Sediment Quality Obj.
Deadline: 11/28/06 5pm

City of Morro Bay

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Ms. Tam M. Doduc
Board Chair
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

November 27, 2006

Re: City of Morro Bay Comments/Concerns on Sediment Quality Objectives

Dear Chair Doduc and Board Members,

On behalf of the City of Morro Bay staff, we are expressing our comments and concerns with the Sediment Quality Objectives (SQOs) that are being considered by the State Water Resources Control Board (SWRCB) in the CEQA Scoping Meeting Informational Document - Development of Sediment Quality Objectives for Enclosed Bays and Estuaries (August 17, 2006). This transmittal letter forwards our technical comments prepared by Dr. Douglas A. Coats of Marine Research Specialists (attached).

We are most concerned about the implications this program may have on our dredging, structural marine maintenance or improvements, storm water programs and wastewater discharge programs. In fact all of these activities are already being heavily regulated under several separate and complex permitting and approval programs, not the least of which include the requirements under CEQA and NEPA provisions. In that regard, it is equally important for the SQO development to undergo rigorous CEQA analysis, particularly with respect to a thorough well-documented evaluation of actions that would be forced by SQO implementation. Morro Bay is a small coastal community of 10,000 that is already struggling to meet the daily demands of a functioning harbor, wastewater treatment plant, storm water management program, and all other City services in an increasing complex and costly regulatory environment. The impacts to small communities like Morro Bay to even evaluate and participate in the consideration of these programs, let alone administer them, are significant and compromise all aspects of providing essential City services.

The SQO informational document does not provide sufficient insight into how the SQOs will be implemented for various specific actions that may be taken in each of the widely varying bays and estuaries of California. Because of the potentially profound impact on construction, dredging, and discharge activities conducted by communities near enclosed bays and estuaries, such as the City of Morro Bay, it is imperative that the draft Substitute Environmental Document (dSED) explicitly delineate every aspect of the proposed SQO implementation. The dSED should also provide sound rationale for all the components of the SQO implementation plan. In particular, the City is concerned that policies adopted for San Francisco and San Diego Bays, which is the focus of attention in the informational document, will be inappropriately adopted statewide. In that regard, the City urges the State Board Staff to build flexibility into the SQO implementation plan, so that it can adapt to the specifics of each proposed project or action, and so that it will consider the nature of the particular water body where that action may be taken. The following are some examples of site-specific or project-specific considerations that are relevant to water bodies such as Morro Bay.

- Activities within Morro Bay are already heavily monitored and regulated by several agencies and programs, including the California Coastal Commission, the State Lands Commission, California State Parks, the Regional Water Quality Control Board, the Army Corps of Engineers, and the U.S. EPA (through the National Estuary Program). Another layer of bureaucratic oversight or additional monitoring is likely to be redundant and

unnecessary. SQO requirements must be carefully integrated into the existing monitoring and regulatory programs within each individual bay and estuary.

- Historical data has demonstrated that sediments within Morro Bay are comparatively devoid of chemical contaminants due to the lack of major industry within the watershed. The dSED should specify exactly how monitoring requirements can be adapted to this and other well-studied bays and estuaries where surficial sediments are known to be relatively benign.

- The likelihood for potential impacts from contaminated sediments strongly depends on the nature and duration of the proposed activity. For example, the replacement of single pier piling should not be subject to the same monitoring requirements as large-scale dredging projects. Consequently, the SQOs should be implemented in an adaptive manner that allows local regulators some flexibility in the use of professional judgment, for example, to identify "low threat" activities based on available site-specific and project-specific information. This would be analogous to the latitude currently afforded to Regional Board Staff in issuing 401 Certifications.

In closing, we believe the impacts to a wide range of potential programs and activities that are conducted by a small community the size of Morro Bay could be potentially devastating. In the simplest terms, small communities like ours do not have the financial or staffing resources to comply with these complex regulations. This means other critical and essential public services will be directly impacted if the City is required to implement the SQOs. As discussed above, there are already several underlying programs and protocols that have been in place for years that are currently regulating all of these activities.

Thank you for the opportunity to provide our brief comments and raise these critically important issues. We would also like to reserve the right to conduct further analysis and provide additional comments when more accurate and complete information has been provided, particularly as it relates to the CEQA requirements for analyzing the effects of implementing the project, alternatives analysis, and cumulative effects of regulatory programs. Please feel free to contact Dr. Douglas Coats on any of the technical issues raised in the attached comments, or either of us if you have any general questions or would like additional information.

Sincerely,

Bruce Ambo, AICP
Public Services Director

Rick Algert,
Harbor Director

cc: Mayor and City Council
Robert Hendrix, City Manager
Rob Schultz, City Attorney
Bruce Keogh, Wastewater Division Manager
Rachel Grossman, Associate Planner
Douglas Coats, Marine Research Specialists

Attachment

1. November 3, 2006, Technical Comment Letter from Dr. Douglas Coats

marine research specialists
3140 Telegraph Road, Suite A · Ventura, CA 93003 · (805) 644-1180

Mr. Bruce Ambo
Public Services Director
City of Morro Bay
955 Shasta Avenue
Morro Bay, CA 93442

3 November 2006

Reference: Comments on the Informational Document prepared to Support Proposed Sediment Quality Objectives (SQOs) for Enclosed Bays and Estuaries of California[1]

Dear Mr. Ambo:

Pursuant to your request,[2] we have reviewed the referenced scoping document on behalf of the City of Morro Bay. Based on that review, the following recommendations are provided for submission to the State Water Resources Control Board (SWRCB). The recommendations pertain to technical aspects of SQO development, and to the proposed process to implement the objectives. We request that the SWRCB staff consider these recommendations during preparation of the draft Substitute Environmental Document (dSED). Recommendations 1 though 4 pertain to the credibility of the overall program, namely, suggested improvements in the analytical techniques used to establish and evaluate the SQOs. Together, they indicate that the development and acceptance of the SQOs could benefit from the application of more rigorous statistical methods. Subsequent comments and recommendations point to much needed clarification of the proposed implementation plan, and its applicability to the sediments within Morro Bay in particular.

1. **State the target risk levels for committing Type-I and Type-II errors in SQO assessments.** Specification of these two statistical error rates is essential for the evaluation of every aspect of SQO development, and for subsequent application of the SQOs. Type-I errors, that of a generating a false alarm, would arise when impacts are mistakenly ascribed to conditions exceeding an SQO. The parties responsible for cleanup, for example, would be concerned about setting the risk levels for Type-I errors too high. Conversely, minimizing the risk of generating Type-II errors, wherein a meaningful impact is missed, would be important to the public trustees of the environment

   a) In effect, specification of these two competing error rates quantifies the phrase "*…adequate margin of safety...*" in the Water Code's definition of an SQO.[3] Thus, to some degree, establishing the relative levels of the two error types is a matter of policy; for example, decisionmakers need to decide whether the two affected parties should be subject to the same risk, or if not, what the relative levels of risk should be.[4] However, establishing the absolute risk levels requires insight into database variability, so that the error rates are not set so low that the resulting data requirements are unrealistic. In contrast to policy decisions about relative risks, establishing absolute risk levels requires technical

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[1] State Water Resources Control Board (SWRCB). 2006. CEQA Scoping Meeting Informational Document. Development of Sediment Quality Objectives for Enclosed Bays and Estuaries. State Water Resources Control Board, Division of Water Quality. Dated August 17, 2006. http://www.waterboards.ca.gov/bptcp/docs/draft_sqo_scopingdoc081706.pdf (Last accessed on 29 October 2006).

[2] Ambo, B. 2006. Electronic Mail from Mr. Bruce Ambo, to Dr. Douglas Coats, Senior Oceanographer, Marine Research Specialists (MRS) on 6 October 2006 authorizing a technical review of the proposed sediment quality objectives.

[3] Water Code Section 13391.5 defines an SQO as "*…that level of a constituent in sediment which is established with an adequate margin of safety, for the reasonable protection of beneficial uses of water….*"

[4] Identifying the relative seriousness of committing Type I compared to Type II errors is discussed on Page 5 of Cohen, J. 1988. Statistical Power Analysis for the Behavioral Sciences. Second Edition. Lawrence Erlbaum Associates, Publishers. New Jersey.

input. In particular, the oft-cited "*95% confidence level*"[5] that is usually applied to laboratory experiments, wherein many samples are easily obtained, is virtually unachievable in the marine or estuarine environment without unacceptable sacrifices in the power to detect impacts (high Type-II error rates).

b) Regardless of the difficulties in establishing these target error rates, their specification is necessary to the evaluation of all aspects of the SQO development and its implementation. At a minimum, the error rates determine the number of samples that are required to evaluate compliance with the SQOs. Despite including a brief definition of the Type-II (beta) error rate in the glossary, any specification of this, or the Type-I error rate (alpha confidence level) was conspicuously absent from the informational document, and from its supporting technical documents. They are a fundamental precept of all impact analyses and cannot be neglected in the dSED.

2. **Apply more rigorous and comprehensive statistical analyses to establish, support, and apply the multiple lines of evidence approach** [Section 2.18 on Pages 27 through 30]. Application of canonical correspondence analyses (CCA)[6,7] or meta-analyses[8] to the derivation of SQOs would lend much needed credence to the SQOs. The proposed SQOs already partially rely on multivariate ordination techniques to establish the potential for impacts to the benthic community. Specifically, benthic response indices, based on principal component analyses (PCA), were used to distill complex information about infaunal communities into succinct indices. These indices allow individuals with limited understanding of ordination analysis to evaluate the quality of individual benthic samples. However, the CCA technique is a far more robust and widely used method for assessing the relationship between biological communities and stressors. In addition, there are other statistical techniques, such as meta-analysis, that can also simultaneously accommodate data from all aspects of the SQO determination, including benthic infauna, chemical concentrations, and bioassays. The SQO analysis should utilize one or more of these more-rigorous, all-encompassing statistical techniques.

   a) The currently proposed SQO approach interrelates biological indices, effects levels, contaminant concentrations, environmental variables, bioassays, and bioaccumulation data, using a series of tabular decision matrices that do not lend themselves to an all-encompassing quantitative evaluation. In particular, the statistical power of an SQO to detect site-specific impairment for a given sampling design is impossible to determine without explicitly quantifying all the cross-correlations, not to mention the statistical error rates described in Comment #1. CCA is designed to quantify these global relationships, as well as to provide an estimate of the statistical confidence in the results.[9]

   b) CCA obviates the need for the step-across procedure used in the Benthic Response Index (BRI) to correct for deficiencies in the principal component analysis (PCA). Specifically, CCA accommodates the much wider range in diversity that occurs among geographically divergent benthic communities. More importantly, it directly relates biological indices to the pertinent underlying environmental gradients, thereby distinguishing between changes in community structure that result from natural spatiotemporal changes from those induced by pollution. Consequently, the intricacies of the multiple lines of evidence approach used in the SQOs can be formalized, or at a minimum, better supported by CCA than PCA.

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[5] A 95% confidence interval represents a Type-I error rate of 5%.

[6] Jongman, R. H. G., C. J. F. ter Braak, and O. F. R. van Tongeren, editors. 1987. Data Analysis in Community and Landscape Ecology. Pudoc, Wageningen, The Netherlands.

[7] ter Braak, C. J. F., and I. C. Prentice. 1988. A theory of gradient analysis. Adv. Ecol. Res. 18:271-313.

[8] Hedges, L.V. and I. Olkin. 1985. Statistical methods for meta-analysis. San Diego: Academic Press.

[9] Traditionally, statistical confidence (viz., the *p*-value or the effective Type-I error rate) in multivariate analysis has been computed empirically through Monte Carlo (randomization) tests. However, analytical techniques have been developed for prospective power analyses of multivariate data that can be used in the design of sampling programs (See NOAA. 2003. Monitoring of Biological Recovery of Prince William Sound Intertidal Sites impacted by the Exxon Valdez Oil Spill: Sampling Effort in Assessments of Oil-Spill Impacts to Intertidal Organisms. NOAA Technical Memorandum NOS OR&R 12, August 2003.)

c) The mature field of onshore landscape ecology has a long history of successful applications of advanced ordination techniques in impact assessment. It has made comprehensive methods, such as CCA, de rigueur in all biological disciplines. From personal experience, this legacy precludes publication of the results of more rudimentary multivariate analyses in the peer-reviewed scientific literature, including marine ecology journals. Consequently, the lack of a global ordination analysis covering all the components of the SQO development poses an impediment for establishing the overall credibility of the SQOs within the scientific community.

3. **Normalize and transform physicochemical properties measured in bulk sediment samples.** Irrespective of the statistical analysis method used, normalization and transformation of bulk metal concentrations is necessary prior to correlation with infaunal community response. These procedures are commonly applied in assessments of benthic impacts, but there is no mention of them in the SQO informational document, or in its supporting technical documents. Normalization by percent fines, organic carbon, iron, and aluminum often reveal anthropogenic (human-induced) patterns that are otherwise masked by natural variability in background concentrations. In that regard, Appendix A includes percent fines and total organic carbon as required analytes, but the SQO implementation plan does not say what to do with them. That leaves one wondering whether the authors intended to specify some type of normalization of metals concentrations, but inadvertently left that step out of the SQO computation procedures. Regardless, the list of analytes in Appendix A does not include iron and aluminum, which are equally useful for tracking variations in ambient sediment properties. On a related note, many of the physicochemical properties measured in sediment samples need to be transformed to improve the normality of their probability distributions and the homogeneity of their variance, both of which are necessary for the application of most standard statistical tests.

4. **Investigate the influence of temporal variability within the SQO database.** Analyses of two decades of sediment data collected at shallow sites within northern Estero Bay have revealed large interannual fluctuations within the benthic community structure.[10] The amplitudes of these temporal fluctuations are typically much larger than the spatial differences across the bay at any given time. It is likely that similar, large, temporal fluctuations also occur within enclosed bays and estuaries along the California coast. As a result, determinations of habitat impairment using the proposed SQO approach could be significantly confounded if, for example, sediment samples were collected after a major El Niño event. In that case, community structure in the sediment samples is likely to be significantly altered compared to the baseline infaunal community used to establish the SQOs, resulting in a determination of impairment based on the benthic response index. In any regard, with the amount of attention devoted to the influence of regional infaunal differences on statewide SQOs, it seems prudent to also examine the importance of temporal changes.

5. **Clarify in the implementation plan that the initial (Phase I) SQOs apply only to enclosed bays rather than to estuaries, and provide a more discriminating definition of estuaries.** The recommended Alternative 3, in Section 2.2, does not appear to be reflected in the preliminary draft plan. Namely, that implementation of the SQOs will occur in two phases, with the initial phase only covering enclosed bays. In an apparent contradiction, Section 2.19 discusses interim measures to be applied to estuaries in Phase I. Moreover, the implementation plan [V.C.2] makes no mention of phased implementation, and simply states that chemistry and toxicity components will be applied in both bays and estuaries. Finally, for some water bodies such as Morro Bay, the difference between the appellations of "*Enclosed Bay*" and "*Estuary*" are not distinct, and consequently, the listing of place names under each category in Footnotes 2 and 3 of the draft implementation plan is subject to debate.

   a) **Morro Bay should be identified as an "*Estuary*" rather than an "*Enclosed Bay*"** [Footnotes 2 and 3 on Page 38]. Morro Bay is designated as an estuary by the U.S. EPA, and has been included in its National Estuary program. In addition, it is cited as an estuary by the Central Coast Regional Water

[10] Chapter 4 in City of Morro Bay and Cayucos Sanitary District. 2006. Offshore Monitoring and Reporting Program, 2005 Annual Report. Submitted February 2006 to the SWRCB.

Quality Control Board.[11] The SQO designation that all of the Morro Bay sediments, including those in the back bay, near the inflows of Chorro and Los Osos Creeks, are representative of an enclosed bay rather than an estuary, contradicts the designation made by these other knowledgeable sources.

b) **Correct Footnote 2 on Pages 37 and 38, which identifies Estero Bay as an "*Enclosed Bay*."** This appears to be a typographical error associated with an inopportune page break in the footnote that splits the place name "*Drakes Estero*." Nevertheless, these kinds of errors can set a burdensome precedent in the minds of readers unfamiliar with the central California coast. Estero Bay is neither an estuary nor an enclosed bay. As such, sediment quality within Estero Bay is not subject to the proposed SQOs. To avoid confusion, any future documents produced by the SWRCB that refer to "*Drakes Estero*" should include a non-breaking space between the two words wherever that place name is used. In addition, Estero Bay should be added to the list of bays considered "*ocean waters*" in the first paragraph under II.B on Page 37 of the Informational Document.

6. **Modify the data collection requirements to state that participation in regional monitoring programs is at the sole discretion of the permittee** [VII.B.2.b]. Permittees should not be required to participate in regional monitoring programs. The SQO assessment methodology is not dependent on a comparison with reference or baseline samples. Consequently, there is no nexus between an SQO determination for a highly localized dredge footprint or point-source discharge, and samples collected elsewhere within the water body. Mandating that permittees must participate in monitoring coalitions as part of the SQO implementation has the potential for regulatory abuse. For example, permittees could be forced to fund massive regional monitoring programs that bear no direct relationship to their site-specific activities, simply because a regulatory agency cannot find funding elsewhere, or even worse, as a punitive effort to unreasonably restrict permitted activities. These are the kinds of concerns that limit NPDES monitoring "*…to include only those scientific investigations necessary to study the effects of the proposed discharge*."[12]

7. **Clarify and correct the methodology and formulae for assessing exposure to toxic pollutants in sediments** [Section V.H].

   a) **Identify what specific regions the nCCS and sCCS are each to be applied, or whether both are applicable in all California water bodies [V.H.3.a on Page 45].** For example, where does Morro Bay fall, in the north (nCCS) or south (sCCS) with regard to the Chemical Category Score?

   b) **Specify whether the measured concentrations that are to be compared with the thresholds in Table 3.5, are computed on a dry-weight basis, or on an as-received (wet) basis** [Table 3.5 on Page 46].

   c) **Correct the formulae to apply to chemical concentrations that are normalized and transformed.** For the reasons described in Comment #3, the CCS and P_{max} indices should be derived from normalized and transformed concentrations in the SQO database. Otherwise, there is no analytical basis for including "*Percent Fines*" and "*Total Organic Carbon*" in the list of required analytes. At a minimum, the role of these two physicochemical properties in determining SQOs should be explicitly identified.

   d) **Add aluminum and iron to the list of analytes in Appendix A, to augment the other two surrogates (Percent Fines and Total Organic Carbon) for assessing natural variability in ambient sediment concentrations.**

[11] CCRWQCB. 2003. Resolution Number R3-2002-0051 Attachment A, dated 16 May 2003. http://www.swrcb.ca.gov/rwqcb3/TMDL/documents/RBResolutionandAmendment_001.pdf (Accessed on 31 October 2006).
[12] 40 CFR §125.63

e) **For completeness, define which of the PAH congeners identified in Appendix A are designated as low molecular weight, and which are considered high weight, in the computation of P_{mas}, nCCS, and sCCS.**

f) **Clarify how the thresholds apply when measured concentrations of an analyte are not detected, or are detected-but-not-quantified with method-detection and practical-quantification limits that exceed the thresholds** [Table 3.5 on Page 46]. Matrix interference is commonplace in the chemical analysis of sediment samples; and it can cause the MDL and PQL to be raised above one or more of the thresholds. How are these results accommodated in the SQO evaluation procedure?

g) **Provide an example calculation for nCCS, sCCS and P_{max}.** The description of the methodology is equivocal in terms of how the evaluation is actually to be conducted. For example, in the case of the nCCS, would a weight of "*1*" or "*2*" be assigned to a cadmium concentration of 0.15 mg/kg, since it falls between "*T1*" and "*T2*?" If it is a weight of 1, then what would a concentration of 0.13 mg/kg be assigned, a zero? If it is a zero, then is it still normalized by the cadmium weight in the denominator when computing the weighted mean, thereby significantly reducing the weighted average?

h) **Correct the formulae and tables for computing P_{max}.** The methodology described in the text must be in error. It gives completely opposite results from CCS for representative contaminant concentrations. In particular, the equation indicates that a cadmium concentration of exactly zero, would result in a *P* value of 0.572. This erroneously suggests that exposure to any sediment whatsoever, regardless of its cadmium concentration, would be considered to be highly likely to result in severe biological effects under the P_{max} determination.

i) **Clarify how the *"average value"* of both approaches is used to determine the final chemical exposure category** [V.H.6 on Page 47]. Ordinal ranks do not lend themselves to averaging. For example, what is the "*average value*" if one approach finds a moderate exposure, while the other indicates a low exposure; does that result in a low-to-moderate exposure?

8. **Clarify whether benthic chemistry samples are to be screened in addition to benthic infaunal samples** [V.D.2 on Page 42]. Typically, large pieces of macrofauna are opportunistically removed from subsamples prior to chemical analysis to avoid skewing results for total organic carbon, but actual physical sieving of chemistry samples is not commonplace. Yet, the implementation plan only states that "*benthic samples*" are to be sieved. Benthic sediment subsamples can include those earmarked for biological or chemical analysis.

9. **Confirm that all four of the benthic community tools must be applied at all sites as stated in the analysis requirements** [V.G.2 on Page 44]**.** Could this be a typographical error where a word is missing so that only "*one*" or "*two*" of the four community tools are required? It seems unreasonable to require all four when some tools are better suited to more freshwater environments.

10. **Rewrite Sections VII.B.4, through VII.B.6 to eliminate additional inconsistencies and vagueness** [on Page 53]. For example:

a) Does Section VII.B.5.a imply that permittees will be required to conduct monitoring within the entire water body? As discussed in Comment #6, this seems unreasonable for a highly localized discharge in a very large embayment. Because the SQO compliance determination [Section V] does not require comparison with reference stations, there should be no reason to require sampling at any location except near the discharge point or within a proposed dredging footprint.

b) How are existing data taken "*…into consideration…*" in the design of a monitoring program? Can it be used to reduce the scope of monitoring, or even eliminate it? Does this suggest that Regional Board Staff will be afforded some flexibility in the implementation of the SQOs? If so, the implementation plan should specify the degree to which professional judgment is permitted.

c) Is Section VII.B.5.d referring to depth strata? If so, then the statement conflicts with the Staff Recommendation that the SQOs only apply to surficial sediments [Alternative 2 in Section 2.3 on Pages 5 and 6].

d) What is a "*…targeted design…*" and to whom does it apply [VII.B.5.e]? Those permittees are not "... *described in Section II.B.…*" as stated in the text.

e) The statement concerning monitoring frequency is inconsistent with the requirement specified in Section VII.A, namely, that low-volume, small dischargers may be exempted.

f) Why is the reader being asked who should be conducting regional monitoring? But, since the question has been posed, clearly, regional monitoring is the responsibility of State or County agencies. Just as the Department of Health Services is responsible for collecting, analyzing, and reporting on beach samples collected for bacterial monitoring, one of the state agencies, probably the Regional Water Quality Control Board should be responsible for monitoring of sediment conditions. Certainly, it is not the responsibility of individual permittees, or even local municipalities since most enclosed bays and estuarine water bodies extend well beyond their individual spheres of influence.

g) What is the basis for a three-year time cycle on regional monitoring?

h) Section number VII.B.5 is used twice.

i) What is the "*Section* 5" that is cited in Section VII.B.4**?**

11. **Provide a comprehensive analysis of all actions that would be forced by implementation of the SQO Program.** Specifically, the dSED should thoroughly evaluate all reasonably foreseeable cleanup actions, or other mitigation requirements, that would be required as a result of SQO implementation. This is a required part of the impact analysis as stated in CEQA Section 15126 where "[a]*ll phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development, and operation."*

12. **Provide detailed justification and thorough comparative analyses for the numerous alternatives listed under each issue of the SQO program elements.** The CEQA scoping document identifies a "*Staff Recommendation*" but no justification is provided for the recommendation and no comparative analysis is presented in the document. Any CEQA compliant document that is prepared for the SQO Program must contain a thorough discussion of each alternative, as well as the justification for the selection of each preferred alternative. In this regard, CEQA Section 15126.6(d) states the following.

> *Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.*

13. **Identify the correct baseline conditions to be evaluated under the "*No Project Alternative*."** As part of the evaluation of the "*No Project Alternative,*" CEQA Section 15126.6(e) requires the dSED

> *"…discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.*"

14. **Identify the environmentally preferred alternative, as well as all feasible mitigation measures and impacts associated with the mitigation, if any.** For implementation of SQOs, CEQA Guidelines

Section 15121 (a)(2) states that "[a] *public agency should not approve a project as proposed if there are feasible alternatives or mitigation measures available that would substantially lessen any significant effects that the project would have on the environment*."

15. **Evaluate potential cumulative impacts associated with the proposed project and resulting actions, as well as other regulatory and regional programs.** Given the broad scope of the SQO implementation, it is imperative that the CEQA document provide a comprehensive cumulative impact analysis. Specifically, the dSED should address the cumulative impacts from SQO implementation in concert with existing sediment and water quality regulations. For example, cumulative impacts associated with the California Ocean Plan and the Bay Protection and Toxic Cleanup Program (BPTCP) should be considered in the cumulative impact analysis. In addition, the cumulative impact analysis must consider reasonably foreseeable development projects that would be affected by the SQOs. CEQA Section 15130(b)(1) requires one of two following alternative approaches for identifying cumulative projects.

    a) *A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency*

    b) *A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.*

Please contact the undersigned if you have questions regarding these recommendations.

Sincerely,

Douglas A. Coats

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