



CITIZENS COMMITTEE TO COMPLETE THE REFUGE

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Sent via email: huittc@slc.ca.gov

January 3, 2012

Re: Revised Draft Environmental Impact Report (EIR) San Francisco Bay and Delta Sand Mining Project

Dear Mr. Huitt,

The Citizens Committee to Complete the Refuge appreciates the opportunity to provide comments on the above mentioned EIR. We support the December 15, 2011 comments provided by San Francisco Baykeeper.

The Executive summary of the revised EIR states, "The CSLC (California State Lands Commission) holds title to and manages tidelands and submerged lands and beds of navigable waters for the benefit of all people of the State for statewide Public Trust purposes." [emphasis added] This is indeed a great responsibility.

The revised environmental review of the proposal to grant new leases to the applicants (Hanson Marine Operations and Jerico Products/Morris Tug) to mine 2,040,000 cubic yards of sand per year for the next ten years is fatally flawed. We urge CSLC to reject certification of the revised EIR as it would not be to the "benefit of all people of the state." The project as proposed is not in the public interest as it has the potential to inflict significant environmental harm well beyond the immediate area of the sand leases. Certification of this EIR would constitute a breach of CSLC's responsibilities. CCCR has no comment regarding the suitability of any of the proposed alternatives. It would be inappropriate to select a preferable alternative at this time because the EIR has failed to provide the data and analysis necessary to inform the public's understanding of the level of sand extraction that is appropriate based on projected need, or to assess the full range of environmental impacts (including the proper geographic scope of analysis) that would result from the continuation of sand mining.

Inappropriate Environmental Baseline/inaccurate forecast of future demand for extracted sand - failure to demonstrate a need for the levels of sand extraction proposed:

The EIR states:

The NOP for this Project EIR was issued on July 10, 2007, at which time the initial 10-year leases were in effect, and 2007 mining volumes were selected as a part of the baseline for the Draft EIR analysis. After evaluating comments received on the 2010 Draft EIR, the CSLC staff concluded that an average over several years of mining in the Central Bay, Suisun Bay, and the western Delta more accurately represented year-to-year fluctuations, and thus existing conditions, in terms of annual sand mining activity than did a single year of sand mining. The annual quantity of sand mined fluctuates substantially due to changes in demand, economic conditions, capacity, and other factors. The quantity of sand mined in the 2007 mining year was in the low range compared with previous years, depressing the baseline. Therefore, consistent with the State



CEQA Guidelines and case law, the baseline condition for the analysis of Project impacts in this EIR is defined as the existing physical effects of mining operations occurring at a level equal to the average of the five years preceding the issuance of the NOP and the physical effects of past sand mining operations... [emphasis added]

The Legislative Analyst’s Office<sup>1</sup>, reported in January 2011 that between July 2007 and July 2010 the state lost 1.3 million jobs and that the “construction sector lost the most jobs of any sector since 2007. Construction employment is nearly 40 percent below the level of July 2007.” The LA Times<sup>2</sup> reported in August 2011, that according to the Associated General Contractors of America, “construction employment continued to slump in most of California’s metropolitan areas in July,” and that “The construction industry was especially hard-hit by the recession, and advocates worry that it will continue to slump as local and state governments cut back on infrastructure improvements. Stimulus projects, which gave the industry a lifeline during the recession, have all but dried up.”

In June 2011, the LA Times<sup>3</sup>, cited an economic forecast released by the Anderson School of Business, University of California at Los Angeles (UCLA), that construction employment won’t reach pre-recession levels until at least 2021.

The EIR has arbitrarily selected an environmental baseline for sand mining extraction that corresponds to a period of rapid growth for the construction industry in California - one that is unlikely to be replicated for another decade (the period of the proposed leases).

G-3  
cont.

The EIR states, “...With an existing, ongoing operation for which the applicant is seeking entitlements to continue activities, (rather than initiate new activities), both the project and the baseline must be defined carefully to ensure that the environmental analysis focuses on any proposed changes that constitute the project.” We concur, and find that CSLC has abused its discretion in arbitrarily switching from utilizing the 2007 extraction rate to an average of extraction rate for the period of 2002-2007, a period just prior to a precipitous decline in construction activity.

The EIR states the Project Objective is “To obtain renewal of all necessary permits and approvals to continue mining sand at an economically viable level in San Francisco Bay for the next 10 years.” The EIR fails to demonstrate the need for extraction of 2,040,000 cubic yards/year. If, “The *annual quantity of sand mined fluctuates substantially due to changes in demand, economic conditions, capacity, and other factors,*” and construction industry remains in a slump, wouldn’t it be reasonable to assume there has been a corresponding decrease in demand for mined sand? There has certainly been a marked change in economic conditions since 2007, a downturn in the construction industry that is projected to remain in place until 2021. What rationale is provided to support the need for an annual extraction of 2,040,000 cubic yards of sand? No information is provided regarding the extraction volumes since 2007. Has the applicant provided information that supports the need for a 35% increase above the volume extracted in 2007?

<sup>1</sup> Legislative Analyst’s Office. January 5, 2011. “2011 Cal Facts.” [http://www.lao.ca.gov/reports/2011/calfacts/calfacts\\_010511.aspx#zxee\\_link\\_2\\_1294170707](http://www.lao.ca.gov/reports/2011/calfacts/calfacts_010511.aspx#zxee_link_2_1294170707)

<sup>2</sup> LA Times. August 30, 2011. “Construction employment continues to fall in California cities.” [http://latimesblogs.latimes.com/money\\_co/2011/08/construction-employment-continues-to-fall-in-california-cities.html](http://latimesblogs.latimes.com/money_co/2011/08/construction-employment-continues-to-fall-in-california-cities.html)

<sup>3</sup> LA Times. June 15, 2011. “California to suffer housing shift, UCLA forecasters say.” <http://articles.latimes.com/2011/jun/15/business/la-fi-econ-forecast-20110615>

**Failure to identify significant adverse impacts to environment:**

The environmental review of the impacts of the proposed project on mineral resources is fatally flawed. The EIR fails to fully consider the adverse impacts of the proposed project on sediment supply within the Bay and transport of sediment supply through the Golden Gate. The EIR states (page 4.2-4) that “CHE found, through morphological analysis, the vast majority of sediment mined from the Central Bay lease areas during the past decade has not been replenished through natural processes (CHE 2009). The study concluded that recovery of sand resources in the Central Bay area is a long-term process, and for the additional 10 years of mining as proposed by the Project, the available resource is largely limited to the material already in place.” Nothing in the EIR indicates the time frame in which sand resources in the Central Bay will be recovered, nor does the EIR provide any evidence that sand resources will be recovered at all.

The Coast & Harbor Engineering (2009)<sup>4</sup> reports:

*Morphological analysis indicates a measurable depletion of sand resources in the Central Bay lease areas. The vast majority of sediment mined from these areas during the past decade is still missing from the lease and immediately adjacent areas. It appears that recovery of the Central Bay sand mining leases in Central Bay is a long-term process. The study indicates that for the purposes of the proposed 10-year mining lease renewal, sand mining resources in Central Bay are largely limited to material already in place. [emphasis added]*

G-4

The EIR states the Project would have a significant adverse impact on mineral resources if it would result in “The loss of availability of a known mineral resource that would be of value to the region and residents of the State.” However, *Impact MIN-1: Loss of availability of a known mineral resource*, concludes “Renewal of sand mining leases for an additional 10 year period would not result in the loss of availability of a known mineral resource of regional or statewide value (Less than Significant, Class III).”

The EIR reports that contrary to previous assumptions, CHE reports sand extracted from lease areas has not been replenished and further states “Mining of a non-renewable mineral resource can generally be expected to eventually deplete the resource.”

Incomprehensibly, the EIR reaches a conclusion that this impact is not significant because important mineral resources would not be lost to the development of incompatible land uses. The significance criteria “loss of availability of a known mineral resource that would be of value to the region and the residents of the State” does not constrain consideration of mineral resource loss to losses specifically arising from the development of incompatible land uses. The threshold is simply “loss of availability of a known mineral resource.” The EIR has acknowledged there will be a significant and potentially irretrievable loss of availability of a known mineral resource (sand) – more importantly, by the information provided it is clear that this loss is directly related to the on-going sand mining activities. The conclusion of the EIR that impacts to mineral resources are not significant is fatally flawed.

<sup>4</sup> Coast and Harbor Engineering (CHE). 2009. *Sand Mining Resource Evaluation and Impact Analysis*. Included in the DEIR as appendix G.

**Failure to consider relevant scientific information in assessment of the geographic scope of impact analysis and nature of impacts:**

The discussion of mineral resources is striking in its failure to provide any meaningful discussion and analysis regarding the substantive issue of the adverse anthropogenic impacts of sand mining on natural sediment supply both within the Bay and on the transport of coarse sediments through the Golden Gate. This particularly striking as information was available not only in peer reviewed scientific papers but also in local newspapers prior to the release of the Revised EIR. One must deduce this was a purposeful omission as some of this information was submitted in conjunction with comments to the 2010 DEIR.

Magoon and Treadwell<sup>5</sup> and Barnard and Kvitek<sup>6</sup> provide substantive information regarding the adverse impacts of sand mining on the availability of natural sediment supply. Their studies point to what appears to be a strong correlation between sand mining and adverse coastal geomorphological impacts including as an example erosion of open-coast beaches (e.g. Ocean Beach).

G-5

CHE makes the statement:

In addition, *analysis indicates* that the proposed additional 10 years of sand mining in the Central Bay lease areas is *not likely to cause a significant impact on sediment transport and budgets in areas outside the immediate vicinity of the lease areas, such as the San Francisco Bar, Ocean Beach, etc.* It appears that only small amounts of sediment have been impounded in the mining holes. Numerical modeling results indicate that changes in hydrodynamics, salinity and sediment transport/morphology are likely to be confined to the immediate vicinity of the mining areas.

However, the EIR fails to provide data and analyses that support its conclusion – that contrary to information provided by the scientific community - on-going and proposed future sand mining will not adversely impact sediment transport through the Gate. Thus decision makers and the public are at a loss to understand why a growing body of peer reviewed scientific knowledge regarding regional impacts of sand mining should be summarily rejected. The EIR is fatally flawed because it does not respond to substantive evidence that the project could have significant adverse impacts beyond the immediate project lease areas and of a nature not identified in the EIR.

**Additional concerns:**

CCCR fully supports Baykeepers comments including but not limited to:

- the need to evaluate foreseeable impacts arising from ancillary sand and gravel facilities I G-6
- the assessment of impacts to biological resources is inconsistent with stated significance criteria I G-7
- the project’s impacts to delta smelt and other special status species is significant I G-8

<sup>5</sup> Magoon, O. T. and D. D. Treadwell. 2009. Anthropogenic reduction of the natural supply of sediments to the coasts of Washington, Oregon and California. Proc. Of Coastal Dynamics 2009. (Tokyo, Japan)

<sup>6</sup> Barnard, P. and R. Kvitek. 2010. Anthropogenic Influence on Recent Bathymetric Change in West-Central San Francisco Bay. San Francisco Estuary and Watershed Science, 8(3)

## Comment Letter G

- impacts to longfin smelt are inadequately addressed and mitigation measures illegally deferred
- reasonably foreseeable impacts associated with indirect emissions of greenhouse gases, mercury and other environmental contaminants must be adequately identified, assessed and mitigation measures proposed

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As stated earlier CCCR has not assessed suitability of any of the alternatives proposed in the EIR as the basic premise of project need and direct environmental impacts and geographic scope of those impacts have not been adequately identified or assessed.

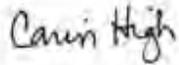
I G-11

The Revised EIR is fatally flawed. We urge CLSC to withhold certification of any EIR for the proposed project until issues raised in our letter and that of San Francisco Baykeeper are substantively addressed and the determinations of the EIR corrected. We ask to be kept informed of any additional comment periods, environmental review documents, or decision documents.

I G-12

Thank you for the opportunity to provide comments.

Sincerely,



Carin High  
CCCR Vice-Chair

**RESPONSE TO COMMENT SET G: CITIZENS COMMITTEE TO COMPLETE THE REFUGE**

- G-1** This comment addresses the merits of the Project and the CSLC's Public Trust responsibilities. The California State Lands Commission (CSLC) will decide whether or not to approve the proposed Project at a future noticed public hearing.
- G-2** This Environmental Impact Report (EIR) was prepared in compliance with the requirements of the California Environmental Quality Act (CEQA). An economic analysis to determine "the level of sand extraction that is appropriate based on projected need," as suggested in the comment, is beyond the scope of an EIR, which must focus on the physical environmental effects of a Project (Pub. Resources Code, § 21082.2). The criteria for formulation and selection for analysis of Project alternatives are described at the beginning of EIR Section 3.0, Alternatives and Cumulative Projects. The alternatives analyzed in the EIR meet the CEQA requirement that an EIR examine a reasonable range of alternatives.
- G-3** Please see Master Response 2, Baseline Used in the Analysis.
- G-4** Regarding the potential effects of sand mining on sediment transport and supply within the Bay and offshore of the Golden Gate, please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology. Regarding significance conclusions reached in the evaluation of Mineral Resources impacts, please see Master Response 3, Mineral Resources Impacts Significance Conclusions.
- G-5** Regarding the potential adverse anthropogenic impacts of sand mining on natural sediment supply within the Bay and the transport of coarse sediments through the Golden Gate, please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology. Please see also the response to Comment I-6. The referenced studies (Barnard and Kvitek 2010; and Magoon and Treadwell 2009) were reviewed during the preparation of this EIR.
- G-6** Please see the response to Comment H-17.
- G-7** Please see the responses to Comments H-18, H-19, and H-20.
- G-8** Please see the response to Comments H-21 and H-22.
- G-9** Please see the response to Comments H-23 and H-24.
- G-10** Please see the response to Comment H-25.
- G-11** Please see the response to Comment G-2, above.

**G-12** This EIR was prepared in compliance with the requirements of CEQA. The comments from San Francisco Baykeeper referenced in the comment are contained in Letter H in this document, and responded to below. The CSLC staff will ensure the Citizens Committee to Complete the Refuge is on the Project's mailing list.



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*sent via electronic mail: huittc@slc.ca.gov*

December 15, 2011

Re: San Francisco Bay and Delta Sand Mining DEIR, SCH # 2007072036

Dear Mr. Huitt:

Please accept these comments, submitted on behalf of San Francisco Baykeeper and Save the Bay, regarding the proposed San Francisco Bay and Delta Sand Mining (“Project”) Revised Draft Environmental Impact Report (“DEIR”). We appreciate the fact California State Lands Commission (“CSLC”) found it appropriate to revise the 2010 DEIR, addressing in part some of the comments received on the 2010 DEIR. Yet the revised DEIR fails to fully address several significant impacts, instead re-wording earlier analysis and relying on similar assumptions and conclusions. Most of the comments made in regards to the 2010 DEIR were not addressed, causing us to repeat several comments herein. We hope that these concerns are adequately resolved and the Project is designed to minimize environmental impacts, while science determines the appropriate and sustainable level of mineral extraction from the San Francisco Estuary.

H-1

Particular concerns surround the fact that significant adverse impacts to biological resources, water quality and mineral resources have been assessed in a manner inconsistent with significance criteria stated within the Project DEIR, as well as accepted standards for environmental impact analysis. It is our sincere hope that the State Lands Commission and all other responsible agencies seize this environmental review process as an opportunity to ensure the best possible protections of geologic, hydrologic and wildlife resources during the ten year duration of this proposed Project.

While research proceeds to determine the full extent of sand mining impacts on sediment transport processes in the San Francisco Bay coastal system we encourage the adoption of the Reduced Project Alternative. Extraction rates under this alternative are consistent with average rates from 2002-2007 - an era of significant construction and development that is unlikely to be repeated during the 10-year duration of this Project. To increase the permitted extraction rate by 51% of this baseline level, as proposed under the preferred alternative, is entirely unjustified based on information contained in the DEIR. Further, the DEIR does not demonstrate this allotment would trigger the requirement for imports

H-2

H-3

from distant sources, particularly in light of the fact that a number of land-based sources can be found in the Bay Area, as depicted on Figure 4.5-1 of the DEIR.

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cont.

**I. SIGNIFICANCE CRITERIA FOR IMPACTS TO MINERAL RESOURCES ARE LIMITED IN SCOPE AND INAPPROPRIATELY APPLIED**

As stated in § 4.2.3, adverse impacts to mineral resources are considered significant under the following conditions:

- The loss of availability of a known mineral resource that would be of value to the region and the residents of the State; or
- The loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other use plan.

In comparison with the 2010 DEIR, the significance criteria for impacts to mineral resources are essentially unchanged and fail to address any environmental impacts associated with unsustainable rates of mineral extraction. The 2010 DEIR interprets these criteria to “mean that depletion of the resource through mining does not constitute a significant impact; an impact could only occur where a project prevented or inhibited access to a known mineral resource” (4.2-8). In a similar vein, the revised DEIR states “... these criteria are understood and interpreted as primarily concerning the potential loss of access to known mineral resources.” Under this interpretation, no mining operation could ever pose a significant impact to mineral resources unless operations prevented future access to sand or other mineral resources.

H-4

Under this flawed interpretation, the DEIR assumes the only geological impact could be one preventing future access to mineral resources for social or economic benefit. These criteria fail to concede that additional significant impacts to geological and mining resources could occur, including, for example, loss of a critical mineral resources for the maintenance and restoration of beaches and wetlands within and outside San Francisco Bay. It is quite conceivable, for instance, that sand mining in San Francisco Bay has resulted in increased erosion along Ocean Beach, an impact that is entirely ignored, despite prior comments.

H-5

Additionally, the DEIR admits that mining in Central Bay lease areas is occurring at an unsustainable rate and that sand mined from the Bay and Delta is no longer considered an entirely renewable resource. As such, the impact analysis fails to satisfy the DEIR’s own significance criteria, since unsustainable extraction could result in the loss of available mineral resources of value to the region and residents of the State. If unsustainable rates of mining occur over a number of years it is reasonable to assume that an adequate volume of the resource will be unavailable to meet future demand. The cumulative impacts of proceeding under an already unsustainable rate of extraction represent a significant cumulative impact that could only be reasonably mitigated through severe cuts in permitted mining activities.

H-6

II. PROPOSED EXTRACTION RATES ARE UNSUSTAINABLE, RESULTING IN FORESEEABLE SIGNIFICANT IMPACTS

Despite the finding in Section 4.2 of the revised DEIR that extraction of non-renewable sand resources in the Delta and Bay “...can generally be expected to eventually deplete the resource”, the DEIR curiously fails to identify this as a significant impact; although Significance Criteria established in Section 4.2.3 includes “The loss of availability of a known mineral resource that would be of value to the region and residents of the State”. As stated in the DEIR, the Project could in fact result in the loss of a valuable resource, so it is unclear how this impact fails to satisfy this criterion for significance. In reality, this is a significant impact not only to future mineral extraction activities but to the bathymetry and geomorphology of the Bay and surrounding coastline. In addition, unsustainable extraction violates goals of the San Francisco Bay Sub-Tidal Habitat Goals Project, which includes the promotion of no net loss to San Francisco Bay subtidal and intertidal sand habitats.<sup>1</sup>

H-6  
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H-7

Through assessment of Impact MIN-1: *Loss of availability of a known mineral resource*, the DEIR suggests that Central Bay lease areas could suffer from resource depletion since deposition of new sand resources have not been observed over the last ten years. This is consistent with a 2004 USGS report, which concludes that “the total volume of sand in the west-central bay shoals that are in active sand mining leases is unknown... The volume of commercially extractable sand and gravel in these shoals needs to be known to prevent resource depletion. Additionally, it is not known whether the sand shoals in west-central bay are being naturally replenished, are in equilibrium, or are eroding”.<sup>2</sup> In the absence of appropriate evidence, extraction volumes should be minimized to permit monitoring and adaptive management over the ten year lease cycle.

H-8

Although not included in the Revised DEIR, the 2010 DEIR cited Porterfield’s 1980 estimates of sand loads from the Delta to the Bay, which at the time ranged from 1.7 to 3.3 million cubic yards.<sup>3</sup> This estimate is based on out-dated data and fails to reflect the well known phenomenon that sediment loads from the Delta have reduced significantly since publication of the Porterfield report.<sup>4</sup> Under the proposed Project, leaseholders would be permitted to extract up to 2,040,000 cubic yards of sand per year, which exceeds Porterfield’s lower bound estimate of total sand loads and is a majority of the upper bound estimate. In reality, proposed extraction levels likely approximate or exceed total annual sand loads from the Delta.

H-9

The likely fact that extraction rates approximate or exceed total sand inputs from the Delta is consistent with comments to the Notice of Preparation (“NOP”) for this Project received from Patrick Bernard of

H-10

<sup>1</sup> San Francisco Bay Subtidal Habitat Goals Report. 2010. Available at <http://sfbaysubtidal.org>  
<sup>2</sup> Chin, JL, FL Wong and PR Charlton. 2004. *Shifting Shoals and Shattered Rocks – How Man Has Transformed the Floor of West-Central San Francisco Bay*. Circular 1259, U.S. Geological Survey, Menlo Park, CA.  
<sup>3</sup> Porterfield, G. 1980. *Sediment Transport of Streams Tributary to San Francisco, San Pablo and Suisun Bays, California, 1909-66*. U.S. Geological Survey, Water Resource Investigations 80-64, 92 p.  
<sup>4</sup> Schoellhamer, DH. 2011. *Sudden clearing of estuarine waters upon crossing the threshold from transport- to supply- regulation of sediment transport as an erodible sediment pool is depleted: San Francisco Bay, 1999*. Estuaries & Coasts 34: 885-899.

the USGS.<sup>5</sup> Dr. Barnard pointed out that over 100 million cubic yards of sediment has been lost from the Mouth of San Francisco Bay in the last 50 years, a time period broadly coincident with major sand mining activities in Central San Francisco Bay. This is also consistent with the CHE report prepared in support of this Project, which found that the volume of material mined from 1997 to 2008 is nearly equivalent to the measured erosion inside and surrounding the lease areas. Authors of the CHE report indicated that only approximately 5 percent of the mined sands are replaced under natural processes, suggesting an entirely unsustainable practice that could result in significant erosion and other geomorphological impacts to areas within and outside San Francisco Bay.<sup>6</sup> Accordingly, the DEIR should develop a project alternative that satisfies the project objectives through sustainable practices.

H-10  
cont.

Since sand mining can and should be conducted in a sustainable manner the DEIR should more appropriately assess whether the project has the potential for resource depletion, thereby threatening the availability of a resource of value to the region and the residents of the State. Consistent with other sand and gravel operations, this project should operate under a principal of no-net-loss. For CSLC to allow mining in excess of sustainable loading rates represents an abdication of their public trust duty.

H-11

**III. DEIR FAILS TO ADDRESS POTENTIAL IMPACTS TO COASTAL SEDIMENT SUPPLY AND BEACH EROSION**

Despite the fact that Dr. Patrick Barnard of USGS brought to the attention of SLC in 2007 that the Project “could result in significant erosion and other geomorphological impacts to areas within and outside San Francisco Bay”, the DEIR and accompanying CEH report failed to comprehensively assess geomorphological impacts along the coast. As highlighted by Dr. Barnard, evidence supports the likelihood that sand mining has exacerbated the erosion of Ocean Beach and other research supports the likelihood that the San Francisco Estuary is experiencing net erosion due to several factors.

The recent paper by Dr. Barnard et al (2010) describes impacts to bedform of areas in the vicinity of Central Bay lease areas, linking these changes to sand mining activities:

*“A reduction in sediment supply from the heavy aggregate mining to the southeast (see Physical setting) would explain the shift to ebb transport domination in this region, as well as more rapid bedform migration and thus shifting of bedform orientations along the southern part of the bedform field. Over this time period, the western half of the focus area lost approximately 175,000 m3 of sediment relative to the eastern half.”<sup>7</sup>*

This research is not reviewed in the DEIR, yet conclusions made in Section 4.3 of the DEIR do include statements that the Project may contribute to erosion of the San Francisco Bar, resulting in

H-12

<sup>5</sup> Barnard, PL. 2007. Letter to Sarah Mongano, Environmental Scientist, California State Lands Commission, Re: comments on EIR for Hanson Sand Mining in San Francisco Bay.

<sup>6</sup> Coast and Harbor Engineering (CHE). 2009. *Sand Mining Resource Evaluation and Impact Analysis*. Included in the DEIR as appendix G.

<sup>7</sup> Barnard, PL, DM Hanes, DM Rubin, P Dartnell. 2010. *Analyzing bedforms mapped using multibeam sonar to determine regional bedload sediment transport patterns in the San Francisco Bay Coastal System*.

geomorphological impacts. However, analysis of these impacts is illegally deferred to a future date, pending a subsequent application for new sand mining leases beyond the Project period.

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cont.

**IV. INADEQUATE ASSESSMENT OF POTENTIAL GEOMORPHOLOGICAL IMPACTS INDICATES AN UNDER-REPRESENTATION OF IMPACTS TO HYDROLOGY OR WATER QUALITY**

Among other criteria, a hydrology- or water quality-related impact is considered significant if the Project "...altered the topography in a manner that would result in substantial erosion or sedimentation" (4.3-24). The fact that the DEIR states that depletion of sand resources "is not considered a significant impact of the Project" (4.2-11) suggests a lack of understanding regarding sediment dynamics and potential impacts to coastal geomorphology in the region. Numerical modeling conducted in support of this project did not adequately assess potential geomorphology impacts to beaches and coastlines north and south of the Golden Gate and concerns still exist over whether on-going sand mining operations are exacerbating known erosion issues.

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H-13

Continuation of sand mining operations at unsustainable extraction rates could result in significant erosion of beaches and bluffs located north and south of the Golden Gate. Unsustainable sand mining operations have occurred in other areas of California, such as Monterey Bay, where accelerated erosion of beaches and bluffs resulted in the termination of sand mining in the area during the 1980s.<sup>8</sup> Baykeeper shares the concerns of USGS that without a reliable supply of coarse sediment from the Delta to the mouth of San Francisco Bay coastal geomorphology in the region. As a result, permanent alterations to beaches and coastlines may occur, requiring public investment in coastal revetment and restoration. In addition, reliable sediment loads from the San Francisco Estuary are required in efforts to mitigate the effects of sea level rise over the next century.

**V. THE DEIR INACCURATELY FORECASTS FUTURE SAND DEMAND**

Mineral demand forecasts appear to be based on data from a report published in 2006 at the onset of the current housing crisis.<sup>9</sup> (4.2-3) Recent state-wide housing data indicates that demand for construction services and material is down significantly; housing starts in September 2010 were down 70% compared with 2006 data from the same month.<sup>10</sup> Since economic forecasts over the 10-year lease period indicate prolonged strain on the construction sector it would appear that forecasts for sand over a similar period may be overestimated. Accordingly, assessment of potential impacts to air quality and mineral resources appears to be based on outdated information.

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**VI. THE DEIR SHOULD EVALUATE PROJECT ALTERNATIVES THAT DEMONSTRATE MINIMUM EXTRACTION RATES TO ACHIEVE ECONOMIC VIABILITY**

Project Applicants have identified the objective for the San Francisco Bay and Delta Sand Mining Project to "...continue sand mining at an economically viable level in San Francisco Bay for the next 10 years".

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<sup>8</sup> Griggs, G, K Patsch and L Savoy. 2005. *Living with the Changing California Coast*. University of California Press, Berkeley.

<sup>9</sup> Kohler, S. 2006. *Aggregate Availability in California*. Department of Conservation, California Geological Survey.

<sup>10</sup> Housing start data available through the California Building Industry Association at [www.cbia.org](http://www.cbia.org)

(ES-2) However, the DEIR fails to provide any evidence to determine economic viability or unacceptability. The DEIR evaluates a Reduced Project alternative, which is equivalent to recorded extraction volumes from 2002 to 2007, representing a 37% reduction in allowable extraction levels under the preferred alternative. This period of record coincides with the housing boom and an era of construction material demand that is unlikely to be repeated during the proposed Project. Regardless, Project proponents are likely to view this alternative as too restrictive, yet the DEIR provides no information with which to assess whether this or other project alternatives could meet the only stated project objective. If the Reduced Project alternative is deemed not viable, reasons for this determination must be adequately described and justified.

H-15  
cont.

**VII. FORESEEABLE IMPACTS ARISING FROM INEVITABLE SAND MINING OPERATIONS BEYOND THE 10-YEAR LEASE TERM SHOULD BE EVALUATED**

More information should be provided in the DEIR the Applicant’s potential option to extend the proposed project for an additional 10 years beyond the proposed 10 year lease period. (2-1) The DEIR states that further CEQA review will be required at that time, yet further CEQA review will only occur in the event the option to extend the lease is discretionary, which is not stated in the DEIR. Furthermore, by the very terms of the project proposal, the project intends to continue for another 20 years. Therefore, the DEIR must evaluate the impacts of this project term.

H-16

**VIII. FORESEEABLE IMPACTS FROM ANCILLARY SAND AND GRAVEL FACILITIES MUST BE CONSIDERED IN THE DEIR**

The DEIR inconsistently describes on-shore sand and gravel facilities as part of the Project, and not part of the Project. (2-17) The DEIR admits that activities at sand and gravel facilities occur as a totally foreseeable indirect result of the Project mining. However, the DEIR chooses to omit evaluation of impacts from on-shore facilities, noting that those facilities are required to obtain separate approvals. This approach contradicts CEQA's well established principle that a project is the whole of an action that has a potential to result in a direct or reasonably foreseeable indirect physical impact; a project is not each separate governmental approval required for each foreseeable impact.

To effort to help protect water quality in the Bay, San Francisco Baykeeper has resorted to litigation against permit holders in violation of storm water permits, including sand and gravel storage facilities. Such suits have highlighted the reasonably foreseeable indirect physical impacts associated with sand mining in San Francisco Bay and Delta, despite the fact that such facilities have obtained the required Clean Water Act permits. Baykeeper has brought several lawsuits against on-shore facilities that store sand, including the Tidewater Sand & Gravel Co. (now Hanson Oakland Marine), the Granite Rock Company, and Cemex, Inc.

H-17

At the time of Baykeeper’s suit against Tidewater Company, sand and gravel stored at facilities immediately adjacent to the Bay was acting as a source of storm water pollution. Permit violations for high suspended sediment concentrations were a direct result of sediment from the sand piles directly contaminating storm water flowing from the facility. Similarly, Baykeeper filed suit against the Granite Rock Company due to storm water violations associated with on-shore storage of sand and other construction materials. Granite Rock operates several concrete and asphalt facilities and maintains

large piles of crushed concrete, sand, and rubble at its facilities. In addition to being a source of wind-borne dust, these uncovered piles were also causing storm water pollution. Granite Rock’s own storm water sampling results reported exceedances of EPA Benchmarks for total suspended solids, pH, and iron. Prior to Baykeeper’s lawsuit, every storm water sample collected at the site exceeded the benchmark for total suspended solids.

Baykeeper brought a third similar storm water pollution-related lawsuit against Cemex, a corporation specializing in concrete and building supplies. Cemex owns and operates nine concrete ready mix supply facilities in the Bay Area. Raw materials, including sand used in the manufacturing of various ready mix products, are stored and transported at the facilities. Baykeeper’s site investigation revealed extensive tracking of dust, sediment, and debris from Cemex’s facilities. In addition to air-borne contamination, Cemex’s storm water was found to be in violation of EPA Benchmarks for total suspended solids, pH, and iron.

These three facilities are only a small fraction of the many facilities in the Bay Area that store mined sand. On-shore storage of mined sand can cause significant storm water pollution, which can cumulatively have a significant impact on water quality in the Bay. To fully understand the water quality impacts of sand mining, the effects of on-shore storage of the mined material must be considered in the DEIR for public review and comment.

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**IX. THE ASSESSMENT OF IMPACTS TO BIOLOGICAL RESOURCES IS INCONSISTENT WITH STATED SIGNIFICANCE CRITERIA**

Conclusions contained in §4.1.4 of the DEIR fail to adhere to stated thresholds of significance, which claim that a biological resource impact is considered significant if (4.1-40):

- There is a potential for any part of the population of a special status species (such as State or federally endangered species) to be directly affected or indirectly harmed through the disturbance or loss of its habitat;
- A net loss occurs in the functional habitat value of a sensitive biological habitat, or any area of special biological significance;
- There is a potential for the movement or migration of fish to be impeded; or,
- A substantial loss occurs in the population or habitat of any native fish or vegetation or in there is an overall loss of biological diversity, with substantial defined as any change that could be detected over natural variability.

H-18

The DEIR states that "noise levels generated by sand mining at the location of the hydraulic dredge are within the sound range that can elicit behavioral responses... ". (4.1-41) The DEIR concludes that these impacts are less than significant, but fails to explain how noise impacts that change the behavior of fish and swimming patterns could not (1) directly affect or indirectly disturb the fish habitat, (2) reduce the value of the habitat by resulting in avoidance, or (3) change the movement or migration of sensitive fish species. In addition, the DEIR fails to consider how increasing noise through increased sand extraction

H-19

could exacerbate these effects. The DEIR offers no mitigation measures for this impact, which therefore must be considered to be significant and unmitigated.

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cont.

Similarly, the DEIR describes in detail numerous impacts to foraging habitat that will likely occur as a result of sand mining but, inexplicably, the DEIR concludes that this impact will be less than significant because "these changes do not appear to last more than a few years..." (4.1-43) However, nothing in the significance criteria suggests that an impact may be less than significant if it lasts "only" a few years. This conclusion is at odds with significant threats faced by endangered, threatened, and sensitive species whose populations could pass a tipping point over the course of a few years, nor does this evaluation account for the increased production proposed by the project that would increase the scope and duration of this multi-year impact above baseline levels. The DEIR offers no mitigation measures for this impact, which therefore must be considered to be significant and unmitigated.

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**X. THE PROJECT'S IMPACTS TO DELTA SMELT AND OTHER SPECIAL STATUS FISH SHOULD BE CONSIDERED SIGNIFICANT AND UNAVOIDABLE**

Based on entrainment estimates the DEIR admits the Project would entrain an estimated 0.3 percent of the regional abundance index for delta smelt within the Bay-Delta region (4.1.49), which clearly qualifies as a significant impact pursuant to the DEIR's stated thresholds significance. However, the DEIR concludes this impact will be less than significant, despite the absence of mitigation measures intended to avoid direct take of listed species. Mitigation of this impact is deferred by delaying consultation with California Department of Fish and Game ("CDFG") to determine whether an Incidental Take Permit ("ITP") under Section 2081 of CDFG code is required. (4.1-51) Nothing in the DEIR's evaluation shows that this impact will be less than any of the significance criteria provided by the DEIR.

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Similarly, the DEIR admits the project will cause mortality to other special status fish and implements mitigation measures to reduce the impact, yet fails to provide any comparison of the reduced impacts to the DEIR's standards of significance. Merely implementing some mitigation measures does not necessarily reduce an impact to a less than significant level. Awaiting further review and advice from state and federal wildlife agencies impermissibly defers the evaluation and mitigation of these impacts that must occur in the DEIR.

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**XI. IMPACTS TO LONGFIN SMELT ARE INADEQUATELY ASSESSED AND FORMULATION OF MITIGATION MEASURES IS ILLEGALLY DEFERRED**

Based on projected impacts to longfin smelt and other special status species, CSLC should deny the proposed Project and suspend any ongoing activities that cannot be mitigated to less-than-significant levels. The DEIR notes that formal CDFG consultation has not been initiated over likely take of longfin smelt during project operations and that formulation of mitigation measures is deferred pending further unknown recommendations from CDFG after closure of the public review and comment period on the EIR. Because these mitigation measures are wholly uncertain and would not take effect for a year or more after the project begins, the project should be denied and not permitted to operate in any way that would result in illegal take of longfin smelt.

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Mitigation measures intended to reduce impacts to biological resources fail to meet minimum standards for environmental review. In *Gentry v. City of Murrieta*, the Court of Appeal stated that mitigation measures may be formalized after project approval only if, the lead agency has circulated an environmental review document that (1) identifies and discloses with particularity the project’s potentially significant impacts, (2) establishes measurable performance standards that will clearly reduce all of the identified impacts to less-than-significant levels, and (3) describes a range of particularized mitigation measures that, when taken in combination, are able to meet the specified performance standards. (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1394-1395; see also CEQA Guidelines § 15126.4.) However, the DEIR simply recommends that Applicants consult with CDFG to determine whether an ITP is required after the CEQA review process is over and public review and comment period closed. (4.1-51) This approach fails to meet the standards established by *Gentry* for deferral of mitigation measures for several reasons. First, the mitigation measure fails to include any “measurable performance standards”; second, the DEIR fails to describe any “particularized mitigation measures”; and third, the DEIR offers no evidence to support its conclusion that MM BIO-9d would serve to reduce impacts to sensitive species to less-than-significant levels.

H-24

**XII. REASONABLY FORESEEABLE IMPACTS ASSOCIATED WITH INDIRECT EMISSIONS OF GREENHOUSE GASES AND MERCURY SHOULD BE ADEQUATELY ASSESSED**

The DEIR must evaluate the significant environmental impacts that will occur as a result of concrete manufacturing using the mined sand materials. Presumably, the sole, or most significant, outlet for sand mined from this project will be concrete production. This DEIR fails to mention this as a reasonably foreseeable indirect impact of the Project. However, the concrete production that will be fueled by this mining project will have significant and unmitigated impacts to the environment, all of which must be analyzed in a revised DEIR. In particular, the DEIR must evaluate and analyze mitigation measure for the project's indirect effects of increasing emissions of greenhouse gasses, and mercury.

Concrete production is among the most greenhouse gas intensive activities occurring today, responsible for up to 5% of global greenhouse gas emissions annually.<sup>11</sup> The DEIR must evaluate the amount of greenhouse gas production that will occur as a result of the cement production using the sand from this mining project (including the available amount of sand proposed to be increased by this project). The DEIR should evaluate mitigation measures such as funding greenhouse gas controls or sequestration for cement manufacturers, or sponsoring greenhouse gas offset projects at a ratio of at least 3:1.

H-25

In addition, cement production also results in a substantial amount of mercury emissions, accounting for the third largest source of mercury emissions in the United States. In addition, the San Francisco Bay is impaired for mercury, and cement production in the Bay Area contributes additional mercury loads to this already impaired water body. The DEIR fails to analyze this significant indirect impact or proposed recommended mitigation measures.

<sup>11</sup> The Cement Sustainability Initiative: Progress report, World Business Council for Sustainable Development, published 2002-06-01.

**XIII. CONCLUSION**

For the foregoing reasons the proposed Project Alternative should be rejected in favor of a less damaging alternative. The DEIR should be revised and recirculated to provide the public and governmental decision-makers with an opportunity to review each of the project's significant environmental impacts, and the additional mitigation measures and project alternatives that must be considered to reduce or avoid these impacts.

H-26

Thank you for your consideration of these comments.

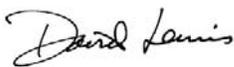
Sincerely,



Ian Wren  
Staff Scientist, San Francisco Baykeeper



Jason Flanders  
Staff Attorney, San Francisco Baykeeper



David Lewis  
Executive Director, Save the Bay

**RESPONSE TO COMMENT SET H: BAYKEEPER AND SAVE THE BAY**

- H-1** In accordance with section 15088.5, subsection (f)(1),(3) of the State California Environmental Quality Act (CEQA) Guidelines (Cal. Code Regs., tit. 14, § 15088.5, subd. (f)(1),(3)), the California State Lands Commission (CSLC) staff did not respond to comments submitted on the 2010 Draft Environmental Impact Report (EIR) that was released on July 5, 2010. Comments were addressed in the text of the Revised Draft EIR prepared for the proposed Project and circulated for public review on November 16, 2011.
- H-2** The commenter's preference for the Reduced Project Alternative is noted. The EIR does not attempt to, and need not, justify the level of mining proposed by the Applicant (the Project Description). An economic analysis of the type that would be required to determine future market demand for sand in the Bay Area is beyond the scope of an EIR.
- H-3** The EIR analyzes the potential effects of the Reduced Project Alternative and the No Project Alternative, particularly on climate change and air emissions, in the event that limiting or ending sand mining in the Bay and Delta should result in increased import of sand, particularly from British Columbia. It is not assumed that this would definitely occur, only that it is reasonable to assume that this would be a consequence of these alternatives.
- H-4** Please see Master Response 3, Mineral Resources Impacts Significance Conclusions.
- H-5** Potential Project impacts on sediment transport and coastal erosion are examined in Impact HYD-2 in Section 4.3, Hydrology and Water Quality. Please also see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- H-6** Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology, and Master Response 3, Mineral Resources Impacts Significance Conclusions.
- H-7** Potential Project impacts on sediment transport and coastal erosion are examined in Impact HYD-2 in Section 4.3, Hydrology and Water Quality. In addition, according to its authors, the San Francisco Bay Subtidal Habitat Goals Project Report is neither a policy document nor a regulatory document, but offers *guidance* to public agencies on establishing policies for subtidal restoration and protection (San Francisco Bay Subtidal Habitat Goals Project, 2010). (Emphasis added.) Goals and Objectives in the Report include:

*Soft Substrate Protection Goal 3: Promote no net loss of San Francisco Bay subtidal and intertidal sand habitats, and Soft Substrate Protection Objective 3-1: Continue the efforts of the interagency sand mining working*

*group to encourage harvests of sand at levels replenished through natural processes.*

The Project does appear to be in conflict with this non-regulatory goal and objective, since, as discussed in the EIR, sand inputs to the mining lease areas were significantly less than the amount of sand mined from the Bay during the past 10-year lease period, and this imbalance can be expected to continue. Please see also Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.

- H-8** Regarding the basis for the conclusion in the EIR that the Project would not have a significant impact on mineral resources please see Master Response 3, Mineral Resources Impacts Significance Conclusions.
- H-9** As discussed in Section 4.3, Hydrology and Water Quality, the influx of sand into the Bay and Delta has decreased substantially over the past several decades; consequently, studies that are more recent than the Porterfield study were relied upon for the impact analysis in this EIR as the best current and available scientific information on sediment flux in the Bay and Delta. As discussed in Section 4.3, Hydrology and Water Quality, and Appendix G, Bathymetric and Hydrodynamic Study, based on the bathymetric and hydrodynamic analysis conducted for this EIR, the proposed mining volume will likely exceed the amount of sand transported into the mining lease areas in the Central Bay. However, Project impacts on sediment transport in the Bay and Delta (areas outside the mining areas) are not strictly governed by relative comparison of volumes of extraction and influx. Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- H-10** While the commenter accurately cites the finding of the Coast and Harbor Engineering (CHE) report (Appendix G in the EIR) regarding sediment lost from the mining lease areas during the last mining lease period, the CHE report did not find that this "...could result in significant erosion and other geomorphological impacts to areas within and outside San Francisco Bay." The CHE study found that the effects of mining the Central Bay lease areas are not detectable beyond the immediate environs of the lease areas. Please see EIR Appendix G, Bathymetric and Hydrodynamic Study; Impact HYD-2 (Potentially adverse effect on the hydrology and geomorphology of the Bay and Delta) and Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- H-11** Mineral extraction is not generally considered a "sustainable" practice, as it usually results in the depletion of a limited, non-renewable resource. This in itself, however, does not necessarily lead to a conclusion of a significant impact under CEQA. Please see Master Response 3, Mineral Resources Impacts Significance Conclusions.

- H-12** Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- H-13** Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- H-14** The mineral aggregate demand forecast referred to by the commenter, which is cited in Section 4.2, Mineral Resources, of the EIR, is a long-term (50-year) forecast prepared by the California Geological Survey, and takes into account expected fluctuations in demand over a long time period. It is the most recent analysis of this kind available. It is well known that the demand for aggregate products fluctuates, partially as a function of the strength of building industry, but more generally with fluctuations in economic activity.
- H-15** Economic analysis such as that requested by the commenter is beyond the scope of an EIR.

State CEQA Guidelines section 15126.6, subdivision (a) states that:

An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.

The CSLC is not restricted to considering approval of only the Project as proposed or one of the alternatives as presented in the EIR, but also may select different Project elements, including levels of allowable sand mining, from the range considered in the alternatives analysis.

The process for selection of the alternatives analyzed in the EIR is presented in EIR Section 3.0, Alternatives and Cumulative Projects.

- H-16** The Project evaluated in this EIR is the issuance of 10-year, not 20-year, leases for the specified parcels; the Applicant-proposed option to extend the proposed 10-year leases for another 10 years is not evaluated. Page 2-1 of the EIR (Section 2.1, Introduction, in Section 2.0, Project Description), states that future consideration of mining beyond the 10-year lease terms would require additional environmental review pursuant to CEQA (similar to the current CEQA review for the issuance of new leases for parcels that were previously leased by the Applicants). The EIR's evaluation of cumulative effects appropriately considers both past mining and the potential for future mining to occur within the Bay and Delta (please see Table 3-3 in Section 3.0, Alternatives and Cumulative Projects).

- H-17** The following excerpt from Section 2.3.1, Project Action, under “General Methods of Sand Mining” (page 2-20) in Section 2.0, Project Description, answers the commenter’s question regarding offloading facilities:

For the purpose of this EIR, transportation of sand by the sand miners to offloading facilities and the offloading of the sand mining barges are considered part of the Project; this is consistent with State CEQA Guidelines section 15378, which requires that an EIR examine the “whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.” Operations at offloading facilities, including ground transport of materials to and from offloading facilities, are not considered part of the Project, since these facilities operate under their own land use permits, air district permits to operate, stormwater permits, and other entitlements and the Applicants are not seeking any changes to these existing entitlements.

No new offloading facilities are proposed. As noted in this passage from the Project Description, and in the comment, each off-loading facility operates under its own entitlements. No new permits or approvals are necessary to continue offloading at existing locations in the future and they could continue to operate whether or not the Project is approved. Therefore, the “whole of the action” of approving the Project does not affect the continued operation or existence of these facilities, and the EIR properly excludes operations of these facilities from the impact analysis.

- H-18** Conclusions regarding the significance of biological resources impacts are consistent with the stated significance criteria. Please see the responses to the following comments in this comment set.

- H-19** The discussion of EIR Impact BIO-2, regarding potential effects of Project-related noise pages 4.1-40 through 4.1-41 in Section 4.1, Biological Resources, Section 4.1.4, Impact Analysis and Mitigation) establishes that fish, including special-status species, are known to detect sounds in the 120 to 140 decibel (dB) level range and that modified behaviors, such as avoidance or altered foraging, occur at sound levels greater than 140 dB. Physical damage to fish does not occur until noise levels exceed 180 dB, which are not reached during sand mining. The underwater sounds generated by sand mining activities are reported to be in the range of 130 to 140 dB, which is within the range detectable by fish but at the lower threshold for eliciting behavioral responses. Additionally, noise generated by the drag head is expected to decrease with increasing distance from the drag head, with estimated levels of 120 dB, which is below detectable thresholds for fish, at a distance of 0.75 mile and as low as 112 dB at 1.25 miles. Most likely, sound levels only reach the thresholds where avoidance or altered foraging is caused immediately adjacent to the drag head itself, which represents a very small area of the seafloor and water adjacent to the dredge. Finally, the duration of a sand mining event is relatively short — approximately 2 to 4 hours

per day, and each mining event is in a different location over a relatively large area of the Bay and Delta.

In summary, the determination that dredging noise would result in a less-than-significant impact was based on the impact being:

- (1) predominantly below sound levels detectable by fish, except for a very limited area near the active dredging point;
- (2) potentially only being high enough to elicit any behavioral changes immediately adjacent to the drag head; and
- (3) only occurring for a relatively short time period each day and not in the same location.

As a result, the EIR concludes that there is no permanent loss of habitat, no permanent net loss in the functional value of the habitat, fish migration is neither impeded nor prevented, and sand mining noise does not result in the substantial loss in population, habitat, or biological diversity.

**H-20** The physical action of removing soft substrate material in itself represents the initial loss of marine habitat and the short-term usability of that parcel of seafloor for fish foraging. Regarding recovery of benthic communities from disturbance, please see the response to Comment A-32.

Based on the species composition and low species abundances observed at all the mining sites and comparison sites, the suitability of these sites for fish foraging is considered limited. Special-status fish such as green sturgeon, salmon, and steelhead typically forage in shallower nearshore waters and not in the deeper waters of Central Bay or along the Delta channels where sand mining occurs.

As stated at the conclusion of the discussion of Impact BIO-3 in Section 4.1, Biological Resources, the basis for determining that potential disturbance to benthic soft bottom habitat from sand mining activities is less than significant is that short-term changes in habitat composition and associated marine fauna, "...do not appear to last more than a few years and do not appear to result in any detectable changes in infaunal composition or forage suitability." Specifically, no special-status species would incur any permanently lost habitat, no net loss would occur in the long-term functional habitat value, there would be no impeded movement or migration of special-status species, and there would be no substantial loss in population or habitat of any native fish or vegetation, biological diversity, or natural variability.

**H-21** Contrary to the commenter's statement, the EIR does not conclude that impacts to delta smelt would be less than significant. Please see Impact BIO-8 in Section 4.1, Biological Resources, which concludes that Project impacts to delta smelt and longfin smelt would be significant and unavoidable.

**H-22** Many of the special-status fish protection measures presented in the EIR were developed either directly by, or in close coordination with, federal (National Marine Fisheries [NMFS] and U.S. Fish and Wildlife Service [USFWS]) and/or State (California Department of Fish and Game [CDFG]) resource agencies, and the measures have been further shaped based on agency comments. The EIR requires the implementation of several non-compulsory conservation measures described in the 2006 NMFS Conference and Biological Opinion, in addition to other protective measures (e.g., Mitigation Measures [MM] BIO-9a, and BIO-9b), and is more protective of the resources than measures required by the resource agencies. These mitigation measures are both feasible and effective in reducing impacts to special-status fish species. The conclusion that these measures would mitigate Impact BIO-9 to less than significant is reasonable and supported by factual evidence.

**H-23** The EIR does not defer mitigation. The EIR finds that Project impacts to delta smelt and longfin smelt would be significant and unavoidable (Impact BIO-8). MMs BIO-8a and BIO-8b describe measures to avoid, minimize, and compensate for the take of delta smelt and longfin smelt, which will likely be included in a future Incidental Take Permit (ITP) which can only be issued by the CDFG. The CSLC staff is aware that the Applicant has initiated consultation with CDFG with the intent of obtaining an ITP. CDFG can only issue an ITP if it finds that the avoidance, minimization, and compensatory measures specified in the ITP will result in no net take of the species, and that activities covered by the ITP will not jeopardize the continued existence of the species (Fish & Game Code, § 2081). Nevertheless, since an ITP has not been issued, CSLC staff currently has no basis for concluding that Project impacts on these species would be fully mitigated, and therefore, the EIR concludes that impacts to these species may remain significant and unavoidable.

An EIR is an informational document and does not set policy, nor determine whether a project will be approved or disapproved. Upon certification of the EIR, the CSLC may take action to approve or disapprove the Project, or may approve it pending the issuance by CDFG of an ITP. If the Applicants were to continue to conduct sand mining operations without an ITP, they could be liable for violation of the State Endangered Species Act, should their operations result in unauthorized take of listed species (Fish & Game Code, § 2050 et seq.). Should the CSLC approve the Project with the potential for significant and unavoidable impacts, it must adopt a Statement of Overriding Considerations. As stated in State CEQA Guidelines section 15021, subdivision (d):

CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian. An agency shall prepare a statement of overriding considerations as described in Section 15093 to reflect the

ultimate balancing of competing public objectives when the agency decides to approve a project that will cause one or more significant effects on the environment.

- H-24** Because this EIR finds that Impact BIO-8 would remain significant and unavoidable, the mitigation measures need not comply with the legal precedents cited by the commenter. These only apply if the lead agency relies on future mitigation to reach a conclusion that mitigation measures would reduce the impact to a less-than-significant level. The rationale for concluding that MMs BIO-9a and BIO-9b would be effective in reducing Impact BIO-9 to less than significant is provided at the conclusion of the discussion of this impact, in Section 4.1 Biological Resources (the commenter refers to “MM BIO-9d,” but no such mitigation measure is included in the EIR).
- H-25** The CSLC staff notes that sand is not an ingredient in the manufacture of Portland cement. Raw materials for Portland cement include limestone and shale or clay, which are combined and altered in a high-temperature process that involves a large expenditure of energy, typically producing high levels of greenhouse gases (GHGs), criteria pollutants, and often toxic air contaminants, sometimes including mercury. Concrete, on the other hand, is made by mixing Portland cement and aggregate, including sand, and water; the cement binds the aggregate materials together. The mixing of concrete from its constituent ingredients does not require heat, and does not result in large emissions of air pollutants, except energy expended and fuel combusted for the handling and transportation of the material. Some of the sand mined from the Bay and Delta is used as an ingredient in concrete, and some is used as backfill material. Both cement manufacturing facilities and concrete plants operate under their own entitlements, which would not be affected by approval of the Project. Analysis of the environmental effects of cement and concrete manufacture, or other uses of sand mined from the Bay and Delta, is beyond the scope of the EIR.
- H-26** The commenter’s position on the Project is noted. This EIR, including the alternatives analysis, fully complies with the CEQA statute and State CEQA Guidelines. As described in the responses above, recirculation of the EIR is not required.

# Comment Letter I



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January 3, 2012

via email

**SUBJECT: Revised Draft Environmental Impact Report (EIR) State Clearinghouse No. 2007072036, San Francisco Bay and Delta Sand Mining, November 2011**

To the State Lands Commission:

I have reviewed the subject Revised Draft EIR (DEIR), with emphasis on Central Bay sand mining impacts that are likely to be cumulatively considerable for beach and dune erosion in San Francisco peninsula shorelines.

My qualifications to comment on the RDEIR include my past role as staff environmental analyst for the regulatory division (then branch) of the U.S. Army Corps of Engineers, San Francisco District, and my specific experience with a (flawed) USACE environmental assessment for the permit and public notice for sand mining authorization reissuance in the early 1990s. I have over 30 years professional experience in applied coastal ecology, regulation, and management, including NEPA/CEQA (EIS/R management and preparation), Clean Water Act Section 404 regulation, endangered species planning and regulation, and regional wetland planning as federal agency senior staff (U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers) and as an independent consultant in coastal ecology.

1. The RDEIR's interpretation of environmental baseline of "existing conditions" for impact analysis of one "project" sand mining lease within a succession of mining leases over time improperly precludes reasonable interpretation of significant cumulative and indirect impacts of sand mining.

The RDEIR fails to correct the principal flaws of the original DEIR regarding the long-term indirect and cumulative impacts of San Francisco Bay sand mining on coarse sediment transport, erosion, and sediment budget deficits of the adjacent San Francisco Ocean Beach shoreline and ebb tidal delta. The RDEIR fails to apply meaningfully to CEQA analysis of cumulative impacts consistent with the best available scientific data and analysis provided

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by U.S. Geological Survey study of P. Barnard and R. Kiveck (2010), despite the inclusion of their publication in appendix I (DEIR comments) of the RDEIR. Moreover, the technical Appendix G (Bathymetric and Hydrodynamic Study, prepared by Coastal & Harbor Engineering, dated November 2011 in the Appendix, but cited as 2009 model results in the text of the RDEIR) on which the RDEIR relies for its (flawed) conclusions about indirect and cumulative impacts of sand mining to Golden Gate sand transport fails to cite Barnard and Kiveck’s data and analysis, and fails to reconcile the significant inconsistencies between the findings and conclusions of Barnard and Kiveck (2010) with the analysis of Appendix G regarding significant cumulative impacts of in-bay sand mining to the Ocean Beach-Golden Gate ebb tidal delta sediment budget and beach erosion. This omission is significant because the data and analysis of Barnard and Kiveck (2010) and the EIR regarding significant long-term indirect and cumulative impacts to Golden Gate sand transport and potential beach erosion are fundamentally inconsistent, and this inconsistency is not properly addressed in the RDEIR or in Appendix G.



I-2

Barnard and Kiveck (2010) conclude that from 1997 to 2008, west-central San Francisco Bay lost over 14 million m<sup>3</sup> of sediment, the majority of which was located within aggregate mining lease sites, and consisted of coarse sediment. Their analysis demonstrated a “clear anthropogenic influence on sediment loss in west-central San Francisco Bay from 1997 to 2008”, which under CEQA guidelines (§15130) must be treated as significant cumulative impacts, including “past, present, and reasonably anticipated future projects” (past, currently proposed, and foreseeable future in-bay sand mining). The RDEIR continues to assess the proposed sand mining lease as though it were a solitary project rather than one episode of lease renewal in a continuous long-term succession of public leases and permits to mine Bay-Delta sand on private submerged lands. The RDEIR narrowly and arbitrarily interprets the environmental baseline in a way that excludes and obscures highly significant cumulative impacts of the proposed 10 year lease sand mining in addition to the cumulative impact of past sand mining and additive, incremental effects of future sand mining on the huge bay sand mining pits and coarse sediment deficits shown by Barnard and Kiveck.



I-3

The “existing conditions” that “normally” serve as the environmental baseline for new projects cannot reasonably be applied to a sand mining “project” that is one lease segment within a long, multi-decade succession of leases (sequential CEQA “projects”) for sand mining, with foreseeable future lease renewals. Each successive and mining lease “project” each contributes to massive local and regional cumulative impacts overall to the SF Bay-Ocean Beach sediment transport cell as shown by Barnard and Kiveck (2010). The State Lands Commission cannot interpret the “existing conditions” baseline for an ongoing series of sand mining projects in a way that contradicts CEQA requirements for their cumulative impact analysis. Decades of sand mining under a succession of leases, involving many millions of cubic yards of net sand loss within the Bay is not a “normal” CEQA project and cannot utilize a “normal” baseline if it precludes required disclosure and assessment of significant cumulative impacts.

A paradigmatic example of this misuse of CEQA of environmental baseline so that CEQA-required cumulative impacts of successive sand mining leases is precluded shown on p. 1-10 of the RDEIR, regarding biological resources:

Impacts on biological resources are assumed to have occurred since sand mining in the Project areas first started, and the ongoing disturbance that occurred during this time is considered part of the baseline condition. (RDEIR p. 1-10)



I-3

This spurious impact analysis disregards the essential context of the antecedent “projects” of multiple successive Bay-Delta mining leases and mining episodes, and their cumulative impacts. The same tactic is applied to generate even greater fallacies, with far greater public interest and impact significance, about impacts of sand mining on sediment transport and budgets of the Golden Gate. The contrived environmental baseline (section 1.0 and p. 2.8, 5-year average prior to NOP for the current lease proposal) swallows whole all legacy impacts of antecedent sand mining episodes that should be at the heart of the analysis.

The RDEIR, like the DEIR, asserts a fundamental fallacy that the project is “not likely to cause measurable sediment depletion outside the mining areas” by narrowing the scope of analysis to the “piecemealed” current mining lease, and ignoring its cumulatively considerable contribution to the long-term legacy impact of past decades of mining leases that generated the (cumulative impact of) massive mining pits. The magnitude of this impact is estimated by Barnard and Kiveck (2010) to be loss of 240 million m<sup>3</sup> from the entire San Francisco Bay Coastal System over the last 50 years. The RDEIR, in contrast, myopically limits the analysis of sand transport to the direct effects of the proposed project’s addition to the mining pit’s overall effect on sand transport to the Golden Gate ebb tidal delta complex. The overall (cumulative, long-term) significant impact on the mining pits and sand extraction rates – a permanent major sediment sink – is again disregarded mostly because it is treated as mostly due to a “baseline” condition, ignoring the overall effect of past mining lease impacts together with proposed and foreseeable future mining. This is in effect temporal piecemealing, or project segmentation, on a massive scale. By this CEQA sleight-of-hand, the RDEIR wholly fails to assess the significant cumulative impact of past and continued foreseeable sand mining on the sand transport and sediment budget of the Golden Gate and San Francisco shorelines (Ocean Beach, Fort Funston bluffs of the Golden Gate National Recreation Area, National Park Service). This is an unreasonable interpretation of the DEIR’s own data that shows that sand removed by mining has never been significantly replenished naturally. This likely significant cumulative impact is demonstrated by Barnard and Kiveck (2010) for west-central Bay sand mining:



I-4

The data presented here demonstrates a clear anthropogenic influence on sediment loss in west-central San Francisco Bay from 1997 to 2008.

From 1997 to 2008, west-central San Francisco Bay lost over 14 million m<sup>3</sup> of sediment, the majority of which was located within aggregate mining lease sites. The rate of sediment loss is nearly three times the rate determined between surveys from 1947 to 1979, indicating a rapid acceleration of sediment loss from the region during the last decade. As only 10% of the mapped substrate is dominated by mud, and only 5% of the measured sediment loss is from mud-dominated substrates, the majority of the sediment lost from west-central San Francisco Bay was coarse sediment, material that would otherwise have been available for transport to eroding, open-coast beaches. While it is difficult to establish the precise contribution of the various potential anthropogenic influences to the observed sediment loss from 1997 to 2008 in west-central San Francisco Bay, the timing, spatial distribution, and

magnitude of sediment loss suggests a strong correlation with sediment removal by aggregate mining activities.

Given that an estimated one-quarter of a billion cubic meters of sediment has been lost from the San Francisco Bay Coastal System in the last 50 years (Table 1), most of which is sand and due to anthropogenic activities (Dallas 2009), and that a direct potential sediment transport link from the San Francisco Bay to the outer coast (Barnard and others, in press) has been established, it is not surprising that over 90% of the 13-km-long shoreline south of the San Francisco Bar has been eroding during this same period (Dallas 2009).

...over the last 50 years ... an estimated sediment loss of 240 million m<sup>3</sup> from the entire San Francisco Bay Coastal System. It is highly probable that the majority of sediment lost from the Central Bay and on the San Francisco Bar is coarse sediment (i.e., sand and gravel).

...the 1997 to 2008 rate of change in the lease areas (-7.2 cm yr<sup>-1</sup>) must be largely attributable to anthropogenic sediment removal by aggregate mining and/or dredging, given that the rate of loss is at least 5.7 cm yr<sup>-1</sup> higher than the background rate. The slightly higher background rate from 1997 to 2008 in west-central San Francisco Bay may result from the cumulative impacts of sediment removal in this region, especially in leasing areas, which can effectively limit sediment supply/replenishment to adjacent, non-lease areas.

...within the lease sites, 85% of the sediment that was extracted by aggregate mining from 1997 to 2008 was not “replenished,” based on the bathymetric change analysis. (Barnard and Kiveck 2010; underlining added for emphasis)

The RDEIR fails to reconcile the analysis of Barnard and Kiveck with the contradictory conclusion of Appendix G and RDEIR p. 4.3-34 that sand mining is not expected to significantly affect sand transport and deposition of sediment within the bay, ebb-tidal delta complex, and ocean coast, except within and immediately adjacent to mine pits. The RDEIR provides no explanation why it defers to the 2009 hydrodynamic model results cited in Appendix G over the more comprehensive data, analysis, and conclusions of Barnard and Kiveck (2010), but arbitrarily invokes or invents inflated scientific uncertainty (with no reference to a reasonable standard of scientific certainty or controversy) to further obscure reasonable potentially significant impacts and mitigation, treat significant cumulative impacts as “insignificant”, and confine CEQA impact analysis to a conditional “if-then” proposition about “speculative” conclusions, instead of making a reasonable conclusion about impacts and mitigation based on the best available scientific data:

Many uncertainties remain regarding sediment transport and continuity within the Bay-Delta estuary system and outer coast areas. Nonetheless, a reduction in the supply of sediment from the Bay-Delta estuary is a possible (and plausible) cause of erosion observed at the San Francisco Bar. Historically, high rates of sediment contribution to the estuary’s watershed, including hydraulic mining activities in the 19th century, may have contributed substantially to the formation and evolution of the San Francisco Bar. Thus, it may be shrinking over time simply due to a dramatic reduction in the supply of sediment from the Central Valley. Still, it is not clear how erosion or removal of sediment in different parts of the estuary, and over different temporal scales, may translate to a reduction in sediment supply from the Bay-Delta estuary to the San Francisco Bar.



I-4  
cont.

**Conclusion**

If the overall reduction in sediment supply in the Bay-Delta system is the cause, or a contributing cause, of the erosion of the San Francisco Bar, it would be reasonable to conclude that the Project could make a considerable contribution to this process. In the absence of greater certainty regarding the physical processes at work, however, such a conclusion is considered speculative, and the cumulative impact is therefore less than significant. Current and future research may shed additional light on the causes of erosion of the San Francisco Bar. Should the CSLC receive an application for new sand mining leases beyond the period covered by the current Project, the CSLC shall reexamine the effects of sand mining on sediment transport and coastal morphology. (RDEIR p. 4.3-40; underlining added)

↑  
I-4  
cont.

The RDEIR’s interpretation of “environmental baseline” that unreasonably ignores the segmented nature of the “project” (multiple successive mining leases over decades), combined with its dismissal of definitive scientific research conclusions as “speculative”, and its bizarre “if-then” inference format for impacts, together provide an appearance of bias and disingenuous interpretation to avoid the overwhelming scientific evidence that long-term Bay-Delta sand mining has, and continue to have, highly significant adverse impacts. Then the RDEIR treats foreseeable future projects (renewal of mining leases) as merely speculative (“should the CLSC receive an application for new mining leases...”), and improperly defers mitigation and analysis to future CEQA projects (“...shall re-examine the effects of sand mining...”)! CEQA “project description”, of course, must account for reasonably foreseeable future phases or consequences of a project (Guidelines § 15165; Laurel Heights Improvement Assoc. v. Regents of University of California (1988) 47 Cal 3d 376). The RDEIR adds to the appearance of bias by arbitrarily engaging in pure speculative arguments that trivialize mining impacts (“Thus, [the San Francisco Bar] may be shrinking over time simply due to a dramatic reduction in the supply of sediment from the Central Valley [rather than sand mining impacts]”) over authoritative scientific research conclusions of Barnard and Kiveck. This is a radical departure from scientific standards and CEQA regulations.

I-5  
I-6

This improper and apparently biased, myopic analysis of the current mining lease improperly excludes analysis of highly significant cumulative impacts caused by accelerated beach and bluff erosion that is indirectly caused by coastal sand budget deficits of the Golden Gate, including beach recreation, economic impacts, land use impacts, hazards, and fish and wildlife habitat (migratory shorebird foraging, federally listed western snowy plover habitat, accelerated loss of Fort Funston coastal dune scrub and bluff habitat – none of which are discussed or mitigated as significant potential indirect and cumulative impacts in biological resource sections).

I-7

The State Lands Commission should correct the CEQA analysis flaws regarding cumulative impacts to sand transport and beach erosion in the Golden Gate by consulting with a scientific peer review panel including leading scientific researchers in coastal geomorphology, engineering, and oceanography (U.S. Geological Survey, University of California) to develop a sound scientific approach, consistent with CEQA, to re-analyze cumulative impacts of Bay-Delta sand mining on coastal resources, particularly beach and bluff erosion of San Francisco. The indirect and cumulative physical impacts of sand mining on San Francisco shoreline erosion should be carried over to re-analyze potential significant

I-8  
↓

# Comment Letter I

impacts on beach recreation, economic impacts, land use impacts, hazards, and fish and wildlife habitat (including federally listed western snowy plover).

↑ I-8  
cont.

2. The RDEIR's analysis of aggregate mining cumulative impacts is inconsistent with CEQA assessment of comparable river aggregate mining. The Bay-Delta sand mining impact analysis is inconsistent with all EIRs for in-stream (river) aggregate mining in California that I have reviewed. Net long-term loss of sediment and degradation of in-stream mining pits or terrace mining pits is generally interpreted as a significant geomorphic (geological) impact, and significant depletion of a natural mineral resource that reduces its availability. No gravel mining EIR in California to my knowledge has ever attempted to argue that downstream sediment budget impacts do not occur merely because mining pits do not migrate downcurrent (as argued in Appendix G, p. 10). If an aggregate mining pit progressively enlarges (fails to replenish with sediment at a significant rate) and causes bank erosion after successive episodes of mining, the only reasonable conclusion is that the mining is unsustainable, causing depletion of a finite sediment supply and ecosystem instability. This is a significant

I-9

3. The RDEIR fails to analyze potential significant impacts of turbidity during the growing season of expanding *Stuckenia* (submerged aquatic vegetation) beds in the Suisun Bay area. The RDEIR mentions the existence of *Potamogeton pectinatus* (*Stuckenia pectinata*) in the vicinity of Ryer, Roe and Simmonds Islands, and Little Honker Bay (RDEIR 4.1-12), but fails to identify the distribution, abundance, and biological significance of native subtidal SAV beds in Suisun Bay area. The RDEIR fails to identify extensive subtidal *Stuckenia* beds near Chippis Island adjacent to lease PRC 7781 West, and in Montezuma Slough adjacent to lease PRC 7781 East. It also mistakenly identifies *Ruppia maritima* from open subtidal beds, instead of a second *Stuckenia* species, *S. filiformis*. Prof. Katharyn Boyer of San Francisco State University (Romberg Tiburon Center) is currently conducting research on the distribution, abundance, structure, and ecology of *Stuckenia* beds in the Suisun Bay area. The recent research from her lab indicates that *Stuckenia* beds in the Suisun Bay area are far more extensive and abundant than previously documented. Native SAV beds may have significant ecological influence on native estuarine fish, including federally listed species, estuarine trophic structure, and waterfowl habitat. *Stuckenia* survivorship and growth is highly sensitive to turbidity during the growing season. The RDEIR (and DEIR) fail to assess either the extent or sensitivity of the native SAV beds in the project area, or potentially significant impacts and mitigation.

I-10

4. BCDC Bay Plan and Land Use Policy impacts of Bay-Delta sand mining. The RDEIR states on p. 4.2-7 that the Bay Plan defines dredging, but "...the Bay Plan does not explicitly address mining or mineral resources." This statement appears to indicate that the Bay Plan (McAteer-Petris Act authority) does not provide an explicit policy to support authorization of dredging for mining purposes, in contrast with dredging for navigation or natural resource management purposes that are expressly authorized and supported by the Bay Plan. The RDEIR fails to identify the apparent land use policy impact of leasing California state lands within BCDC jurisdiction for the purposes of mining rather than navigational dredging, or borrowing sediment

I-11

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6

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for habitat restoration, erosion management within the Bay, or recreational shoreline nourishment.

**Conclusions and recommendations**

1. The RDEIR commits substantial errors of impact analysis (invalid CEQA argument, unsound scientific argument and inference, failure to utilize the best available scientific evidence and analysis, deference to speculation and inflated, arbitrary assessment of scientific uncertainty over exceptionally sound and definitive published scientific research) that result in severe underestimation of significant cumulative and indirect impacts (see comments 1-4 above).

I-12

The RDEIR should be withdrawn and replaced with a subsequent wholly revised DEIR with substantial corrections and revisions to the treatment of “environmental baseline” and cumulative impacts for a CEQA “project” that is one segment in a long sequence of past projects (leases) and future foreseeable projects (leases and permits), with full and proper, scientifically sound and peer-reviewed cumulative impact analysis on sediment transport impacts including the Golden Gate and adjacent San Francisco coast.

I-13

2. The subsequent DEIR and FEIR should assess a reduced project alternative that includes elimination of the high-stakes, high-risk, unmitigated impact of west-central bay sand mining, OR reduction of mining rates not to exceed measured replenishment rates. Mining in excess of natural sand replenishment rates should be identified as a significant unmitigated impact.

I-14

3. The nexus between west-central SF Bay sand mining and Ocean Beach erosion justifies a rigorous analysis of mitigation and a full public interest review of the overall cost and benefits of in-bay sand mining, off-site aggregate extraction alternatives, and San Francisco Peninsula coastal erosion. The SLC should consult experts and stakeholders in San Francisco shoreline resources and erosion issues, including the Ocean Beach Task Force, City of San Francisco (Department of Public Works, Department of Environment), Golden Gate National Recreation Area, U.S. Geological Survey, U.S. Army Corps of Engineers- San Francisco District Planning and Engineering Division, and U.S. Fish and Wildlife Service, and Surfrider Foundation. This consultation should inform substantial revisions in the subsequent DEIR and FEIR.

I-15

4. The SLC should rigorously review EIR precedents for cumulative impact analysis and environmental baseline approaches of repeat-project aggregate mining in California river systems, and fully consider the applicability of precedents for Bay-Delta CEQA impact analysis.

I-16

5. The SLC should consult with BCDC to determine whether the Bay Plan authorizes dredging for mining purposes, and whether a land use policy conflict may exist if dredging for mining adversely impacts (without mitigation) substantial public resources within the jurisdiction of the Bay Plan.

I-17

Respectfully submitted,



Peter R. Baye, Ph.D.  
Coastal ecologist

## Copies Furnished:

Save San Francisco Bay Association  
San Francisco Baykeeper  
Citizen's Committee to Complete the Refuge  
Interested parties

## Literature Cited

Barnard, P.L. and R.G. Kiveck. 2010. Anthropogenic Influence on Recent Bathymetric Change in West-Central San Francisco Bay. San Francisco Estuary and Watershed Science 8 (September 2010) [http://escholarship.org/uc/jmie\\_sfews](http://escholarship.org/uc/jmie_sfews)

## **RESPONSE TO COMMENT SET I: PETER BAYE, PH.D.**

- I-1** This comment is preamble to those which follow, and requires no discrete response.
- I-2** Regarding the baseline used in the Environmental Impact Report (EIR) analysis, please refer to Master Response 2, Baseline Used in the Analysis. Please note that the cumulative analysis in the EIR includes consideration of past and possible future sand mining (see Table 3-3 in Section 3.0, Alternatives and Cumulative Projects); and the discussion of cumulative effects on sediment transport and coastal morphology, commencing on page 4.3-38 in Section 4.3, Hydrology and Water Quality (Section 4.3.6, Cumulative Projects Impact Analysis), of the EIR. The effects of past sand mining are included in the baseline conditions. Also, please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- I-3** Please see the response to Comment I-2, above; also Master Response 2, Baseline Used in the Analysis, and Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- I-4** The EIR examines the cumulative contribution of sand mining to sediment loss in the Bay, and resulting effects on coastal morphology. Please see the discussion of cumulative effects on sediment transport and coastal morphology, commencing in Section 4.3, Hydrology and Water Quality, of the EIR. Please also see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- I-5** Regarding the environmental baseline used in the EIR analysis, please see Master Response 2, Baseline Used in the Analysis. The significance conclusions in the EIR are supported by substantial evidence including recent scientific literature that was carefully reviewed and considered in preparation of the EIR. Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.
- I-6** The CSLC staff reached a different conclusion from the Barnard and Kvitek (2010) report than that stated by the commenter. Barnard and Kvitek (2010) state the following on page 11:

“From 1997 to 2008, west–central San Francisco Bay lost over 14 million m<sup>3</sup> of sediment, the majority of which was located within aggregate mining lease sites. The rate of sediment loss is nearly three times the rate determined between surveys from 1947 to 1979, indicating a rapid acceleration of sediment loss from the region during the last decade. As only 10% of the mapped substrate is dominated by mud, and only 5% of the measured sediment loss is from mud-dominated substrates, the majority of the sediment lost from west–central San Francisco Bay was

coarse sediment, *material that would otherwise have been available for transport to eroding, open-coast beaches*. While it is difficult to establish the precise contribution of the various potential anthropogenic influences to the observed sediment loss from 1997 to 2008 in west-central San Francisco Bay, the timing, spatial distribution, and magnitude of sediment loss suggests a strong correlation with sediment removal by aggregate mining activities.” (Emphasis added.)

In particular, CSLC staff believes that the statement that lost sediment “...would otherwise be available for transport to eroding, open-coast beaches...” is not the same as saying that any sediment mined as part of the proposed Project would have been transported to the open coast. The abstract for this article emphasizes this point, as it describes the potential connection between sediment loss in the Central Bay and coastal erosion as a “hypothesis:”

“Sediment loss in the entire San Francisco Bay Coastal System during the last half-century, as estimated from a series of bathymetric change studies, is 240 million m<sup>3</sup>, and most of this is believed to be coarse sediment (i.e., sand and gravel) from Central Bay and the San Francisco Bar, which is likely to limit the sand supply to adjacent, open-coast beaches. This hypothesis is supported by a calibrated numerical model in a related study that indicates that there is a potential net export of sand-sized sediment across the Golden Gate, suggesting that a reduction in the supply of sand-sized sediment within west-central San Francisco Bay will limit transport to the outer coast.” (Barnard and Kvitek 2010, abstract, page 1.)

The conclusions from the more recent publication by Dallas and Barnard (2011) suggest a similar level of scientific uncertainty regarding the connection between sediment loss within the Bay and coastal processes:

“Quantitative analysis of a series of historical and recent bathymetric surveys of the San Francisco ebb-tidal delta provides information on its long-term morphologic evolution and the processes driving the observed change. It is concluded that:

- (1) From 1873 to 2005 the San Francisco ebb-tidal delta experienced periods of both erosion and deposition, with total net loss of 100 +/- 52 million m<sup>3</sup> of fine- to coarse-grained sand;
- (2) A minimum of 200 million m<sup>3</sup> of sediment has been permanently removed from the system by dredging, aggregate mining, and borrow pit mining. At least 50 million m<sup>3</sup> of this total was sand or coarser grained material removed from Central San Francisco Bay and is comparable with grain sizes on the ebb-tidal delta;
- (3) Changes to the morphology of the San Francisco ebb-tidal delta have altered alongshore wave energy distribution along adjacent

Ocean Beach. Over the past 50 years wave heights have decreased along northern Ocean Beach and increased along southern Ocean Beach, and this increase is coincident with the location of a beach erosion 'hot spot' that has persisted for decades;

- (4) Shoreline change results indicate a majority of the sheltered, sandy shoreline from Crissy Field Beach to northern Ocean Beach has been stable or experienced net accretion since the late 1800s, with an increase in accretion rates since the 1980s. In contrast, a majority of the exposed, open coast beaches from southern Ocean Beach to Pt. San Pedro have experienced net erosion since the late 1800s, with an increase in erosion rates since the 1960s;
- (5) Long-term erosion of the San Francisco ebb-tidal delta and accelerating rates of shoreline erosion along open coast beaches correlate temporally with a reduction in the tidal prism of San Francisco Bay and a decrease in coastal sediment supply, both as a result of anthropogenic activities." (Dallas and Barnard 2011, page 9.)

Similarly, a 2010 presentation by Dr. Barnard at a Regional Sediment Management Science Workshop sponsored by the San Francisco Bay Conservation and Development Commission (BCDC), concluded with a summary of what is known and what is not known about the influence of anthropogenic bathymetric changes in the Bay on sand transport and on coastal morphology (Barnard et al. 2010):

"What we know:

- Historical changes
- Short-term changes/patterns/processes
- Semi-quantitative information on transport pathways

"What we are working on (What we know we don't know):

- Golden Gate sediment flux
- Sand provenance"

The CSLC staff understands that there is a strong inference and widespread belief that sand mining and other sediment removal from the Central Bay contributes to changes in coastal morphology outside the Golden Gate, including erosion of the southern end of Ocean Beach and of the San Francisco Bar. This potential connection, and the Project's potential contribution, are discussed in the cumulative effects on sediment transport and coastal morphology, commencing on EIR page 4.3-38 in Section 4.3, Hydrology and Water Quality as well as in Section 4.3.6, Cumulative Projects Impact Analysis). However, as stated by Dallas and Barnard (2011) and Barnard et al. (2010), researchers still lack crucial empirical evidence, including the dynamics of Golden Gate sediment flux and

sand provenance (i.e., origin) of the San Francisco Bar and Ocean Beach, that could link sediment loss in the Central Bay to changes in coastal morphology.

Furthermore, while bathymetric analysis for this EIR (see Appendix G) reached similar conclusions to Dr. Barnard's regarding bathymetric changes in the Central Bay mining lease areas, the hydrodynamic modeling conducted for this EIR (Appendix G) concludes that the persistent mining holes within the mining lease areas do not have a substantial effect on tidal currents or on sediment transport and deposition outside the mining lease areas, and that the Project would not change this. These results were corroborated by supplemental modeling and analysis performed in preparation of this Final EIR. Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.

According to the State California Environmental Quality Act (CEQA) Guidelines section 15151, EIRs are not required to resolve disagreements among experts, but rather must only provide a summary of differing opinions:

Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

This EIR meets the requirement of disclosing and summarizing the main points of disagreement among experts. See Master Response 1, Comments A-6, A-42, A-43, H-12, H-13, I-4, and K-1, and the responses to these comments.

Possible future sand mining is included in the consideration of cumulative effects in the EIR. Please see the discussion of cumulative effects on sediment transport and coastal morphology, commencing on page 4.3-38 in Section 4.3, Hydrology and Water Quality, and Section 4.3.6, Cumulative Projects Impact Analysis.

- I-7** Please see the response to Comment I-6, above. The EIR concludes that the Project would not have a direct significant impact on coastal morphology. Please see also Master Response 1.
- I-8** As noted in the discussion of cumulative effects on sediment transport and coastal morphology in Section 4.3.6, Cumulative Projects Impact Analysis, commencing on page 4.3-38 in Section 4.3, Hydrology and Water Quality, of the EIR, CSLC staff will continue to monitor ongoing research regarding sediment transport and coastal processes in the Bay and offshore, and will take new information resulting from this research into account in any future environmental review of proposed sand mining leases. Regarding the suggestion for peer review of the technical studies conducted for this EIR, please see the response to Comment A-45, above, and Master Response 1.

- I-9** The hydrodynamic study conducted for this EIR (see Appendix G) concluded that the alteration of the seabed caused by the Project would not cause changes in tidal currents or geomorphic changes outside the immediate vicinity of the mining holes. Supplemental analysis and modeling were conducted in preparation of this Final EIR, as reported in Master Response 1, which refine and confirm the earlier results. Therefore, geomorphic effects of the type suggested would not be expected to occur, and the EIR properly concludes that such an impact would be less than significant (please see Impact HYD-2 in Section 4.3, Hydrology and Water Quality). Regarding depletion of mineral resources, please see Master Response 3.
- I-10** As stated in under “Project Site” in Section 4.1.1, Environmental Setting, in Section 4.1, Biological Resources (page 4.1-2), “The marine habitats where sand mining occurs consist of open water pelagic (midwater) habitat and soft substrate benthic (bottom) habitat. No mining occurs in the nearshore subtidal (soft or hard substrate) or intertidal habitats, within submerged aquatic vegetation beds or emergent saltwater marsh or wetlands.” SAV beds provide important habitat for many juvenile and adult fish and invertebrate species inhabiting the San Francisco Bay-Delta ecosystem, which may include both federally and state listed special status species.

Although two of the Delta sand mining leases (PRC 7781 West and PRC 7781 East) lie adjacent to land areas within Suisun Bay that contain extensive acreage of submerged aquatic vegetation and marsh wetland, sand mining within these leases occurs within the existing dredged shipping channel and at a depth of 30 feet or deeper, which is currently beyond the depth to which Delta SAV is known to occur.

Although some increased seafloor turbidity will occur at the location of the dredge suction head and from limited barge overflow of sediment fines, as discussed in Section 2.0, Project Description and analyzed in Section 4.3.4 in Section 4.0, Hydrology and Water Quality, these short-term plumes are not expected to spread beyond a few hundred feet down current from the sand mining barge. In the case of the seafloor plume created in the immediate vicinity of the dredge suction head, the plume would be expected to remain within the channel and travel down current and downslope within the channel. Existing BCDC permits prohibit dredging within 200 feet of shoreline or within 250 feet of any water 4 feet or under mean lower low water (MLLW) for Middle Ground Shoal, and mining within 100 feet of Alcatraz Island or in waters shallower than 30 feet MLLW in the Central Bay, as stated in Section 1.0, Introduction, Section 1.3.2, Current Projects and Permit Conditions (page 1-19). The chance of any increased turbidity caused by sand mining dredge operations reaching nearshore or onshore SAV beds is therefore highly unlikely. Since SAV are unlikely to be impacted by the Project operations, extensive detail on the distribution, abundance and biological significance of individual aquatic vegetation species is not included in the environmental setting discussion in Section 4.1, Biological Resources.

- I-11** Consistency of the Project with Bay Plan and other applicable land use policies is examined in Section 4.7, Land Use and Recreation. Impact LU-4 identifies the potential for a significant impact based on incompatibility with certain policies (please see Table 4.7-3). However, as discussed under Impact LU-4, implementation of mitigation measures identified elsewhere in the EIR is expected to reduce this impact to less than significant. Please note that the final determination of the Project's consistency with Bay Plan policies will be made by the BCDC.
- I-12** As discussed in the responses to Comments I-6, I-7, I-9, I-10, and I-11, and in Master Responses 1 and 3, the EIR does not underestimate the potential for significant adverse environmental effects of the Project.
- I-13** As discussed in the responses to Comments I-4, I-7, and I-8, and in Master Response 1, the cumulative impact analysis in the EIR is complete and complies with the requirements of CEQA.
- I-14** The alternatives analysis contained in the EIR complies with the requirements of CEQA. Please see the response to Comment A-12. As noted in the response to Comment H-11, mineral extraction is not generally considered a "sustainable" practice. Please see Master Response 3, Mineral Resources Impacts Significance Conclusions.
- I-15** Please see the response to Comments I-6 and A-45.
- I-16** Please see the response to Comment I-9 and Master Response 2, Baseline Used in the Analysis.
- I-17** Please see the response to Comment I-11. Because BCDC is a Responsible Agency for this Project, the CSLC staff has consulted with BCDC about the Bay Plan.

From: JLucas1099@aol.com [mailto:JLucas1099@aol.com]  
Sent: Saturday, December 31, 2011 12:28 PM  
To: Huitt, Christopher@SLC  
Subject: San Francisco Bay and Delta Sand Mining Project - revised DEIR - November 2011

Christopher Huitt, Project Manager  
California State Lands Commission  
100 Howe Avenue, Suite 100-South  
Sacramento, California

December 31, 2011

RE: Revised Draft EIR San Francisco Bay and Delta Sand Mining Project, November 2011

Dear Christopher Huitt,

In regards State Lands Commission Revised Draft EIR for San Francisco Bay and Delta Sand Mining Project there is still some inconsistency, I feel, with CEQA Law and Guidelines in regards accurately assessing the cumulative impacts of increased sand mining leases on sediment budget for the San Francisco Bay Estuary and possible conflict with anticipated Delta infrastructure projects that overlap these critical areas of Estuary.

In regards alternatives, I would have to select a no project alternative as the DEIR's proposed reduced project alternative is not reduced sufficiently to still retain essential, historical, beneficial uses of San Francisco Bay.

I will attempt to provide you with background data that has brought me to this conclusion, though, inspite of an extended public comment period, it is difficult to review all technical material for such a longterm project.

In regards levels of sediment supplied to San Francisco Bay from the Delta, for the past twenty years I have relied on a San Francisco Corps of Engineers Sediment Budget Study for San Francisco Bay, February 29, 1992 that was prepared by Ogden Beeman & Associates, Inc, and Ray B. Krone & Associates, Inc. This study provides incomparable data on flows from all rivers of the estuary for up to 70 years, sediment inflows to the San Francisco Bay system, dredging records, bathymetric charts, and sediment budget calculations. It however does not appear to be a reference data source for this sand mining project DEIR which is too bad.

Generally speaking Bay scientists contend that, historically, half of the sediment carried into San Francisco Bay from the Delta continues out through the Golden Gate Bridge while one third is driven by wind and wave action into the South Bay. Though from 1955 to 1990 this averaged out 7.88 million cubic yards of sediment per year, by 1992, in consideration of State water diversions, annual estimate was 5.93 million cubic yards. It would seem essential for this DEIR to determine the volume of sediment carried into San Francisco Bay at present levels of water diversion and at anticipated ten and twenty year future diversions levels as base inflow on which to base an assessment of mining extraction tonnage that can be supported by the estuary system.

Based on the 1990 5.93 million cubic yards of sediment carried into the Bay, that would mean that half the volume should pass out through Golden Gate, a third would be driven by wind and waves along the Alameda shore and into South Bay, and a remaining one-sixth or one million cubic yards would be left in Central Bay. The proposed volume of bay sands to be mined according to leases applied for, as referenced in the DEIR, is triple this amount. This may be a simplistic summation of sediment appropriation in San Francisco Bay, but it beggars the validity of sediment volumes that this DEIR proposes to lease to mining interests for decades.

J-1

J-2

The historical beneficial uses that are critical to sustain in San Francisco Bay are the native fisheries, marsh and tidal habitat to support resident and migratory birds of the Pacific Flyway, drinking water supplies for 30 million California residents and water to sustain agriculture for Central Valley and most of the State. Shipping channels to Sacramento and Stockton should be able to be accomodated though the 35 foot depth increase may come into conflict with a water supply Delta bypass tunnel.

J-3

Coordination with these projects is not fully addressed in this DEIR, and, I feel, in this it does not fully adhere to CEQA Law and Guidelines. All the aforementioned beneficial uses can't be accomodated anywhere else in California but in San Francisco Bay. It is essential that this major West Coast estuary be conserved by appropriate industry in a sustainable level of health.

The sand mining leases adjacent to confluence of the San Joaquin and Sacramento Rivers, can have serious detrimental impacts on the fishery in those highly nutrient waters. Here also sand mining activities may be cricically depleting sediment loads essential to the Salt Pond Restoration program by Coastal Conservancy and the US Fish & Wildlife Service for conversion of subsided salt ponds into sustainable tidal marshes of the South Bay. State and Federal Agencies need to be coordinated with more thoroughly in this regard. The Stockton deep water shipping channel will impact this sensitive region as well. Afraid I do not believe any leases should be renewed for sand mining in this Suisun Bay channel.

J-4

J-5

J-6

As believe I would like to send this off to you at this time and submit pertinent background data after thought and rereading of the documents, please accept these comments in their present draft.

Thank you for all consideration of concerns on this long term and high impact project.

Sincerely,

Libby Lucas,  
174 Yerba Santa Ave.,  
Los Altos, CA 94022

From: JLucas1099@aol.com [mailto:JLucas1099@aol.com]  
Sent: Monday, January 02, 2012 4:17 PM  
To: Huitt, Christopher@SLC  
Subject: San Francisco Bay and Delta Sand Mining Project FDEIR - continuation of comment

Christopher Huitt, Project Manager  
California State Lands Commission  
100 Howe Avenue, Suite 100-South, Sacramento, CA 95825

January 2, 2012

RE: San Francisco Bay and Delta Sand Mining Project FDEIR - November 2011

Dear Christopher Huitt,

As a continuation on my comments submitted two days ago, I would like to elaborate on why I stress that a San Francisco Bay and Delta Sand Mining FDEIR needs to incorporate the definitive Sediment Budget Study data for San Francisco Bay with appropriate update for the intervening 20 years and projections to year 2050.

As hydrologists and soil conservation scientists will testify, it is pulse flows of a river or stream that carry the sediment load, and therefore it is such detail of base flow data (not average yearly flow) of estuary tributaries passing through Delta and into San Francisco Bay that need be considered in assessing a sediment budget for San Francisco Bay. Such a sediment budget is needed to determine if sand mining is even sustainable.

If one references Table 2 of this San Francisco COE 1992 Sediment Budget Study for San Francisco Bay one notes that for 1965 through 1967 the annual sediment inflow to San Francisco Bay was estimated to be 11.1, 10.5, and 10.0 million cubic yards which dropped to 8.63 m cy (for period 1909-66) in USGS/Porterfield 1980 study, and to 7.88 m cy (for period 1955-90) in Beeman 1992 study. In Table 3, with 1990 water project operating conditions, annual sediment inflow to San Francisco Bay is estimated to be 5.93 m cubic yards. Does the intervening 20 years now bring the in-Bay annual sediment load budget to 3.93 million cubic yards?

J-7

This steady and dramatic decline in sustaining volumes of sediment that are being bourne through Delta into San Francisco Bay and out through the Golden Gate cannot be ignored. Sediment recruitment is essential to maintain health of existing marshes throughout Bay and Estuary and for restoring extensive South Bay salt ponds. The Marine sanctuary outside Golden Gate needs sandy sediment, as do beaches and cliffs of adjacent shoreline. Could diminished Estuary sands contribute to recent erosion at Devil's Slide or Pacifica?

Global warming and rising bay and ocean levels may be cited as contributing factors in these aforementioned "natural phenomena" but they need to be assessed in this FDEIR as feasible cumulative effects. And verified flow data for present conditions and for future water conveyance and storage projects need inclusion before sand mining leases extensions in Central Bay and Delta should even be considered for renewal.

J-8

The Delta mining permits, are of special concern in that they may be contributing to conditions for erosion of an already fragile levee system and to degradation of benthic nutrient integrity of critical habitat at confluence of Sacramento and San Joaquin Rivers, for the Delta Smelt and Chinook Salmon. Cumulative effect analysis needs to include findings and recommendations of the recently released Suisun Marsh Habitat Management, Preservation and Restoration Plan, Bay Delta Plan fisheries element regarding this particular area, the State Department of Water Resources details of dire status of levees and infrastructure along Sacramento and San Joaquin river system, and sediment removal facilities considered in through-Delta isolated conveyance plans.

J-9

On P 3-10 there is a chart for Maintenance Dredging Work Windows which is an important consideration for permitting of any of these sand mining leases, but such a consideration should only come after conclusive data has been submitted that there exists surplus sand sediment to be mined. An updated Bay sediment budget might prove at what reduced volume mining is feasible without destabilization of estuary ecosystems.

J-10

Bathymetric analysis is helpful to ascertain what past practices have resulted in for Bay subtidal wetlands and shoals but is no help in evaluating the full spectrum of flow conditions that have contributed to bayscape. As one looks at seventy years of estuary monthly flow records of 1922 to 1991 one sees that almost sixty percent of the time no measurable acre-feet of flow reaches San Francisco Bay. Average flow computation and modeling does not begin to assess the dynamics of the natural estuary system.

J-11

It is my contention that the State Lands Commission has a mandate from the State of California to protect the Public Trust and as such, needs to coordinate with all agencies, state and federal, in their ongoing plans and projects that affect historic and present day beneficial uses of San Francisco Bay and Delta. This would include California Department of Fish and Game, US Fish & Wildlife Service, US Army Corps of Engineers, BCDC, California Department of Water Resources, Coastal Conservancy, Marine Fisheries, NOAA et al.

J-12

I think this probably conveys majority of concerns with proposed San Francisco Bay and Delta Sand Mining Project, except maybe to take issue with DEIR claim that this is a green alternative to importing sand from distant sources. Sand shipped into our region weighed against the natural dispersal of sand and sediment to estuary riparian corridors, bay marshes, shoals and wetlands, as well as shoreline beaches and bluffs at the cost of accomplishing these latter natural conditions by man made efforts, is no challenge as an alternative.

J-13

Thank you for your kind consideration of this comment continuation and these concerns.

Libby Lucas  
174 Yerba Santa Ave.,  
Los Altos, CA 94022

## RESPONSE TO COMMENT SET J: LIBBY LUCAS

**J-1** With regard to cumulative impacts on sediment transport and coastal morphology and historic changes to the Bay's sediment budget, please see the discussion of cumulative effects on sediment transport and coastal morphology, in Section 4.3, Hydrology and Water Quality; Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology; and the response to Comment I-6. The commenter's preference for the No Project Alternative is noted.

**J-2** More recent studies, including ones reviewed for this Environmental Impact Report (EIR), indicate major changes to the Bay's sediment budget over the past several decades. The 1992 study by Ogden Beeman Associates and Krone Associates referenced in the comment is 20 years old, and sources more recent were used in this EIR to characterize current conditions. Please see the discussion of sediment dynamics in Section 4.3, Hydrology and Water Quality.

The volume of Bay sands to be mined, as noted in the EIR, is likely much larger than the amount of sands that will be deposited in Central Bay. This is confirmed by the results of the Bathymetric and Hydrodynamic Study performed for the EIR (Appendix G), and supplemental modeling analyses performed in preparation of this Final EIR. Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology. During the period 1997-2008, less than 5 percent of the sand mined from the Central Bay lease areas was replenished. As noted in the response to Comment H-11, mineral extraction is not generally considered a "sustainable" practice, but this does not necessarily lead to a conclusion that it will result in a significant impact under the California Environmental Quality Act (CEQA). Please see also Master Response 3, Mineral Resources Impacts Significance Conclusions.

**J-3** Please refer to the cumulative impact analysis contained in EIR Section 3.0, Alternatives and Cumulative Projects, including Table 3-3, which includes a list of cumulative projects considered in the analysis.

**J-4** Potential effects of the Project on fisheries are considered in EIR Section 4.1, Biological Resources, Environmental Setting, Pelagic Fish Community (please see page 4.1-4).

**J-5** The coarse-grained sand targeted by the Project Applicants differs from the finer-grained dredge spoils that are used in Bay and Delta marsh restoration projects. The potential for the Project to affect sediment transport and deposition is considered in Impact HYD-2 in Section 4.3, Hydrology and Water Quality, and is found to be less than significant. The San Francisco Bay to Stockton Navigation Improvement Project is considered in the cumulative impact analysis in the EIR. Please see Table 3-3 in Section 3.0, Alternatives and Cumulative Projects.

**J-6** The commenter's opposition to Project approval is noted.

**J-7** Please see the response to Comment J-2.

High flows were included in the hydrodynamic modeling conducted for this EIR, including the extreme winter 1996-1997 flows (please see Appendix G). The sediment transport numerical modeling simulations indicated large amounts of sediments (medium sands) moving from the rivers and down through the Delta, with some reaching to the Central Bay and some exiting the Golden Gate. The model showed only a very small amount being deposited in the mining holes, which is explained by the limited duration of periods of high flows and the limited supply of river sediment. The bathymetric analysis (Appendix G), which examined actual bathymetry changes in Central Bay between 1997-2008, was consistent with the modeling results, and showed that less than 5 percent of the sand mined from the Central Bay during this period was replenished. Barnard and Kvittek (2010) came to the same conclusion, using the same data sets. Please see also Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.

Regarding the historical decline in the volume of sediments being transported into the Bay and Delta, please see the discussion of sediment dynamics and the discussion of cumulative effects on sediment transport and coastal morphology in Section 4.3, Hydrology and Water Quality, of the Final EIR.

Regarding the potential for the Project to contribute to changes in coastal sediment transport and morphology, please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology, and the response to Comment I-6.

**J-8** CSLC staff is unaware of any scientific evidence showing a connection between global warming and sea level rise on the one hand, and the availability for mining or transport of sand on the other. As noted in Section 4.3, Hydrology and Water Quality, the construction of dams and engineered channels on streams tributary to the Bay and Delta has affected flow and sediment transport dynamics.

**J-9** The potential for the Project to affect currents, salinity, and sediment transport and deposition is examined in the Hydrodynamic and Bathymetric Study contained in Appendix G, and Impact HYD-2 in Section 4.3, Hydrology and Water Quality. Such effects are found to be less than significant.

**J-10** The Long Term Management Strategy (LTMS) Maintenance Dredging Work Windows figure (Figure 3-1 in Section 3.0, Alternatives and Cumulative Projects) referred in the comment is provided as part of the definition of the LTMS Management Plan Conformance Alternative. Please see the response to Comment J-2.

**J-11** Please see the response to Comment J-7.

**J-12** The CSLC staff has consulted with the cited agencies throughout the environmental review process.

**J-13** The commenter's opinion that importing sand, instead of mining it locally, may be environmentally preferable is noted.

From: orville magoon [mailto:omagoon@sbcglobal.net]  
Sent: Wednesday, November 16, 2011 2:22 PM  
To: Huitt, Christopher@SLC  
Subject: EIR San Francisco Bay....CSLC EIR #742

Dear Mr. Huitt:

Comments:

1. As described in subject report, proposed sand mining could have a negative or erosive action on the San Francisco Bar Shoal, the coast of the City of San Francisco, and probably the City of Pacifica and adjacent coast.

(See Conclusion page 4.3-40. and supporting paragraphs.)

2. If the described sand mining just east of the Golden Gate Bridge is actually undertaken, then the California State Lands Commission could be liable for damages to the coasts of the City of San Francisco and the City of Pacifica.

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K-1

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Cheers,

Orville T. Magoon

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415-931-1842

[omagoon@sbcglobal.net](mailto:omagoon@sbcglobal.net)

**RESPONSE TO COMMENT SET K: ORVILLE MAGOON**

- K-1** The EIR finds that the Project's potential to have a direct or cumulative significant impact on coastal morphology is less than significant. Please see Master Response 1, Project Impacts on Sediment Transport and Coastal Morphology.