1) in Seattle and one (1) in Grays Harbor – which provide a total of 952 barrels additional on-water storage capabilities in advance of the 6 hours response requirement.
- The tank barge Kenny is capable of reaching the Grays Harbor Planning within 30 hours and arriving at the Imperium transfer site within 34 hours. This dedicated resource will providing more than 30,000 barrels of additional on-water storage – more than double the 24-hour dedicated transfer requirement.

- All tank vessels are encouraged to utilize all information and follow all Standards of Care in the Grays Harbor Safety Plan. The plan can be located at:
<http://www.portofgraysharbor.com/harbor-safety/links.php>
- The checklist below will be used to document compliance with the measures. Ecology inspectors may be present during transfers and unannounced drills may be used to verify compliance as well.

The above prevention and preparedness measures provide a higher level of protection than required in WAC 173-182-405 and WAC 173-182-355, are beyond regulatory minimum requirements and present a plan for a rapid, aggressive response should spills from tank vessels occur while in the Grays Harbor Area.

CHECKLIST FOR STANDARD OPERATIONS PRE-ARRIVAL/DEPARTURE OF VESSELS OPERATING AT IGH TERMINAL

The Washington State Department of Ecology requires the following precautionary measures. These special conditions are adopted, in part, to address a shortfall of on-water storage response capabilities for a worst-case discharge planning volume from on-land storage tanks.

First, all tank vessels that call on the Imperium Marine Terminal must be contracted with NRC. If a spill originates from the vessel then the NRC Plan will be activated. If the spill occurs during transfers or originates from the Imperium facility, this Imperium ICP will be activated. If the source of the spill is unknown both parties must work together to respond. Additionally, prior to the arrival or departure of tank vessels that call at the Imperium Marine Terminal, either to load or discharge oil cargo, Imperium must complete the following actions:

- Notify NRC and Ecology of a vessel in route to Imperium for a transfer. Include arrival time and transfer information.
- Confirm the vessel is a NRC Plan covered vessel
- Ensure that the worst-case discharge volume of the vessel is identified (fuel and cargo) and communicated to NRC, Imperium and Ecology.
- Ensure the vessel QI is in contact with Imperium.
- Ensure that Imperium and receives the Advance Notification of Arrival from Agent.
- Arrange for an escort tug to meet the vessel at the Westport entrance and escort it to the Hoquiam River.
- Arrange for two tugs (escort and assist) to be assigned to work with the vessel during mooring procedures
- Ensure that prior to the transfer the standard procedure per the Facility's Transfer Operations Manual is followed; PLUS:
- Provide notice of transfer plans to Cowlitz and NRC for personnel standby, to include product(s) and volume(s) to be transferred and transfer direction (vessel loading or unloading)
- Arrange for an NRC skimmer vessel (OSRV) to be re-positioned to temporary moorage at Imperium Terminal during transfers
- Ensure workboats and personnel to cascade the two mini-barges with a total of 480 bbl capacity are available for response during transfers.
- Arrange for the Cowlitz boom boat to be deployed at the Imperium Terminal during transfers
- Arrange for the transfer area to be pre-boomed by the Cowlitz boom boat (if within safe and effective operating limitations)

5.5 EQUIPMENT MAINTENANCE

WAC 173-182-270 Maintenance records for response equipment.

The spill response equipment maintained by NRC is inspected in a systematic approach:

- Verifying that the equipment is where it is supposed to be and maintenance is documented and up to date.
- Demonstrating that the equipment turns on and all of the other components/pieces needed to make it work are also there.
- Deploying the equipment in the appropriate operating environment.

NRC/NCRES ensures that each piece of equipment and/or system goes through each of the above levels of inspection over time (6 years) in a systematic approach. At a minimum, half of the equipment/systems are inspected within the first triennial drill cycle (3 years) and the remaining half will be inspected in the following triennial drill cycle. NRC will ensure that documentation of equipment maintenance and inspections are kept on file for at least 5 years and made available to Ecology upon request.

See the NRC PRC Application for additional information on equipment maintenance procedures.