

San Francisco Bay and Delta Sand Mining

BCDC Commission Briefing
January 2017

Introduction

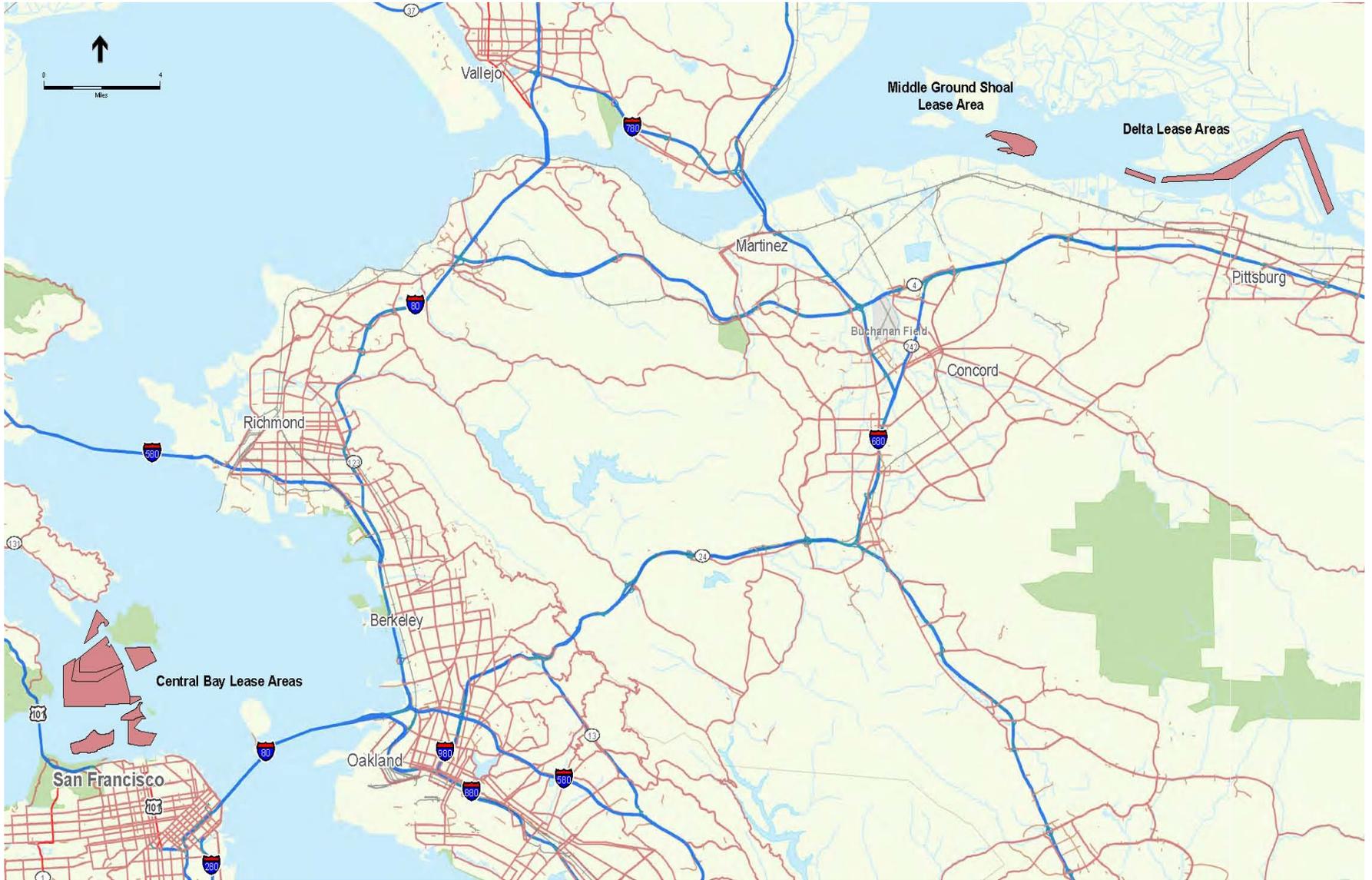
Hanson Marine Operations & Lind Marine, Inc.
BCDC sand mining permits required Commission updates:

- Sand mining volumes
- Benthic Study
- Water Quality Study
- Sediment Transport Study

Permits Received: April 29, 2015

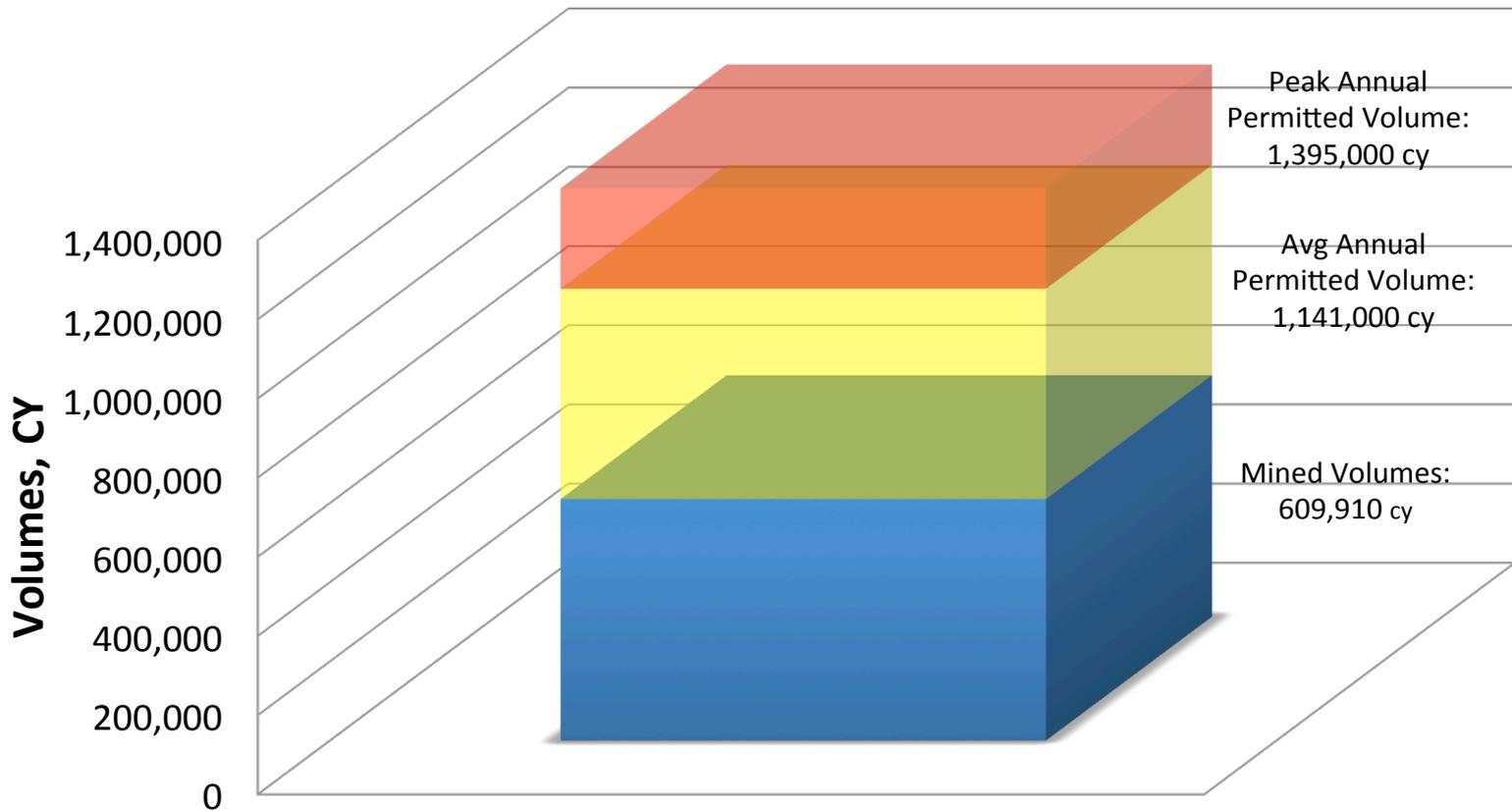
- Hanson Marine Operations
 - BCDC Permit 2013.004.00
- Lind Marine, Incorporated
 - BCDC Permit 2013.003.00
- Suisun Associates
 - Joint Venture between Lind Marine and Hanson Marine Operations
 - BCDC Permit 2013.005.00

Vicinity Map of Lease locations



Mining Activity Summary

Annual Sand Mining Volumes: 2016
Hanson, Central Bay Leases

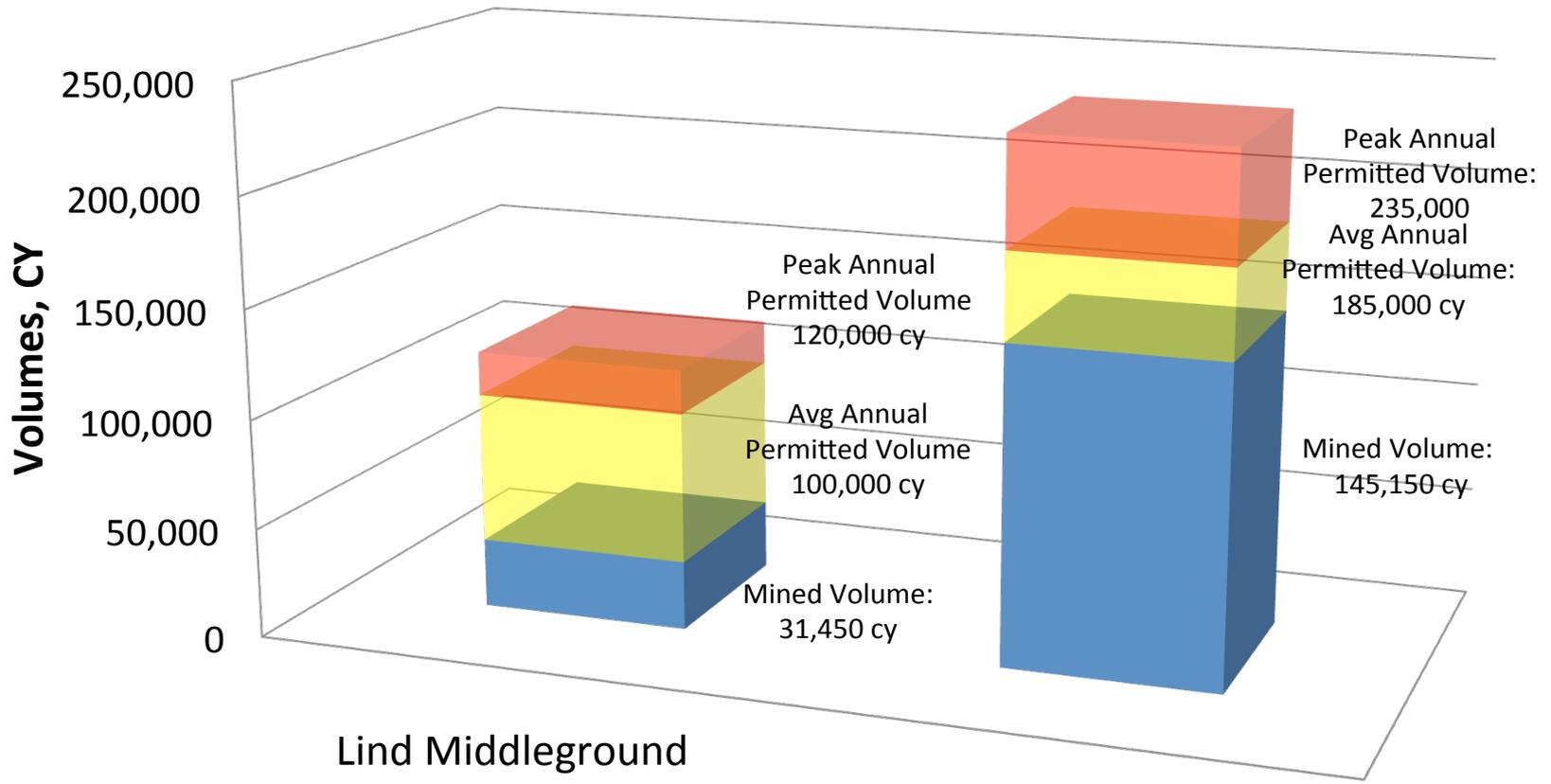


Hanson Central Bay



Mining Activity Summary

Annual Sand Mining Volumes: 2016 Suisun Bay Leases



Benthic Study Update

- Benthic Technical Advisory Committee (TAC)

Members:

- SF Bay Conservation and Development Commission
- California State Lands Commission
- US Army Corps of Engineers
- SF Regional Water Quality Control Board
- National Marine Fisheries Service
- California Department of Fish and Wildlife
- US Geological Survey - Biologist Specialist
- Hanson Marine Operations & Lind Marine

Benthic Study Update

- The TAC established study questions and parameters, and agreed upon the Study objective:
 - Characterize the Bay bottom (benthic habitat) conditions where sand mining occurs in comparison to control areas.
 - Compare and contrast physical and biological characteristics of the habitat and community of control and sand mining areas.
 - Assess the potential impacts of sand mining disturbance on habitat conditions and functions.

Benthic Study Update

- TAC issued a Request for Proposal and conducted in-depth analyses of competitive bids
- Selected NewFields to perform the study
 - Specializes in Oceanographic Investigation and Evaluation, sediment profile imaging, and sediment management
 - Extensive experience in sediment, habitat and community structure investigations.
 - Extensive work in San Francisco Bay

Benthic Study Update

- Sampling and Analysis Plan finalized
- Study design
 - Control sites in Central Bay and Suisun Bay
 - Compares pre and post mining habitat conditions
 - 12 months post-disturbance comparison
- Data collection and analyses includes:
 - Grain size
 - Total Organic Carbon
 - Benthic Community Data
 - Underwater video, sediment profile and aerial characterization

Benthic Study Update

- Baseline sampling completed - October 2016
- Follow up sampling – October 2017
- Study complete – April 2018 est.

Water Quality Study

- Two seasons of sampling:
 - August 2015 and April 2016
 - Central Bay, Middle Ground and Suisun Channel
- Samples characterize effluent:
 - Chemistry and toxicity
 - Plume extent and transport within surface waters
 - Composition of plume (midpoint, downstream and upstream)

Water Quality Study

- Study and analyses completed
- Draft report submitted to the SFRWQCB for review
- Study conclusion:

“Overall, the monitoring results from both surveys demonstrate that effluent from sand mining operations do not adversely impact the water column with regards to chemical concentrations or toxicity, and that any physical effects related to plume turbidity are spatially limited and ephemeral in nature.”

Sediment Process Study

- Two funding installments deposited
- TAC will be led by BCDC staff
- First meeting proposed for February 2017
- Study questions and design approach will be developed by TAC and an Independent Science Panel

Questions?