Sector San Diego
Area Contingency Plans (ACP)
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ACP 6- San Diego Area Committee
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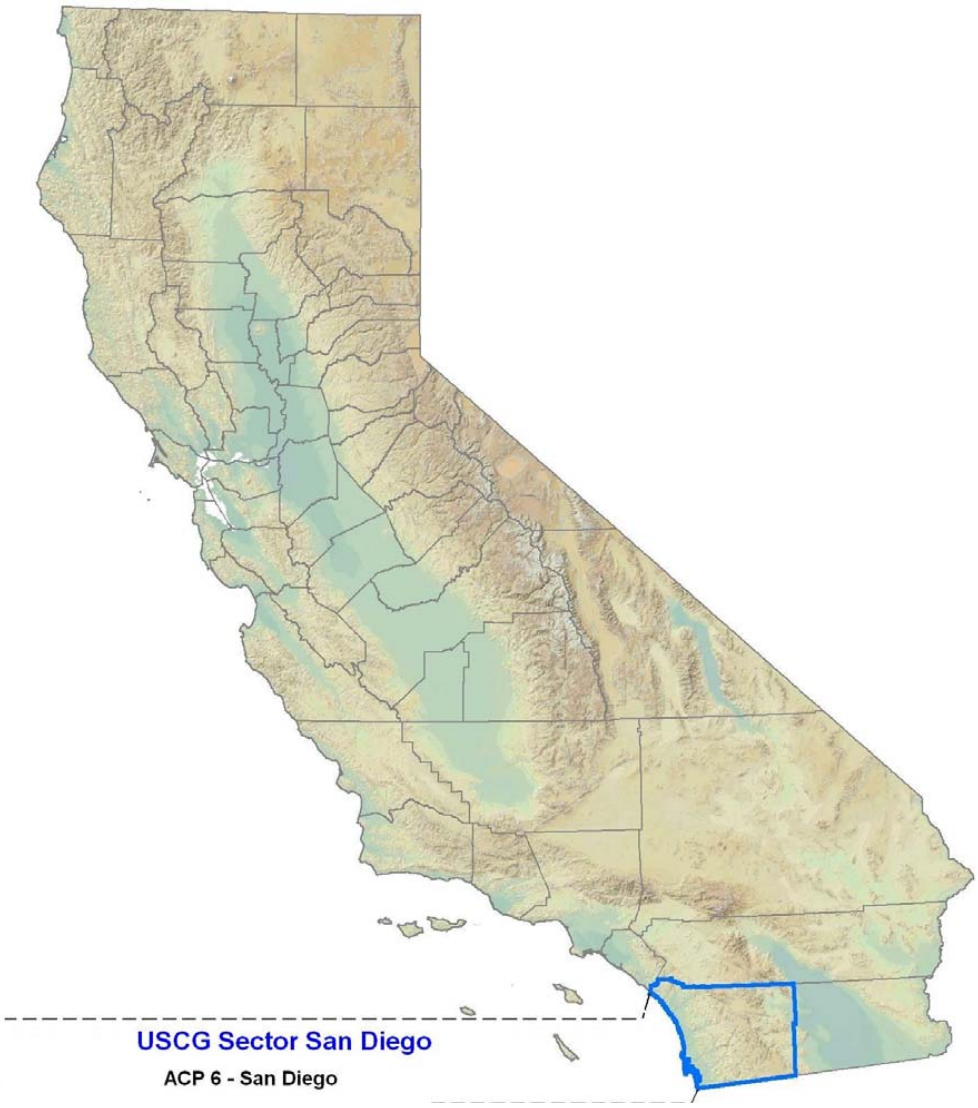

Emergency Spill Notification Numbers
National Response Center 1-800-424-8802
California Office of Emergency Services 1-800-852-7550

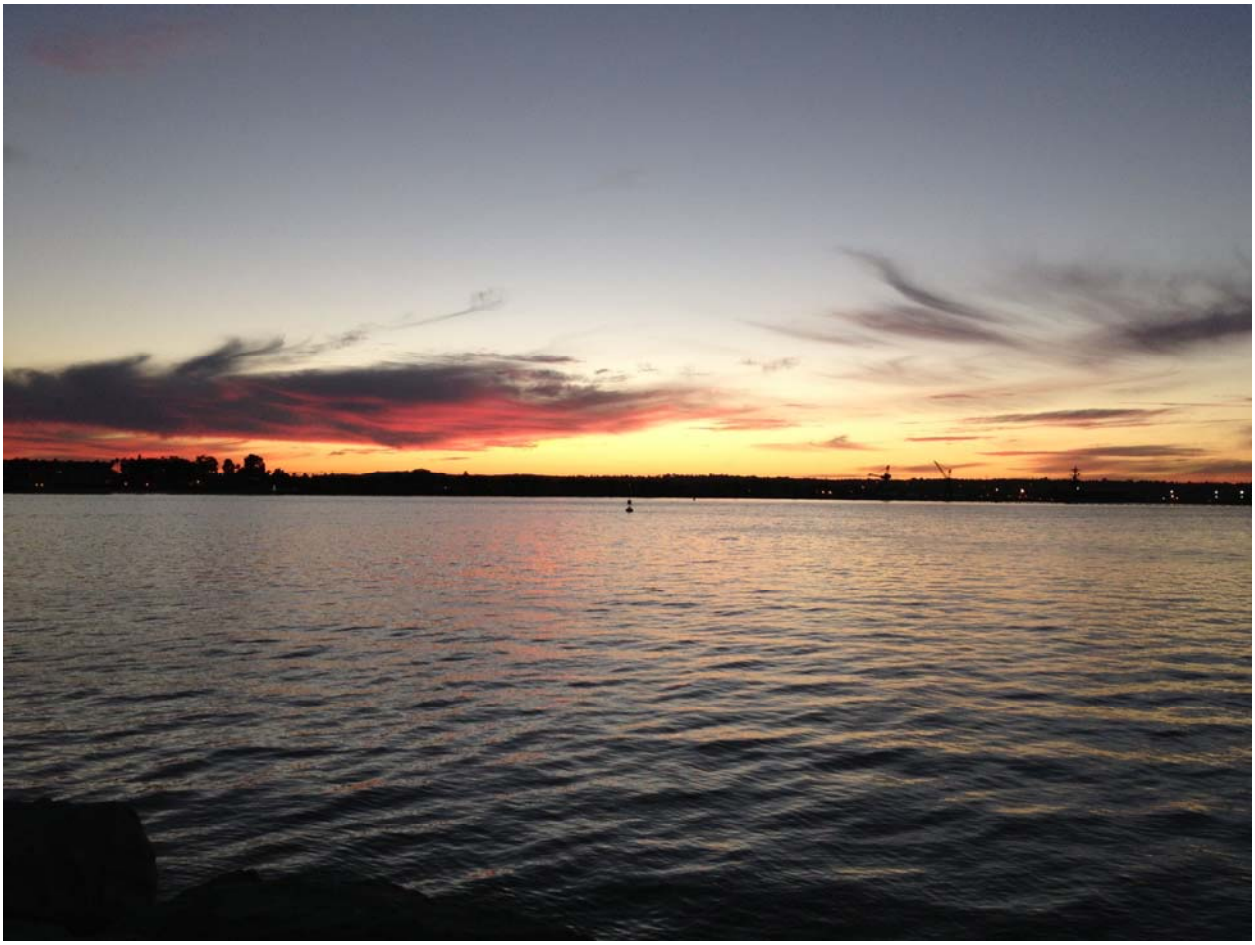

Figure 1 San Diego Bay is the home to Sector San Diego. The bay naturally serves as the logistical focal point for area contingency response planning effort in San Diego County.

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Volume II (Section 9800) San Diego ACP Response Concerns and Preparedness for Environmental, Economic, and Cultural Resources

9800 Introduction

The focus of spill response contingency planning is the identification and protection of environmental, cultural, and economic resources at risk. Section 9800 is a catalog of environmental, cultural, and economic concerns which have been identified by the Area Committees. Strategies to protect identified sites from oil and collateral impacts are included for many of these resources which may be at risk during a spill.

9800.1 Organization of Section 9800

Section 9800 provides geographically organized information about resources that may be at risk from spills. Some variation to the generic format shown below is found among the California Area Committee Plans. This is to be expected, as each of the six unique Area Committees are semi-autonomous bodies that are charged to protect their own section of the coastline. The desire to make each of the Area Plans within the state similar is a goal that is reached by each Committee producing a plan that closely follows this same generic outline.

The information in the 9800 section is grouped by Geographic Response Areas (GRAs). In some instances GRAs fall along political boundaries such as a county line, or may be delineated based on the geomorphology, and in other instances GRAs are based on local hydro-geographic areas where contaminants such as oil are likely to circulate. Section 9800 is organized first by county or GRA and then into topical subsections for each county or GRA. The Statewide template for organization is shown below for each geographic grouping, though local variations accommodate the needs of each Area Committee (not all ACPs have all the topical subdivisions shown or in some cases have additional sections).

9800 Document Introduction & Organization Overview
- **9811.1 Sensitive Sites**
- **9811.2 Cultural and Other Resources at Risk**
  - **9811.21 Cultural Notes**
  - **9811.22 Essential Fish Habitat**
  - **9811.23 Other Concerns**
- **9811.3 Economic Sites**
- **9811.4 Operational Divisions**

Each California Area Plan subsection 9800 contains a table of contents that closely follow this generic format.

9800.2 Prioritization of Response Actions

Prioritization of protection measures during a spill response should be guided by two considerations. The primary consideration is how soon the oil will get to each sensitive site. The second is the predefined hierarchy of protection priorities (Section 9800.23 below). This second consideration becomes more complicated whenever the available response resources are insufficient to implement all of the response strategies necessary to protect all of pre-identified resources at risk.

Responders should not assume that resources which appear to be equidistant from the source of a spill are at equal risk from the oil. The direction of the spread of a slick will determine which resources need first protection. The next consideration would be this: can the sites at risk be protected by available resources before oil arrives? The final consideration is response effort prioritization. When the sites that are at risk are too numerous to protect with the response resources available within the projected times of impact, then triage of any response protection efforts will be necessary. What or how one prescribes that site protection order is somewhat outside of the scope of this document.

For the purpose of prioritization planning, “risk” is defined as “the probability of spilled oil reaching the vicinity of a sensitive site of concern.” During an actual oil spill event, the relative likelihood of a site coming into contact with the oil is a function of the proximity of the spill to the site and whether prevailing condition - the wind, current, and tides at the time of the spill - will move the oil toward the site, or not?

At a minimum, the initial responders to a spill in the marine environment, and OSPR Scientific Field Staff in particular, must be able to develop a forecast for the speed and direction of the oil slick. This requires responders to acquire the best information available (optimally, real time information) about the local weather, tides, and currents, to make a useful estimate for the spread of the slick away from the spill release location. This information can be used to model an impact trajectory that can guide early protection effort. Models can be as simple as estimates of oil slick movements drawn by hand on a chart or map, or the more sophisticated outputs of a computer simulation.

9800.21 Modeling Oil Spill Trajectories

During an initial response, an “envelope trajectory model” can provide usable estimates for site protection planning. As more assets and information become

available, computer modeling may sometimes be used to provide more robust planning guidance. While computer models can be useful, they are typically unavailable in the initial critical hours of a spill. In addition, very few spill responders are trained to use spill modeling software.

Regardless of the trajectory prediction method, all such projections must be made on some modeling assumptions. OSPR Scientific spill responders have access to tide and current information and can use these to make an initial trajectory estimate. The envelope trajectory method is described in (ACP Vol I) Section 3210.1 and also in greater detail in Section 4600.

9800.22 Developing a List of Site Protection Priorities

Once a spill trajectory is available, responders can use it to develop a prioritized action list of sensitive site protection measures. The normal sequence of actions should progress as follows. First, the responder responsible for identifying the sensitive resources that need protection should produce or obtain the initial envelope trajectory. This trajectory can then be superimposed on the appropriate Geographic Response Area overview map(s) to determine which sites are likely to be at risk. These sites can then be prioritized using the probable time of impact and the prioritization criteria below (Section 9800.23.)

The protection strategies which are most appropriate for each site should be selected from the ACP pages. Sites and their selected protection strategies should be compiled into a prioritized deploy-by-time list. The resultant list should then be transmitted by fax or email (or even phone) to the first responders' on-scene who will be implementing initial emergency operations.

9800.23 Prioritization - Predefined Hierarchy of Protection in Statutes

State and Federal law establish three priority levels for dedication of emergency oil spill response resources.

- First Priority – Protection of human health and safety
- Second Priority - Protection of environmental resources
- Third Priority - Protection of economic resources

Examples of resources that will receive a first priority response (human health and safety) include, but are not limited to:

- Power plant intakes -desalinization plants
- Drinking water intakes -other health/safety intakes
- Public use areas at risk (e.g. fire departments)

Within the Second Priority – Environmental Resources – sites are ranked by sensitivity. This sensitivity may be useful in making priority decisions between two sites if both may be impacted simultaneously but inadequate resources are available for concurrent protection.

9800.24 Further Considerations in Preparing Trajectory Projections

Trajectories and oil distribution maps may and should be corrected with reliable over-flight information if and when it becomes available. If viewing conditions are poor, do not assume that the over-flight information is better than envelope calculations. Unreliable over-flight information has resulted in regrettable consequences in past spills. Over-flights provide the best information when they are concurrent with high and low slack water because then it is easiest to observe the maximum extent of oil movement. Information gathered from over-flights should be used to update trajectory predictions.

Real- time current measures can be helpful to improve envelope trajectories. Such real-time data are available for many locations through the Physical Oceanographic Real-Time System (PORTS®), CODAR (Cencoos or Socoos), and other online information sources. WWW.SCCOOS.ORG

Freshwater runoff can significantly change the time and velocity of tidal currents. Estimates of oil distribution will be improved by applying the previous day's deviation between real-time current measurements and the predicted tidal currents to estimate the deviation for predicted tidal currents.

Computer simulations are the preferred method to make trajectory projections. Responders should use computer predictions for periodic intervals over the short term future as soon as possible in the response. Computer simulations combined with current overflight information can provide projections which include scope as well as extent of spill expansion and have greater detail for some local current patterns. The projection images are very useful for determining which resources are most likely to be reached by the oil and therefore at most "risk". Computer simulations are effective for looking at advanced time intervals. For example, predictions are useful for every six hour increment (interval keyed to the maximum and minimum tides) for the first 36 to 48 hours and including any predicted changes the wind direction and/or speed and weather. Normally, computer projections are through the National Oceanic and Atmospheric Administration's Scientific Support Coordinator. Envelope trajectories may still be used to verify the output from simulations.

Wind has less effect upon the distribution of oil in a strong current (as in bays and estuaries). First, since oil is moving at 100% of flow, currents are dominating oil dispersion in high current environments. Second, helical flow patterns in currents will usually keep oil in the main channel until slack tide. The helical flow will stop at slack tide and the oil will be blown directly down wind. Oil blown out of the channel during the slack before the ebb (at high tide) may be carried back into the channel by the ebb tide before it can impact shorelines; however, oil blown out of the channel during the slack before the flood (at low tide) will be blown directly downwind until it strands on the shoreline. In ocean environments, winds tend to be more dominant because currents tend to be more modest; however, recent CODAR information indicates that there may be periods of high velocity ocean currents of up to two knots in places along the California coastline.

9801 Ecologically Sensitive Sites

Protection of environmental resources has the highest priority, after human health and safety. Both Federal and State laws require that sites having special ecological sensitivity be identified and plans made to protect or otherwise mitigate impacts from spills. In California these locations are termed “Sensitive Sites.” For each sensitive site, information is summarized in the Site Summary, Site Strategy, and accompanying Strategy Diagram pages.

9801.1 Sensitivity Ranking of Ecologically Sensitive Sites

Each site has an environmental sensitivity ranking. The ranking index was developed in order to identify the relative sensitivities of these sites to oil and, in turn, to help determine protection priority of sites. These ranks define the environmental sensitivity of the area and its resources at risk. The environmental sensitivity differs by location or season depending on conditions or the presence of species. Accordingly each site is ranked A, B, or C based on the following definitions:

Category A - Extremely Sensitive – highest concern for protection: Wetlands, estuaries and lagoons with emergent vegetation (marsh, riparian ESI 10) Sheltered tidal flat (ESI 9); and habitats for rare, threatened or endangered species (State or Federal); sites of significant concentrations of vulnerable and sensitive species (e.g., pinniped pupping or major bird roosting/nesting sites).

Category B - Very Sensitive – very high concern for protection: Major pinniped haulout areas during non-pupping seasons; moderate concentrations of vulnerable and sensitive species; other low energy habitats (ESI types 8A, 8B, 7 and 6B).

Category C - Sensitive – great concern for protection: Higher energy habitats (ESI 6A through 1) for example, habitats important to large numbers of species of sport, commercial value, and scientific interest or species experiencing significant population declines though not yet threatened.

The A, B, or C ranking should not be misconstrued as defining whether a site can be effectively protected from oiling. Some “A” sites or portions of “A” sites may not be feasible to protect using conventional techniques. For example, some seabird colonies and pinniped haulouts may be in such high energy environments that booming is precluded, and the primary protective measure/strategy would be offshore containment and recovery and/or considering applied technologies such as dispersants and in-situ burning. . Assigning a response priority is usually guided according to the time by which the oil slick is likely to impact a sensitive site regardless of sensitivity ranking. The OSPR Resources at Risk Technical Specialist will be invaluable in helping the response prioritize deployments.

Some sites have no inherent ecological sensitivity but represent key oil protection sites through collection, deflection or exclusion. The protection strategies at these sites are designed to stop the spread of oil, or to prevent the injury of nearby environmentally sensitive sites (A, B, C). Prioritization of these site deployments will be made for each response using an appropriate spill-specific trajectory. These sites are identified as:

Category X – Key Protection – oil collection, deflection, or exclusion sites that have little inherent ecological sensitivity but implementation of their strategy or strategies may protect more ecologically sensitive sites. Not all ACPs (or GRAs) have Category X sites.

Each environmentally sensitive site identified in the GRA sections will have a Site Summary Sheet which describes why the site is environmentally sensitive and provides points of contact. In addition to the Site Summary Sheet, a Site Strategy Sheet provides information on protection strategies, recommended resources, and site logistical and access information. In addition to the Site Summary and Site Strategy Sheets, most sites also have an associated Strategy Diagram that should also be considered a guide (i.e. exact placement of boom may need to differ from what is depicted on Strategy Diagram depending on conditions at the time of a spill).

It should be understood that strategies described in this section are primarily intended to serve as initial guidance for the first 24 hours of a spill response until further guidance based on real-time conditions/sensitivities/constraints are identified and addressed. Additional or modified protection strategies may also need to be considered depending on spill conditions. In other words, strategies presented here

in the ACP may need to be modified based on actual spill conditions and/or directions from the Unified Command.

9801.2 “Dynamic Site” Pre-response Assessment Strategy

The mouths of many of the creeks and rivers in San Diego County will routinely cease to flow during extended periods of dry weather. Many of these mouths will become “closed” due to the long shore movement of beach sand under the combined influence of water currents, waves, tides, and wind.

To properly address the uncertainty at dynamic coastal sites, the status of these areas will need to be assessed at the time of a spill before any response equipment is ordered and dispatched. The need to assess the dynamic sites is noted on the Site Strategy pages under the paragraph titled:

“CONCERNS and ADVICE to RESPONDERS”.

For those sites in the plan that require a pre-assessment, the text in this section will include; “Strategically Dynamic: Assess current site conditions before selecting a response strategy or ordering response equipment.”

Many of these sites may not require any response other than an initial assessment when they are naturally closed and the threat of oil transportation into the estuary mouth is nil.

This text hopes to address this potential conflict that may arise when ACP planners seek to simply identify the amount of equipment that will be required to protect a site while not necessarily mandating the deployment of heavy equipment (or other resources) to a site during an emergency before the site has been evaluated to determine the existing conditions.

9802 Cultural and Other Resources at Risk

Information for addressing Cultural resources issues is contained in section 9820. This Section also includes information on Essential Fish Habitat (9820.2), the Wildlife Response Plan (9821), and summary information on data contained inside of NOAA’s Emergency Response Management Application (ERMA)

The sub-section includes information specific to Geographic Response Areas concerning resources at risk which are not geographically localized, identified, or are variably distributed between years. For example, though cultural resource sensitivity is noted on Sensitive Site Summary pages, most cultural resource information is highly confidential and not publicly available. Therefore, local key contacts with access to this information are provided.

9803 Economically Sensitive Sites

Economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. Examples of resources that will receive a first priority response based on human health and safety may include: power plant intakes; desalinization plants; drinking water intakes; or other water intakes that can affect human health (e.g., intakes for fish processing facilities). Environmentally sensitive sites are designated as the second priority for oil spill response resources and are defined and listed in Section 9801.1 using a scale of A, B, and C (A being most environmentally sensitive to an oil spill). The economic sites are ranked after sites in the environmental scale using D, E, and F ranking categories. People involved with response planning recognize that throughout California's marine waters, along the State's shoreline, and within coastal communities are many resources of economic importance that could be severely impacted by an oil spill incident. Not all economic resources susceptible to contamination from marine oil spills have been identified. The Area Contingency Plan is a planning document intended to assist oil spill response personnel but the Unified Command of each spill requires flexibility to provide the most appropriate response to a given spill event.

9803.1 Criteria for Ranking Economic Resource Priorities

Economic resources that have a greater potential for long-term damages receive a higher rank/ priority in an emergency response. The following criteria or definitions are used to categorize economic resources in terms of priority for response:

D = Economic activities and resources which require high water quality for their operations or existence. Resources that fall into this category would face severe, long-term economic impacts from a spill. This category includes facility/industrial intakes, aquaculture and mariculture areas, marine labs, salt pond intakes, aquarium water intakes, etc.

E = Facilities, businesses, or resources which directly use coastal or bay waters within their economic activity and which are at risk of oiling from a spill in marine waters. The resources falling into this category would face significant disruption of their activity, but shorter term potential damages from oiling than resources in the "D" category. This category would include resources such as marinas, harbors, commercial piers, and parks or recreational areas.

F = Marine associated facilities, businesses and resources. These resources would have impacts from a marine spill, but do not depend directly on marine water for their economic base. Resources in this category will tend to face less severe damages than those identified in categories D or E. This category includes economic

resources such as waterfront hotels, restaurants, shops, and residential areas. (Note: residential sites would be evacuated to avoid health risks).

Private properties owners are encouraged to purchase their own response equipment to protect their economic resources. Please note that city and county governments may have a limited amount of boom available.

9803.2 Types of Economically Significant Resources and Ranking

Listed below are various types of significant economic resources potentially at risk from oiling, and the assigned response priority ranking (D, E, or F).

- Aquaculture, mariculture (D)
- Aquariums, marine labs (D)
- Facility/industrial intakes (not affecting public health) (D)
- Parks, beaches, recreational areas (E)
- Vessel or boat traffic areas, harbor entrances, anchorages (E)
- Marinas and houseboat areas (E)
- Ferries and tour boats (E)
- Port or harbor facilities (E)
- Boat moorings, cargo piers, terminals, fishing piers (E)
- Ship or boat repair facilities (E)
- Tourist hotels & restaurants (F)
- Waterfront residence (F)

These suggested ranks can provide guidance for setting response priorities for Economic sites.

9803.3 Information about Sensitive Economic Resources

This economic section of the ACP contains lists, and/or maps of sensitive economic areas or resources. Below is a list of the types of information that may be provided for each identified economic resource or facility. Some information is unavailable for specific resources identified within this section.

- Resource or facility identification number
- Geographic location of resource or facility
- Brief description of the resource at risk
- Contact names and numbers (24 hour access when available)
- Priority response ranking
- Other information

9804 Shoreline Operational Divisions

Shoreline operational divisions are presented in the ACP as front-loaded information to enable rapid response organizational planning. The operational divisions have been developed in conjunction with the US Coast Guard, California Fish and Game OSPR, and various oil spill response organizations. Experience has demonstrated that in the earliest stages of spill response, having organizational issues such as this, prepared in advance, is helpful to the response team.

The shoreline operational divisions are organized and named according to county boundaries. Within each county, divisions are established by using local coastal physical characteristics such as land ownership and management, and shoreline access, combined with the operational need to work along reasonably sized coastline segments (generally not longer than about ten miles).

In ACP areas having more than one county, shoreline operational divisions will utilize county codes followed by a single alpha character (A to Z). Shoreline operational divisions are consecutively labeled, beginning in the north, and follow the coastline towards the southern border of each county. For example, the north-most operational division in San Diego County is “SD-A.” San Clemente Island has not been pre-designated with operational divisions in the San Diego ACP.

In San Diego Bay, the labeling progresses in a clockwise direction to accommodate changing coastline angles. ACP Division can be further subdivided (as necessary) to provide for appropriate work assignments that are tailored to the needs of a response.

9805 Shoreline Access

This information was moved from the Area Plan into ERMA Southwest, Here:
http://response.restoration.noaa.gov/maps-and-spatial-data/environmental-response-management-application-erma/southwest-erma.html

Additional information on ERMA data layers can be found in section 9822.

9806 California Strategy Concepts, Systems Approach, and Nomenclature

Every isolated geographical niche has its own unique culture and a certain amount of regional variability in language. This section will guide non-native southern California responders who might be unfamiliar with our local response methods, concepts, and vernacular.

9806.1 Booming Systems

Boom and booming systems terminology used on the west coast is way different than much of the rest of the U.S., or even that used inside of the World Oil Spill Catalog. In general, harbor boom (see definition below) is used as primary site protection in the San Diego ACP, although some strategies do call for swamp boom (A.K.A. “river boom” - see below). For response and planning purposes, harbor boom may be substituted for swamp boom and two consecutive layers of swamp boom are roughly equivalent to one layer of harbor boom. Swamp boom may be used in low energy applications: areas with little wind chop, or waves and light currents.

Responders should be aware of several issues and amend their own response actions as necessary. Long-skirted booms in shallow channels can aggravate entrainment problems. In such instances, it may be inadvisable to substitute harbor boom for swamp boom. The most useful rule of thumb is to use whatever works best in the prevailing conditions to achieve the stated protection goal(s) found in the strategy pages of the area plan. As a response continues, strategy and deployment adjustments will be the responsibility of the Incident Command working with the Planning and Operations sections to develop affective protection measures.
Also, wherever oil accumulates against booms in rough or choppy conditions, there can often be the problem of oil washing over the flotation. This nullifies the booming. To avoid this problem, protective strategies are designed to avoid collection of oil in pockets (except for the purposes of skimming), and instead, are oriented to keep oil moving along booms to collection or deflection as much as the situation permits. Responders, both in operations and planning, will need to adjust boom configurations to prevent excessive “pocketing” so as to minimize entrainment and over-wash. This may mean altering boom angles. This may also be unavoidable and require back-up layering of boom. Some strategies include this as a contingent alternative, but regardless, if over-wash is a problem, then a second layer should be viewed as the containment and deployed in the “shadow” of the becalming first layer. In some instances the lesser freeboard of swamp boom may provide adequate control once the wave has been broken.
Regardless of strategy design, deployment and adjustment remain key to successful booming. If strategies are not properly deployed and maintained through proper anchoring and tending, the protective booming will be neutralized. Every effort by spill managers and responders should be made to ensure proper execution for the duration of any response.

9806.2 Skimming Systems

This section provides an introduction to skimming issues in site strategies. In the Area
Plan Strategies, the inclusion of self-powered skimming vessels is minimized in recognition that the first response resource priority is on-water skimming. The best

protection for sensitive sites is to minimize the amount of oil that ultimately arrives to any site.

Best efforts aside, it is almost inevitable that shore-side skimming and offshore skimming are include as integral parts of protecting shoreline sites. The philosophy of spill strategy development should include the attempt to control, capture, immobilize, or collect oil at shorelines where feasible. Once oil has been immobilized, either contained or confined near shore, oil skimming efficacy dramatically improves. Also, once oil has impacted a site, it may be a reasonable tactic to keep it stranded at that site rather than to allow it re-mobilize and potentially impact other sites.

Since there is a variety of skimming options that may be included in any strategy, this preamble provides an opportunity to define skimming systems so that the elaborate descriptive verbiage need not be repeated in each strategy. A number of acronyms for skimming systems are included in the Acronyms and Nomenclature section below: TSA, SFS, SPS, and SSS.

A skimming system includes four elements: a skimming device, storage for skimmed oil, a pumping device to move captured oil from the skimming device to storage, and a power supply that is appropriate to energize the system.

9807 Glossary of Acronyms and Nomenclature Used in Strategies

To minimize repetitious verbiage in protection strategies, the following acronyms and nomenclature may be used in the strategies.

Anchoring Systems – Whether expressly stated or not, anchoring systems must be sufficient to hold boom in the currents wherever boom may be deployed. To insure successful anchoring, the anchoring system should include: anchors with anchor buoys to control placement and anchor chains which equal or exceed the weight of anchors indicated, enough line to produce adequate scope to hold anchors (rule of thumb is 3:1 (line to depth), but 5-7:1 (for high current areas), and a buoy between anchor line and boom (crown buoys) to keep the anchor from sinking the boom under tension conditions.

BBE - boom boat equivalent: A vessel able to safely transport and deploy 600 feet of harbor boom or 1800 feet of swamp boom.

Boom boat - a boat suitable for transporting, towing and deploying large amounts of boom, usually crewed with a helmsman and two deck hands for handling the boom deployment. Boom boats should generally be capable of grounding without sustaining damage. (Also see Shallow Water Boom Boat and Very Shallow Water Boom Boat.)

Bboat - see boom boat

Danforth - refers to “Danforth anchors” with chain, typically presented as a number of anchors and minimal weight (e.g., 3/12+ - means three anchors of a minimum of 12 lbs each) with at least an equal weight of anchor chain. Without substantial anchor chain mass, anchors will not hold. Northill anchors are equivalent.

Hboom - see harbor boom

Harbor boom - an inland waters type boom (greater than 18” and less than 42” overall (flotation and skirt)) of a curtain boom design (skirted boom with solid flotation). Some strategies clarify boom size by indicating flotation and skirt as follows: 9X9+ which indicated a boom with at least 9” of flotation and 9” of skirt.

SORBM - sorbent boom, with or without a skirt

Shallow water boom boat – a boom boat capable of safely working in three feet of water depth or less, which can also withstand routine beaching or stranding.

Skiff - a small two person craft able to operate in 3 foot waves or larger and capable of delivering personnel and equipment to shores.

SKF - see skiff

SFS- stationary floating skimmer - a floating platform supporting a skimmer and storage, including VOSS equipment.

SPS - self-propelled skimmer - a small to medium sized skimmer with its own propulsion and storage – which could be a VOSS.

SSS - shore side skimmer, includes a skimming unit, such as a rope-mop or weir skimmer and its support pack and a storage container such as a vacuum truck, baker tank, or other tank.

SWPBM - see swamp boom

Swamp boom - a river boom type (less than 18” overall) of a curtain boom design

Towed skimming array - a skimming system with two boats towing collection booms which funnel
oil to a skimming system

TSA - towed skimming array - an array with two boats towing collection booms which funnel oil to a skimming system

VOSS – Vessel of Opportunity Skimming System – a portable skimming system (skimming device, pump, power supply, and storage) installed on a vessel not designed for skimming.

VSA – “V”-Skimming Array -Same as TSA

“V”-Skimming Array -Same as TSA

Very shallow water boom boat - a boom boat capable of working in two feet of water or less, which should be durable enough to withstand repeated stranding without sustaining damage.

Weir Skimmer - a skimmer with an adjustable damn, to minimize water collection.

Xboom – is any boom other than harbor boom, swamp, or sorbent boom. This term is used to simplify equipment tables. A type designator should be used as well as a length. Type designators include:

- TB or TBB – tidal barrier boom
- OB – ocean boom
- FB - fence boom
- OS – oil snare
- BB – bushy boom