

1 **5.0 SOCIOECONOMIC EFFECTS AND ENVIRONMENTAL JUSTICE**

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3 **5.1 SOCIOECONOMIC EFFECTS**

4 Under the California Environmental Quality Act (CEQA), economic and social effects  
5 are not considered environmental effects unless they result in a physical change in the  
6 environment. The proposed San Francisco Bay and Delta Sand Mining Project (Project)  
7 is essentially the continuation of an ongoing activity using existing methods and  
8 facilities. The economic and social effects of the proposed Project are expected to be  
9 minimal and are not expected to produce physical changes in the environment.  
10 However, the California State Lands Commission (CSLC) desires that the  
11 environmental impact report (EIR) provide an analysis of economic or social effects of  
12 the proposed Project on specific industry sectors, small businesses, and communities.

13 **5.1.1 Analysis And Conditions**

14 **Regional Socioeconomic Conditions**

15 The estimated 2007 population of the nine Bay Area counties was 7.19 million  
16 (California Department of Finance 2009), of whom approximately 3.45 million were  
17 employed (California Employment Development Department 2009). For those counties  
18 proximal to sand mining extraction or offloading operations (i.e., all but San Mateo and  
19 Santa Clara Counties), the estimated 2007 population was 4.67 million, of whom  
20 approximately 2.28 million were employed. The annual unemployment level in the  
21 region in 2007 was approximately 4.5 percent.

22 **Analysis**

23 A socioeconomic effect could occur if the proposed Project led to a substantial increase  
24 or reduction in sand mining operations in San Francisco Bay, such that a change in the  
25 number of operating sand mining tugs and barges would occur. An increased number of  
26 operating tugs and barges would require the employment of additional operators, deck  
27 hands, and shoreside personnel. Conversely, a decrease in number would lead to a  
28 reduction in these jobs. The number of jobs involved is not large; approximately 20 full-  
29 time equivalent (FTE) employee positions are directly involved as crew members on  
30 sand extraction tugs and barges. This is a minuscule fraction of the number of  
31 employed persons in the San Francisco Bay Area. Given that no change in the number  
32 of tugs and barges has been included in the proposed Project, a significant  
33 socioeconomic effect is not expected.

1 A second, separate socioeconomic effect may result from the increased volume of  
2 extracted sand in the proposed Project compared to the baseline volume (i.e., the  
3 average annual volume mined at each parcel from 2002 to 2007). Such an increase  
4 would increase the availability of local sand to some construction projects, potentially  
5 replacing sand procured from other sources at a higher price. This would cause a  
6 marginal decrease in the cost of new construction where that sand is used. However,  
7 sand is one of the lowest-cost construction commodities, so the change in cost would  
8 likely be a very minor component of the overall cost of a construction project and  
9 unlikely to have substantial ripple effects as a consequence (such as increased  
10 demand).

11 A socioeconomic effect could also occur if the proposed Project caused the level of  
12 activity at any of the offloading sites to change substantially, requiring the addition or  
13 reduction of mobile equipment, operators, and management. The proposed Project  
14 would increase the volume of sand mining in the Central Bay by 35 percent, increase  
15 the amount of sand mining in Suisun Bay/Delta (i.e., lease parcel PRC 7781) from the  
16 current level by approximately 250 percent, and would not substantially change<sup>1</sup> the  
17 volume of sand mining at the privately-owned parcel at Middle Ground Shoal. Together,  
18 these changes suggest that a substantial change in activity level at some offloading  
19 sites may occur. However, the use of any particular offloading site may be influenced by  
20 a number of factors, including proximity to the mining sites, regional demand for mined  
21 sand, and site ownership or use agreements between the sand miners and the site  
22 operators. Typically, extracted sand is brought to the offloading site that has a market  
23 for the material.

#### 24 **Summary**

25 No adverse socioeconomic effect is anticipated from the proposed Project, for the  
26 following reasons:

- 27 • The direct employment for sand mining operations is very small relative to the  
28 local population; and
- 29 • Changes in activity levels at extraction sites are not closely correlated to activities  
30 at offloading sites.

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<sup>1</sup> The proposed volume represents a 3 percent increase over the 2007 baseline.

1 **5.1.2 Relationship to Alternatives**

2 **No Project Alternative**

3 With this alternative there would be a loss of direct employment of those workers who  
4 operate and maintain the tug and barge fleet. As noted above, this number of workers is  
5 very small relative to the work force in the San Francisco Bay Area.

6 The alternatives analysis states that under the No Project Alternative, the local need for  
7 sand would be met using existing quarries and facilities. This could result in some  
8 displacement of employment at the offloading sites, as they become less active and  
9 more sand is mined, processed, and transported from sources on land. To the extent  
10 that the need for sand is met by imported sand transported to the Bay Area by ship, the  
11 offloading facilities would continue to be active.

12 **Long-term Management Strategy Conformance Alternative**

13 This alternative would limit the time frame (“work window”) for sand mining in the  
14 Central Bay lease areas to a five- to six-month period each year, and a three-month  
15 period in the Suisun Bay and western Delta lease areas. As noted in the description of  
16 this alternative in Section 3.0, Alternatives and Cumulative Projects (Section 3.3.2), two  
17 possible consequences are: (1) the Applicants may add tug and barge combinations to  
18 their fleets to extract the permitted volume within the work windows, and (2) the  
19 Applicants may stockpile materials at offloading sites, to maintain a supply when no  
20 sand mining is occurring.

21 With this alternative there would be a direct loss of employment for Central Bay and  
22 Suisun Bay/Delta sand mining during that portion of the year when sand mining cannot  
23 occur, but this would be offset, to an extent, by the extra effort required to extract  
24 permitted quantities during the work-window period. That extra effort may be limited by  
25 the availability of mining equipment, or of stockpiling space at offloading sites or other  
26 intermediate storage sites. Therefore, overall, the socioeconomic effect of this  
27 alternative would be the potential loss of employment related to the constrained work  
28 windows and likelihood that increased efforts during the work windows would not offset  
29 losses at times when sand mining cannot occur.

30 **Clamshell Dredge Mining Alternative**

31 This alternative would be the same as the proposed Project in terms of the locations  
32 and timing of sand extraction, but a different method of extracting sand would be used.  
33 The clamshell dredging work crew would likely be similar in size to a suction dredge

1 crew, but the productivity of the clamshell operation is typically lower than that of the  
2 suction dredge (typically, suction dredging is in the range of five times more efficient  
3 than clamshell dredging). Consequently, this alternative could result in an increase in  
4 local employment if there is a market for all of the sand that the proposed leases allow  
5 to be extracted. However, that is not a certainty. If the cost of clamshell dredging is  
6 higher than suction dredging, the market for dredged sand may be limited by the higher  
7 price of the product, resulting in extracted volumes below the limits set by the leases. A  
8 reduction in extraction crew worker hours would be one consequence of this.

9 Therefore, for this alternative, the socioeconomic effects are not predictable. In the  
10 context of all employment within the San Francisco Bay Area, however, the effects  
11 would be extremely small in any case.

## 12 **Reduced Project Alternative**

13 This alternative would decrease allowable annual mining volumes in all lease areas to a  
14 level equivalent to current baseline volumes (i.e., the average mined per year at each  
15 Project parcel from 2002 to 2007). Labor required to mine, process, and transport this  
16 material would be expected to remain generally the same as baseline levels, but would  
17 be somewhat lower than levels associated with the proposed Project.

### 18 **5.1.3 Cumulative Projects Analysis**

19 As noted above, the proposed Project would not have a significant socioeconomic effect  
20 on the region, because it is essentially a continuation of existing sand mining  
21 operations, with some modification of the quantities that are permitted to be extracted.  
22 Hence, no cumulative socioeconomic effect would occur when considering this Project  
23 in combination with other cumulative projects described in Section 3.0, Alternatives and  
24 Cumulative Projects.

## 25 **5.2 ENVIRONMENTAL JUSTICE**

26 This Section discusses the distributional patterns of high-minority and low-income  
27 populations on a regional basis and characterizes the distribution of such populations  
28 adjacent to the sand mining lease areas and the barge offloading facilities. This  
29 discussion addresses whether the proposed Project has the potential to  
30 disproportionately impact areas with low-income or high-minority populations, thus  
31 creating an inconsistency with the intent of the CSLC environmental justice policy  
32 (described below).

1 Regional and local environmental justice assessments have been performed by  
2 agencies within the study area, such as the Bay Area Metropolitan Transportation  
3 Commission's (MTC) *2001 Regional Transportation Plan Equity Analysis and*  
4 *Environmental Justice Report* (MTC 2001). Methods applied in this analysis are  
5 consistent with those used in the MTC report, and with currently accepted definitions of  
6 low income and high minority.

## 7 **Background**

8 On February 11, 1994, President Clinton issued an "Executive Order on Federal Actions  
9 to Address Environmental Justice in Minority Populations and Low-Income Populations"  
10 designed to focus attention on environmental and human health conditions in areas of  
11 high minority populations and low-income communities, and promote non-discrimination  
12 in programs and projects substantially affecting human health and the environment  
13 (White House 1994). The order requires the U.S. Environmental Protection Agency  
14 (U.S. EPA) and all other Federal agencies (as well as state agencies receiving Federal  
15 funds) to develop strategies to address this issue. The agencies are required to identify  
16 and address any disproportionately high and adverse human health or environmental  
17 effects of the programs, policies, and activities on minority and/or low-income  
18 populations.

## 19 **California State Lands Commission Policy**

20 The CSLC has an Environmental Justice Policy to ensure equity and fairness in its own  
21 processes and procedures (CSLC 2002). The CSLC adopted an amended  
22 Environmental Justice Policy on October 1, 2002, to ensure that "Environmental Justice  
23 is an essential consideration in the CSLC's processes, decisions and programs and that  
24 all people who live in California have a meaningful way to participate in these activities."  
25 The policy stresses equitable treatment of all members of the public and commits to  
26 consider environmental justice in its processes, decision-making, and regulatory affairs  
27 which is implemented, in part, through identification of, and communication with,  
28 relevant populations that could be adversely and disproportionately affected by CSLC  
29 projects or programs. This discussion is provided in this document consistent with and  
30 in furtherance of the CSLC's Environmental Justice Policy. The staff of the CSLC is  
31 required to report back to the Commission on how environmental justice is integrated  
32 into its programs, processes, and activities (CSLC 2002).

1 **5.2.1 Setting**

2 **Study Area**

3 To evaluate the environmental justice aspects of the proposed Project, a Study Area  
4 was chosen based on the geographic areas where impacts occur. This Study Area  
5 comprises seven of the nine Bay Area counties: San Francisco, Marin, Sonoma, Napa,  
6 Solano, Contra Costa, and Alameda Counties. This study area takes into account the  
7 lands surrounding all of the sand mining lease areas and offloading facilities.

8 **Demographics**

9 As noted in the Background discussion above, the concept of environmental justice is  
10 concerned with preventing a disproportionate impact from a project on high-minority and  
11 low-income populations affected by the project.

12 The most common source of demographic data is the decennial U.S. Census. However,  
13 the most recent Census data were collected in the year 2000, and many Bay Area  
14 communities underwent a variety of demographic changes between 2000 and 2008.  
15 Population growth, the gentrification of neighborhoods, replacement of industry by retail  
16 and live/work space, infill housing in the cores of larger cities, and the development of  
17 transit villages are some of the changes that took place during that period. Therefore, to  
18 best represent current conditions, this environmental justice analysis uses a dataset  
19 obtained from the Environmental Systems Research Institute (ESRI) Demographics Unit  
20 (ESRI 2008) and used by other public agencies, including city and county economic  
21 development, health, and public service departments. Sources of data in this dataset  
22 include U.S. Postal Service mail delivery routes (housing), the U.S. Census Bureau's  
23 American Community Survey (ethnicity, family size), and private market-analysis firms  
24 (household income). The resolution of the data is at the census block group level  
25 (typically a census tract is made up of several census blocks), which minimizes the  
26 chance of masking small disadvantaged populations with adjacent populations that  
27 have higher income or fewer members of ethnic or racial minorities.

28 Members of minority populations are those who are Hispanic (regardless of race),  
29 Black, Asian American, Alaska Native, Native Hawaiian, or Pacific Islander  
30 (U.S. Department of Transportation 1997). Block groups with potentially significant  
31 minority populations are those having a percentage minority population more than  
32 1.2 times that of the Community of Comparison. "Low-income populations" are defined  
33 in terms of household income. For 2009, the Federal poverty guideline was defined as a  
34 household income less than \$10,830 for a one-person household, and \$18,310 for a

1 family of three (U.S. Department of Health and Human Services 2009). Block groups  
2 with potentially significant low-income populations are those having a percentage of  
3 households with low income (below the Federal poverty guideline) that is more than  
4 1.2 times that of the Community of Comparison.

5 Using the definitions provided above, and the 2008 Demographic Update data, each  
6 census block group was evaluated for its percentage of minority populations.  
7 Separately, the average household income and household size for each census block  
8 group was used to evaluate the block group's relationship to the Federal poverty  
9 guideline. Figure 5-1 illustrates the percentage of minority populations in each block  
10 group. Figure 5-2 illustrates the ratio of household income level to poverty guideline, by  
11 block group. These maps also show the lease area boundaries and offloading sites.  
12 Several, but not all, of the offloading sites are in or very near areas that have high  
13 minority populations, low incomes, or both.

#### 14 **Communities of Comparison**

15 The concept of a Community of Comparison provides a basis for determining how  
16 disadvantaged a region might be, in relation to the community that surrounds it.  
17 Typically, the Community of Comparison is the smallest political entity that  
18 encompasses an impacted area. Generally it is a city, but other Communities of  
19 Comparison can occur. For example, the offloading site on the Petaluma River is on  
20 unincorporated land but is within the Sphere of Influence of the city of Petaluma. If it  
21 became necessary to examine environmental justice issues for an impacted region  
22 adjacent to that offloading site, the city of Petaluma's Sphere of Influence would be the  
23 most appropriate Community of Comparison.

#### 24 **5.2.2 Policy Analysis and Conditions**

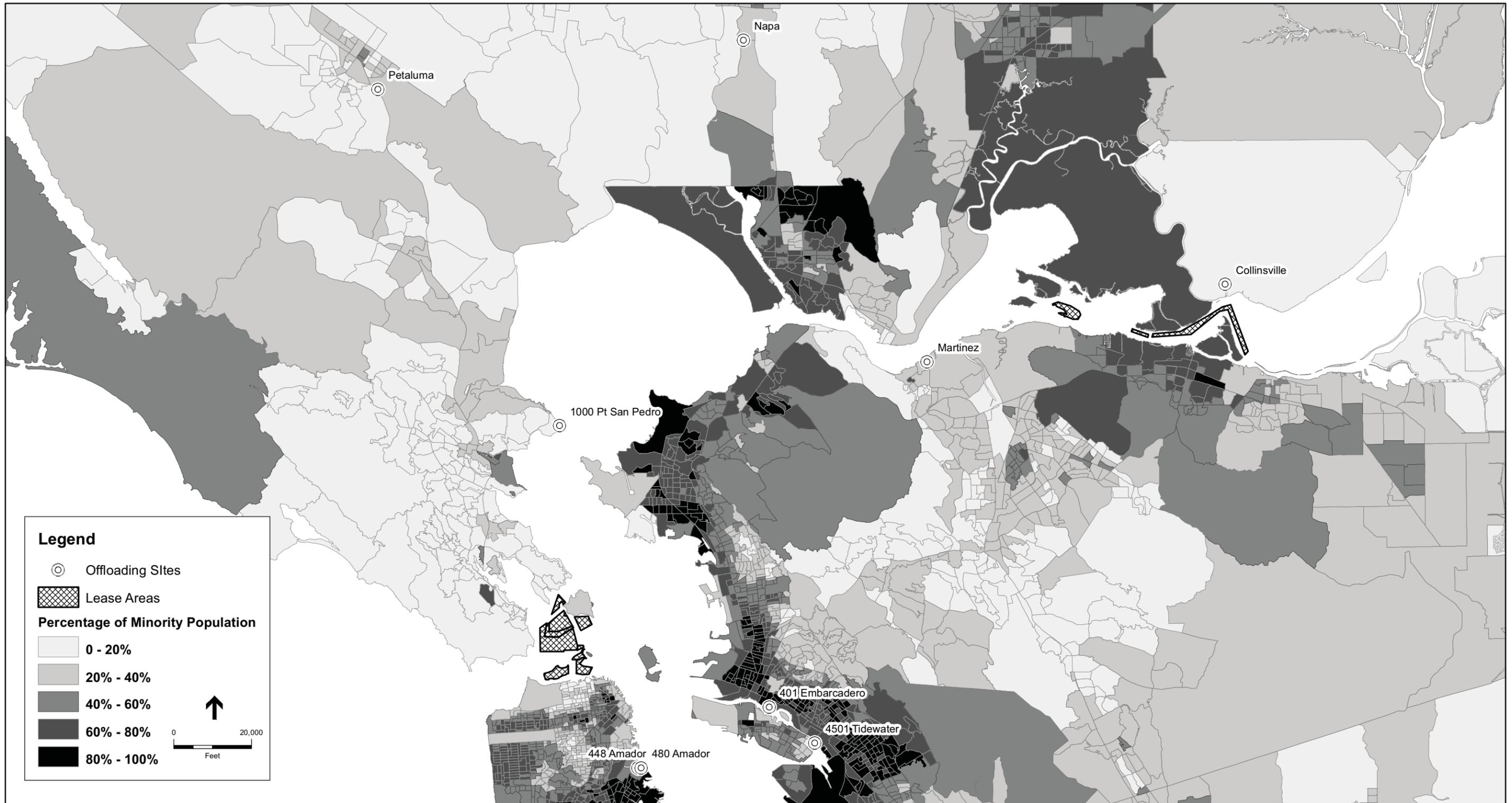
25 Ordinarily the CSLC's Environmental Justice Policy, cited above, takes effect only when  
26 an impact occurs. The proposed Project would continue an existing activity (sand  
27 mining), with some modification of the intensity of that activity on certain portions of the  
28 sand mining leases. In general, these leases are so far removed from residential areas  
29 that the activities on the leases have no material effect on any residential area. Thus,  
30 extraction activities on the leases do not present typical environmental justice concerns.  
31 However, two concerns require consideration: (1) the possibility that the proposed  
32 Project may affect the health of low-income or minority populations who rely on fishing  
33 in the Bay to supplement their diet; and (2) impacts on low-income or minority  
34 populations near offloading areas.

1 From Figures 5-1 and 5-2, it is apparent that several low-income and high-minority  
2 demographic areas are within walking distance of the Bay shoreline. At San Francisco  
3 Bay fishing piers, persons may fish without a fishing license; thus, the piers are  
4 attractive places for low-income individuals to fish for food, for themselves and their  
5 families. Attempts to document the extent of such fishing have been few, and these  
6 efforts have been made difficult by language barriers and individuals' reluctance to  
7 communicate with interviewers. Nevertheless, it is known that a number of the people  
8 fishing from Bay Area fishing piers or the shoreline are members of low-income and/or  
9 minority populations (San Francisco Estuary Institute 2000).

10 Certain species of fish in San Francisco Bay contain concentrations of mercury, and  
11 possibly other pollutants, that can harm human health if consumed in excessive  
12 amounts; the California Office of Environmental Health Hazard Assessment (OEHHA)  
13 has issued announcements warning that consumption of these fish should be limited or  
14 avoided (OEHHA 1999). If the Project increased the transport and dispersal of  
15 pollutants, it could contribute to an increased incidence of fish containing concentrations  
16 of harmful pollutants or contribute to increased concentrations of harmful pollutants in  
17 certain fish; either such occurrence could adversely impact those who rely on Bay fish  
18 for sustenance.

19 There are two reasons why the proposed Project would be unlikely to increase health  
20 risks for those who fish in the Bay for subsistence. The first is that the proposed Project  
21 is a continuation of an existing activity, with no new extraction or offloading locations.  
22 The second is that the materials that are entrained and disturbed by sand mining are  
23 relatively coarse sediments, with sand mining occurring where waters of the Bay are  
24 relatively deep and currents relatively strong. As discussed in Section 4.3, Hydrology  
25 and Water Quality, these physical factors mitigate against the accumulation of fine silts  
26 that are more likely to aid in the transport or dispersal of pollutants of concern. Thus, the  
27 likelihood of the proposed Project causing an increased risk of disease in minority or  
28 low-income populations, or any person catching Bay fish for food, is negligible.

29 Regarding impacts on low-income or minority populations near offloading areas, the  
30 only impact identified in Section 4.0, Environmental Analysis, that has the potential to  
31 affect residential areas is toxic air emissions (Impact AIR-3). As noted in Section 4.5, Air  
32 Quality, during offloading, toxic air emissions from diesel-powered equipment occur  
33 close to residential areas at (and only at) the Oakland Tidewater offloading site. For that  
34 location, the air emissions modeling described in Section 4.5, Air Quality, predicted the  
35 dispersion plume of diesel particulate matter shown in Figure C-4 in Appendix C.



SOURCE: ESRI 2008; California State Lands Commission 2008, 2011; Hanson Marine Operations 2008; Hanson and Jerico 2007

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**Figure 5-1**  
 Percentage of Minority Population by Block Group