Chapter 3000

Operations

Northwest Area Committee Expectations:

- Northwest Area Committee members and those responding within the region are fully aware of key policies, expectations, and procedures in the Northwest Area, including:
  - Staffing of the Wildlife Branch under the Operations Section.
  - The role of the Operations Section in use of dispersants, salvage and when responding to rail incidents.
  - Shoreline cleanup tactics and property access.

Critical Elements of Chapter 3000:

- Offers operations safety guidance for responding to Bakken oil spills.
- Offers operations guidance on fast water response, remote sensing tactics, response to gasoline (or other highly volatile) oil spills.

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3100 Operations Section

All incidents begin with operations. The Operations Section Chief must be both tactically competent when responding to and possess a thorough understanding of the Incident Command System (ICS). For a quick explanation of how the Operations Section functions and organizes its work, please refer to Section 9315.

Some of the primary responsibilities of the Operations Section Chief are:

- Manage tactical operations;
- Ensure tactical operations are conducted safely;
- Maintain close communications with the Incident Commander/Unified Command;
- Identify required tactical resources to accomplish response objectives;
- Identify staging areas;
- Assemble and disassemble strike teams and task forces; and
- Assist in the development of the Incident Action Plan.

3101 Function and Organization of the Operations Section

3101.1 Initial Response

The ICS 201 Operations Diagram provides the operational structure for the initial day's response and that structure remains in place until the Incident Action Plan (IAP) is approved, briefed and commences. The incident works under the ICS 201 in the *Reactive Phase* of the response and under the IAP in the *Proactive Phase*. The Operational Diagram for the next operations period will not be complete until after the Tactics Meeting occurs and not final until approved by Unified Command (UC) in its Planning meeting. Finally, the operations diagram is not displayed in the Incident Command Post (ICP) until the operational period commences.

3102 Initial ICS Organization

Until Operations is established as a separate Section, the Incident Commander has direct control of tactical resources. The Incident Commander will determine the need for a separate Operations Section at an incident or event. When the Incident Commander activates an Operations Section, he or she will assign an individual as the Operations Section Chief.

3103 Role of an Operations Section Chief

The Operations Section Chief will develop and manage the Operations Section to accomplish the incident objectives. The Operations Section Chief is normally selected from the organization with the most jurisdictional or functional responsibility for the incident. The position of Operations Section Chief should be filled by the person with the greatest technical and tactical expertise in dealing with the problem at hand.

The Operations Section Chief roles are as follows:

- Operations Section Chief (along with Command and General Staff) develop and implement strategies and singularly develops and implements tactics.
- Responsible for developing and implementing strategies and tactics to carry out the Incident Objectives.
- Responsible to the Incident Commander/Unified Command for the direct management of all incident-related operational activities.
- Organizes, assigns, and supervises all tactical field resources assigned to an incident, including air operations and those resources in a staging area.
- Has direct involvement in the preparation of the Incident Action Plan.
- May have one or more Deputies assigned.
- The assignment of Deputies from other agencies may be advantageous in the case of multijurisdictional incidents.

The **Operations Section Chief's** workload consists of a combination of responsibilities both inside the ICP and in the field. Their day starts with the Operations Briefing at which time the Operations Section Chief discusses current response actions and accomplishments and the plan for the upcoming operating period. Once the operations brief is complete and after heading to the field to see how ICS work assignments are proceeding, the Operations Section Chief should begin to formulate what the next day's operational period work will entail.

When the Operations Section Chief returns to the ICP, they use the UCs objectives, the Work Analysis Matrix and Operation Planning Worksheet to prepare for the Pre-tactics and Tactics meetings. Once the Tactics Meeting is complete, the Operations Section Chief (or Deputy Operations Section Chief) returns to the field to speak to the division and group supervisors dealing with field issues to ensure the work is on track before returning to the ICP for the Planning Meeting.

The OSC returns to the ICP to present operations plan for the next operational period at the Planning Meeting. Depending on the complexity of the incident, an incident may be managed with a single Operations Section Chief, an Operations Section Chief and a Deputy working nights, or multiple Deputies working days and nights. In medium- to-large spills, the Operations Section Chief may use the Planning Operations Section Chief Deputy role to keep the IAP development process on track while they are in the field.

3104 Operations Section Technical Management

3104.1 Staging Areas

Staging areas are locations where incident personnel and equipment are assigned awaiting tactical assignment. All resources in the Staging Area are ready for deployment. Out-of-service resources are NOT located in the Staging Area.
Each Staging Area should have a direct line of communication with the Resource Unit and should utilize ICS-211P and 211E for resource tracking. Staging Area Managers should determine adequacy of staging areas, communications and other support aspects and request additional support using ICS-213RR as needed.
Staging Area names should account for the geographic location. For example, if it were located at Shilshole Marina, the name could be "Shilshole Marina Staging."
After a Staging Area has been designated and named, a Staging Area Manager will be assigned. The Staging Area Manager will report to the Operations Section Chief or to the Incident Commander if the Operations Section Chief has not been designated.
In the event of a larger spill with multiple Staging Areas established, span of control may be managed by assigning a Staging Area Branch Director to oversee all of the Staging Area Managers.

The Staging Branch Director is responsible for supervising the Staging Area Managers (STAMs) as well as coordinating their activities including assigning STAMs and receiving, maintaining, checking-in/out, storing, and distributing resources. The Staging Branch Director will generally remain in the Incident Command Post and supervise the STAMs from there.

3104.2 Divisions

ICS Divisions are established **to divide an incident into geographical areas of operation**. The benefits of a **Divisional Organization** allow resources a clearly assigned location and can be found easily on a chart or map.

The person in charge of each Division is designated as a **Supervisor.** Divisions are determined by the needs of the incident. The most common way to identify Divisions is by using alphabet characters (A, B, C, etc.). Other identifiers may be used as long as the assigned responders know Division identifiers.

NWACP best management practice naming conventions for divisions:

- Name the incident/source location Division A.
- Mainland divisions are named with a single alpha character B to Z a three letter regional identifier City or County. For example SKG-B for Skagit County.
- Island divisions are named with double alpha characters BB to ZZ proceeded by a 3 letter island code. For example, the convention would be SJI – BB for San Juan Island.

Riverbank Divisions are marked on the right descending bank or the left descending bank. Riverbank Divisions typically should not cross rivers. For

example B-L or B-R looking to the mouth of the river. For larger spills the name may be proceeded by a regional identifier.

Divisions are land-based operations with a boundary against a shoreline where coastal spills are concerned. Divisions are not boundaries/breaks on the water; these boundaries/breaks are referred to as Branches. Determining the length of a Division along a shoreline involves several factors.

Consider the following when determining how to set Division boundaries:

- Span of control issues when dealing with both personnel and equipment resources
- Access issues and constraints, both on land and on water
- The degree of shoreline oiling. Heavy oiling would call for shorter segments while minimal oiling may allow the use of larger divisions
- Natural breaks such as a bridge or geological feature.
- Predominate shoreline types
- Jurisdictional boundaries such as a city, county or state line
- Consultation with the Environmental Unit to ensure that Divisions encompass rather than bisect Shoreline Cleanup Assessment Technique (SCAT) segments or Geographic Response Plans (GRP).
    - For example, the shoreline operational divisions are organized and named according to County boundaries. Within county domains, division boundaries are guided by logical features such as coastal physical characteristics and land ownership/management, shoreline cleanup logistical considerations and manageable working size. Logistics, access and manageability are driving considerations, particularly as it relates to types of cleanup operations required and problems likely to be present.
    - In Area Contingency Plan areas having more than one county, Shoreline Operational Divisions may utilize a single alpha character (A to Z). Shoreline Operational Divisions are labeled from north to south in each county. For example, the northern-most Operational Division in King County is "K-A." In large bays (i.e., Elliott), the labeling will continue in a clockwise direction to accommodate changing coastline angles. Divisions can be subdivided, if necessary, by Operations to account for unforeseen work assignment effort.

Operations should have in mind how to expand Divisions beyond the next operational period; however, Divisions should be created, named and populated based on the next day's operational needs. Creating Divisions in areas that are not yet impacted may not allow for the flexibility needed in subsequent operational periods.

In the early hours of a spill, responders will implement the Geographic Response Plan (GRP) priority tables. This prioritized list of strategies may call for implementation of protection booming outside the impacted area. The Operations

Section may not initially need to create Divisions for all areas where GRPs are activated. Initially the GRP priority table deployments are best handled functionally, with a protection group or taskforce early in the spill before the actual extent of the oiling is determined via aerial observations. After the boom is deployed (and if a geographic division has been identified for the area) the GRP strategy may then be maintained as a resource assigned to the division where the strategy is located.

If a spill occurs at a facility that has pre-designated Divisions for their area of potential impact, those Divisions should be utilized. Pre-identifying Divisions based on the considerations listed above is a *Best Practice* under the NWACP.

3104.3 Groups

Groups are used to describe **Functional** areas of operation. The person in charge of each Group is designated as a **Supervisor.**

The kind of Group established is determined by the needs of an incident. Groups are labeled according to the job that they are assigned (i.e., Sampling Group, Disposal Group, Protection Group, etc.). Groups will work wherever their assigned task is needed and are not limited geographically.

The benefits of a **Functional Organization** allow movement of resources without boundaries.

In general, coastal zone spills start with a heavy emphasis on the Functional Organization (on-water recovery, shore-side protection, shore-side recovery) and as time goes forward, the organization morphs into a Geographic Organization driven by SCAT and beach clean-up, while inland spills in narrow waterways may begin and end predominately as Geographic Organizations.

3104.4 Divisions and Groups

Divisions and Groups can be used together on an incident. Divisions and Groups are at an equal level in the organization. One does not supervise the other. When a Group is working within a Division on a special assignment, Division and Group Supervisors must closely coordinate their activities.

3104.5 Establishing Branches

If the number of Divisions or Groups exceeds the span of control, it may be necessary to establish another level of organization within the Operations Section called **Branches.** The person in charge of each Branch is designated as a **Director**. Deputies may also be used at the Branch level.

- Branches may be used to serve several purposes, and may be functional or geographic in nature.
- Branches may be established for specialized or critical operations where strategies, tactics, and resources differ from oil spill response operations. For example; Damage Control, Salvage, Source Control, or Wildlife Branch.

- In general, Branches are established when the number of Divisions or Groups exceeds the recommended span of control of one supervisor to three to seven subordinates for the Operations Section Chief.
- Branches are identified by Roman numerals, geographic location, or functional name.
- A Branch Director manages Branches. Branch Directors may have a Deputy. In multiagency incidents, the use of Deputy Branch Directors from assisting agencies can be of great benefit to ensure and enhance interagency coordination.
- Some incidents may require the use of aviation resources to provide tactical or logistical support.
    - On smaller incidents, aviation resources will be limited in number and will report directly to the Incident Commander or to the Operations Section Chief.
    - On larger incidents, it may be desirable to activate a separate Air Operations organization to coordinate the use of aviation resources. The Air Operations organization will then be established at the Branch level, reporting directly to the Operations Section Chief.
    - The Air Operations Branch Director can establish two functional groups. The Air Tactical Group coordinates all airborne activity. The Air Support Group provides all incident ground-based support to aviation resources.

3104.6 Branches, Other Factors

While span of control is a common reason to establish Branches, additional considerations may also indicate the need to use these Branches, including:

- **Multidiscipline Incidents.** Some incidents have multiple disciplines involved. Examples may include Source Control Branch, On-Water Recovery Branch, Near-Shore Branch, Damage Control, Salvage, Wildlife Branch, or Recovery Branch, etc.
- **Multijurisdictional Incidents.** In some incidents, it may be better to organize the incident around jurisdictional lines. In these situations, Branches may be set up to reflect jurisdictional boundaries.
- Very Large Incidents. Very large incidents may organize using Geographic or Functional Branches or both.

3104.7 Operations Section: Expanding and Contracting

The organization within the Operations Section reflects the objectives established by the Incident Commander. The Operations organization usually develops from the bottom up and may include:

Task Forces: Task Forces are comprised of a combination of mixed resources with common communications operating under the direct supervision of a Task Force Leader. Task Forces can be versatile combinations of resources and their use is encouraged. The combining of resources into Task Forces allows for

several resource elements to be managed under one individual's supervision, thus lessening the span of control of the Division/Group Supervisor.

Task Forces are recommended as the initial tactical units to establish in operations. As additional resources and tactics are identified, Task Forces should be moved into Groups and Divisions as needed to maintain span-of-control.

Commonly used "Task Force" numbering conventions

- 1 – 19: Recovery Group
- 20 – 39: Protection Group
- 40 – 59: Shoreline Recovery Group
- 60+: Differentiate per the needs of the response

Strike Teams: Strike Teams are a set number of resources of the same kind and type with common communications operating under the direct supervision of a Strike Team Leader. Strike Teams are highly effective management units. The foreknowledge that all elements have the same capability and how many will be applied allows for better planning, ordering, utilization and management.

Hot Shot Teams have been defined as teams that have tools such as personnel, boom, and vessels and are assigned to the staging site. They are available but not engaged until the operating period commences and can be called upon by Division and Group supervisors for unforeseen operations. Their Function is to respond to and mitigate issues identified by OSC, DIV/GRU Supervisors and SCAT in real time. Hot Shot Teams are organized as Functional Units so that they are not limited by geographic boundaries.

Single Resources: May be individuals, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified supervisor. The Incident Commander or Operations Section Chief at an incident may work initially with only a few single resources or staff members. The Operations Section usually develops from the bottom up. The organization will expand to include needed levels of supervision as more and more resources are deployed. At some point, the Operations Section and the rest of the ICS organization will contract. The decision to contract will be based on the achievement of tactical objectives. Demobilization planning begins upon activation of the first personnel and continues until the ICS organization ceases operation.

3200 Wildlife Branch

The primary purpose of the Wildlife Branch is to provide the best achievable care for impacted wildlife and to minimize wildlife losses, including preventing injury to wildlife or habitats both from the oil and from response countermeasures. It is the policy of the Northwest Area Committee (NWAC) that representatives of the United States Fish and Wildlife Service (USFWS) will assume the positions of Director and Deputy Director of the Wildlife Branch. State fish and wildlife representatives will assume these positions if a USFWS representative is not available or if designated by a USFWS representative. This designation may be

made on a case-by-case basis or through a pre-existing agreement. If there is a significant marine mammal response component to an incident, a representative from the National Marine Fisheries Service (NMFS) may be appointed to the position of Deputy Director. Appointment of other parties, including tribal representatives, Responsible Party representatives, or others to one or both of these positions may be made by a USFWS representative or designee at any time during an incident, and for such periods of time as may be deemed appropriate. Unless otherwise indicated by USFWS, the Wildlife Branch Director position will be delegated to the Washington Department of Fish and Wildlife for spills that occur within the legal boundaries of Washington State.

The Wildlife Branch is responsible for implementing the Wildlife Response Plan for the Northwest Area, provided in Section 9310, "Northwest Wildlife Response Plan." Wildlife Response Tools are provided in Section 9311, "Northwest Area Wildlife Deterrence (Hazing) Resources." The Wildlife Response Plan describes the roles, responsibilities, and duties of the Wildlife Branch and associated personnel in detail. The Wildlife Branch is responsible for ensuring compliance with applicable federal and state wildlife laws and mandates. Trustee agencies provide input into the selection of response methods used so that wildlife operations comply with each trustee's governing laws and their obligations to preserve and protect wildlife and habitat. During a spill response, the wildlife trustee agencies will advise the Wildlife Branch about local wildlife resources, sensitive species or habitats, logistical considerations, and other issues that arise. Indian Tribes retain sovereign authority to manage wildlife resource issues within reservation boundaries. It is necessary for agencies to consult and coordinate with tribal governments whose lands may be impacted by an oil spill.

The Wildlife Branch will be activated when either a federal or state trustee agency, Responsible Party, or Unified Command determines that an oil spill has occurred in the vicinity of wildlife resources (mammals or birds) or has a trajectory that puts wildlife resources at risk. Activities associated with the activation of the branch will be appropriate to the size of the spill. Activation of personnel and equipment is based primarily on anticipated adverse effects to wildlife. On every spill response, the first action of the Wildlife Branch must be to deploy skilled and experienced observers to the vicinity of spill location to conduct an initial wildlife impact assessment, in order to determine the extent of the initial and potential wildlife impacts in a timely manner. The ability to effectively determine the size and scale of the wildlife response is highly dependent on skilled observers arriving on scene quickly. The Wildlife Response Plan in Section 9310 describes specific response strategies for oiled birds and sea otters, as well as deterrence and monitoring options for killer whales.

Depending on the size of an incident, the Wildlife Branch may range in size from just the Branch Director position to full activation of the organization, as presented in in Figure 3000-1, including the associated equipment and personnel resources. Within the Wildlife Branch, there are three groups: the Wildlife Reconnaissance Group, the Bird Recovery & Rehabilitation Group, and the

Marine Mammal Recovery & Rehabilitation Group. The Wildlife Branch coordinates and manages the activities of all personnel in the Wildlife Branch who are under the authority of the Unified Command during a spill response. These include federal, state, and local agencies along with commercial and nonprofit organizations responsible for wildlife.

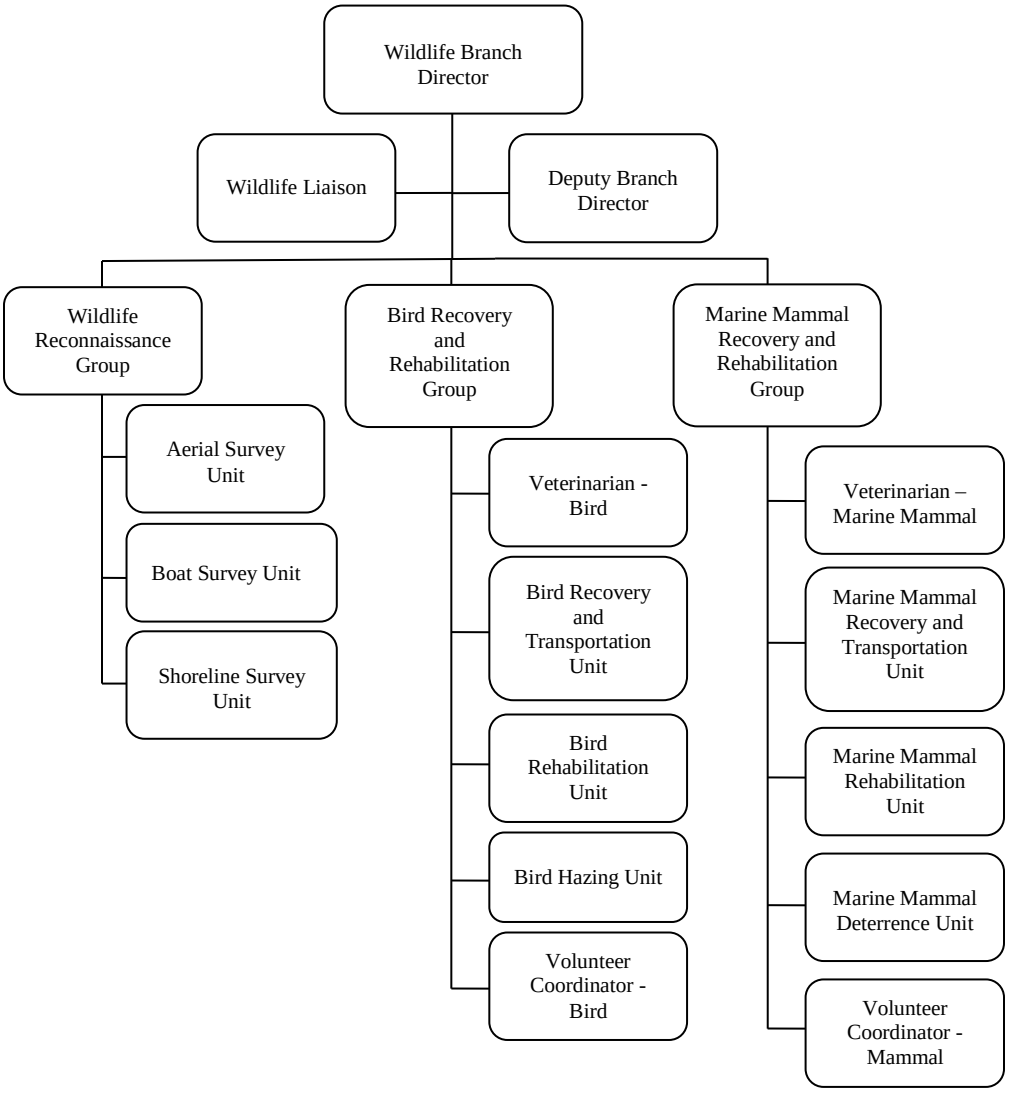

Figure 3000-1 Wildlife Branch Organizational Structure

The Wildlife Branch, working for the Operations Section Chief, will develop operational strategies, tactics, and resource needs for its operations and present them in the Incident Action Plan. Wildlife Branch activities affect and interact with numerous other sections of the Incident Command, and it is important that good communications are established and maintained between the Wildlife Branch and other responders. In particular, coordination between the Wildlife Branch and the Environmental Unit (EU), a part of the Planning Section, is essential. The Wildlife Branch is responsible for providing information to the

Unified Command, the Planning Section, and the Public Information Officer/Joint Information Center regarding the daily numbers of live and dead animals.

Worker safety must be considered before any wildlife response effort is conducted. Therefore, all Wildlife Branch activities must conform to the Site Safety Plan for the response. Additional safety requirements may be included in an incident specific Wildlife Branch Safety Plan. Appropriate biosecurity measures will be utilized to reduce the risk of transmission of infectious diseases between wildlife and personnel during an oiled wildlife response.

The determination to suspend wildlife operations and demobilize the Wildlife Branch is made by the Unified Command based upon a recommendation from the Wildlife Branch Director, and in consultation with other trustee agencies.

The process of cleaning and rehabilitating oiled wildlife may take several weeks to months, and some animals, especially those recovered late during a response, may still require care for a period of time after other response resources have demobilized. For this reason, the wildlife rehabilitation personnel, equipment and facilities deployed by the Wildlife Branch could be the last resources of the Unified Command to be demobilized following a response.

As animals are released, and fewer animals remain in care, Wildlife Branch personnel and equipment resources will be gradually demobilized as appropriate - following the standard checkout procedures identified through the ICS and the Unified Command. More detailed information concerning the responsibilities of the Wildlife Branch can be found in Section 9310.

3300 Tactical Response Options

The Operations Section, in coordination with the Planning Section, develops the specific tactics for response strategy implementation.

3310 Situation Assessment

At any release where the lead agency determines that there is a threat to public health or welfare or the environment, the lead agency may take appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release, or the threat resulting from that release (National Oil and Hazardous Substances Pollution Contingency Plan [NCP], Section 300.415(b)(1)). For releases determined to pose a substantial threat to public health or welfare, the Federal On-Scene Coordinator (FOSC) must direct a response to the incident.

The following checklist is intended to be used as a guideline for developing tactical response options/strategies. This list is not presented in order of importance and may not apply to every situation. The checklist does not prohibit the Operations Section from choosing response options or strategies that are not listed.

- Determine whether special circumstances exist requiring special action, such as:
  - Health and safety issues
  - Fire and/or explosions (see Gasoline Response Policy, Section 4622)
  - Access limitations (barricades, security fences, etc.)
  - Vessel collision
  - Vessel groundings
  - Lightering operations
  - Salvage operations
  - Vessel traffic blockages
  - Sample collection and analysis for evaluation or source determination
- Implement support infrastructure, i.e.:
  - Determine a response structure that is consistent with Unified Command System principles that will be used, and from there determine the level of support needed to fill positions in the structure, which include Finance, Logistics, Operations, and Planning (see Chapter 2000, "Command" for further discussion of the Unified Command System).
- Implement the Geographic Response Plan for the incident's location, based on real time information and protection strategy effectiveness (see Section 4400, "Geographic Response Plans." http://www.rrt10nwac.com/GRP/Default.aspx).
- Determine and mobilize the personnel necessary for initial response efforts.
- Mobilize equipment; see http://www.wrrl.us.
- Coordinate volunteers (see Chapter 4000, "Planning").
- Identify initial resources at risk using Geographical Response Plans or any other source of information available (see Section 4400), such as:
  - Natural resources – fish, wildlife, habitats, and Endangered Species Act issues (see Section 4314, "Endangered Species Act.")
  - Cultural Resources – Initiate contact with a State Historic Preservation Officer (see Section 4313, "National Historic Preservation Act; http://www.achp.gov/overview.html#top)
  - Socioeconomic resources
    A. Critical infrastructure
       - Drinking water intakes
       - Energy/power generation intakes, locks, and dams
       - Federal/state irrigation agricultural channels and water projects

    B. Water dependent commercial areas
       - Industrial intakes
       - Agricultural irrigation intakes
       - Aquaculture
       - Marinas
       - Commercial fishing and shellfish harvest areas
       - Federal/state and private fish hatcheries

- Specially designated residential, commercial, and industrial areas (e.g., floating homes and live-aboard marinas)

C. Water dependent recreational areas
- Boating
- Public recreational areas
- Sport fishing
- National/state/local parks and beaches
- National seashore recreational areas
- National river reach designated as recreational

- Notify and coordinate with Natural Resource Trustees (see notification section 9106 for contact information; in the state of Washington, contact the Washington Department of Ecology [Ecology]).
- Coordinate with Federal and State Natural Resource Damage Assessment personnel (see notification section 9106 for contact information, in the state of Washington, contact Ecology)

3320 Containment and Cleanup

The following checklist is intended to be used as a guideline for developing tactical response options/strategies. This list is not presented in order of importance and may not apply to every situation. The checklist does not prohibit the Operations Section from choosing response options or strategies that are not listed.

For detailed information on the listed options and strategies, refer to "Characteristic Coastal Habitats: Choosing Spill Response Alternatives" Job Aid at http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/characteristic-coastal-habitats.html, as well as Section 4600, "Response Technologies for Oil Spills, and Section 9420, "Northwest Area Shoreline Countermeasures Manual and Matrices."

- Natural recovery (includes setting aside areas for research purposes and countermeasures effectiveness determination. Recognize that identifying set-aside sites involves a complex matrix of scientific, logistical, legal, and public relations issues.);
- Booming and containment (see Gasoline Policy Section 4622);
- Skimming (see Gasoline Policy Section 4622);
- Barriers and berms;
- Physical herding;
- Manual oil removal/cleaning;
- Mechanical oil removal;
- Sorbents;
- Vacuuming;
- Debris removal;
- Sediment reworking/tilling;
- Vegetation cutting/removal;

- Flooding/deluge;
- Dispersants (see Section 4620, "Decanting During On-Water Recovery" and http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/smart.html);
- In-Situ burning (see Section 4610, "Dispersant Use Policy," Section 4610, "Decanting During On-Water Recovery," Section 4620, and Section 9407 In-Situ Burn Operational Planning Tool);
- Decanting (Section 4620); and
- National Marine Fisheries Service Biological Opinion for oil response.

A critical element to containment and cleanup is to monitor the strategies/tactics that have been implemented for effectiveness and efficiency. It is also important to discuss and develop criteria/guidance for terminating the cleanup.

3320.1 Gasoline and Other Flammable Liquids

Spills of gasoline and other flammable liquids, including many crude oils, pose significant response challenges as well as serious health and safety concerns for responders and communities downstream and downwind from the release. Gasoline range products are finished gasolines and volatile hydrocarbon fractions used for blending into finished gasoline, including straight-run naphtha, alkylate, reformate, benzene, toluene, xylene, and other refined petroleum products with a flash point below 100 degrees Fahrenheit (37.8 degrees Celsius). When these types of products are spilled into the environment, it is imperative to take immediate steps to control the source of the release (where safe), to eliminate all possible ignition sources, to quickly establish isolation distances, to notify regulatory and local response agencies, and to initiate a preliminary site safety plan prior to any response activities. However, it is essential that no personnel enter a potentially unsafe environment prior to an initial safety assessment, including vapor monitoring for flammable materials, reduced oxygen, and toxic substance levels.

In many cases, highly flammable liquids should not be contained as part of spill response. Containing gasoline and other highly flammable liquids increases the risk of fire by delaying dispersion of vapors into the atmosphere. The risks posed by response techniques such as booming and applying foam to spilled gasoline and other flammable liquids are warranted only under very limited circumstances. However, in some cases and as judged by the FOSC, Incident Command, or Unified Command, containment and the use of foam may be appropriate and necessary in response to an imminent threat to public health and safety and the environment. Deflection and protection booming can be used to move flammable liquids away from sensitive areas but must be conducted in a safe manner, within safe atmospheric levels. In unaffected downstream or down current areas at risk, a boom should be deployed prior to arrival of the product. Though mechanical recovery of flammable liquids on water can be an effective practice under some circumstances, often the more prudent response option is to allow flammable liquids to evaporate and dissipate.

Given the inherent danger of booming flammable liquids on water, as well as the products' rapid rates of evaporation and dissipation, the NWAC adopts the following guidelines for responding to gasoline and other flammable liquid releases on water. **Note that these are only guidelines. Each release must be evaluated based on its particular circumstances. Safe work practices and professional judgment should always prevail.**

- Control the source of flammable liquids as quickly as possible, when safe to do so.
- Ensure that proper safety precautions are taken to prevent accidental ignition and risk to responding personnel and the general public. An evacuation may be warranted under some circumstances. In many cases, the best response option may be to allow the spilled product to spread and evaporate.
- Notify emergency and regulatory response agencies. Involve local fire jurisdictions immediately.
- Ensure that proper site hazard analysis and risk assessment are conducted to determine the scope of the release and initiate the development of a Site Safety Plan.
- Establish control zones as soon as possible. Track and predict movements of both liquid and vapors and re-establish control zones as appropriate.
- Eliminate all potential ignition sources within appropriate control zones.
- Prevent entry of the spilled product into waterways, sewers, or confined areas.
- Conduct air monitoring throughout the response.
  - Note: Air monitoring must be conducted with the greatest of care. Air monitoring both increases the exposure danger to responders and introduces possible accidental ignition sources. Nearby population centers should be monitored, as should the leading edge of the vapor cloud. However, in open water areas it may make more sense for responders to stay away from the concentrated area around the spilled material. In any area that is being monitored, the monitoring should be conducted continuously, if possible. Also, only direct reading, intrinsically safe, continuously monitoring instruments should be used. Lower explosive levels, oxygen, hydrogen sulfide, and benzene levels should all be monitored.
- Coordinate response efforts with all agencies; work within a Unified Command.
- Identify and prioritize environmental concerns. Conduct exclusion, deflection, and protective booming downstream or down current as appropriate, outside of hazardous atmospheres and prior to the arrival of the released product.
- Workers should avoid touching, walking, or boating through the spilled product.
- Avoid prolonged inhalation exposure to fumes. Consult appropriate

reference guides for exposure limits.

- Allow the product to evaporate and dissipate unless there is an imminent threat to public health and safety.
- When appropriate, use fire monitors/water fog spray to move product out from under docks and other collection areas where the product concentrates.
- Stage firefighting foam (appropriate to the type of flammable liquid released) and application equipment, if appropriate.
- All equipment used when handling the product must be grounded.

3320.2 Submerged or Sinking Oils – Policy and Operational Tactics

In the Pacific Northwest Group IV, oils are moved over the water, over highways and rail corridors, and stored in aboveground storage tanks. In addition, oil sands products that are moved by vessel, pipeline, and rail, may differ from other crude oils in the rate at which lighter ends of the mixture volatilize, particularly in warm weather. As a result, spills of oil sands products may be potentially submerged or sinking, especially under high-flow and high-sedimentation conditions. It is the policy of Regional Response Team (RRT) 10 that communication of the potential for sinking oil must again be brought to the attention of the Unified Command at the Initial Unified Command Meeting.

There can be great logistical and operational difficultly in ramping up to detect and recover Group 5 oils in the water column or on the sea bottom. For spills of Group 5 oils, or other oil products where submerging or sinking is a concern, the NWAC considers the following best practices for the Operations Section:

- Recovering oil in fast-moving water is difficult, as oil tends to flow under containment booms and skimmer efficiency is greatly reduced, necessitating more rapid responses further downstream. In these situations, the United States Coast Guard (USCG) recommends installing underflow dams, overflow dams, sorbent barriers, or a combination of these techniques.
- Develop detection strategies potentially using sonar, divers/cameras, remotely operated vehicle/camera, aircraft, photo bathymetry, diaper drops, dragnet, snare drops, and side-scan sonar.
- Containment strategies consist of using bubble curtains, water jets, surface-to-bottom nets/screens, silt curtain, and natural collection sites.
- Recovery strategies consist of using diver directed oil recovery operations, remotely operated vehicles, dredges, vacuum systems, integrated video mapping systems, nets, sorbents, bioremediation and pre-spill surveys.
- Consider expanding the ICS Structure to include Oil Detection Groups, Sinking Oil Recovery Groups, and Sinking Oil Divisions.

Refer to Section 9412, "Non-floating Oil Spill Response Tool" for details on response techniques, equipment capabilities, and considerations for non-floating oil spill response.

3320.3 Operational Safety Issues Associated with Bakken Crude Oil

Because of the presence of up to 30 percent (by volume) light volatiles in Bakken Crude oil, the potential for fire and explosion is the single largest risk to responder and public health regarding this type of oil. Accordingly, extreme caution should be exercised during the initial stages of response. Operations should refer to the general response guidelines in the 2012 Emergency Response Guidebook prepared by the United States Department of Transportation – Pipeline and Hazardous Materials Safety Administration and Transport Canada.

3320.4 Fast Waster Oil Spill Response

Oil spills in fast moving water above 1 knot require special tactics and can be difficult to control and recover due to the ease with which oil mixes with water and entrains under booms and skimmers. Fast currents also make deploying equipment and maneuvering on the water very difficult and dangerous due to the high forces exerted on boats and recovery equipment. Fast water accelerates many spill processes, necessitating quicker and more efficient responses compared to stagnant water or slow moving current conditions. More experience and skill are needed to successfully complete responses.

For the purposes of the Northwest Area Contingency Plan, "fast water" is defined as any current above 1 knot. Oil may begin to entrain under a boom at 0.7 knots; however, it is unrealistic and unnecessary to be that exact when responding to an oil spill, so the more generalized measure of 1 knot is used. Areas of fast water exist throughout the Northwest, including in Puget Sound, the Strait of Juan de Fuca, the Columbia River, Haro Strait, and most rivers.

In general, fast water spill response uses the same equipment as slow water spill response, but it is deployed in ways that account for the current. Examples include setting the boom on angles such that the oil flows along the boom rather than under it. The faster the current, the steeper the angle the boom must have to prevent boom failure. By setting up cascading booms, oil can be diverted away from sensitive areas or to containment or recovery devices near shore where currents are slower due to bottom frictional effects.

Rigging the angled booms can be time consuming. Additionally, the pressure put on the booms by the currents is substantial and creates safety hazards. To conduct these operations safely and efficiently, it is critical that experienced responders lead the deployment.

There are known "best practices" for responding in fast water, especially in challenging currents exceeding 2 knots. For example a 10-inch boom with a 4-inch skirt and 6-inch freeboard works best in fast water, and anchoring boom in

fast water requires anchors and lines that can withstand 3,000 pounds of force. Additional fast water techniques and practices are applied as well. There are some specialized pieces of equipment that are intended to improve fast water response, as described below.

A **BoomVane™** is a device for deploying oil containment boom into rivers and other waterways by harnessing the power of the current. A cascade of vertical vanes under the wave-rider float are designed so that the current pulls the vane into the center of the channel, in current speeds of 0.5 to >5 knots. The system can be operated in waters with heavy traffic and debris. The lightweight design and control rudder allow for easy retrieval and re-launching. The BoomVane™ can also be towed with a boat to operate a single vessel sweep system without the need for an outrigger arm. This piece of equipment can be used to hold one end of a boom in the center of the channel instead of setting up rigging from the opposite shoreline. For more details, see http://www.elastec.com/oilspill/containmentboom/boomvane/index.php

Boom Deflectors are installed between boom sections prior to deployment. The wing on the deflector is set at an angle against the water flow. As the water moves the deflector wing, the boom is also moved at an angle toward the shoreline. The speed of the current will determine the appropriate angle to set the wing. Faster currents will apply more force, and therefore less angle on the wing is needed to achieve the desired results. The Boom Deflectors are made from aluminum and are 80 inches long and 16 inches high, with a wing that is 60 inches long and 12 inches high. Two people using the handles built in at the top can easily move a deflector. This piece of equipment can be used to hold boom at an angle and reduce the amount of rigging required.

NOFI Current Busters are a combination booming and collection system intended to be towed by a single boat. This system uses two booms in a V shape that is underlain by a net to concentrate the oil. At the base of the V, the boom widens out again in a loop to create a quiescent zone that acts both as a collection area and an oil water separator. Current Busters come in different sizes and can handle currents of 3 to 5 knots. This equipment improves the ability to collect and recover oil that is moving in currents. For more details, see http://www.qualitechco.com/env/products/boom-vane

The DESMI Speed-Sweep System is a heavy duty rubber boom recovery system designed to allow for the collection of oil at greater speeds. Once the pollutant has been collected at the cusp, a skimmer can be located at the apex and recovery can begin. The high efficiency DESMI Speed-Sweep System is designed to either connect to a Ro-Boom system or operate as an independent collection unit. It can be towed either between two vessels or by one vessel with a jib arm or paravane. The Speed-Sweep can collect oil up to speeds of 3 knots, which results in easier and quicker operations all round. This system allows the surface water and oil to be slowed by as much as 70%, which allows the oil to concentrate in the apex ready for collection. No head wave phenomena or planning will occur. For more details, see http://www.desmi.com/advanced-sweep-systems/speed-sweep.aspx.

The MegaSecur Water Gate is a water barrier technology that quickly stops the flow of a stream in order to create a water reserve, perform aquatic work, or stop the spread of a toxic spill. Recognized worldwide for its reliability, durability, and ease to deploy, the "WA" category barriers adapt to all situations and all relief without exception. Models are available for water depths from 15 to 60 inches. For more details, please visit http://megasecur.com/products/serie-wa/.

Tactical Manuals
The USCG has published two resources for fast water response. These remain the most commonly used manuals and are available online:

- Oil Spill Response in Fast Currents: A Field Guide, USCG Research and Development Center, 2001, Report No. CG-D-01-02
  Available at:
  http://wildpro.twycrosszoo.org/000ADOBES/OilSpill/Spills_FastCurrent.pdf
- Oil Response in Fast Water Currents: A Decision Tool, USCG Research and Development Center, December 2002, Report No. CG-D-03-03
  Available at: http://www.uscg.mil/acquisition/rdc/reports/2003/2002-0558-Public.pdf

3330 Monitoring Oil Movement

The following best practices should be followed when monitoring oil movement:

- Conduct overflights and collect detailed photographic, video, low visibility, and/or infrared information
- Conduct computer modeling and develop oil spill trajectories. For support, contact the National Oceanic and Atmospheric and Administration Scientific Support Coordinator 206-526-4911, also see Section 9106.1, "Federal Agency Response Partners: Roles and Contacts" for more information about the National Oceanic and Atmospheric Administration's role in spill response.
- Conduct shore-side and on-water assessments to monitor proximity of spill to sensitive areas (see "Shoreline Assessment" Job Aid at http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-assessment-job-aid.html).

3340 Remote Sensing during Oil Spill Response

Many factors must be considered when contemplating the use of remote-sensing technology during an oil spill response. There are three basic arenas in which the sensors can operate:

- Terrestrial platforms (land or water-based): these platforms can support observers using visual means of detection, cameras (single frame, television, infrared, etc.), and/or radar.
- Aircraft (manned helicopters, manned fixed wing, or drones): these platforms can support visual observers, cameras (same as terrestrial), radar

(of various types), infrared, lasers (of various types), microwave, and/or ultraviolet.

- Satellites: these platforms typically use electronic detection means, mostly types of radar.

All sensor/platform packages provide different spatial resolutions, dwell times, on-scene ("delivery") times, planning requirements for use, swath widths, detection thresholds, analysis times, difficulty of data interpretation, false detection rates, weather limitations, and costs. Additionally, there are dramatic differences in each sensor's capabilities to accomplish specific tasks. Of interest to the response effort are such things as slick size, description, and movement; relative oil thickness; location of the thickest oil; type of oil being observed; etc. In addition, various environmental conditions have a bearing on the sensor. For example, darkness, fog, rain/snow, sun location, and cloud coverage, etc. are important considerations.

The geometry of the situation also plays an important role. A sensor at high altitude is able to "see" a larger area, but typically at a lower resolution than would be obtainable by a platform operating at a lower altitude. Moreover, many sensors, including visual, lose detection capability at certain acute angles.

In general, increased capability comes with increased cost. At the high end, these costs can be extraordinary. In addition, no single sensor package will give all the information desired at a given spill under all conditions. At the high end, the very sophisticated laser based sensor packages may be able to give more information; however, most of the information is merely "nice to know" and is of little value to the actual response. For instance, absolute oil thickness is of little value if a much less expensive sensor will provide a sufficiently reliable estimate of relative thickness for the purpose of guiding response actions. Also, classification of the oil type and characteristics would likely be of little value when such information can be easily obtained from the spiller or from the first responders on scene.

Region 10 currently has access to the following remote sensing tools:

Terrestrial

In addition to visual observation (mostly from a vessel), the USCG Sector Puget Sound Joint Harbor Operations Center has the capability to view various camera feeds throughout the marine waters of northwest Washington using the Sensor Management System. This system is a joint USCG/United States Navy application that captures federal, state, local, and port partner sensor feeds and vessel track data throughout this area, displaying them on a global information system display. This system also includes optical and infrared cameras.

In the event of a significant spill, the FOSC has the ability to contact the Joint Harbor Operations Center where one of the 24-hour watch standers can view the affected area on the Sensor Management System, giving a broader view of the spill and any hazards that might be present that cannot be seen from the shore.

Aircraft
In addition to customary visual observation from helicopters and fixed wing aircraft, the following are available:

- King County Sheriff helicopter with infrared capability, and
- Washington State Patrol fixed wing aircraft with infrared capability.

Satellite
Both commercial and military satellite platforms exist.

A literature search reveals the following sensor technologies, each with its own set of capabilities and limitations that could potentially be useful for oil spill response. The NWAC Science Response and Technology Workgroup will study these sensors in greater depth for inclusion in future updates to the Northwest Area Contingency Plan:

- Next generation infrared,
- Ultraviolet,
- Microwave,
- Laser,
- Laser-acoustic, and
- Various satellite platforms.

3350 Dispersants
According to the NCP, for areas that are not Pre-Authorized or No-Use Zones, (as described in Section 4610), the FOSC must request approval for the use of dispersants from the RRT, in particular; there must be concurrence from the affected state and the United States Environmental Protection Agency, with consultation with the United States Department of the Interior and United States Department of Commerce (DOC).

In preparation for RRT approval, typically the Unified Command will trigger a process to evaluate the applicability of dispersant use for the specific conditions of that incident, by setting that as an objective. During the time that the EU is following its procedures (Section 4610) for evaluating whether dispersant use is appropriate for the specific incident, the Operations Section should also be conducting its own preparations, including ordering of resources, described in further detail below.

The types of oils typically produced or transported in Washington offshore waters are oils imported from Alaska such as Alaska North Slope crude oil or oil imported from foreign countries into northwest ports; oils from Canadian sources, including Alberta crude and diluted bitumen; and a range of fuel oil types that could be spilled from a variety of marine industrial activities (e.g., fuel tanks from ships, cargoes of small tankers).

Dispersants typically work best on spilled oil with a relatively low viscosity at the time of treatment and when there is wave energy to mix the dispersant into the oil. Viscous and emulsified oil typically may not disperse as effectively as fresher oil, even with sufficient mixing. Therefore, the window of opportunity for application of dispersants is small, meaning that all preparations, authorizations, and logistics must be undertaken as expeditiously as possible while ensuring thorough adherence to all appropriate regulations and notifications.

Dispersants are typically applied using either a vessel or aircraft-mounted spraying unit. Spray systems need to be able to apply the appropriate dispersant dosage in droplets that are the appropriate size. Droplets that are too small can be subject to wind drift; those that are too large will pass right through the oil slick. Both the flow rate and the droplet size are a function of the spray bar pressure and nozzle type. Application systems should be calibrated prior to use, preferably with the specific dispersant type to be used. This determination should be made in the Operations Section during the preparation for the RRT dispersant use approval decision.

Approved dispersants are listed in the NCP Product Schedule (http://www2.epa.gov/sites/production/files/2013-08/documents/schedule.pdf) as per Subpart J of the NCP. In the Northwest, dispersant stockpiles are maintained by some of the Oil Spill Response Organizations.

As a best practice and if time allows, before dispersant applications proceed, a small test should be conducted, in which dispersants are sprayed on a portion of the slick. Once dispersant operations are underway, a monitoring/observation program should be established to monitor the safety of operations, and observations of wildlife in the area, in addition to Special Monitoring of Applied Response Technologies (SMART) protocols to monitor of the effectiveness of the application (http://response.restoration.noaa.gov/sites/default/files/SMART_protocol.pdf).

Operations will develop Daily Operational Plans using these guidelines as a minimum:

- Dispersant must only be applied by experienced spray applicators and in accordance with manufacturer instructions.
- The persons applying dispersant are responsible for the calibration and operation of the spraying system, and the safety and maintenance of the application platform.
- Droplet size is the key variable influencing dispersant effectiveness. Undersized droplets (e.g., fog or mist) will be lost through drift and evaporation. Oversized droplets will punch through the oil and be lost in the water column.
- Only undiluted concentrate dispersant is applied from aircraft. Dispersant should, where possible, be applied into the wind and parallel with the slick.

- Dispersant should be applied in a methodical and continuous manner to ensure that the entire target area is treated.
- Spraying effort should concentrate on the thickest sections, and/or the leading edges, of oil that threatens sensitive areas. Use visual observation or remote sending to locate the thickest concentrations of oil.
- Thick portions of the slick may require several applications.
- Oil sheen should not be sprayed with dispersant.
- In general, aerial application is preferred over vessel application. The altitude of the aircraft should be as low as possible.

Dispersant applications must be monitored to confirm whether or not dispersant use is effective. The SMART protocols are the accepted protocols for monitoring dispersant applications and should be utilized. However, dispersant applications should not be delayed simply because monitoring is not in place. The policy of the RRT is that visual observation (Tier 1 of SMART) is the minimum level of monitoring during a dispersant application. Once a dispersant application operation is a potential option, the Operations Section should immediately request deployment of the USCG Strike Team to the spill site if dispersant use is likely. The Strike Team maintains monitoring capabilities for SMART monitoring and can typically deploy a team within 2 hours of notification. The USCG FOSC will typically deploy the Strike Team.

A decision to end dispersant application due to poor effectiveness should ideally be based on SMART monitoring results. Review all aspects of the application and monitoring for possible reasons why dispersant application may be ineffective, including:

- Dispersant formulation,
- Application ratios (increase or decrease oil: dispersant ratio),
- Application methods,
- Monitoring methods,
- Interpretation of monitoring results
- Oil weathering, and
- Weather conditions.

Further details regarding how SMART field data should be interpreted and utilized to make decisions on adjustments to or termination of dispersant application can be found in the SMART Manual (http://response.restoration.noaa.gov/sites/default/files/SMART_protocol.pdf).

3360 Shoreline Cleanup

Under certain conditions, it will be appropriate to take actions to remediate the effects of oil on shorelines. Other conditions may dictate that no actions should be taken. The primary goal of any shoreline countermeasure is the removal of oil from the environment with no further injury or destruction to that environment, ideally to help enhance the treated area's ability to recover.

To best assess and determine the appropriate treatment options for affected shoreline, the Shoreline Cleanup Assessment Technique (SCAT) provides a comprehensive program of assessment, monitoring, and treatment recommendations for affected shorelines. On USCG spills, SCAT is typically run from the EU within the Planning Section. The United States Environmental Protection Agency may choose to run this from within the Operations Section for inland spills.

Once a spill occurs, typically the EU will begin to develop a SCAT plan within the first day of a response, and the Operations Section will need to coordinate with the SCAT Coordinator to ensure appropriate interaction of the shoreline assessments and treatment recommendations with the shoreline cleanup tactics being used. The SCAT program and process typically leads the development of the Treatment Endpoints for shorelines, which will guide the Operations Section when their work on shorelines is complete.

Access to Shorelines for Cleanup
Access to shoreline areas may be accomplished from the water, land, or air. Deployment from the water usually involves using shallow water platforms such as landing craft and skiffs. Access from a land-based response utilizes trucks, all-terrain vehicles, or other four-wheel drive vehicles, while access from the air may be possible by helicopter. For coastal spills in the Pacific Northwest, access by air to some remote regions may be the only option. In some cases, permission for entry onto private property must be obtained first.

Passive Oil Recovery
Shoreline cleanup is usually carried out in stages, starting with the removal of the heaviest accumulations of oil, which reduces the risk of recontamination by floating oil. Passive recovery can be applied to shorelines that have already been oiled to help keep the re-mobilizing oil from refloating and migrating to other non-impacted shorelines. Passive recovery can be deployed along shorelines prior to shoreline assessment occurring. Passive recovery can also be used to line the inside of a containment, diversion, or exclusion boom as an effective collection technique.

Shoreline cleanup operations can produce a significant solid waste stream; all wastes generated must be measured, stored, and disposed of according to the approved Disposal Plan (Sections 4325 and 9405).

3370 Removal and Disposal

Ensure adequate disposal of released substances. Moving of hazardous substances off site must comply with regulations promulgated under the Resource Conservation and Recovery Act (RCRA). Under certain circumstances, some of the procedural requirements of the RCRA regulations can be waived. The specific circumstances are described in the RCRA regulations (see Section 4315, “Resource Conservation and Recovery Act” for RCRA guidance).

- Outline the disposal plan, prepared with the EU and in accordance with the disposal guidelines found in Section 43325and Section 9405, "Disposal Guidance for Washington State and Oregon State."
- Comply with federal, state, and local disposal laws/regulations:
  - Obtain necessary permits.
- Determine the volume of oil or hazardous substance for disposal and possible recovery credit.
- Take measures to minimize waste:
  - Segregate clean from contaminated waste.
  - Line storage area to contain contaminated waste.
- Identify disposal locations (on site vs. offsite).
- Secure transportation for product disposal.

3380 Demobilization

The following actions should be taken when demobilizing from the site:

- Complete final survey.
- Clean/return equipment.
- Survey/replace equipment.
- Restore damaged areas in consultation with appropriate Natural Resource Trustees and property owners.

3390 Salvage

Before, during, and/or after an oil spill or potential incident, salvage assistance may be required. A salvage plan may be developed within the response organization for, but not limited to, vessel stranding, vessel sinkings and rescues (towing). The Incident Commander/Unified Command will review and approve or disapprove the salvage plan based on the resulting risk to human life, port security, and the environment.

Initial rescue efforts will have priority over pollution response efforts, to the extent that they may interfere. Subsequent to any rescue efforts, the pollution response efforts and salvage efforts may be conducted concurrently. The On-Scene Coordinator will prioritize actions when interference between salvage and pollution response efforts cannot be eliminated.

USGC Captains of the Port have jurisdiction over vessel salvage; this does not preclude any other agencies' interests with respect to spill prevention or response. Ecology would normally be part of the Salvage/Source Control Group.

For general guidelines to follow in responding to an incident that requires salvage operations, refer to United States Navy Salvage Manual Volume 1–6 http://www.supsalv.org/00c2_publications.asp?destPage=00c2&pageId=2.6 and Section 5230 for Resource Listings.

For additional salvage guidance, see the Sector Columbia River or Sector Puget Sound Salvage Annex to the Marine Transportation Security Plan. For specific salvage resource lists also see the Western Response Resources Inventory at http://www.wrrl.us/.

Contacts for Salvage References and Support:

- Navy Supervisor of Salvage:
  - Supervisor of Salvage Operations (202) 781-2736
  - After hours and on weekends (NAVSEA Duty Officer) (202) 781-3889
  - Switchboard (202) 781-1731
  - Office of the Director of Ocean Engineering Supervisor of Salvage and Diving (SUPSALV) http://www.supsalv.org

  SUPSALV can provide the services of naval architects, may provide the services of naval salvage vessels, and has access to contracts that will provide the services of commercial salvers and equipment. SUPSALV has developed and has available software for rapid analysis of longitudinal strength and intact/damaged stability; the software is known as Program of Ship Salvage Engineering (POSSE).
- USCG Marine Safety Center Salvage Team:
  - During business hours : (202) 327-3985
    Duty email: SERT.Duty@uscg.mil
  - After hours, contact the USCG Headquarters Command Center: (202) 327-3985

  The USCG Marine Safety Center Salvage Emergency Response Team can evaluate vessel stability, hull strength, and salvage plans and may be available to go on scene. The Marine Safety Center may be able to provide vessel plans, if the ship is U.S. flagged.
- United States Army Corps of Engineers:
  - Vessel PUGET Supervisor: 206-498-8795
  - Vessel PUGET Captain: 206-399-0358

  The United States Army Corps of Engineers can respond to floating logs, debris, and navigational hazards, including derelict vessel up to 30 feet in length. A majority of this response work is conducted by the vessel PUGET, a 104-foot vessel with a 20-ton crane, typically moored at the Hiram M. Chittenden Locks in Seattle.

  NOTE: Be prepared to provide the following information when calling for support: brief description of services required, location, urgency, point of contact, and telephone number. If the task is urgent and requires

immediate mobilization, this fact should be clearly articulated and include a statement that funding will be provided by separate correspondence.

- Ecology
  - Through Washington Department of Emergency Management 24-hour number: (800) 258-5990

  Ecology can provide response and reviews of salvage or lightering plans.

3400 Responding to Rail Incidents

Parties that offer for transportation, accept for transportation, transfer, or otherwise handle hazardous material for transportation via rail are required to have the following available at all times: the basic description and technical name of the hazardous material, immediate hazards to health, risks of fire or explosion, immediate precautions to be taken in the event of an incident or accident, immediate methods for handling fires, and initial methods for handling spills or leaks in the absence of fire and preliminary first aid measures. They must also provide an emergency response telephone number of a person who is either knowledgeable regarding the hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information. The emergency response number may be the number for the shipper, consignee, beneficial owner, or contract services provider (e.g., CHEMTREC). When a service provider is used, the shipper must register with the company and provide safety data sheets and contact telephone numbers. During an emergency when the contract provider is called, the provider will provide responders with shipment information and will then contact the shipper and pass along the information. At this point, the shipper will contact the first responders. More information on requirements can be found in 49 Code of Federal Regulations 172 Subpart G.

In general, rail carriers transport products on lines that they own. However, there are a variety of agreements that allow carriers to operate on lines owned by other companies. Regardless of whose trains are operating on the line, the track owner is responsible for the emergency response phase of the incident. Once the emergency is over, cleanup or other monitoring work may be transferred to the transporter. Where trackage rights do not exist, the shipment continues to its destination after being transferred at an “Interchange Point.” At this Interchange Point, the responsibility shifts to the new line owner.

Currently, there are no requirements for the amount of response resources that track owners must have in order to respond to an incident on their lines. Below is a summary of resources available to several rail owners operating in Washington, Oregon, and Idaho. The rail companies surveyed for this information are BNSF Railway (BNSF), Union Pacific, Genesee & Wyoming, Inc. (Portland and Western Railroad, Puget Sound and Pacific Railroad), and Tacoma Rail/Tacoma Municipal Belt Line.

Air Monitoring: Air monitoring resources vary according to organization. The initial air monitoring may be conducted by the local first responders until additional resources arrive. The capabilities of these responders can vary depending on their location and the resources available to them. This air monitoring would be used to inform responder and public safety decisions. Several of the carriers rely on their response contractors to provide air monitoring. In general, this air monitoring would be performed specifically for cleanup operations and not necessarily to support public safety decision making. BNSF has a more robust air monitoring program than the other providers, called the Tactical Toxicology program that is designed to provide air monitoring information for the incident. BNSF has the ability to cascade additional air monitoring equipment into the region as well as toxicologists and industrial hygienists. BNSF's air monitoring program will support response activities and public safety decisions. Union Pacific has the same ability to bring in contractors that specialize in toxicology and environmental health to support public health and safety decisions.

In all rail incidents, the decisions regarding public safety will be made by the local Incident Commander/Unified Command.

Resources for Fire Fighting: In general, resources for combating a fire resulting from a train incident will come from local fire departments. One carrier, BNSF, has additional resources, including foam trailers staged in Montana, Washington, and Oregon. BNSF also maintains contracts with private industrial firefighting companies. The other carriers do not have additional company-owned resources or contracts for firefighting.

Spill Response Equipment: Rail owners all contract with at least one spill response contractor whose equipment they would rely on in an incident resulting in a spill. Rail owners determine the number of cleanup organizations they contract with. One company, BNSF, has company-owned spill response equipment staged throughout the region. This equipment is listed on the Western Response Resource List.

Mutual Aid: Resources can be shared among the different rail companies if available, but there are no formal mutual aid agreements.