

## Potential Place of Refuge (PPOR) Sites in the San Francisco Bay Area

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Decision-makers must address both operational and environmental issues when determining where to direct a stricken vessel. The U.S. Coast Guard Captain of the Port (COTP) has jurisdiction to approve a PPOR site for a vessel in distress. The COTP will confer with other federal, state, and local officials while deciding where and when to move a stricken vessel. Selection of a PPOR site by the COTP, in consultation with other agencies and stakeholders, will always be made on a case-by-case basis. However, prior identification of PPOR sites significantly enhances the decision-making process, facilitates the overall response operation, and helps prevent or minimize potential adverse effects to the vessel, the public, the environment, and resource users.

Workgroups were established for the San Francisco Bay and Delta (SFBD) Area of Responsibility (AOR) to develop a PPOR decision-making process and a framework for establishing pre-incident information on PPOR sites for inclusion in Area Contingency Plans (ACPs). Participants developed an approach to pre-survey PPOR sites, not pre-determine them. Data gathered was streamlined and incorporated into a California Statewide PPOR Database including: pre-incident summaries containing PPOR site-specific data; NOAA Trajectory Analysis Planner (TAP II) modeling results for shoreline impacts; and PPOR area maps.

A number of PPOR sites were identified within SFBD and included in the California Statewide PPOR Database. A subcommittee consisting of representatives from various SFBD Area Committee organizations including vessel pilots, natural resource agencies, and port authorities chose the 94 sites. These participants were later involved with providing physical, navigational, human health and safety, and economic information for 22 designated deep draft PPOR sites for the SFBD AOR. Additionally, a natural resource workgroup branched off from this PPOR subcommittee to address natural resource concerns for these 22 sites, ensuring validation of information with natural resource trustees within the SFBD AOR.

**Keywords:** Natural resource protection, navigation, emergency

**Poster Topic:** Environmental Cleanup

## **A Novel and Cost-Effective Method to Document Trash Reduction in Stormwater**

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Numerous urban creeks and shorelines in California are listed as impaired by trash on the Clean Water Act's 303(d) list. As a result, over the course of the last decade, NPDES stormwater permits have included stringent requirements that mandate extensive trash reductions designed to improve local waterways. As such, municipalities have developed new and enhanced control measures to reduce the generation or transport of trash through storm drain systems. Cities and counties in the Los Angeles and San Francisco Bay regions have installed tens-of-thousands of "full-capture" systems to intercept trash, which are certified by the State Board and coined "Track One" controls in the recently adopted amendments to the statewide Ocean and Inland Surface Waters Plans by the State Board. Other municipalities are enhancing institutional controls such as street sweeping and storm drain cleaning, improving franchise waste hauler agreements to improve garbage containment and transport, implementing extensive on-land cleanup programs utilizing business improvement districts and volunteers, and adopting ordinances that reduce the generation of litter-prone items that end up in stormwater. These types of actions are coined "Track Two" controls by the State Board. Unlike certified full capture systems, track two controls require monitoring to verify their effectiveness and determine that they have an equivalent level of performance to full capture systems. Identifying the need for a cost-effective method to establish full capture equivalency, Bay Area communities developed an On-Land Trash Assessment Protocol and have conducted over 1,000 assessments to-date. Visual on-land assessments are rapid and low-cost. With a bit of training this method can be used by municipal staff and volunteers to assess improvements in trash conditions in local watersheds. The poster will provide an overview of this visual assessment protocol and results to date.

**Keywords:** trash, stormwater, assessment, litter, monitoring, control, assess, storm drain

**Poster Topic:** Environmental Cleanup