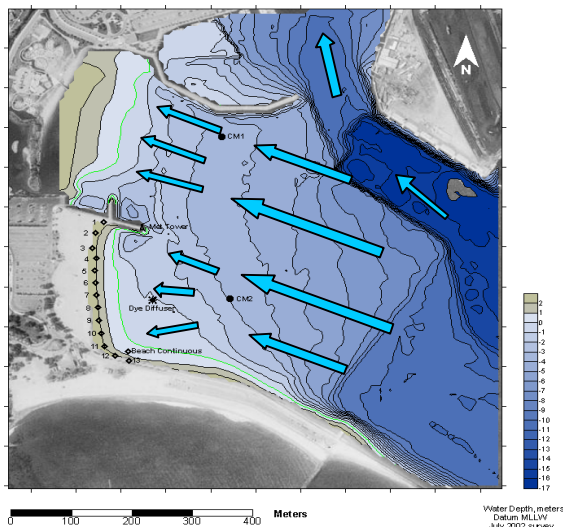




COASTAL DATA MONITORING IN SUPPORT OF CLEAN BEACH INITIATIVE, CABRILLO BEACH, CA

Cabrillo Beach is a well-used, urban green space popular with Los Angeles beachgoers and water-sports enthusiasts. A goal of The Clean Beach Initiative (CBI) for Inner Cabrillo Beach (ICB) was the achievement of a more thorough understanding of hydrodynamic and water quality changes that may occur during natural habitat restoration beach construction activities in the ICB vicinity. Under a contract with the U.S. Army Engineer Research and Development Center (ERDC), Evans-Hamilton, Inc. (EHI) was tasked with monitoring currents, winds, and water properties in the vicinity of ICB to support the CBI.

SCOPE AND APPROACH



Tide-Dominated Flood Currents Circulation Pattern.

The circulation study was designed based on information indicating that the shallow ICB area had relatively slow circulation, and that bacteria problems were occurring in the very shallow nearshore waters (less than 0.5 m); thus, the movement of those very shallow waters was also important to measure and understand, if possible. EHI recommended a combination of measurement techniques, including the release and tracking of dye and conducting direct measurements of the circulation using profiling current meters. Additional meteorological, water

level (tide height), and water property measurements were also collected to document the conditions under which the circulation study was performed so that identical or very similar conditions could be chosen for the post-construction circulation study.

RESULTS

The ICB preconstruction monitoring study significantly advanced the understanding of the circulation and water properties along this important public recreation area. The circulation was found to be more complex and energetic than anticipated. The study revealed that circulation provides more flushing of near-beach waters when strong winds prevail than would normally be expected from tidal currents alone. EHI determined that four dominant circulation patterns occur from these interactions of the tide and wind in the ICB area: tide-dominated flood currents, tide-dominated ebb currents, wind-affected flood currents, and wind-affected ebb currents.

