

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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Operations

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 (IC/UC);
- 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 (IAP).

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

1 3103 Role of an Operations Section Chief

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

8
9 The Operations Section Chief roles are as follows:

- 10 ▪ Operations Section Chief (along with Command and General Staff)
11 develop and implement strategies and singularly develops and implements
12 tactics.
- 13 ▪ Responsible for developing and implementing strategies and tactics to
14 carry out the Incident Objectives.
- 15 ▪ Responsible to the IC/UC for the direct management of all incident-related
16 operational activities.
- 17 ▪ Organizes, assigns, and supervises all tactical field resources assigned to
18 an incident, including air operations and those resources in a staging area.
- 19 ▪ Has direct involvement in the preparation of the IAP.
- 20 ▪ May have one or more Deputies assigned.
- 21 ▪ The assignment of Deputies from other agencies may be advantageous in
22 the case of multijurisdictional incidents.

23
24 The **Operations Section Chief's** workload consists of a combination of
25 responsibilities both inside the ICP and in the field. Their day starts with the
26 Operations Briefing at which time the Operations Section Chief discusses current
27 response actions and accomplishments and the plan for the upcoming operating
28 period. Once the operations brief is complete and after heading to the field to see
29 how ICS work assignments are proceeding, the Operations Section Chief should
30 begin to formulate what the next day's operational period work will entail.

31
32 When the Operations Section Chief returns to the ICP, they use the UCs
33 objectives, the Work Analysis Matrix and Operation Planning Worksheet to
34 prepare for the Pre-tactics and Tactics meetings. Once the Tactics Meeting is
35 complete, the Operations Section Chief (or Deputy Operations Section Chief)
36 returns to the field to speak to the division and group supervisors dealing with
37 field issues to ensure the work is on track before returning to the ICP for the
38 Planning Meeting.

39
40 The Operations Section Chief returns to the ICP to present the operations plan for
41 the next operational period at the Planning Meeting. Depending on the complexity
42 of the incident, an incident may be managed with a single Operations Section
43 Chief, an Operations Section Chief and a Deputy working nights, or multiple
44 Deputies working days and nights. In medium- to-large spills, the Operations
45 Section Chief may use the Planning Operations Section Chief Deputy role to keep
46 the IAP development process on track while they are in the field.

47

1 **3104 Operations Section Technical Management**

2 **3104.1 Staging Areas**

3 Staging areas are locations where incident personnel and equipment are assigned
4 awaiting tactical assignment. All resources in the Staging Area are ready for
5 deployment. Out-of-service resources are NOT located in the Staging Area.
6 Each Staging Area should have a direct line of communication with the Resource
7 Unit and should utilize ICS-211P and 211E for resource tracking. Staging Area
8 Managers should determine adequacy of staging areas, communications and other
9 support aspects and request additional support using ICS-213RR as needed.
10 Staging Area names should account for the geographic location. For example, if it
11 were located at Shilshole Marina, the name could be “Shilshole Marina Staging.”
12 After a Staging Area has been designated and named, a Staging Area Manager
13 will be assigned. The Staging Area Manager will report to the Operations Section
14 Chief or to the IC if the Operations Section Chief has not been designated.

15
16 In the event of a larger spill with multiple Staging Areas established, span of
17 control may be managed by assigning a Staging Area Branch Director to oversee
18 all of the Staging Area Managers.

19
20 The Staging Area Branch is responsible for supervising the Staging Area
21 Managers (STAMs) as well as coordinating their activities including assigning
22 STAMs and receiving, maintaining, checking-in/out, storing, and distributing
23 resources. The Staging Area Branch will generally remain in the Incident
24 Command Post and supervise the STAMs from there.

25
26 **3104.2 Divisions**

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

30
31 The person in charge of each Division is designated as a **Supervisor**. Divisions
32 are determined by the needs of the incident. The most common way to identify
33 Divisions is by using alphabet characters (A, B, C, etc.). Other identifiers may be
34 used as long as the assigned responders know Division identifiers.

35
36 Northwest Area Contingency Plan (NWACP) best management practice naming
37 conventions for divisions:

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

45
46 Riverbank Divisions are marked on the right descending bank or the left
47 descending bank. Riverbank Divisions typically should not cross rivers. For

- 1 example B-L or B-R looking to the mouth of the river. For larger spills the name
2 may be preceded by a regional identifier.
3
- 4 Divisions are land-based operations with a boundary against a shoreline where
5 coastal spills are concerned. Divisions are not boundaries/breaks on the water;
6 these boundaries/breaks are referred to as Branches. Determining the length of a
7 Division along a shoreline involves several factors.
8
- 9 Consider the following when determining how to set Division boundaries:
- 10 ▪ Span of control issues when dealing with both personnel and equipment
11 resources
 - 12 ▪ Access issues and constraints, both on land and on water
 - 13 ▪ The degree of shoreline oiling. Heavy oiling would call for shorter
14 segments while minimal oiling may allow the use of larger divisions
 - 15 ▪ Natural breaks such as a bridge or geological feature.
 - 16 ▪ Predominate shoreline types
 - 17 ▪ Jurisdictional boundaries such as a city, county or state line
 - 18 ▪ Consultation with the Environmental Unit to ensure that Divisions
19 encompass rather than bisect Shoreline Cleanup Assessment Technique
20 (SCAT) segments or Geographic Response Plans (GRP).
 - 21 ○ For example, the shoreline operational divisions are organized and
22 named according to County boundaries. Within county domains,
23 division boundaries are guided by logical features such as coastal
24 physical characteristics and land ownership/management, shoreline
25 cleanup logistical considerations and manageable working size.
26 Logistics, access and manageability are driving considerations,
27 particularly as it relates to types of cleanup operations required and
28 problems likely to be present.
 - 29 ○ In Area Contingency Plan areas having more than one county,
30 Shoreline Operational Divisions may utilize a single alpha
31 character (A to Z). Shoreline Operational Divisions are labeled
32 from north to south in each county. For example, the northern-most
33 Operational Division in King County is "K-A." In large bays (i.e.,
34 Elliott), the labeling will continue in a clockwise direction to
35 accommodate changing coastline angles. Divisions can be
36 subdivided, if necessary, by Operations to account for unforeseen
37 work assignment effort.
- 38
- 39 Operations should have in mind how to expand Divisions beyond the next
40 operational period; however, Divisions should be created, named and populated
41 based on the next day's operational needs. Creating Divisions in areas that are not
42 yet impacted may not allow for the flexibility needed in subsequent operational
43 periods.
44
- 45 In the early hours of a spill, responders will implement the GRP priority tables.
46 This prioritized list of strategies may call for implementation of protection
47 booming outside the impacted area. The Operations Section may not initially need

1 to create Divisions for all areas where GRPs are activated. Initially the GRP
2 priority table deployments are best handled functionally, with a protection group
3 or taskforce early in the spill before the actual extent of the oiling is determined
4 via aerial observations. After the boom is deployed (and if a geographic division
5 has been identified for the area) the GRP strategy may then be maintained as a
6 resource assigned to the division where the strategy is located.

7
8 If a spill occurs at a facility that has pre-designated Divisions for their area of
9 potential impact, those Divisions should be utilized. Pre-identifying Divisions
10 based on the considerations listed above is a *Best Practice* under the NWACP.

11 12 **3104.3 Groups**

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

15
16 The kind of Group established is determined by the needs of an incident. Groups
17 are labeled according to the job that they are assigned (i.e., Sampling Group,
18 Disposal Group, Protection Group, etc.). Groups will work wherever their
19 assigned task is needed and are not limited geographically.

20
21 The benefits of a **Functional Organization** allow movement of resources without
22 boundaries.

23
24 In general, coastal zone spills start with a heavy emphasis on the Functional
25 Organization (on-water recovery, shore-side protection, shore-side recovery) and
26 as time goes forward, the organization morphs into a Geographic Organization
27 driven by SCAT and beach clean-up, while inland spills in narrow waterways
28 may begin and end predominately as Geographic Organizations.

29 30 **3104.4 Divisions and Groups**

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

35 36 **3104.5 Establishing Branches**

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

- 41 ▪ Branches may be used to serve several purposes, and may be functional or
42 geographic in nature.
- 43 ▪ Branches may be established for specialized or critical operations where
44 strategies, tactics, and resources differ from oil spill response operations.
45 For example; Damage Control, Salvage, Source Control, or Wildlife
46 Branch.
- 47 ▪ In general, Branches are established when the number of Divisions or

- 1 Groups exceeds the recommended span of control of one supervisor to
2 three to seven subordinates for the Operations Section Chief.
- 3 ■ Branches are identified by Roman numerals, geographic location, or
4 functional name.
 - 5 ■ A Branch Director manages Branches. Branch Directors may have a
6 Deputy. In multiagency incidents, the use of Deputy Branch Directors
7 from assisting agencies can be of great benefit to ensure and enhance
8 interagency coordination.
 - 9 ■ Some incidents may require the use of aviation resources to provide
10 tactical or logistical support.
 - 11 ○ On smaller incidents, aviation resources will be limited in number
12 and will report directly to the IC or to the Operations Section
13 Chief.
 - 14 ○ On larger incidents, it may be desirable to activate a separate Air
15 Operations organization to coordinate the use of aviation
16 resources. The Air Operations organization will then be established
17 at the Branch level, reporting directly to the Operations Section
18 Chief.
 - 19 ○ The Air Operations Branch Director can establish two functional
20 groups. The Air Tactical Group coordinates all airborne activity.
21 The Air Support Group provides all incident ground-based support
22 to aviation resources.

23 24 **3104.6 Branches, Other Factors**

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

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

36 37 **3104.7 Operations Section: Expanding and Contracting**

38 The organization within the Operations Section reflects the objectives established
39 by the IC. The Operations organization usually develops from the bottom up and
40 may include:

- 41
- 42 **Task Forces:** Task Forces are comprised of a combination of mixed resources
43 with common communications operating under the direct supervision of a Task
44 Force Leader. Task Forces can be versatile combinations of resources and their
45 use is encouraged. The combining of resources into Task Forces allows for
46 several resource elements to be managed under one individual's supervision, thus
47 lessening the span of control of the Division/Group Supervisor.

1
2 Task Forces are recommended as the initial tactical units to establish in
3 operations. As additional resources and tactics are identified, Task Forces should
4 be moved into Groups and Divisions as needed to maintain span-of-control.

5
6 Commonly used “Task Force” numbering conventions
7 ▪ 1 – 19: Recovery Group
8 ▪ 20 – 39: Protection Group
9 ▪ 40 – 59: Shoreline Recovery Group
10 ▪ 60+: Differentiate per the needs of the response

11
12 **Strike Teams:** Strike Teams are a set number of resources of the same kind and
13 type with common communications operating under the direct supervision of a
14 Strike Team Leader. Strike Teams are highly effective management units. The
15 foreknowledge that all elements have the same capability and how many will be
16 applied allows for better planning, ordering, utilization and management.

17
18 **Hot Shot Teams** have been defined as teams that have tools such as personnel,
19 boom, and vessels and are assigned to the staging site. They are available but not
20 engaged until the operating period commences and can be called upon by
21 Division and Group supervisors for unforeseen operations. Their Function is to
22 respond to and mitigate issues identified by OSC, Division/Group Supervisors
23 and SCAT in real time. Hot Shot Teams are organized as Functional Units so that
24 they are not limited by geographic boundaries.

25
26 **Single Resources:** May be individuals, a piece of equipment and its personnel
27 complement, or a crew or team of individuals with an identified supervisor. The
28 IC or Operations Section Chief at an incident may work initially with only a few
29 single resources or staff members. The Operations Section usually develops from
30 the bottom up. The organization will expand to include needed levels of
31 supervision as more and more resources are deployed.

32 At some point, the Operations Section and the rest of the ICS organization will
33 contract. The decision to contract will be based on the achievement of tactical
34 objectives. Demobilization planning begins upon activation of the first personnel
35 and continues until the ICS organization ceases operation.

36 37 **3200 Wildlife Branch**

38 The primary purpose of the Wildlife Branch is to provide the best achievable care
39 for impacted wildlife and to minimize wildlife losses, including preventing injury
40 to wildlife or habitats both from the oil and from response countermeasures. It is
41 the policy of the Northwest Area Committee (NWAC) that representatives of the
42 United States Fish and Wildlife Service (USFWS) will assume the positions of
43 Director and Deputy Director of the Wildlife Branch. State fish and wildlife
44 representatives will assume these positions if a USFWS representative is not
45 available or if designated by a USFWS representative. This designation may be
46 made on a case-by-case basis or through a pre-existing agreement. If there is a
47 significant marine mammal response component to an incident, a representative

1 from the National Marine Fisheries Service (NMFS) may be appointed to the
2 position of Deputy Director. Appointment of other parties, including tribal
3 representatives, Responsible Party representatives, or others to one or both of
4 these positions may be made by a USFWS representative or designee at any time
5 during an incident, and for such periods of time as may be deemed appropriate.
6 Unless otherwise indicated by USFWS, the Wildlife Branch Director position will
7 be delegated to the Washington Department of Fish and Wildlife for spills that
8 occur within the legal boundaries of Washington State.

9
10 The Wildlife Branch is responsible for implementing the Wildlife Response Plan
11 for the Northwest Area, provided in Section 9310, “Northwest Wildlife Response
12 Plan.” Wildlife Response Tools are provided in Section 9311, “Northwest Area
13 Wildlife Deterrence (Hazing) Resources.” The Wildlife Response Plan describes
14 the roles, responsibilities, and duties of the Wildlife Branch and associated
15 personnel in detail. The Wildlife Branch is responsible for ensuring compliance
16 with applicable federal and state wildlife laws and mandates. Trustee agencies
17 provide input into the selection of response methods used so that wildlife
18 operations comply with each trustee’s governing laws and their obligations to
19 preserve and protect wildlife and habitat. During a spill response, the wildlife
20 trustee agencies will advise the Wildlife Branch about local wildlife resources,
21 sensitive species or habitats, logistical considerations, and other issues that arise.
22 Indian Tribes retain sovereign authority to manage wildlife resource issues within
23 reservation boundaries. It is necessary for agencies to consult and coordinate with
24 tribal governments whose lands may be impacted by an oil spill.

25
26 The Wildlife Branch will be activated when either a federal or state trustee
27 agency, Responsible Party, or UC determines that an oil spill has occurred in the
28 vicinity of wildlife resources (mammals or birds) or has a trajectory that puts
29 wildlife resources at risk. Activities associated with the activation of the branch
30 will be appropriate to the size of the spill. Activation of personnel and equipment
31 is based primarily on anticipated adverse effects to wildlife. On every spill
32 response, the first action of the Wildlife Branch must be to deploy skilled and
33 experienced observers to the vicinity of spill location to conduct an initial wildlife
34 impact assessment, in order to determine the extent of the initial and potential
35 wildlife impacts in a timely manner. The ability to effectively determine the size
36 and scale of the wildlife response is highly dependent on skilled observers
37 arriving on scene quickly. The Wildlife Response Plan in Section 9310 describes
38 specific response strategies for oiled birds and sea otters, as well as deterrence and
39 monitoring options for killer whales.

40
41 Depending on the size of an incident, the Wildlife Branch may range in size from
42 just the Branch Director position to full activation of the organization, as
43 presented in in Figure 3000-1, including the associated equipment and personnel
44 resources. Within the Wildlife Branch, there are three groups: the Wildlife
45 Reconnaissance Group, the Bird Recovery & Rehabilitation Group, and the
46 Marine Mammal Recovery & Rehabilitation Group. The Wildlife Branch
47 coordinates and manages the activities of all personnel in the Wildlife Branch

- 1 who are under the authority of the UC during a spill response. These include
- 2 federal, state, and local agencies along with commercial and nonprofit
- 3 organizations responsible for wildlife.
- 4

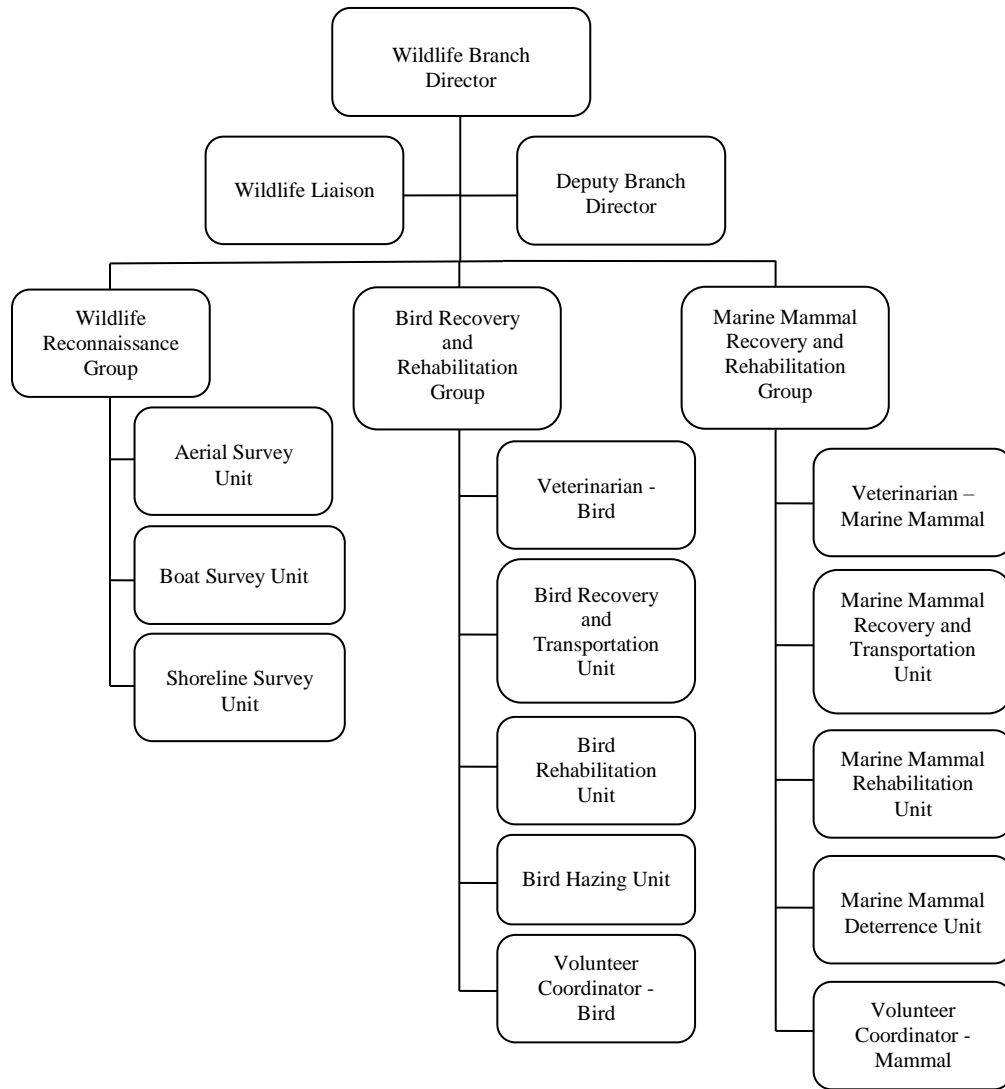


Figure 3000-1 Wildlife Branch Organizational Structure

- 5
- 6 The Wildlife Branch, working for the Operations Section Chief, will develop
- 7 operational strategies, tactics, and resource needs for its operations and present
- 8 them in the IAP. Wildlife Branch activities affect and interact with numerous
- 9 other sections of the Incident Command, and it is important that good
- 10 communications are established and maintained between the Wildlife Branch and
- 11 other responders. In particular, coordination between the Wildlife Branch and the
- 12 Environmental Unit (EU), a part of the Planning Section, is essential. The
- 13 Wildlife Branch is responsible for providing information to the UC, the Planning
- 14 Section, and the Public Information Officer/Joint Information Center regarding
- 15 the daily numbers of live and dead animals.
- 16

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

7
8 The determination to suspend wildlife operations and demobilize the Wildlife
9 Branch is made by the UC based upon a recommendation from the Wildlife
10 Branch Director, and in consultation with other trustee agencies.

11
12 The process of cleaning and rehabilitating oiled wildlife may take several weeks
13 to months, and some animals, especially those recovered late during a response,
14 may still require care for a period of time after other response resources have
15 demobilized. For this reason, the wildlife rehabilitation personnel, equipment and
16 facilities deployed by the Wildlife Branch could be the last resources of the UC to
17 be demobilized following a response.

18
19 As animals are released, and fewer animals remain in care, Wildlife Branch
20 personnel and equipment resources will be gradually demobilized as appropriate -
21 following the standard checkout procedures identified through the ICS and the
22 UC. More detailed information concerning the responsibilities of the Wildlife
23 Branch can be found in Section 9310.

24 25 **3300 Tactical Response Options**

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

28 29 **3310 Situation Assessment**

30 At any release where the lead agency determines that there is a threat to public
31 health or welfare or the environment, the lead agency may take appropriate
32 removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the
33 release or threat of release, or the threat resulting from that release (National Oil
34 and Hazardous Substances Pollution Contingency Plan [NCP], Section
35 300.415(b)(1)). For releases determined to pose a substantial threat to public
36 health or welfare, the Federal On-Scene Coordinator (FOSC) must direct a
37 response to the incident.

38
39 The following checklist is intended to be used as a guideline for developing
40 tactical response options/strategies. This list is not presented in order of
41 importance and may not apply to every situation. The checklist does not prohibit
42 the Operations Section from choosing response options or strategies that are not
43 listed.

- 44 ▪ Determine whether special circumstances exist requiring special action,
45 such as:
 - 46 ▪ Health and safety issues
 - 47 ▪ Fire and/or explosions (see Gasoline Response Policy, Section 4622)

- 1 ▪ Access limitations (barricades, security fences, etc.)
- 2 ▪ Vessel collision
- 3 ▪ Vessel groundings
- 4 ▪ Lightering operations
- 5 ▪ Salvage operations
- 6 ▪ Vessel traffic blockages
- 7 ▪ Sample collection and analysis for evaluation or source determination
- 8 ▪ Implement support infrastructure, i.e.:
 - 9 ▪ Determine a response structure that is consistent with UC System
 - 10 principles that will be used, and from there determine the level of
 - 11 support needed to fill positions in the structure, which include Finance,
 - 12 Logistics, Operations, and Planning ([see Chapter 2000, “Command”](#)
 - 13 [for further discussion of the UC System](#)).
 - 14 ▪ Implement the Geographic Response Plan for the incident’s location,
 - 15 based on real time information and protection strategy effectiveness ([see](#)
 - 16 [Section 4400, “Geographic Response Plans.”](#)
 - 17 [http://www.oilspills101.wa.gov/northwest-area-contingency-](http://www.oilspills101.wa.gov/northwest-area-contingency-plan/geographic-response-plans-grps/list-of-geographic-response-plans/)
 - 18 [plan/geographic-response-plans-grps/list-of-geographic-response-plans/](http://www.oilspills101.wa.gov/northwest-area-contingency-plan/geographic-response-plans-grps/list-of-geographic-response-plans/)).
 - 19 ▪ Determine and mobilize the personnel necessary for initial response
 - 20 efforts.
 - 21 ▪ Mobilize equipment; see <http://www.wrrl.us>.
 - 22 ▪ Coordinate volunteers ([see Chapter 4000, “Planning”](#)).
 - 23 ▪ Identify initial resources at risk using Geographical Response Plans or any
 - 24 other source of information available ([see Section 4400](#)), such as:
 - 25 ▪ Natural resources – fish, wildlife, habitats, and Endangered Species
 - 26 Act issues ([see Section 4314, “Endangered Species Act.”](#))
 - 27 ▪ Cultural Resources – Initiate contact with a State Historic Preservation
 - 28 Officer ([see Section 4313, “National Historic Preservation Act;](#)
 - 29 <https://www.achp.gov/protecting-historic-properties>)
 - 30 ▪ Socioeconomic resources
 - 31 A. Critical infrastructure
 - 32 • Drinking water intakes
 - 33 • Energy/power generation intakes, locks, and dams
 - 34 • Federal/state irrigation agricultural channels and water projects
 - 35 B. Water dependent commercial areas
 - 36 • Industrial intakes
 - 37 • Agricultural irrigation intakes
 - 38 • Aquaculture
 - 39 • Marinas
 - 40 • Commercial fishing and shellfish harvest areas
 - 41 • Federal/state and private fish hatcheries
 - 42 • Specially designated residential, commercial, and industrial areas
 - 43 (e.g., floating homes and live-aboard marinas)
 - 44 C. Water dependent recreational areas
 - 45 • Boating
 - 46 • Public recreational areas

- 1 • Sport fishing
- 2 • National/state/local parks and beaches
- 3 • National seashore recreational areas
- 4 • National river reach designated as recreational
- 5 ■ Notify and coordinate with Natural Resource Trustees (see notification
- 6 section 9106 for contact information; in the state of Washington, contact
- 7 the Washington Department of Ecology [Ecology]).
- 8 ■ Coordinate with Federal and State Natural Resource Damage Assessment
- 9 personnel (see notification section 9106 for contact information, in the
- 10 state of Washington, contact Ecology)

11

12 **3320 Containment and Cleanup**

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

18
19 For detailed information on the listed options and strategies, refer to
20 “Characteristic Coastal Habitats: Choosing Spill Response Alternatives” Job Aid
21 at [http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/characteristic-coastal-habitats.html)
22 [spills/resources/characteristic-coastal-habitats.html](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/characteristic-coastal-habitats.html), as well as [Section 4600,](#)
23 [“Response Technologies for Oil Spills, and Section 9420, “Northwest Area](#)
24 [Shoreline Countermeasures Manual and Matrices.”](#)

- 25 ■ Natural recovery (includes setting aside areas for research purposes and
- 26 countermeasures effectiveness determination. Recognize that identifying
- 27 set-aside sites involves a complex matrix of scientific, logistical, legal, and
- 28 public relations issues.);
- 29 ■ Booming and containment (see Gasoline Policy Section 4622);
- 30 ■ Skimming (see Gasoline Policy Section 4622);
- 31 ■ Barriers and berms;
- 32 ■ Physical herding;
- 33 ■ Manual oil removal/cleaning;
- 34 ■ Mechanical oil removal;
- 35 ■ Sorbents;
- 36 ■ Vacuuming;
- 37 ■ Debris removal;
- 38 ■ Sediment reworking/tilling;
- 39 ■ Vegetation cutting/removal;
- 40 ■ Flooding/deluge;
- 41 ■ Dispersants (see Section 4620, “Decanting During On-Water Recovery”
- 42 and [http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/smart.html)
- 43 [spills/resources/smart.html](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/smart.html));

- 1 ▪ In-Situ burning (see Section 4610, “Dispersant Use Policy,” Section 4610,
- 2 “Decanting During On-Water Recovery,” Section 4620, and Section 9407
- 3 In-Situ Burn Operational Planning Tool);
- 4 ▪ Decanting (Section 4620); and
- 5 ▪ National Marine Fisheries Service Biological Opinion for oil response.

6
7 A critical element to containment and cleanup is to monitor the strategies/tactics
8 that have been implemented for effectiveness and efficiency. It is also important
9 to discuss and develop criteria/guidance for terminating the cleanup.

10

11 **3320.1 Gasoline and Other Flammable Liquids**

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

27

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

43

44 Given the inherent danger of booming flammable liquids on water, as well as the
45 products’ rapid rates of evaporation and dissipation, the NWAC adopts the
46 following guidelines for responding to gasoline and other flammable liquid
47 releases on water. **Note that these are only guidelines. Each release must be**

- 1 **evaluated based on its particular circumstances. Safe work practices and**
2 **professional judgment should always prevail.**
- 3 ■ Control the source of flammable liquids as quickly as possible, when safe
4 to do so.
 - 5 ■ Ensure that proper safety precautions are taken to prevent accidental
6 ignition and risk to responding personnel and the general public. An
7 evacuation may be warranted under some circumstances. In many cases,
8 the best response option may be to allow the spilled product to spread and
9 evaporate.
 - 10 ■ Notify emergency and regulatory response agencies. Involve local fire
11 jurisdictions immediately.
 - 12 ■ Ensure that proper site hazard analysis and risk assessment are conducted
13 to determine the scope of the release and initiate the development of a Site
14 Safety Plan.
 - 15 ■ Establish control zones as soon as possible. Track and predict movements
16 of both liquid and vapors and re-establish control zones as appropriate.
 - 17 ■ Eliminate all potential ignition sources within appropriate control zones.
 - 18 ■ Prevent entry of the spilled product into waterways, sewers, or confined
19 areas.
 - 20 ■ Conduct air monitoring throughout the response.
 - 21 – Note: Air monitoring must be conducted with the greatest of care.
22 Air monitoring both increases the exposure danger to responders
23 and introduces possible accidental ignition sources. Nearby
24 population centers should be monitored, as should the leading edge
25 of the vapor cloud. However, in open water areas it may make
26 more sense for responders to stay away from the concentrated area
27 around the spilled material. In any area that is being monitored, the
28 monitoring should be conducted continuously, if possible. Also,
29 only direct reading, intrinsically safe, continuously monitoring
30 instruments should be used. Lower explosive levels, oxygen,
31 hydrogen sulfide, and benzene levels should all be monitored.
 - 32 ■ Coordinate response efforts with all agencies; work within a UC.
 - 33 ■ Identify and prioritize environmental concerns. Conduct exclusion,
34 deflection, and protective booming downstream or down current as
35 appropriate, outside of hazardous atmospheres and prior to the arrival of
36 the released product.
 - 37 ■ Workers should avoid touching, walking, or boating through the spilled
38 product.
 - 39 ■ Avoid prolonged inhalation exposure to fumes. Consult appropriate
40 reference guides for exposure limits.
 - 41 ■ Allow the product to evaporate and dissipate unless there is an imminent
42 threat to public health and safety.

- 1 ▪ When appropriate, use fire monitors/water fog spray to move product out
- 2 from under docks and other collection areas where the product
- 3 concentrates.
- 4 ▪ Stage firefighting foam (appropriate to the type of flammable liquid
- 5 released) and application equipment, if appropriate.
- 6 ▪ All equipment used when handling the product must be grounded.

8 **3320.2 Non-floating Oils – Policy and Operational Tactics**

9 In the Pacific Northwest non-floating oils and Group V oils are moved over the
10 water, over highways and rail corridors, in pipelines and stored in aboveground
11 storage tanks. Non-floating oils refer to heavy oils and Group V oils that exhibit
12 qualities which could, due to the oil characteristics, weathering, environmental
13 factors or how they are discharged, potentially cause the oils to submerge or sink.
14 Examples of these types of oils include, but are not limited to, Diluted Bitumen
15 (dilbit), Group V Residual Fuel Oils (GPVRFO), Low American Petroleum
16 Institute Oil (LAPIO), Asphalt and Asphalt Products.

17
18 It is the policy of Regional Response Team (RRT) 10 that communication of the
19 potential for sinking oil must again be brought to the attention of the UC at the
20 Initial UC Meeting.

21
22 There are logistical and operational difficulties in detecting and recovering non-
23 floating oils in the water column or on the sea floor or river bed. For spills of non-
24 floating oils, or other oil products where submerging or sinking is a concern, the
25 NWAC advocates use of the Sunken Oil Detection and Recovery Operational Guide,
26 American Petroleum Institute (API) Technical Report 1154-2, First Edition, February
27 2016. The Operational Guide identifies and documents current best practices and
28 alternative technologies possessing the potential to more effectively detect, contain,
29 and recover sunken oil, defined as “the accumulation of bulk oil on the bottom of a
30 water body.” Each technology mentioned includes a detailed description of the
31 method, its advantages and disadvantages, and summary tables. Each technology
32 entry also includes the kinds of information needed to select the most effective
33 approaches to sunken oil detection and recovery.

- 34
35 ▪ Refer to Section 9412, Sunken Oil Detection and Recovery Operational
- 36 Guide, API Technical Report 1154-2, First Edition, February 2016.¹
- 37 ▪ Refer to API Technical Report 425, Options for Minimizing Environmental
- 38 Impacts of Inland Spill Responses, October 2016 as supportive supplement to
- 39 API-Technical Report 1154-2.²

40

¹ American Petroleum Institute, February 2016, *Sunken Oil Detection and Recovery*, API
Technical Report 1154-1, First Edition, API Publishing Services, Washington, DC.

² American Petroleum Institute, February 2016, *Sunken Oil Detection and Recovery Operational
Guide*, API Technical Report 1154-2, First Edition, API Publishing Services, Washington, DC.

1 **United States Coast Guard (USCG) Oil Spill Removal Organization (OSRO)**
2 **Classification Guidelines for Non-floating Oils**

3 **Detection:**

4 *Detection Types (Examples):*

- 5 1) Sonar Systems;
- 6 2) Underwater Visualization Systems;
- 7 3) Diver Observations;
- 8 4) Sorbents;
- 9 5) Laser Fluorosensors;
- 10 6) Visual Observations by Trained Observers;
- 11 7) Bottom Sampling; and
- 12 8) Water-column Sampling

13
14 **Recovery:**

15 *Recovery Types (Examples):*

- 16 1) Suction Dredge;
- 17 2) Diver-directed Pumping and Vacuuming;
- 18 3) Mechanical Removal;
- 19 4) Sorbent/V-SORs;
- 20 5) Trawls and Nets;
- 21 6) Manual Removal; and
- 22 7) Agitation.

23
24 **Storage:**

25 Available storage within the Captain of the Port (COTP) zone will be compatible
26 with the recovery devices. Storage requirements align with Higher Volume Port Area
27 (HVPA) requirements and planning criteria.

28
29 **Environment (COTP Zone):**

30 All OSRO equipment will be suited for the area in which it's intended to operate.
31 This will include weather, types of water bottoms, currents and water visibility,
32 logistical challenges, etc.

33
34 **Containment (Optional):**

35 OSROs may choose to keep containment equipment on hand, but it is not a condition
36 of becoming a classified OSRO for non-floating oil.

37
38 OSRO's will have non-floating oil procedures that connect their inventory, personnel
39 and contractual assets in their ability to respond to an incident.

40
41 Response times for non-floating oil Facility Response Plan's and Vessel Response
42 Plan's slightly differ, but the National Strike Force Coordination Center has made the
43 determination that the stricter standard will be utilized when evaluating OSRO's
44 response capability. Classified non-floating oil OSRO's must be capable of
45 responding within 24 hours of discovery of a discharge. Refer to Section 9412, "Non-
46 floating Oil Spill Response Tool" for details on response techniques, equipment
47 capabilities, and considerations for non-floating oil spill response.

48

1 **3320.3 Operational Safety Issues Associated with Bakken Crude**
2 **Oil**

3 Because of the presence of up to 30 percent (by volume) light volatiles in Bakken
4 Crude oil, the potential for fire and explosion is the single largest risk to
5 responder and public health regarding this type of oil. Accordingly, extreme
6 caution should be exercised during the initial stages of response. Operations
7 should refer to the general response guidelines in the 2016 Emergency Response
8 Guidebook prepared by the United States Department of Transportation – Pipeline
9 and Hazardous Materials Safety Administration and Transport Canada.

10

11 **3320.4 Fast Water Oil Spill Response**

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

20

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

27

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

35

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

40

41 There are known “best practices” for responding in fast water, especially in
42 challenging currents exceeding 2 knots. For example a 10-inch boom with a 4-
43 inch skirt and 6-inch freeboard works best in fast water, and anchoring boom in
44 fast water requires anchors and lines that can withstand 3,000 pounds of force.
45 Additional fast water techniques and practices are applied as well. There are some
46 specialized pieces of equipment that are intended to improve fast water response,
47 as described below.

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

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

22
23 **NOFI Current Busters®** are a combination booming and collection system
24 intended to be towed by a single boat. This system uses two booms in a V shape
25 that is underlain by a net to concentrate the oil. At the base of the V, the boom
26 widens out again in a loop to create a quiescent zone that acts both as a collection
27 area and an oil water separator. Current Busters come in different sizes and can
28 handle currents of 3 to 5 knots. This equipment improves the ability to collect and
29 recover oil that is moving in currents. For more details, see
30 <http://www.qualitechco.com/env/products/boom-vane>

31
32 **The DESMI Speed-Sweep System** is a heavy duty rubber boom recovery system
33 designed to allow for the collection of oil at greater speeds. Once the pollutant has
34 been collected at the cusp, a skimmer can be located at the apex and recovery can
35 begin. The high efficiency DESMI Speed-Sweep System is designed to either
36 connect to a Ro-Boom system or operate as an independent collection unit. It can
37 be towed either between two vessels or by one vessel with a jib arm or paravane.
38 The Speed-Sweep can collect oil up to speeds of 3 knots, which results in easier
39 and quicker operations all round. This system allows the surface water and oil to
40 be slowed by as much as 70%, which allows the oil to concentrate in the apex
41 ready for collection. No head wave phenomena or planing will occur. For more
42 details, see <http://www.desmi.com/advanced-sweep-systems/speed-sweep.aspx>.

43
44 **The MegaSecur Water Gate** is a water barrier technology that quickly stops the
45 flow of a stream in order to create a water reserve, perform aquatic work, or stop
46 the spread of a toxic spill. Recognized worldwide for its reliability, durability, and

1 ease to deploy, the “WA” category barriers adapt to all situations and all relief
2 without exception. Models are available for water depths from 15 to 60 inches.
3 For more details, please visit <http://megasecur.com/products/serie-wa/>.

4

5 **Tactical Manuals**

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

- 8 ■ Oil Spill Response in Fast Currents: A Field Guide, USCG Research and
9 Development Center, 2001, Report No. CG-D-01-02
10 Available at:
11 [http://wildpro.twycrosszoo.org/000ADOBES/OilSpill/Spills_FastCurrent.](http://wildpro.twycrosszoo.org/000ADOBES/OilSpill/Spills_FastCurrent.pdf)
12 [pdf](http://wildpro.twycrosszoo.org/000ADOBES/OilSpill/Spills_FastCurrent.pdf)
- 13 ■ Oil Response in Fast Water Currents: A Decision Tool, USCG Research
14 and Development Center, December 2002, Report No. CG-D-03-03
15 Available in Section 9302.

16

17 **3330 Monitoring Oil Movement**

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

- 19 ■ Conduct overflights and collect detailed photographic, video, low
20 visibility, and/or infrared information
- 21 ■ Conduct computer modeling and develop oil spill trajectories. For support,
22 contact the National Oceanic and Atmospheric and Administration
23 (NOAA) Scientific Support Coordinator 206-526-6322 or 206-526-4883,
24 also see Section 9106.1, “Federal Agency Response Partners: Roles and
25 Contacts” for more information about the NOAA’s role in spill response.
- 26 ■ Conduct shore-side and on-water assessments to monitor proximity of
27 spill to sensitive areas (see “Shoreline Assessment” Job Aid at
28 [http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-assessment-job-aid.html)
29 [spills/resources/shoreline-assessment-job-aid.html](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-assessment-job-aid.html)).

30

31 **3340 Remote Sensing during Oil Spill Response**

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

35

- 36 ■ Terrestrial platforms (land or water-based): these platforms can support
37 observers using visual means of detection, cameras (single frame,
38 television, infrared, etc.), and/or radar.
- 39 ■ Aircraft (manned helicopters, manned fixed wing, or drones): these
40 platforms can support visual observers, cameras (same as terrestrial), radar
41 (of various types), infrared, lasers (of various types), microwave, and/or
42 ultraviolet.
- 43 ■ Satellites: these platforms typically use electronic detection means, mostly
44 types of radar.

45

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

11

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

16

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

27

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

29

30 **Terrestrial**

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

38

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

43

44 **Aircraft**

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

47

- King County Sheriff helicopter with infrared capability, and

- 1 ■ Washington State Patrol fixed wing aircraft with infrared capability.

2

3 **Satellite**

4 Both commercial and military satellite platforms exist.

5

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

- 11 ■ Next generation infrared,
12 ■ Ultraviolet,
13 ■ Microwave,
14 ■ Laser,
15 ■ Laser-acoustic, and
16 ■ Various satellite platforms.

17

18 **3350 Dispersants**

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

25

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

32

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

39

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

1
2 Dispersants are typically applied using either a vessel or aircraft-mounted
3 spraying unit. Spray systems need to be able to apply the appropriate dispersant
4 dosage in droplets that are the appropriate size. Droplets that are too small can be
5 subject to wind drift; those that are too large will pass right through the oil slick.
6 Both the flow rate and the droplet size are a function of the spray bar pressure and
7 nozzle type. Application systems should be calibrated prior to use, preferably with
8 the specific dispersant type to be used. This determination should be made in the
9 Operations Section during the preparation for the RRT dispersant use approval
10 decision.

11
12 Approved dispersants are listed in the NCP Product Schedule
13 ([https://www.epa.gov/emergency-response/ncp-product-schedule-products-
14 available-use-oil-spills](https://www.epa.gov/emergency-response/ncp-product-schedule-products-available-use-oil-spills)) as per Subpart J of the NCP. In the Northwest, dispersant
15 stockpiles are maintained by some of the OSROs.

16
17 As a best practice and if time allows, before dispersant applications proceed, a
18 small test should be conducted, in which dispersants are sprayed on a portion of
19 the slick. Once dispersant operations are underway, a monitoring/observation
20 program should be established to monitor the safety of operations, and
21 observations of wildlife in the area, in addition to Special Monitoring of Applied
22 Response Technologies (SMART) protocols to monitor of the effectiveness of the
23 application
24 (http://response.restoration.noaa.gov/sites/default/files/SMART_protocol.pdf).

25
26 Operations will develop Daily Operational Plans using these guidelines as a
27 minimum:

- 28 ■ Dispersant must only be applied by experienced spray applicators and in
29 accordance with manufacturer instructions.
- 30 ■ The persons applying dispersant are responsible for the calibration and
31 operation of the spraying system, and the safety and maintenance of the
32 application platform.
- 33 ■ Droplet size is the key variable influencing dispersant effectiveness.
34 Undersized droplets (e.g., fog or mist) will be lost through drift and
35 evaporation. Oversized droplets will punch through the oil and be lost in
36 the water column.
- 37 ■ Only undiluted concentrate dispersant is applied from aircraft. Dispersant
38 should, where possible, be applied into the wind and parallel with the
39 slick.
- 40 ■ Dispersant should be applied in a methodical and continuous manner to
41 ensure that the entire target area is treated.
- 42 ■ Spraying effort should concentrate on the thickest sections, and/or the
43 leading edges, of oil that threatens sensitive areas. Use visual observation
44 or remote sensing to locate the thickest concentrations of oil.
- 45 ■ Thick portions of the slick may require several applications.

- 1 ■ Oil sheen should not be sprayed with dispersant.
- 2 ■ In general, aerial application is preferred over vessel application. The
- 3 altitude of the aircraft should be as low as possible.
- 4
- 5 Dispersant applications must be monitored to confirm whether or not dispersant
- 6 use is effective. The SMART protocols are the accepted protocols for monitoring
- 7 dispersant applications and should be utilized. However, dispersant applications
- 8 should not be delayed simply because monitoring is not in place. The policy of
- 9 the RRT is that visual observation (Tier 1 of SMART) is the minimum level of
- 10 monitoring during a dispersant application. Once a dispersant application
- 11 operation is a potential option, the Operations Section should immediately request
- 12 deployment of the USCG Strike Team to the spill site if dispersant use is likely.
- 13 The Strike Team maintains monitoring capabilities for SMART monitoring and
- 14 can typically deploy a team within 2 hours of notification. The USCG FOSC will
- 15 typically deploy the Strike Team.
- 16
- 17 A decision to end dispersant application due to poor effectiveness should ideally
- 18 be based on SMART monitoring results. Review all aspects of the application and
- 19 monitoring for possible reasons why dispersant application may be ineffective,
- 20 including:
- 21 ■ Dispersant formulation,
- 22 ■ Application ratios (increase or decrease oil: dispersant ratio),
- 23 ■ Application methods,
- 24 ■ Monitoring methods,
- 25 ■ Interpretation of monitoring results
- 26 ■ Oil weathering, and
- 27 ■ Weather conditions.
- 28
- 29 Further details regarding how SMART field data should be interpreted and
- 30 utilized to make decisions on adjustments to or termination of dispersant
- 31 application can be found in the SMART Manual
- 32 (http://response.restoration.noaa.gov/sites/default/files/SMART_protocol.pdf).
- 33

3360 Shoreline Cleanup

34 Under certain conditions, it will be appropriate to take actions to remediate the

35 effects of oil on shorelines. Other conditions may dictate that no actions should be

36 taken. The primary goal of any shoreline countermeasure is the removal of oil

37 from the environment with no further injury or destruction to that environment,

38 ideally to help enhance the treated area's ability to recover.

39

40

41 To best assess and determine the appropriate treatment options for affected

42 shoreline, the SCAT provides a comprehensive program of assessment,

43 monitoring, and treatment recommendations for affected shorelines. On USCG

44 spills, SCAT is typically run from the EU within the Planning Section. The EPA

45 may choose to run this from within the Operations Section for inland spills.

1
2 Once a spill occurs, typically the EU will begin to develop a SCAT plan within
3 the first day of a response, and the Operations Section will need to coordinate
4 with the SCAT Coordinator to ensure appropriate interaction of the shoreline
5 assessments and treatment recommendations with the shoreline cleanup tactics
6 being used. The SCAT program and process typically leads the development of
7 the Treatment Endpoints for shorelines, which will guide the Operations Section
8 when their work on shorelines is complete.

9 10 **Access to Shorelines for Cleanup**

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

18 19 **Passive Oil Recovery**

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

28
29 Shoreline cleanup operations can produce a significant solid waste stream; all
30 wastes generated must be measured, stored, and disposed of according to the
31 approved Disposal Plan (Sections 4325 and 9405).

32 33 **3370 Removal and Disposal**

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

- 40 ▪ Outline the disposal plan, prepared with the EU and in accordance with
41 the disposal guidelines found in Section 4325 and Section 9405, “Disposal
42 Guidance for Washington State and Oregon State.”
- 43 ▪ Comply with federal, state, and local disposal laws/regulations:
44 ▪ Obtain necessary permits.
- 45 ▪ Determine the volume of oil or hazardous substance for disposal and
46 possible recovery credit.

- 1 ▪ Take measures to minimize waste:
- 2 ▪ Segregate clean from contaminated waste.
- 3 ▪ Line storage area to contain contaminated waste.
- 4 ▪ Identify disposal locations (on site vs. offsite).
- 5 ▪ Secure transportation for product disposal.

7 **3380 Demobilization**

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

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

15 **3390 Salvage**

16 Before, during, and/or after an oil spill or potential incident, salvage assistance
17 may be required. A salvage plan may be developed within the response
18 organization for, but not limited to, vessel stranding, vessel sinking's and rescues
19 (towing). The IC/UC will review and approve or disapprove the salvage plan
20 based on the resulting risk to human life, port security, and the environment.

21
22 Initial rescue efforts will have priority over pollution response efforts, to the
23 extent that they may interfere. Subsequent to any rescue efforts, the pollution
24 response efforts and salvage efforts may be conducted concurrently. The On-
25 Scene Coordinator will prioritize actions when interference between salvage and
26 pollution response efforts cannot be eliminated.

27
28 USGC COTPs have jurisdiction over vessel salvage; this does not preclude any
29 other agencies' interests with respect to spill prevention or response. Ecology
30 would normally be part of the Salvage/Source Control Group.

31
32 For general guidelines to follow in responding to an incident that requires salvage
33 operations, refer to United States Navy Salvage Manual Volume 1–6
34 http://www.supsalv.org/00c2_publications.asp?destPage=00c2&pageId=2.6 and
35 Section 5230 for Resource Listings.

36
37 For additional salvage guidance, see the Sector Columbia River or Sector Puget
38 Sound Salvage Annex to the Marine Transportation Security Plan. For specific
39 salvage resource lists also see the Western Response Resources Inventory at
40 <http://www.wrrl.us/>.

41
42 Contacts for Salvage References and Support:

- 43 ▪ Navy Supervisor of Salvage:
- 44 — Supervisor of Salvage Operations (202) 781-2736

- 1 — After hours and on weekends (NAVSEA Duty Officer) (202) 781-
2 3889
- 3 — Switchboard (202) 781-1731
- 4 — Office of the Director of Ocean Engineering Supervisor of Salvage and
5 Diving (SUPSALV) <http://www.supsalv.org>
- 6
- 7 SUPSALV can provide the services of naval architects, may provide the
8 services of naval salvage vessels, and has access to contracts that will
9 provide the services of commercial salvers and equipment. SUPSALV has
10 developed and has available software for rapid analysis of longitudinal
11 strength and intact/damaged stability; the software is known as Program of
12 Ship Salvage Engineering (POSSE).
- 13 ■ USCG Marine Safety Center Salvage Team:
- 14 — During business hours : (202) 327-3985
15 Duty email: SERT.Duty@uscg.mil
- 16 — After hours, contact the USCG Headquarters Command Center:
17 (202) 327-3985
- 18
- 19 The USCG Marine Safety Center Salvage Emergency Response Team can
20 evaluate vessel stability, hull strength, and salvage plans and may be
21 available to go on scene. The Marine Safety Center may be able to provide
22 vessel plans, if the ship is U.S. flagged.
- 23 ■ United States Army Corps of Engineers:
- 24 — Vessel PUGET Supervisor: 206-498-8795
25 — Vessel PUGET Captain: 206-399-0358
- 26
- 27 The United States Army Corps of Engineers can respond to floating logs,
28 debris, and navigational hazards, including derelict vessel up to 30 feet in
29 length. A majority of this response work is conducted by the vessel
30 PUGET, a 104-foot vessel with a 20-ton crane, typically moored at the
31 Hiram M. Chittenden Locks in Seattle.
- 32
- 33 NOTE: Be prepared to provide the following information when calling
34 for support: brief description of services required, location, urgency, point
35 of contact, and telephone number. If the task is urgent and requires
36 immediate mobilization, this fact should be clearly articulated and include
37 a statement that funding will be provided by separate correspondence.
- 38
- 39 ■ Ecology
- 40 — Through Washington Department of Emergency Management 24-hour
41 number: (800) 258-5990
- 42
- 43 Ecology can provide response and reviews of salvage or lightering plans.
- 44

1 **3400 Responding to Rail Incidents**

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

22
23 In general, rail carriers transport products on lines that they own. However, there
24 are a variety of agreements that allow carriers to operate on lines owned by other
25 companies. Regardless of whose trains are operating on the line, the track owner
26 is responsible for the emergency response phase of the incident. Once the
27 emergency is over, cleanup or other monitoring work may be transferred to the
28 transporter. Where trackage rights do not exist, the shipment continues to its
29 destination after being transferred at an “Interchange Point.” At this Interchange
30 Point, the responsibility shifts to the new line owner.

31
32 Currently, there are no requirements for the amount of response resources that
33 track owners must have in order to respond to an incident on their lines. Below is
34 a summary of resources available to several rail owners operating in Washington,
35 Oregon, and Idaho. The rail companies surveyed for this information are
36 Burlington Northern Santa Fe Railway (BNSF), Union Pacific Railroad (UP),
37 Genesee & Wyoming, Inc. (Portland and Western Railroad, Puget Sound and
38 Pacific Railroad), and Tacoma Rail/Tacoma Municipal Belt Line.

39
40 **Incident Management:** Once a derailment involving hazardous materials is
41 detected, the local Public Safety Answering Point (PSAP or 9-1-1 center) is
42 alerted. Local emergency services are then dispatched and respond to the scene to
43 conduct a scene size-up, request additional resources, establish incident
44 command, and initiate strategies to protect life, property, and the environment
45 from fire and hazardous materials.

1 As additional local, state, federal, tribal, and private resources arrive, the
2 command structure evolves into a Unified Command (UC) with the following key
3 positions:
4 ▪ Local Agency Having Jurisdiction (or local on-scene spill coordinator);
5 ▪ State OSC;
6 ▪ Federal OSC, typically EPA and/or U.S. Coast Guard;
7 ▪ Tribal representative; and
8 ▪ Responsible Party representative

9
10 UC will establish incident objectives that take into consideration and attempt to
11 integrate existing local, railroad, state, federal, and tribal emergency response
12 plans. Stakeholder agencies who do not have jurisdiction, authority, or a financial
13 responsibility for the event – but have available resources and a vested interest in
14 its outcome – will establish an Agency Representative who will report to the
15 incident Liaison Officer. Upon assessing the scope and community-wide impacts
16 of the incident, UC may request an Incident Management Team to support UC
17 over multiple operational periods.

18
19 **Air Monitoring:** Air monitoring resources vary according to organization. The
20 initial air monitoring may be conducted by the local first responders and
21 HAZMAT teams until additional resources arrive such as OSCs and OSROs. The
22 capabilities of these responders can vary depending on their location and the
23 resources available to them. This air monitoring would be used to inform
24 responder and public safety decisions.
25 Several of the carriers rely on their response contractors to provide air monitoring.
26 In general, this air monitoring would be performed specifically for cleanup
27 operations and not necessarily to support public safety decision making. BNSF
28 has a more robust air monitoring program than the other providers, called the
29 Tactical Toxicology program that is designed to provide air monitoring
30 information for the incident. BNSF has the ability to cascade additional air
31 monitoring equipment into the region as well as toxicologists and industrial
32 hygienists. BNSF’s air monitoring program will support response activities and
33 public safety decisions in coordination with the local IC/UC. UP has the same
34 ability to bring in contractors that specialize in toxicology and environmental
35 health to support public health and safety decisions.

36
37 In all rail incidents, the decisions regarding public safety will be made by the
38 local IC/UC.

39
40 **Resources for Fire Fighting:** In general, resources for combating a fire resulting
41 from a train incident will come from local fire departments. BNSF and UP have
42 additional resources, including foam trailers staged in Montana, Washington, and
43 Oregon. Rail owners may also maintain contracts with private industrial
44 firefighting companies.

45

1 In Oregon, both BNSF and UP have partnered with the Oregon Office of State
2 Fire Marshal to pre-position eight (8) firefighting foam trailers that are hosted by
3 fire departments with 24/7 staffing to deploy them to an incident.

4
5 **Spill Response Equipment:** In general, initial spill control at a train incident
6 involving the release of hazardous materials will be implemented by first
7 responders, local OSCs, or HAZMAT teams. Rail owners all contract with at least
8 one spill response contractor whose equipment they would rely on in an incident
9 resulting in a spill. Rail owners determine the number of cleanup organizations
10 they contract with. BNSF and UP have company-owned spill response equipment
11 staged throughout the region. This equipment is listed on the Western Response
12 Resource List.

13
14 **Mutual Aid:** Resources can be shared among the different rail companies if
15 available, but there are no formal mutual aid agreements.

16