

1 **4.0 ENVIRONMENTAL ANALYSIS**

2 Section 4.0 examines the potential environmental impacts of the proposed
3 San Francisco Bay and Delta Sand Mining Project (Project) and Project Alternatives.
4 This Section includes analyses of the environmental issue areas listed below:

5 Biological Resources

6 Mineral Resources

7 Hydrology and Water Quality

8 Hazards and Hazardous Materials

9 Air Quality

10 Cultural Resources

11 Land Use and Recreation

12 Each environmental issue area analyzed in this document provides background
13 information and describes the environmental setting (baseline conditions) to help the
14 reader understand the conditions that would cause an impact to occur. In addition, each
15 section describes how an impact is determined to be “significant” or “less than
16 significant”. Finally, the individual sections recommend mitigation measures (MMs) to
17 reduce significant impacts. Throughout this section, both impacts and the corresponding
18 MMs are identified by a bold letter-number designation (e.g., Impact **BIO-1** and
19 **MM BIO-1**). Where more than one MM is associated with an impact, the corresponding
20 MMs are identified with consecutive lower case letters (e.g., **Impact BIO-1** and
21 **MM BIO-1a** and **MM BIO-1b**).

22 Based on an initial review and analysis, it is likely that the proposed Project would have
23 a less-than-significant impact, or no impact, on the environmental issue areas identified
24 below. The primary reasons for these determinations are as follows:

- 25
- 26 • Aesthetics. The proposed Project is not anticipated to involve any changes to
27 current operations that would have an adverse effect on a scenic vista,
28 substantially damage scenic resources, degrade the existing visual character or
29 quality of the area, or create new sources of light and glare. Therefore, no impact
on the visual quality of the Project area would occur.
 - 30 • Agricultural Resources. There are no agricultural resources within the area of
31 potential effect of the proposed Project; therefore, no impact on agricultural
32 resources would occur.

- 1 • Geology and Soils. The proposed Project would continue to remove and disturb
2 the Bay substrate within the proposed lease areas, but is not anticipated to
3 involve any changes to current operations. Current operations have no significant
4 impact on geology or soils, such as the loss of topsoil or the exposure of people
5 and structures to seismic hazards, landslides, or other geologic hazards.
6 Therefore, no new impacts would occur. Effects on the geomorphology of the
7 Bay floor, on sediment supply and transport, and on the hydrodynamics of Bay
8 waters are considered in Section 4.3, Hydrology and Water Quality.

- 9 • Noise. The proposed Project is not anticipated to involve operational noise
10 greater than that presently resulting from current operations, and therefore is not
11 expected to expose people to higher levels of noise than are currently
12 experienced, or to cause new sources of noise or vibration. Therefore, no noise
13 impact would occur. Potential impacts of noise and vibration on aquatic wildlife
14 are considered in Section 4.1, Biological Resources.

- 15 • Population and Housing. The Project would not result in the direct construction of
16 new housing or infrastructure and would not displace people from existing
17 housing. Thus, the Project would not have an impact on population and housing.

- 18 • Public Services. The Project would not directly increase demands on or require
19 the construction of additional fire or police facilities, school facilities, parks, or any
20 other public service. Therefore, no impact on public services would occur.

- 21 • Transportation. The proposed Project is not anticipated to involve any changes to
22 current operations that would affect land or water transportation, including
23 possible effects on roadways, parking, and navigational channels. Therefore, no
24 new impact on transportation would occur.

- 25 • Utilities and Service Systems. The Project would not require the expansion of
26 existing utilities, including water supply, wastewater treatment, and power. Thus,
27 no impact on utilities and service systems would occur.

28 **ASSESSMENT METHODOLOGY**

29 **Environmental Baseline**

30 The analysis of each issue area begins with an examination of the existing physical
31 setting (baseline conditions as determined pursuant to State California Environmental
32 Quality Act (CEQA) Guidelines section 15125(a) that may be affected by the proposed
33 Project. The effects of the proposed Project are defined as changes to the
34 environmental setting that are attributable to project components or operation.

35 The Notice of Preparation (NOP) for this Project was issued on July 10, 2007 (see
36 Appendix B), at which time the previous 10-year leases were in effect. The California
37 State Lands Commission (CSLC) has determined that averaging the level of mining

1 over a period of several years best accounts for year-to-year fluctuations, and best
2 represents baseline conditions in terms of annual mining activity. As discussed in
3 Section 1.1.6, Definition of Baseline and Future Conditions, the baseline for analyzing
4 Project impacts in this Environmental Impact Report is the existing physical effects of
5 mining operations occurring at a level equal to the average of the five years preceding
6 issuance of the NOP, and the physical effects of past sand mining operations.

7 Using this baseline, the impact analysis is limited to examining the differences between
8 the proposed sand mining operations and the sand mining that was occurring, on
9 average, under the lease agreements when the NOP was issued. Table 1-1 in
10 Section 1.0, Introduction, shows the volume of sand mined from the CSLC Central Bay,
11 Suisun and Delta lease parcels from 2002 to 2007 and the annual average for this
12 period in comparison to the volume of sand the Applicants propose to mine annually
13 over the proposed new 10-year lease period. Overall, the Applicants propose a net
14 increase of 613,350 cubic yards per year of sand over the baseline volume.

15 **Significance Criteria and Impact Analysis**

16 Significance criteria are identified for each environmental issue area. These criteria
17 serve as benchmarks for determining if a component action will result in a significant
18 adverse environmental impact when evaluated against the baseline. According to State
19 CEQA Guidelines section 15382, a significant effect on the environment means "...a
20 substantial, or potentially substantial, adverse change in any of the physical conditions
21 within the area affected by the project..." A determination is then made, based on the
22 analysis of any impact within each affected environmental issue area and compliance
23 with any recommended MMs, of the level of impact remaining in comparison to the
24 pertinent significance criteria. Impacts are classified as follows:

- 25 • If the impact of an action remains significant, i.e., at or above the significance
26 criteria, it is deemed to be **Class I** (*significant adverse impact that remains*
27 *significant after mitigation*).
- 28 • If an action creates a significant, adverse impact, which can be reduced based
29 on compliance with mitigation to a level below the pertinent significance criteria, it
30 is determined to be **Class II** (*significant adverse impact that can be eliminated or*
31 *reduced below an issue's significance criteria*).
- 32 • If an action creates an adverse impact above the baseline condition, but such
33 impact does not meet or exceed the pertinent significance criteria, it is
34 determined to be adverse, but less than significant or **Class III** (*adverse impact*
35 *that does not meet or exceed an issue's significance criteria*).

- 1 • An action that provides an improvement to an environmental issue area in
2 comparison to the baseline information is defined as **Class IV** (*beneficial impact*).

3 **Formulation of Mitigation Measures and Mitigation Monitoring Program (MMP)**

4 When significant impacts are identified, feasible MMs are formulated to eliminate or
5 reduce the intensity of the impacts and focus on the protection of sensitive resources.
6 The effectiveness of a MM is determined by evaluating the impact remaining after its
7 application. Those impacts meeting or exceeding the impact significance criteria after
8 mitigation are considered residual impacts that remain significant (Class I).
9 Implementation of more than one MM may be needed to reduce an impact below a level
10 of significance. The MMs recommended in this document are identified in the impact
11 sections and provided in Section 7.0, Mitigation Monitoring Program.

12 Measures that are incorporated as part of an applicant's project description that are
13 designed to eliminate or reduce a potentially significant impact to a level below the
14 significance criteria are a component of the proposed action and are not considered
15 mitigation measures under CEQA. Such measures incorporated into the project design
16 have the same status as any "applicant proposed measures." The CSLC's practice is to
17 include all measures to eliminate or reduce the environmental impacts of a proposed
18 project, whether applicant proposed or recommended mitigation, in the MMP.

19 **Impacts of Alternatives**

20 Section 3.0, Alternatives and Cumulative Projects, provides a list, description, and map
21 that identifies alternatives to the proposed Project. Each issue area in Section 4.0,
22 Environmental Analysis, presents the impact analysis for each alternative scenario. A
23 summary of the collective impacts of each alternative in comparison with the impacts of
24 the proposed Project is included within the Executive Summary (see Table ES-4).

25 **Cumulative Projects Impact Analysis**

26 Each issue area in Section 4.0, Environmental Analysis, presents the cumulative impact
27 scenario, the focus of which is to identify the potential impacts of the proposed Project
28 that might not be significant when considered alone, but that might contribute to a
29 significant impact when viewed in conjunction with the other projects.