

Office of Strategic Resources Marine Minerals Program

Ongoing Study

Administered by: Pacific OCS Region

Title: Assessment of Significant Sand Resources in Federal and State Waters in the San Francisco, Oceanside, and Silver Strand Littoral Cells

BOEM Information Need(s) to be Addressed:

BOEM needs maps showing the location, thickness, sediment size, and suitability of sand and gravel deposits in coastal areas with for potential beach nourishment and coastal restoration projects. This study will provide information on POCSR sand and gravel deposits in three areas along the California coast. These areas are the San Francisco Littoral cell, the Oceanside Littoral cell and the Silver Strand Littoral cell. Information provided by this study will be based on a synthesis of existing data in the three areas. This study will augment the existing data with new geologic, geotechnical, and geophysical data to be acquired in the San Francisco and Oceanside Littoral cell areas. These data will help to determine if the sand and gravel deposits are compatible with nearby potential onshore or near shore receiver sites.

Total BOEM Cost: \$499,000.00

Period of Performance: 29 Aug 2016 – 31 Oct 2020

Conducting Organization(s): United States Geological Survey

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Description:**Background**

Sand and gravel deposits on the Federal OCS are the primary non-energy related resource that BOEM manages. These resources are an important part of coastal protection and storm damage reduction projects such as beach nourishment and coastal restoration. Coastal protection benefits important biological habitats and ecosystems as well as residential and commercial interests. Before offshore sand resources can be used in coastal restoration projects, the deposits must first be identified and evaluated by conducting studies to determine their quality and quantity (grain size and chemical composition) and compatibility with sand at potential onshore or nearshore receiver sites. BOEM's mission is to provide access to these OCS sand and gravel resources to meet both national and local needs while ensuring protection of the environment.

Three areas of study were chosen by the USGS, BOEM, and the Coastal Sediment Management Workgroup (CSMW) for this project. These areas are the San Francisco Littoral Cell, the Oceanside Littoral Cell, and the Silver Strand Littoral Cell. A number of factors were considered in the selection process including: study area proximity to CSMW Beach Erosional Concern Areas, current and future US dredging technology, water depth, California Beach depth of closure, and the amount of study area acreage under Federal jurisdiction.

Objectives:

This project will identify and inventory potential sand and gravel resources in the San Francisco Littoral Cell, the Oceanside Littoral Cell, and the Silver Strand Littoral Cell areas. Maps with the locations of sand and gravel deposits, their thicknesses, and sediment grain-size information will be made. This will involve synthesis of existing data and some field efforts to acquire new geologic, geotechnical, and geophysical data.

Methods:

Geophysical surveying will be conducted to evaluate the thickness and geologic characteristics of the San Francisco and Oceanside Littoral Cell deposits. A synthesis of existing data will help define the geophysical survey areas. The surveys will be conducted from the USGS RN Parke Snavelly probably using an EdgeTech 512i Chirp Seismic Profiler, a Klein 3000 (100/500 kHz) sidescan sonar fish, and a Geometrics G882 cesium-vapor marine magnetometer.

Sediment sampling and coring will be conducted for the San Francisco and Oceanside Littoral Cells to determine grain-size distributions of surficial and shallow (to 5 meters depth) sediment. The sediment sampling and coring locations will be defined based on the results of the existing data and geophysical surveys. Sediment sampling and coring will focus on areas with the highest potential for significant sand resources.

Current Status: Year-one activities are ongoing. These activities include discovery and synthesis of existing data for the three study sites.

Total Report Due: 30 days after receiving BOEM review comments

Publications Completed: none to date

Affiliated WWW Sites:

[http://www.dbw.ca.gov/pages/28702/files/California%20Marine%20Sand%20Resource%20Assessment%20Study%20Summary%20for%20CSMW%20Homepage%20\(December%202016\).pdf](http://www.dbw.ca.gov/pages/28702/files/California%20Marine%20Sand%20Resource%20Assessment%20Study%20Summary%20for%20CSMW%20Homepage%20(December%202016).pdf)

Revised Date: 21 Jun 2017