Hanson Marine Operations & Lind Marine Inc Sand Mining

Project Presentation

For

BCDC Commission Meeting

March 19, 2015

Hanson Marine Operations

- Sand Mining has occurred for over 70 years
- Entered Bay Sand mining in 1999
- Renewing 10 year permits
  - Central Bay – BCDC Permit Application #2013.004.00
  - Suisun Bay – BCDC Permit Application #2013.005.00md
  - Middle Ground – BCDC Permit Application #2013.006.00
- Existing 10-year permit for Hanson is 1,940,000 cu yds/yr
- Renewal 10-year permit for Hanson is 1,365,000 cu yds/yr (30% reduction)

How Bay Sand Is Used

- Is sand all the same?
- Importance of sand – there is no substitute for sand
- Uses
  - Concrete
  - Asphalt
  - Base/Fill Material
  - Beach and Wetland Restoration
  - Sea Level Rise Resilience

Sand: Demand

- California Aggregate Consumption (Dept of Conservation)
  - 1981 – 2010 = 140,000,000 cu yds of construction aggregate per year; ~ 50% is sand
  - 4.4 cu yds/person
- ABAG Population Projection (2011-2040)
  - 7.2m → 9.3m (2.1m or 30%)
  - 2011 = 31.7m cu yds/yr 2040 = 40.9m cu yds/yr
- ABAG Housing Starts Projection (2011-2040)
  - 660,000 new homes or 22,000/year

Sand: Supply

- Supply
  - California Geological Survey – 2012 study (DOC)
  - North San Francisco Bay 11-20 years remain
  - South San Francisco Bay 11-20 years remain
- Six (6) high quality aggregate quarries have closed since 2001 (7m cu yds/yr)
- Three (3) additional aggregate quarries will close in the next 5-10 years (1.5m cu yds/yr)
- Canadian aggregate

Recent Past Not Representative

- Greatest recession since the Great Depression;
- Housing construction recovering more slowly;
- Operating under short-term extensions and holdover volumes since 2010; and
- At the current rates, sand mining is not economically sustainable.

Air Quality

- Bay Sand is a local resource
- Bay Sand depots in San Francisco and Oakland
- Bay Sand 85% consumed within 5 miles of depot
- One (1) Barge load of sand eliminates 134 truck trips
- For every 100,000 cubic yards of sand mined from Bay:
  - 5,600 fewer truck trips
  - 460,000 fewer miles
  - 92,000 gallons of diesel fuel saved
  - ~ 920 tons of CO_2 not emitted

Air Quality

- Environment – if Bay Sands are replaced with inland domestic sand and Canadian imports:
  - All air emissions will increase
    - SOx will increase 4,400%
    - NOx will increase 510%
    - CO_2 will increase 240%

Conclusion

- Sand is a key ingredient of building material that is essential to the needs of Bay Area
- Sand supply is decreasing and demand is increasing
- Air emissions, truck trips and traffic congestion are dramatically reduced with Bay Sand

We are asking the Commission to approve the renewal of Bay Sand Permits for another 10 years with the average and peak volume limits in the Application.

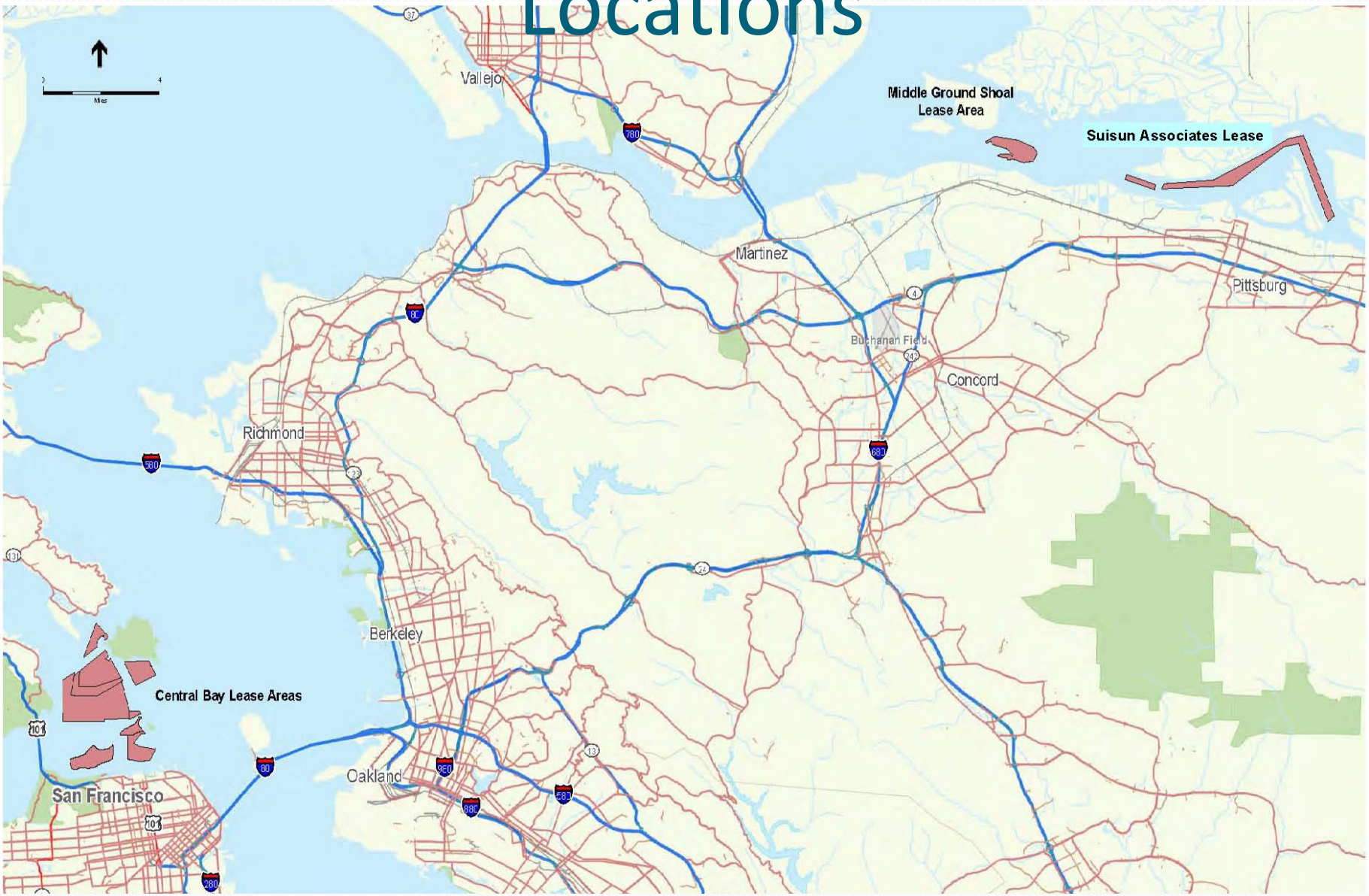
Sand Harvest Equipment

Sand Harvest Method

Lind Marine – Overview

- Formerly Jerico Products
- Long history – heritage operations operating on the Bay for close to 100 years.
- Lind began sand mining in 1970's at Middle Ground shoal, Suisun Channel.

Lind Marine – Suisun Bay Lease Locations



Sand Offloading Locations

Lind Marine - Volumes (cy)

- Previous permitted volumes: 300,000 c.y. (250,000 Middle Ground, 50,000 Suisun Associates)
- SLC Approved volumes: 300,000 c.y. (150,000 Middle Ground, 150,000 c.y. Suisun Associates)
- Application volume: 247,500 c.y. (125,000 Middle Ground, 122,500 Suisun Associates), 300,000 peak; consistent with RWQCB approval

Lind Marine – Uses of Sand

- Key component of building materials including fill and road materials, concrete and hot mix asphalt used in a variety of construction projects.
- Used extensively in environmental remediation as well – Chevron Castro Cove, Hunters Point, and Alameda Naval Air Station as examples.
- Especially important as other local resources in the North Bay are being depleted.
- *Local Resource* that is efficiently harvested and transported by water to Bay Area consumers.

Environmental Benefits

- Reduced air emissions, tire and brake wear, traffic impacts, road maintenance.
- Increased traffic safety.
- Sand mined at Middleground and Suisun Associates is partially within / adjacent to ship channel – maintenance dredging reduced in these areas.

Feasibility

Not feasible to replace Bay sand with alternative sources.

- Domestic land-based sources
  - Resources are limited and depleting.
  - Not all provide sand.
  - Already approaching their operational capacity.
- British Columbia imports
  - Different grade of sand, not direct substitute.
  - Approaching their permitted capacity.
  - Sellers demand buyers take equal amounts rock with sand
- Air, traffic, cost impacts of both are greater.

Feasibility

For Lind in particular, there are no alternative sources…

- Lind Marine does not own/operate other sources of sand, or import sand to the Bay Area.
- Imported sand has different uses and characteristics than sand mined from Middleground and Suisun Associates.
- *Alternative sources aren't feasible for Lind.*

Environmental Review Process

- Initiated in 2007, six year process that concluded in 2012;
- State engaged independent expert consultants (AMS, CHE, and ESA), walled off from applicants;
- EIR analyzed environmental issues implicated Bay Plan policies: sediment system, fish and wildlife, marine habitats, and alternatives and mitigation.

EIR Findings on Benthic Habitat

State EIR and Applied Marine Sciences (AMS) found:

- "benthic infauna community in Central Bay was very low in species diversity and individual species abundances"; and
- AMS "could detect *no effect* of sand mining in the Central Bay leases, and surmised that this is attributable to the natural instability of the sediments in this area caused by the high-energy regime that is present in west Central Bay."

EIR Findings on Sediment

State EIR and Coast & Harbor Engineering (CHE) evaluated full volumes (2,040,000 cy), and found:

- Sand mining "is not expected . . . to result in a substantial alteration of sediment transport patterns or the morphology of the seabed outside of the vicinity of the lease areas"; and
- "is not expected to result in a substantial decrease in the supply of sediment to the San Francisco Bar and Ocean Beach." (FEIR, p. 4.3-42.)

Regulatory Agency Findings

- CDFW approved full volumes and found that ITP "minimizes and fully mitigates" any taking of Delta or longfin smelt.
- USFWS and NMFS approved full volumes and found that with minimization and compensatory measures, there will be no jeopardy to federally-listed species and no adverse modification of critical habitat.
- RWQCB issued WDRs/WQCs and found that, with reduced volumes, sand mining will comply with all water quality standards and protect beneficial uses.

BCDC Permitting Process

- Over two years and upwards of 15 meetings with staff.
- Numerous technical materials produced by Applicants: Bathymetry, Sediment Analysis, Economic Projections, Feasibility Analysis, Public Benefits, and Responses to Staff Questionnaires.
- January 2014 Science Panel on benthic habitat and sediment transport.
- Three Commission briefings and today's hearing.

The Sediment System

Amount of sand coming into the Bay:

- Estimates are uncertain;
- Scientific analysis by experts is necessary;
- Where mining limited to sand in place, sand supply less important.

- Sand reserves in the Bay at least 60 million cy in two Central Bay lease areas (ADEC 2000)

Bay Plan Consistency

- Subtidal Policy 1 states that projects in subtidal areas should be designed to minimize and, if feasible, avoid harmful effects.

- Subtidal Policy 2 states that projects in sandy deep water areas be allowed "only if: (a) there is no feasible alternative; and (b) the project provides substantial public benefits."

- BCDC staff previously interpreted "harm" to mean substantial harm (and not any change).

No Substantial Harm

- Findings of EIR and Regulatory Agencies show no substantial harm to fish and wildlife.
- Findings of EIR and CHE show no substantial harm to sediment supplies and bathymetry beyond the lease areas.
- Findings of EIR and Regulatory Agencies—with seasonal and overall volume limits added—minimizes harm to fish, wildlife, and beneficial uses.

EIR Findings on Feasibility

State and EIR found that the reduced project alternative (baseline) is infeasible:

- "with each increment of reduced sand mining . . . emissions of NOx, PM10, and CO2e rise substantially" and would thus conflict with State climate policy.
- If Hanson or Lind are unable to supply construction-grade sand, it "would negatively affect the Bay Area economy."

Alternatives

- Proper scope is not all sources for Bay Region.
- Proper scope is whether Hanson or Lind can feasibly and reasonably shift production of other.
- There are no feasible alternatives:
  - 1) Economic (new market)
  - 2) Technical (different resource, diminishing alternative supplies)
  - 3) Environmental/Policy (240% increase in GHG)

Minimization of Acreage

- Mining limited to lease areas, which are only a small portion of the overall sandy bottom.
- Only certain areas within each lease are mined, and not in every year.
- Mining temporarily disturbs, at most, about 2.2% (282 acres) of available sandy habitat (12,800 acres).
- Due to limited storage at offloading facilities, sand is mined only in response to immediate demand.

Avoidance & Minimization

- Fish Screens (installed September 2013).
- Specific procedures for pump priming and clearing.
- Water depth limitations to avoid sensitive habitat.
- 100 ft buffer around hard bottom areas.
- Monitoring of mining events to avoid sensitive habitat.
- Seasonal volume restrictions for Middle Ground and Suisun to minimize or avoid incidental take of larval-stage smelt species.

Minimization of Volumes

- Originally Permitted: 2,240,000 cy
- 2013 Originally Proposed: 2,040,000 cy
- RWQCB Approved (Avg/Pk): 1,613,000 / 1,950,000 cy
- Targeted Reductions for Central Bay Southern Leases (PRC 709.1 and 7780.1)

Additional Studies

- Update Water Quality Assessment
- Continue Multi-beam Bathymetric Surveys (5 years)
- New Benthic Study through TAC process
- Proposed Sediment System Study through TAC process

Compensatory Mitigation

Based on full 2,040,000 cy project:

- Purchased habitat credits at Liberty Island to mitigate for incidental take of listed species.
- Financial contribution to Cal Recycle's Estuary Cleanup Project to restore benthic habitats.
- Monitoring, mitigation and further studies will cost approximately $2 million.

Substantial Public Benefits

- Legislature declared development of State's mineral resources is important state policy.
- Benefits the regional economy and local jobs.
- Reduces transportation and construction costs.
- Provides direct and indirect environmental benefits.
- Generates revenues for State and local agencies.

Public Projects

- Crown Beach Restoration (East Bay Regional Parks)
- Presidio Parkway
- Transbay Terminal
- Hunters Point – Land Reclamation
- Oakland Army Base Rehabilitation
- Public Streets, Highways, and Transit
- Utilities, Water and Sewer
- Hospitals
- Educational Facilities (Haas School of Business)

Conclusion

- Applicant Materials
- Availability for Questions