6.0 OTHER REQUIRED CEQA SECTIONS AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

6.1 INTRODUCTION TO ADDITIONAL CEQA REQUIREMENTS DISCUSSED IN THIS SECTION

This Section discusses broader questions posed by the California Environmental Quality Act (CEQA). These include significant effects that cannot be mitigated to less-than-significant levels, the balance between short- and long-term uses of the environment, and growth-inducing impacts.

6.2 SIGNIFICANT ENVIRONMENTAL EFFECTS OF PROPOSED PROJECT THAT CANNOT BE AVOIDED AND CANNOT BE MITIGATED TO A LESS-THAN-SIGNIFICANT LEVEL

Section 4.0, Environmental Analysis, presents the analysis of the potential environmental impacts associated with the proposed San Francisco Bay and Delta Sand Mining Project (Project) over the next 10 years. Effects on all potentially affected environmental resources were evaluated to determine any impacts that would remain significant after mitigation. Implementation of all mitigation measures (MMs) identified in Section 4.0, Environmental Analysis, would reduce most significant impacts to less-than-significant levels. The Project would result in a significant impact to delta smelt and longfin smelt as a result of entrainment and mortality during sand mining operations that impacts adult life stages of the delta smelt and longfin smelt, thereby exceeding the established significance thresholds stated in Section 4.1.3.

6.3 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

The State CEQA Guidelines (§ 15126.2, subd. (d)) require that an EIR evaluate the growth-inducing impacts of a proposed project. A growth-inducing impact is one that could foster economic or population growth, or the construction of additional housing, either directly or indirectly, or remove obstacles to population growth.

The environmental effects of induced growth are secondary or indirect impacts of a project. Growth can result in significant increased demand on community services and public service infrastructure; increased traffic, noise, degradation of air and water quality; and conversion of agricultural land to urban uses. Based on the considerations above, assessing the growth-inducement potential of a project such as the San Francisco Bay and Delta Sand Mining Project involves answering the question:

Would the proposed sand mining operation remove an obstacle to growth and thus directly or indirectly support more economic or population growth or residential construction in the surrounding environment?

A variety of factors influence new development or population growth in the San Francisco Bay region, including economic conditions of the region, adopted growth management policies in the affected communities, and the availability of adequate infrastructure. Although sand mined from the Bay and Delta is used in construction and infrastructure projects, construction sand is available from other regional and imported sources. Given the availability of other sources of sand, the availability of sand (or lack thereof) is not considered an impediment to growth nor a limiting or key factor in decisions to develop in or relocate to the Bay Area. The absence of sand from the Bay and Delta lease parcels would not constrain future development; therefore, the Project would not remove an impediment to growth.

As discussed in Section 5.0, Socioeconomic Effects and Environmental Justice, no changes to levels of employment for the sand mining or offloading facility operations are proposed or anticipated. Therefore, the Project would not foster employment growth. Given the nature and limited size of the mining operations, any changes in crew sizes on the tugs or barges would be minor, and any increase in jobs would likely be accommodated by the local labor pool. The Project would continue sand mining operations at levels similar to current operations and would use existing offloading facilities used for that purpose. The Project would not require or result in the construction of new infrastructure or increase demand for public services.

In summary, the Project would not remove an impediment to economic or population growth or otherwise induce or foster population or employment growth in the region. Therefore, the Project would not result in growth-inducing impacts in the surrounding area and would not be considered growth-inducing according to CEQA.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines (§ 15126.6, subd. (d)) require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. Section 15126.6, subdivision (e)(2) further states, in part, that "*If the environmentally superior alternative is the "No Project" alternative*, the EIR shall also identify an environmentally superior alternative among the other alternatives." (Emphasis added.) Table 6-1 compares the proposed Project with each of the alternatives evaluated in this document, including the No Project Alternative.

The No Project Alternative could avoid most of the significant impacts of the Project, including Impact BIO-8. This alternative would, however, require the Bay Area construction industry to acquire sand from other, likely more distant sources, with consequent increases in air emissions, including greenhouse gases (GHGs) (Table ES-4). Therefore, the No Project Alternative is not considered environmentally superior to the other alternatives or to the proposed Project. Both the LTMS Conformance Alternative and the Clamshell Dredge Mining Alternative could reduce or avoid some impacts of the Project, but also may result in significant unavoidable air quality impacts.

The Reduced Project Alternative would reduce the intensity of the Project's significant impacts, and would likely render mitigation measures easier to implement and achieve. The total amount of material mined would be 1,346,267 cy/yr, which is approximately 694,000 cubic yards less than is proposed under the Project. Even though the Reduced Project Alternative may result in significant unavoidable air quality impacts associated with importing sand and obtaining sand from Bay Area quarries, the overall intensity of impacts would be less than the other alternatives. Therefore, the Reduced Project Alternative is considered the Environmentally Superior Alternative.

Table 6-1. Summary of Environmental Impacts for the Proposed Project and Alternatives

Impact No.	Impact Description	Impact Classes*				
		Proposed Project	No Project	LTMS Conformance	Clamshell Dredge Mining	Reduced Project
Section 4.1 Biological Resources						
BIO-1	Potential displacement of special status species.	III	NI	III	III	III
BIO-2	Potential impacts to fish and wildlife species from increased noise.	III	NI	III	III	III
BIO-3	Potential sand mining impacts on benthic habitat, infauna, epifauna, and foraging habitat.	III	NI	III	III	III
BIO-4	Discharge of suspended sediments may potentially release contaminants into waters that affect plankton and wildlife species.	III	NI	III	III	III
BIO-5	Disturbance of sediments at the seafloor could result in increased turbidity, suspended sediment concentrations, and release of contaminants that potentially impact plankton and wildlife species.	III	NI	III	III	III
BIO-6	Sand mining could result in smothering or burial of, or mechanical damage to, infauna and epifauna, and reduced fish foraging.	II	NI	II	II	II
BIO-7	Sand mining will cause entrainment and mortality of common and managed aquatic species.	III	NI	III	III	III
BIO-8	Regular operation of sand mining activities will cause entrainment and mortality of delta and longfin smelt.	**I**	NI	**I**	III	**I**
BIO-9	Green sturgeon, Chinook salmon, and steelhead trout will be impacted during sand mining.	II	NI	II	III	II
BIO-10	Potential effects on fish movement and migration.	III	NI	III	III	III
Discussion: Under the No Project Alternative, sand mining in the Bay-Delta estuary would not continue and none of the impacts of the proposed Project on biological resources would occur. The LTMS Management Plan Conformance Alternative would have the same potential impact on the benthic community as would the Project, and MM BIO-6 would apply. This Alternative would avoid most of the Project's significant impacts on green sturgeon,						

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Impact No.	Impact Description	Impact Classes*				
		Proposed Project	No Project	LTMS Confor-mance	Clamshell Dredge Mining	Reduced Project
Chinook salmon, steelhead trout, and delta smelt because the LTMS is designed to protect special status species, and protective measures required by the 2006 NMFS conference opinion would remain in effect. However, because the LTMS does not address impacts on longfin smelt (this species was listed after the LTMS was adopted), the potential impacts of this Alternative on longfin smelt would be similar to the Project's, and MMs BIO-8a and 8b would apply; as with the Project, although this measure would reduce the severity of the impact on longfin smelt and delta smelt, it would not reduce the impact to less than significant. Although green sturgeon also is not included in the LTMS (it too was listed after the LTMS was adopted) the measures included in the 2006 NMFS conference opinion would reduce impacts on this species to less than significant. The potential impacts of the Clamshell Dredge Alternative on biological resources would generally be less than under the proposed Project. This Alternative would have a potential impact on the benthic community similar to the Project's and MM BIO-6 would apply; other impacts on biological resources would be less than the Project's, and would likely be less than significant, because this method of mining greatly reduces the potential for fish entrainment and fish are likely to avoid and not become entrapped in the clamshell bucket. Because the turbidity and suspended sediment characteristics of plumes from clamshell and suction head mining are similar, the effect of this Alternative on turbidity and suspended sediments would be similar to that of the proposed Project. The Reduced Project Alternative would reduce the severity of impacts on special status species (green sturgeon, Chinook salmon, steelhead trout, delta smelt, and longfin smelt) because it would reduce the permitted volume of mining. However, because impacts on benthic habitat and some take of special status species would still occur, this Alternative would, like the Project as proposed, have significant impacts on the benthic community and special status species, and MMs BIO-6, BIO-8a, BIO-8b, BIO-9a, and BIO-9b would also apply to this Alternative. As with the proposed Project, Impact BIO-8 would remain significant and unavoidable.					
Section 4.2 Mineral Resources						
MIN-1	Loss of availability of a known mineral resource.	III	III	III	III	III
MIN-2	Loss of availability of a locally-important mineral resource recovery site.	III	III	III	III	III
Discussion: The No Project Alternative would have a less-than-significant impact on the availability of known mineral resources in the Bay and Delta area. The impact of the LTMS Conformance Alternative, Clamshell Dredge Mining Alternative, and Reduced Project Alternative on mineral resources would be the same as that of the proposed Project (less than significant), because they would not limit availability of or access to a known mineral resource deposit.						

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		Proposed Project	No Project	LTMS Conformance	Clamshell Dredge Mining	Reduced Project
Section 4.3 Hydrology and Water Quality						
HYD-1	Potentially adverse effects on water quality.	III	NI	III	III	III
HYD-2	Potentially adverse effects on the hydrology and geomorphology of the Bay and Delta.	III	NI	III	III	III
Discussion: The No Project Alternative would have no hydrology or water quality impacts because sand mining in the Bay-Delta estuary over the next ten years would not occur. Although the LTMS Management Plan Conformance Alternative could cause incrementally greater short-term water quality effects associated with the overflow plume, since more mining would occur within the LTMS work windows, the impact of this alternative would be less than significant, as would the proposed Project. Because the turbidity and suspended sediment characteristics of plumes from clamshell and suction head dredging are similar, the impacts of the Clamshell Dredge Mining Alternative on water quality would be similar to the less-than-significant impact of the proposed Project. The impacts of the LTMS Conformance and Clamshell Dredge Mining Alternatives on hydrology and geomorphology would be similar to the Project's less-than-significant impacts since the same amount of sand would be mined under these alternatives. The Reduced Project Alternative would reduce the severity of the Project's less-than-significant impacts on water quality and hydrology because this alternative would entail less discharge of turbid water to the Bay and Delta and the removal of less sediment from the seafloor than would the Project.					
Section 4.4 Hazards and Hazardous Materials						
HAZ-1	Potential for accidental leak or spill of hazardous materials.	II	NI	II	II	II
Discussion: The No Project Alternative would have no potential for a hazard to the public or the environment related to a release of hazardous materials. The other alternatives would have the same potential impact as the proposed Project, though with the Reduced Project Alternative, the potential for accidental spill or release of hazardous materials would be reduced.						

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Impact No.	Impact Description	Impact Classes*				
		Proposed Project	No Project	LTMS Conformance	Clamshell Dredge Mining	Reduced Project
Section 4.5 Air Quality						
AIR-1	Emissions of criteria pollutants.	III	**I**	**I**	**I**	**I**
AIR-2	Potential impacts on climate change.	II	**I**	II	**I**	**I**
AIR-3	Potential health risk from diesel particulate matter.	III	**I**	III	**I**	**I**
AIR-4	Potential odor impacts.	III	III	III	III	III

Discussion: The No Project Alternative would likely have greater impacts than the proposed Project, since the sand that would be mined from the Bay under the proposed Project would likely be replaced with sand mined at land-based quarries and sand transported from more distant sources. Assuming the same amount of sand is brought to market as proposed for the Project, with half coming from local quarries and half from British Columbia, the No Project Alternative would result in substantially higher emissions of particulate matter (PM_{10}) compared to the Project. This would be a significant impact. Total nitrogen oxides (NO_x) emissions for the No Project Alternative scenario would be higher than under the Project when ocean-going vessel emissions are counted; however, emissions within the Bay Area Air Basin would be lower under this alternative, as most emissions would occur outside of the Bay Area Air Basin. The No Project Alternative would result in substantially higher emissions of GHGs compared to the Project, mostly due to the assumed ocean transport of approximately half of the sand to the Bay Area from British Columbia. This would be considered a significant impact. Since the offloading facilities could continue to be used to receive, stockpile, and ship sand or other aggregate materials, the air emissions in the vicinity of those facilities under the No Project Alternative are assumed to be similar to the Project's. Criteria pollutant and GHG emissions would be significant and unavoidable.

The LTMS Management Plan Conformance Alternative would have annual emissions of criteria pollutants, GHGs, and Toxic Air Contaminants (TACs) similar to the Project, since this alternative would allow for the same volume of sand to be mined per year. However, during the LTMS work windows, this alternative would likely have higher criteria air pollutant emissions that could exceed the daily emission thresholds and result in a potentially significant adverse impact, since mining activities would be more intensive during the LTMS work windows. The Clamshell Dredge Mining Alternative would result in greater, potentially significant and unavoidable, impacts due to emissions of criteria air pollutants, GHGs, and TACs because this alternative would employ a less efficient mining method to extract the same volume of sand.

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		Proposed Project	No Project	LTMS Confor-mance	Clamshell Dredge Mining	Reduced Project
Similar to the No Project Alternative, the Reduced Project Alternative would likely have greater impacts than the proposed Project, since it is assumed that sand would be mined from the Bay only up to the volume of the baseline scenario and that the remainder of sand would be replaced with sand mined at land-based quarries (e.g., half from local quarries and half from British Columbia). Consequently, the Reduced Project Alternative would result in higher total emissions of PM_{10}, NO_x, and GHGs than the Project as proposed. Within the Bay Area Air Basin, PM_{10} emissions would be higher, and NO_x emissions would be lower than with the Project. The increase in PM_{10} in the Bay Area Air Basin under the Reduced Project Alternative would be significant. The Reduced Project Alternative would also result in higher emissions of GHGs compared to the Project, mostly due to the assumed ocean transport of some sand to the Bay Area from British Columbia. This would be a significant impact. Since the offloading facilities would continue to be used to receive, stockpile, and ship sand or other aggregate materials, air emissions in the vicinity of those facilities under the Reduced Project Alternative are assumed to be similar to the Project's. In general, however, increased production at land-based quarries may lead to higher health risks, since toxic air contaminant emissions from land-based quarries may be more likely to impact residential developments and other sensitive receptors than offshore mining activities and transportation; such effects could be significant and unavoidable. Since the increase in GHG emissions associated with this alternative would be from sources beyond the control of the CSLC, MM AIR-2 would not be applicable, and the impact would be significant and unavoidable.						
Section 4.6 Cultural Resources						
CUL-1	Inadvertent discovery of historical resources or "unique archaeological resources."	II	NI	II	II	II
CUL-2	Inadvertent discovery of paleontological resources.	III	NI	III	III	III
CUL-3	Inadvertent discovery of human remains.	II	NI	II	II	II
Discussion: The No Project Alternative would have no potential to disturb unrecorded cultural resources because no sand mining in the Bay and Delta would occur. Because mining would occur within the Central Bay and Delta under all the other alternatives, they would have the same potential impacts as the proposed Project.						

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		Proposed Project	No Project	LTMS Confor-mance	Clamshell Dredge Mining	Reduced Project
Section 4.7 Land Use and Recreation						
LU-1	Incompatible land uses.	III	III	III	III	III
LU-2	Incompatible recreational uses.	III	III	III	III	III
LU-3	Residual impacts on recreation resources due to interference with sand replenishment at down-current beaches.	III	NI	III	III	III
LU-4	Conflicts with regional or local land use plans and policies.	II	NI	II	II	II

Discussion: The No Project Alternative would have no impact on sand replenishment at down-current beaches and would not conflict with regional and local land use plans and policies of cities and counties around the Bay, because no sand mining would occur within the waters of the Bay or Delta. Other impacts of this alternative would be similar to or incrementally less than the Project's less-than-significant impacts.

Although the LTMS Management Strategy Alternative would have an incrementally greater potential to conflict with recreational uses during the LTMS work windows, due to the time of year the work windows occur and the level of mining intensity during the work windows, conflicts between sand miners and recreational users would be less than significant, as they would be under the Project.

The Clamshell Dredge Mining Alternative would have an incrementally greater potential to conflict with recreational uses and to conflict with applicable land use plans and policies, due to the longer period of time required to mine the same volume of sand; however, conflicts between sand miners and recreational users would be less than significant, as they would be under the Project, and mitigation measures identified for the Project, which would apply to this alternative, would reduce potential conflicts with plans and policies to a less-than-significant level.

The Reduced Project Alternative would reduce, but not eliminate, the potential for conflict with applicable land use plans and policies; mitigation measures identified for the Project, which would apply to this alternative, would reduce this impact to a less-than-significant level.

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