

COASTAL CONSERVANCY

Staff Recommendation
September 3, 2020

SAN FRANCISCO BAY SAND MINING STUDIES

18-026-01

Project Manager: Erica Johnson/Marilyn Latta

RECOMMENDED ACTION: Authorization to disburse up to \$875,591 for scientific studies to evaluate impacts from sand mining in San Francisco Bay and Suisun Bay.

LOCATION: San Francisco Bay and Suisun Bay, counties of San Francisco, Marin, Solano, and Contra Costa (Exhibit 1)

PROGRAM CATEGORY: San Francisco Bay Area Conservancy Program

EXHIBITS

Exhibit 1: [Project Location Maps](#)

Exhibit 2: [Sand Mining Lease Areas](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31160 - 31165 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the Executive Officer to disburse up to \$875,591(eight hundred seventy-five thousand five hundred ninety-one dollars) to retain and manage consultants to conduct scientific studies to evaluate impacts from sand mining in San Francisco Bay and Suisun Bay, including through contracts that have total amounts exceeding his delegated authority.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 4.5 of Division 21 of the Public Resources Code regarding the San Francisco Bay Conservancy Program.

2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.”
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PROJECT SUMMARY:

Staff recommends that the Conservancy authorize disbursement of up to \$875,591 to retain and manage consultants to conduct studies of the physical effects and impacts of sand mining in San Francisco and Suisun Bays.

As conditions of their ten-year sand mining permits (2015–2025), the San Francisco Bay Conservation and Development Commission (BCDC) required three sand mining companies to contribute funds to support studies and research on the impacts of sand mining, its sustainability in the bay, and effects on the outer coast offshore from the Golden Gate Bridge. BCDC intends to use information from these studies to inform the sand mining activities for the next 10-year BCDC regulatory permits from 2025-2035.

Mitigation funds for the studies have been provided by three sand mining companies and placed into a Conservancy account. In 2018, Conservancy and BCDC staff retained an Independent Study Coordinator to help form an Independent Science Panel to guide this research and analysis and contracted for initial data collection (via Fall 2019 multibeam survey) and analysis.

Authorization is now requested to contract for the studies that will address the following management questions:

1. Is sand mining at the existing lease areas, at the permitted levels, having a measurable or demonstrable impact on sediment transport and supply within the San Francisco Bay or the outer Coast?
2. What are the anticipated physical effects of sand mining at the permitted levels on the sand transport and supply to the San Francisco Bay and the outer Coast?
3. Are there feasible sand mining approaches to consider in the San Francisco Bay?

Conservancy and BCDC staff, with input from the Independent Science Panel and the Sand Technical Advisory Committee (STAC) made up of agency representatives, BayKeeper, and the three mining companies, will select the most qualified contractors to conduct the following scientific studies:

- **Sand Budget:** Sand mining may affect the amount and location of sand in San Francisco Bay and the outer coast, which may have impacts on local and more distant beaches and subtidal habitats. This study will synthesize best available information on sand transport, document sand sources and sinks, and create a database for the bay and the nearshore outer coast (outside the Golden Gate Bridge) of information developed for the sand budget.
- **Sand Transport:** Sand transport into, within, and through San Francisco Bay is important because it provides the basis for landforms (such as beaches) and subtidal shoals that

support sustainable shoreline features and ecological function. This study will identify the potential effects of mining activities on transport.

- **Stratigraphy:** This study will improve understanding of how much sand exists within the lease areas in San Francisco Bay, the age of the sand deposits, and whether the sand beds are “relic” or new sand that is moving into the lease areas (which relates to post-mining recovery rates and time).

Contractor selection, scope of work, and implementation (product review) will be managed by Conservancy and BCDC staff under the guidance of the Independent Science Panel and with regular updates the STAC. The work is expected to occur Fall 2020 through Fall 2022, to inform the next BCDC sand mining permits for 2025-2035.

Site Description: Twelve sand mining lease areas are in San Francisco Bay and Suisun Bay.

The nine San Francisco Bay lease areas are framed by Angel Island to the north, Alcatraz Island to the east, and the Golden Gate Bridge to the west. Together these lease areas are 2,601 acres with approximate mining depth of 20-80 feet below Mean Lower Low Water (MLLW). These areas are leased by the Hanson Marine Operations (Hanson).

In Suisun Bay, there is one lease area located on the privately held Middle Ground Island sand shoals near Middle Ground Island in western Suisun Bay. This lease area is 936 acres with an approximate mining depth of 15-45 feet below MLLW. It is leased to Lind Marine, Incorporated (Lind).

The final two Suisun Bay lease areas are located between Broad Slough to the west and the confluence of the Sacramento and San Joaquin rivers to the east (parallel to the southern shoreline of Chipps and Van Sickle Islands). Together, these leased areas are 367 acres with an approximate mining depth of 15-40 feet below MLLW. They are leased to the Suisun Associates (Suisun), a joint venture partnership between Lind and Hanson.

Project History: Sand mining has occurred in San Francisco Bay for over one hundred years but has increased significantly since the 1990’s. Sand is mined to supply the Bay Area construction industry. In 2015, three Bay Area sand mining companies, Hanson, Lind and Suisun obtained permits from BCDC and other agencies to mine cumulatively up to 1.426 million cubic yards (mcy) of sand annually, over a ten-year period ending in 2025, for a total of 14.26 mcy. As a condition of these permits the mining companies have contributed funds to support studies and research on the impacts of sand mining, its sustainability in the Bay and effects to the outer coast offshore from San Francisco Bay. Conservancy and BCDC staff began work in 2018 with the formation of an Independent Science Panel. Several contracts were also let under the Executive Officer’s delegated authority for coordination (Revell Coastal, \$47,979, October 2019), data collection (eTrac, \$142,291, February 2020), and analysis (eTrac, \$107,178, April 2020).

PROJECT FINANCING

Coastal Conservancy

Suisun	\$158,947
Hanson	\$681,362
Lind	\$35,282
Project Total	\$875,591

Project funds will come from the Sand Mining Permit accounts within the Conservancy’s Coastal Trust Fund. These accounts consist of funds paid by three sand mining companies (Suisun, Hanson, and Lind) as a condition of their BCDC permits allowing sand mining in 2015-2025. These funds collectively total \$1.2 million and are to be used for creation of a Sand Studies Technical Advisory Committee (SSTAC), an Independent Science Panel (ISP), and implementation of the studies to address (a) the San Francisco Bay sand budget; (b) sand transport into the Bay from the Delta and local tributaries; and to the outer coast (San Francisco Bar and Ocean Beach); (c) the amount and type of sand found at specific locations; and (d) the impacts of mining on the sand resource. Up to \$75,000 of the funds will be used to pay honorariums to the Independent Science Panel members from 2018-2023, and up to \$120,000 (10% of total funds) will be used to support Conservancy staff time in administering all of the contracts.

The proposed project will contract for these specific scientific studies and is therefore consistent with the purpose of the accounts. As stated in the “Project History” section above, a collective total of \$322,448 has been spent to-date on the Independent Science Panel, coordination, data collection, and analysis. The Conservancy is also authorized to take a small percentage for staff time, which has not been included in the previously expended amounts.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

This authorization will be undertaken pursuant to Chapter 4.5 of the Conservancy’s enabling legislation, Public Resources Code Sections 31160-31165, to address resource goals in the San Francisco Bay Area.

The studies will be conducted within the nine-county Bay Area as required under Section 31162 of the Public Resources Code.

Under Section 31162(b), the Conservancy may act to protect, restore, and enhance natural habitats and connecting corridors, watersheds, scenic areas, and other open-space resources of regional significance. This authorization would support best management of San Francisco Bay’s sand resource, which is of critical regional importance in shoreline and subtidal features and ecological functions.

Under Section 31162(c), the Conservancy may assist in the implementation of the policies and programs of the California Coastal Act of 1976. Consistent with Coastal Act Section 30006.5, the proposed studies will provide information about sand transport along the outer coast that may inform decision-making in coastal planning and development.

Under Sections 31163(a) and (b), the Conservancy shall participate in and support interagency actions and public/private partnerships in the San Francisco Bay Area to implement long-term resource goals. Consistent with these sections, the Conservancy is working closely with BCDC staff, the sand miners, and subject matter experts to formulate the management questions and conduct studies to address them.

Consistent with Section 31163(c), the proposed project: (1) is supported by adopted regional plans (San Francisco Bay Plan, Subtidal Habitat Goals Report), (2) is multijurisdictional (involves multiple agencies) and serves a regional constituency (sand resources within San Francisco Bay are of regional importance), (3) can be implemented in a timely way (the RFQ is underway), (4) is needed to inform an upcoming new permit decision, and (5) is entirely funded by outside sources.

As aforementioned, the proposed project is consistent with the Conservancy's Subtidal Habitat Goals, a 50-year regional conservation plan completed in 2010, in the following respects:

- Consistent with Soft Substrate Science Goal 1 to understand the extent of ecosystem services provided by soft bottom habitat by seeking to answer or contributing to existing knowledge regarding sediment size, depth, budget and the relationship to sand removal and supply in the leased areas and/or bay.
- Consistent with Soft Substrate Science Goal 2 to understand the threats of soft bottom habitats by contributing to the understanding of the physical impact of sand mining on physical soft bottom habitat structure, and its recovery.
- Consistent with Soft Substrate Protection Goal 3 to provide no net loss of subtidal habitat by obtaining the information necessary to manage sand harvesting at levels that can be replenished through natural processes.

CONSISTENCY WITH CONSERVANCY'S [2018-2022 STRATEGIC PLAN](#) GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 12, Objective C** of the Conservancy's 2018-2022 Strategic Plan, the proposed project will help protect subtidal habitat and the associated sand resources on which many landforms and species rely.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

Required Criteria

1. **Promotion of the Conservancy’s statutory programs and purposes:** See the “Consistency with Conservancy’s Enabling Legislation” section above.
2. **Consistency with purposes of the funding source:** See the “Project Financing” section above.
3. **Promotion and implementation of state plans and policies:**
 - a. *California Coastal Sediment Master Plan, Central San Francisco Bay Regional Sediment Management Plan.* Consistent with the Recommendations (Ch. VII, p. 55) section of the plan, which addresses need for new information related to sediment supply and dynamics for shoreline managers and the need for stratigraphy of the Bay floor. Also consistent with Table 5: Critical regional monitoring and data needs for San Francisco Bay (Ch. VIII, p. 56) which identifies the need for a sediment budget to make decisions about permitting sand mining. This plan applies to the Central Bay, which incorporates the Hanson sand mining leases.
4. **Support of the public:** The proposed studies are required by BCDC sand mining permit conditions. Non-profit Baykeeper has been an active participant on the TAC and requested these studies as part of the last 2015-2025 CEQA process and sand mining permits.
5. **Location:** The proposed project would be located within the coastal zone of the nine-county San Francisco Bay Area, particularly in the bay itself.
6. **Need:** The proposed studies are necessary to inform BCDC’s review of their next ten-year sand mining permits in 2025. Conservancy participation in administering funds placed into its Coastal Trust Fund for this purpose is essential.
7. **Greater-than-local interest:** The project is regional because the study is within the bay which connects each of the nine counties, and the impact of sand mining on sand supply and transport can affect coastal beaches located just outside the bay opening, the subtidal habitat in the bay, and local economy should sand mining continue/discontinue to take place in the bay.
8. **Sea level rise vulnerability:** The sand science studies may provide valuable information for ongoing climate change planning. Sand beds provide natural green infrastructure in the bay and support beaches and other sand forms that can provide green infrastructure; these studies will assess the mining effects on sand resources.

Additional Criteria

9. **Urgency:** There is a pressing need for the studies to be conducted and completed prior to the expiration of the current BCDC sand mining permit in 2025.

10. **Resolution of more than one issue:** The studies will help to address data gaps with sand dynamics in the Bay and whether sand mining is an activity that can sustainably occur in the Bay.
11. **Leverage:** See the “Project Financing” section above.
12. **Innovation:** Studies may allow the involved agencies to creatively address the need for sand mining for construction-related products while also balancing subtidal ecosystem health and ecosystem services with regards to sand transport.
13. **Readiness:** The Conservancy is preparing to get contracts underway as soon as possible.
14. **Cooperation:** The studies will be conducted via a process that involves agency staff, regulators, the non-profit BayKeeper, sand miners, and subject matter experts.

CONSISTENCY WITH SAN FRANCISCO BAY PLAN:

Conducting studies of the effects and impacts of sand mining in San Francisco and Suisun Bays is consistent with the following policies of BCDC's San Francisco Bay Plan (Reprinted March 2012):

Consistent with Part III, Subtidal Areas Policies 1 & 10 to evaluate local and Bay-wide effects on sediment movement and providing the necessary information to design sand mining activities to minimize and, if feasible, avoid harmful effects; to expand scientific information on sediment transport and the influence of wind and wave action on sediment movement.

Part III, Subtidal Areas Policies:

- (1) Any proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on: (a) the possible introduction or spread of invasive species; (b) tidal hydrology and sediment movement; (c) fish, other aquatic organisms and wildlife; (d) aquatic plants; and (e) the Bay's bathymetry. Projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects.
- (10) The Commission should continue to support and encourage expansion of scientific information on the Bay's subtidal areas, including: (a) inventory and description of the Bay's subtidal areas; (b) the relationship between the Bay's physical regime and biological populations; (c) sediment dynamics, including sand transport, and wind and wave effects on sediment movement; (d) oyster shell transport; (e) areas of the Bay used for spawning, birthing, nesting, resting, feeding, migration, among others, by fish, other aquatic organisms and wildlife; (f) where and how habitat restoration, enhancement, and creation should occur considering species/habitat needs and suitable project sites; and (g) if, where, and what type of habitat type conversion may be acceptable.

CEQA COMPLIANCE:

The proposed project is categorically exempt from the California Environmental Quality Act (CEQA) under 14 Cal. Code Regulation Section 15306 for information collection, because it consists of basic data collection including a literature review, analysis of readily-available bathymetry data, sample collection (coring), and use of tools and/or models to simulate movement of sand which will not result in a serious or major disturbance to an environmental resource. The project is also statutorily exempt under Pub. Res. Code § 21102 (14 Cal. Code of Regulations Sections 15262) in that the proposed project will result in technical studies for future actions that have not yet been approved, adopted or funded. Environmental factors will be considered in the studies undertaken pursuant to this authorization.

Upon approval of the project, Conservancy staff will file a Notice of Exemption.