

# Crown Memorial State Beach Sand Replacement



*A 5-foot sand cliff shows the erosion at Crown Memorial State Beach, Alameda, CA.*

## About the Project

This project will place some 82,600 cubic yards (CY) of sand along nearly 8,000 feet of beach. Imported beach sand mixed with water will be pumped from an offshore barge, dewatered and graded out on the beach as needed.

To minimize disruption and inconvenience to neighbors, work is scheduled for weekdays only. Delivery of sand from a barge in the water requires numerous permits and approvals, but eliminates heavy truck traffic through the city and residential areas.

During this project, the public will be able to access the beach safely across sand fill or ramps over the pipeline, with certain areas restricted as the work progresses, in phases, from one end of the beach to the other.

The Park District operates Crown Memorial State Beach and Alameda Beach for the State and City, and invests significant resources to maintain and preserve it.

## Benefits

- Restore the beach to its original 1987, as-constructed, footprint.
- Improve the beach to further public access and enjoyment.
- Continue shoreline erosion control and protection of city infrastructure.
- Protect the environment, which includes eel grass, clapper rail, grunion, and herring habitat.

## Timeline

2006	
January	Major storm erodes large sections of Crown Memorial State Beach.
August	East Bay Regional Park District applies to Federal Emergency Management Agency (FEMA) for funds to restore the shoreline; engineers estimated cost for 20,600 CY of sand: \$864,040.
2009	
March	FEMA approves \$324,450 in funding for 20,600 CY.
September	California Department of Boating and Waterways awards \$1.5 million for additional 62,000 CY.
2012	
February	FEMA initially approves permission to add additional 62,000 CY using other funds.
August	FEMA denies permission to add additional 62,000 CY using other funds.
December	California Emergency Management Agency approves permission to add additional 62,000 CY using other funds.
2013	
April	FEMA final approval to add 62,000 CY using other funds and capped FEMA funding at \$724,155 for 20,600 CY. California Department of Fish and Wildlife approves \$300,000 towards 62,000 CY from Dubai Star oil spill settlement.
July	East Bay Regional Park District additional emergency funding approval and contract award.
August 1, 2013	Start of on-site construction on land.
September 1 to November 30	Biological working window for in-water work permitted to proceed; pipelines and barges positioned; sand pumping and grading work.
December	Estimated completion of project.

# Crown Memorial State Beach Sand Replacement (continued)



A 1.5-mile segment of the San Francisco Bay Trail runs along Shoreline Drive.

## Background

Crown Beach is an artificial beach that has no natural source of sand replenishment such as deposition from a creek or river. Annual beach maintenance requires collecting sand transported along the shore by wave action to either end of the beach and moving it back to the nodal point at Westline Drive and Shoreline Drive. There is approximately one percent offshore loss of sand each year due to normal natural causes, as predicted by the design model and verified over time by survey. In rare instances there has been a significant offshore loss of sand from a major storm event, as occurred in 1998 and 2005-2006.

The engineered beach and dune system has performed well beyond its projected 20-year life cycle. The State Department of Parks and Recreation, City of Alameda, the East Bay Regional Park District, and regulatory agencies all agreed that constructing and maintaining a sand beach would provide both the needed erosion protection and desired public access to the shoreline.



## Funding

East Bay Regional Park District	
Disaster Recovery funds	\$100,000
Measure AA, Consolidated Development funds	\$154,799
General Fund, additional emergency reserves	\$2,845,201
State and Federal	
State Department of Boating and Waterways	\$1,500,000
Federal Emergency Management Agency (FEMA)	\$724,155
Dubai Star oil spill mitigation funds	\$300,000
<b>Total</b>	<b>\$5,624,155*</b>

\* Project total: Includes consultant engineering, bid document preparation, etc.

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