

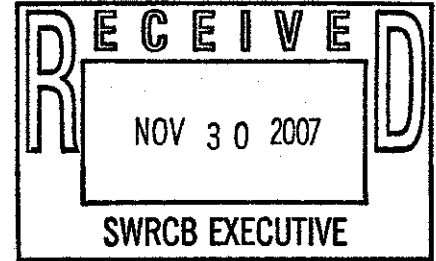


California Stormwater Quality Association™

Dedicated to the Advancement of Stormwater Quality Management, Science and Regulation

November 30, 2007

Jeanine Townsend, Acting Clerk to the Board
Executive Office
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100



Subject: CASQA Comments on Proposed Water Quality Control Plan for Enclosed Bays and Estuaries of California, Sediment Quality Objectives

Dear Chair Doduc and Board Members:

Thank you for the opportunity to comment on the *Draft Staff Report, Water Quality Control Plan for Enclosed Bays and Estuaries, Part 1. Sediment Quality* (September 27, 2007) (Plan), which describes the proposed Sediment Quality Objectives (SQOs) Plan. It is clear that much thought and effort has been put forth to develop the Plan, and we appreciate the State Water Board's attention to detail and use of current science. This is especially evident in the development of a "multiple lines of evidence" approach and in requiring stressor identification prior to implementation of management actions. We further appreciate the State's use of a Scientific Steering Committee and Advisory Committee and believe that both committees have contributed to a robust and scientifically supportable Plan.

Many of the dischargers potentially affected by the Plan are members of the California Stormwater Quality Association (CASQA)¹. As a result, CASQA has been tracking the State's development of the Plan, including participating on the Sediment Quality Advisory Committee. Our comments below are focused on specific issues in the draft report.

As a general comment, we note that it appears that the State Water Board has expended significant resources on the development of the Multiple Lines of Evidence SQO evaluation approach, and that the efforts of the Scientific Steering Committee and Advisory Committee have focused largely on this component of the SQO Plan. We are strongly supportive of this feature of the SQO Plan. However, we have several concerns and request clarification on the details of how the Plan will be implemented. As noted in our comment letter of November 28, 2006, the proposed project should include a clear discussion of "what implementation actions would be required, and by whom, if a SQO is exceeded." Both the environmental and economic analyses of the proposed Plan appear to

¹ CASQA is composed of stormwater quality management organizations and individuals, including cities, counties, special districts, industries, and consulting firms throughout the state, and was formed in 1989 to recommend approaches to the State Water Resources Control Board (State Water Board) for stormwater quality management in California. In this capacity, we have assisted and continue to assist the State Water Board with the development and implementation of stormwater permitting processes.

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have been conducted at a program level. Thus, CASQA recommends that the State Water Board provide clear direction to the Regional Water Boards that a CEQA evaluation and consideration of economics be required at the project level as site-specific remediation goals are adopted, and in the selection of appropriate management actions when an SQO exceedance has occurred.

I. CASQA supports the use of Multiple Lines of Evidence.

CASQA strongly supports the State Water Board staff (staff) in their application of Multiple Lines of Evidence (MLOE). As discussed in the proposed Plan, a number of factors control the impacts of toxic pollutants in sediments, including chemical factors and interactions, bioavailability, and sensitivity of organisms to particular pollutants in a given setting. The interaction of these various factors is complex, and this complexity means that regulating sediment quality will prove more difficult than regulating water quality.

Because of the variable and site-specific nature of pollutants in sediments, the evaluation of sediment quality should not be based on a single line of evidence (LOE). The use of a single LOE, or even two LOE used jointly, is contrary to the direction of the State Water Board's Scientific Steering Committee (SSC) and current scientific literature. Relying on a single LOE will lead to erroneous results and management actions that are either unnecessary or that do not have the intended effect. Thus, we strongly support the Board's recommendation to evaluate sediment quality using a triad MLOE approach.

CASQA has also reviewed three charts presented at the November 19, 2007, State Water Board hearing. In these charts, results for a single line of evidence were compared to the integrated results from all three lines of evidence. Although some correlation was evident (as would be expected), the charts showed clearly that no single line of evidence could correctly predict a site's impact level as determined by the integrated MLOE approach. For example, the charts appeared to demonstrate that a MLOE finding of "Clearly Impacted" was just as likely when amphipod mortality was relatively low (20-30%) as when mortality was very high (80-100%). It appears from the charts that a single line of evidence would only be somewhat predictive in showing no impact – e.g., when amphipod mortality is less than 20%, it appears to be highly unlikely that an SQO exceedance could occur. These charts further reinforce the need to use a MLOE approach to assessing sediment quality.

CASQA also notes that the State Water Board made choices within the SQO development process that lead the SQO evaluation process to be conservative. For example, within a single LOE, two or more test results may be available. These results are integrated, but, where they disagree, results are "rounded up" to the category of higher impact. This "rounding" itself, in some cases, results in an SQO exceedance that would not otherwise have occurred.

CASQA recognizes that available data are limited, and that it was not possible for the State Water Board and its science team to develop complete tools to evaluate sediment quality outside of bays and harbors with sufficient existing data. We concur with Board staff's conclusion that the use of three LOE is necessary even in waterbodies where existing data are limited, and where MLOE evaluation tools have yet to be developed, as the MLOE approach "provides the highest degree of confidence." (Plan at p. 59.) However, we recommend that the State specify that an

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exceedance of SQO in these environments (where tools have not yet been developed) be used only as a trigger for additional study. The State Water Board and its science team are currently working to develop the evaluation methods and tools to evaluate the SQO in estuarine environments, and these tools are expected to be adopted approximately one year after the adoption of the current Plan. Additional study and implementation of management actions should be triggered *after* assessment using established, calibrated tools for SQO evaluation.

II. Program Implementation.

Overall, the implementation process is not clearly defined in the Plan. While the Plan states that SQO evaluations will be done on a site-by-site basis, there is no explanation as to how, and in which order, listing decisions, stressor identification, and management actions will be taken. Over the years, many members of the Advisory Committee have worked together to develop flow charts that discuss viable, potential management actions. We have included the Advisory Committee flow charts here in an effort to assist the State Water Board in clarifying the implementation process. (See attachments) CASQA recommends that the State Water Board augment and modify the implementation language to incorporate and be consistent with the flow charts.

A. CASQA supports the development of site-specific management guidelines.

CASQA strongly supports the staff's position that the chemistry thresholds that are part of the chemistry LOE should not be used as cleanup targets or for any purpose other than as a part of the MLOE evaluation framework. We also concur with the Staff's recommendation that the *"selection of corrective action can be addressed only after many site-specific factors are considered such as:*

- *The hydrodynamics and flow regime in the area of concern*
- *The specific pollutant that is causing the degradation or impairment*
- *The receptors at risk due to the presence of the pollutants at the levels observed within the area of concern.*
- *The aerial extent*
- *Presence of existing sources or legacy releases*
- *Types of controls in place and feasibility of additional controls"* (Plan at p. 116.)

As indicated in the Plan, a variety of parameters such as pH, salinity, oxygen concentration, and temperature fluctuate significantly over a variety of timescales, and each of these factors impact the bioavailability of pollutants. Thus, we support the proposed Plan's requirement to develop site-specific management guidelines, using the result of the stressor identification process and knowledge of local site characteristics.

The State Water Board adopted two methods, mean chemical score indicator (CSI) and CA Logistic Regression Model (LRM), to assess sediment chemistry exposure (Plan at pp. 74-79, Appendix A at pp. 13-15). As detailed in Table 5.8, the CSI is derived from data collected only in southern California. However, the CSI will be used to evaluate sediments collected from bays in both northern and southern California. The Plan indicates that the environmental settings in

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northern and southern California vary significantly in numerous ways that can significantly affect impact of pollutants in sediment, yet it proposes to use data from only southern California in its analysis. (Plan at pp. 12-26.) While we support the MLOE approach proposed by the State Water Board, the use of a subset of available data to develop the tools used to evaluate the chemistry LOE again points out the need to perform site-specific stressor identification and to develop site-specific management guidelines.

The Staff Report accompanying the proposed SQO Plan indicates on p. 35 that Staff believe that State Water Board Resolution No. 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304) will apply to the SQOs when cleanup levels are established. (“A Regional Board must apply Resolution No. 92-49 when setting cleanup levels for contaminated sediment...” at p. 35) Resolution No. 92-49 allows a Regional Water Board to approve cleanup levels less stringent than background if the Regional Water Board finds that it is technologically or economically infeasible to achieve background. The resolution also requires that any alternative cleanup level should be consistent with the maximum benefit to the people of the State, and not unreasonably affect present and anticipated beneficial uses of such water. It is not clear to CASQA that this resolution is directly applicable to the implementation of the SQO Plan. Therefore, CASQA recommends that the key provisions of Resolution No. 92-49 be incorporated directly into the SQO Plan. Specifically, CASQA recommends that any required management actions be “appropriate and consistent with the maximum benefit to the people of the State,” consider economic and technical feasibility, and allow the concept of “containment zones.”

B. Application of SQOs as receiving water objectives requires clarification.

In the proposed Plan, staff recommends that narrative SQOs may be applied in NPDES permits as receiving water limits. However, the application of SQOs as receiving water limits is highly problematic for the following reasons:

- It is unknown how it would be determined that a discharge “causes or contributes to” an exceedance of SQOs. Even following stressor identification (i.e., even if the pollutant(s) responsible for the SQO exceedance are known), the relationship between discharges and concentrations in sediment, or between concentrations of the pollutant(s) in the overlying water column and in sediments, is highly complex.
- It is unknown how “reasonable potential analyses” are to be made to determine that a regulated discharge has the reasonable potential to cause or contribute to an exceedance of SQOs.

For this reason, CASQA opposes the implementation of SQOs as receiving water limits. Rather, the SQO Plan should be consistent with existing provisions in municipal stormwater NPDES permits that specify the obligations of NPDES permittees when either the permittee or Water Board determine that discharges are causing or contributing to exceedances of water quality standards.

C. Listing Issues – The State’s 303(d) Listing Policy.

We agree with the State Water Board’s determination that sediment quality objectives should be used in the 303(d) listing process, but we request clarification on this process. The alternatives analysis states that State Water Board staff have elected to “utilize the existing approach described in 303(d) listing policy (SWRCB 2004).” (Staff Report at p. 99) However, the proposed MLOE approach to evaluating the SQO is inconsistent with the State’s Listing Policy (Listing Policy)², which (in Section 3.6) allows a water body to be listed if (1) “statistically significant... sediment toxicity” is observed, and (2) “if the observed toxicity is associated with a pollutant or pollutants...” The Listing Policy further specifies that the association of pollutants with toxic or other biological effects can be established using sediment quality guideline exceedances, equilibrium partitioning approaches, or Toxicity Identification Evaluation or similar evaluations. Thus, the Listing Policy allows a listing for “sediment toxicity” to be made if only two LOE are present – toxicity and chemistry. If not corrected, this inconsistency between programs will result in a greater number of inappropriate, unfounded listings.

In discussions with the Advisory Committee, State Water Board staff stated that they intended for the MLOE approach to be used together with the binomial statistical evaluation to make listing decisions, and that this process would supersede Section 3.6 of the Listing Policy. We recommend that the State Water Board make the following change to remedy this apparent discrepancy: amend both the recommended Alternative 2 Section 5.7.3 of the Staff Report and Section VII.E.8 of the proposed Plan to specify that the binomial statistical approach of the existing Listing Policy should be used jointly with the MLOE evaluation approach to make listing decisions, and that this approach supersedes Section 3.6 of the Listing Policy.

D. Stressor Identification should be completed prior to any management action.

CASQA supports the Staff’s position that “[g]uideline development should only be initiated after the stressor has been identified.” (Appendix A at p. 27.) It is critical that stressor identification evaluations be undertaken prior to any management action in order to establish the chemical(s), or class(es) of chemicals, responsible for the observed effect, and for use in establishing site-specific sediment concentration targets for any subsequent sediment cleanup action. Stressor identification is particularly important in cases where pollutants not included in the SQO evaluation process (i.e., pollutants, such as pyrethroids, for which thresholds have not been developed as part of the chemistry LOE) may be contributing to an SQO exceedance. Without proper stressor identification, there is a substantial risk that management actions would inappropriately focus only on those pollutants that are evaluated as part of the MLOE, potentially missing the pollutants responsible for the SQO exceedance and resulting in the failure of management action.

² Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List, California Water Boards, adopted September 2004.

E. Management of Possible Legacy-Only SQO Violations.

Although the stressor identification process includes a determination of whether a pollutant comes from an ongoing or legacy source, there is no guidance on how legacy-only SQO violations will be managed. We strongly recommend that the State Water Board address how remedial measures will be implemented and funded if there is no on-going discharge of a compound, and if no "responsible party" can be identified. We request that the State Water Board provide additional specificity on Stressor Identification and Development of Management Guidelines for legacy pollutants, and suggest that the State Water Board may wish to include a new section detailing how legacy compounds will be addressed. One option may be to handle legacy pollutants via the existing hot spots program, provided that funding for the program could be identified.

F. Monitoring Approach.

It is unclear why monitoring frequencies (Appendix A, Section VII.D) for sediment in stormwater discharges are included in the Draft Staff Report (i.e., Appendix A). Stormwater monitoring requirements (including frequencies) are typically developed and tailored by Regional Water Boards in NPDES permits based on region-specific management questions, data needs, and characteristics, such as land uses and known pollutants of concern. Simply requiring minimum frequencies for monitoring sediment in stormwater via a statewide plan will likely gather data of little use while expending limited local public resources. For these reasons, we suggest that Section VII.D is removed and in place, guidance be provided to the Regional Water Boards on what type of monitoring should be considered in NPDES permits for stormwater under what circumstances.

According to Section VII. E.2 of the proposed Plan, individual permittees can be required to conduct monitoring on their own and/or to participate in a regional or water body-wide monitoring coalition, at the discretion of the Regional Water Board. We agree with Board staff that sediment monitoring programs should be based upon a conceptual model, and should consider regional information. These considerations can best be addressed by monitoring coalitions and not by individual permittees. The State Water Board has already endorsed this approach for the San Francisco Bay Area in State Water Resources Control Board Resolution 92-043.

CASQA recommends that the Plan require NPDES permittees to join or form monitoring coalitions. Individual monitoring should only be permitted if a coalition cannot be formed, or if there is reason to believe, *subsequent to a stressor identification process*, that an individual NPDES permittee discharges a significant amount of a stressor pollutant, or to address the issue of whether or not a given NPDES-permitted discharge "causes or contributes to" an exceedance of SQO.

G. Management priorities should be based upon degree of SQO exceedance.

We support allowing the Regional Water Board's discretion in determining whether stations in the "Possibly Impacted" category are impaired or not. As currently defined, the thresholds

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between categories are defined such that large portions of specific water bodies (e.g., San Francisco Bay) may fall into the "Possibly Impacted" category. In these instances, it will be very difficult to take any management action if the scope of that action is all-encompassing, and if "Possibly Impacted" station is categorized and treated in the same manner as "Clearly Impacted" station. Allowing Regional Water Boards the discretion to consider sites categorized as "Possibly Impacted" to meet the protective condition may be helpful in avoiding overly broad management actions. Consistent with this concept, we suggest that the State Water Board may wish to specify phased implementation of management actions, whereby "Clearly Impacted" sites are given high priority and addressed prior to "Likely Impacted" or "Possibly Impacted" sites.

H. Project-level CEQA analysis should be explicitly required prior to implementation of management actions.

In the environmental analysis section of the Plan, staff makes a distinction between a "program level" and "project level" CEQA analysis, and states that it is conducting a program-level analysis of the proposed SQO Plan.

"[T]his CEQA document represents a program level environmental analysis of the draft Part 1 proposal... The corrective actions that require additional controls and or remediation will require a project level CEQA analysis." (Staff Report at p.102.)

Although State Water Board staff conclude that implementation of management actions "could result in potentially significant impacts" (Staff Report at p. 102), the Plan further states that the

"Staff anticipate (emphasis added) that all reasonably foreseeable potential environmental impacts will be mitigated to less-than-significant levels through a project specific CEQA analysis, the Water Board's regulatory and permitting process or under through other agencies with jurisdiction in relevant areas...." (Staff Report at p.109.)

CASQA agrees that it is very difficult to determine the environmental impacts of a proposed Plan when the Regional Water Boards are given broad latitude and discretion to implement that Plan, and we agree that it is both appropriate and necessary to conduct a project-specific CEQA analysis prior to implementation of management actions. Thus, CASQA recommends that the Plan clearly require that the Regional Water Boards conduct a project-specific CEQA analysis so that management actions and alternatives are evaluated fully for their potential environmental impacts.

I. Economic considerations should also be addressed at the project level.

The economic analysis for the Proposed Sediment Quality Objectives Plan is presented in a report entitled "Economic Considerations of Proposed Sediment Quality Plan for Enclosed Bays in California," prepared by Science Applications International Corporation (SAIC) and dated September 18, 2007 (Report on Economic Impacts). This report attempts to examine economic costs associated with the proposed Plan; however, without any direction on how the program is to be implemented, it is impossible to determine an economic impact of that program.

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The Report on Economic Impacts provides monitoring and stressor identification cost estimates but does *not* provide cost estimates associated with other Plan implementation actions (such as remediation or cleanup actions that may be required pursuant to the Plan). Monitoring costs for 16 bays for which no or insufficient data are available for assessing SQO compliance are estimated at \$468,900 to \$691,400. In addition to those 16 reaches, the Report on Economic Impacts looked at the available MLOE data on eight bay segments and estimated costs for Phase I stressor identification testing for those 24 bay segments at \$210,000-\$620,000. However, with "low level" chemical contamination that may be encountered at "Possibly Impacted" sites, it is unlikely that a Phase I stressor identification evaluation will result in a conclusive determination of the likely stressor(s) and that additional tests will be necessary, thereby increasing costs.

For both monitoring and stressor identification, cost estimates include the collection of the samples and the laboratory analysis but not the costs associated with analyzing the information or with preparing the associated reports (i.e., personnel time). As with the environmental analysis, it is difficult if not impossible to conduct a thorough economic analysis without detail on the implementation actions that are likely to occur as a result of the program. Thus, CASQA recommends that the State Water Board require the Regional Water Boards to consider economics (and environmental impacts) at a project level when considering cleanup levels (or other management goals) and associated management actions.

CASQA appreciates the opportunity to submit these comments, and we look forward to working with the State Water Board and staff as the Plan is moved toward adoption. Please contact me at (916) 808-1434 or bbusath@cityofsacramento.org if you have any questions or if we can provide further assistance.

Sincerely,

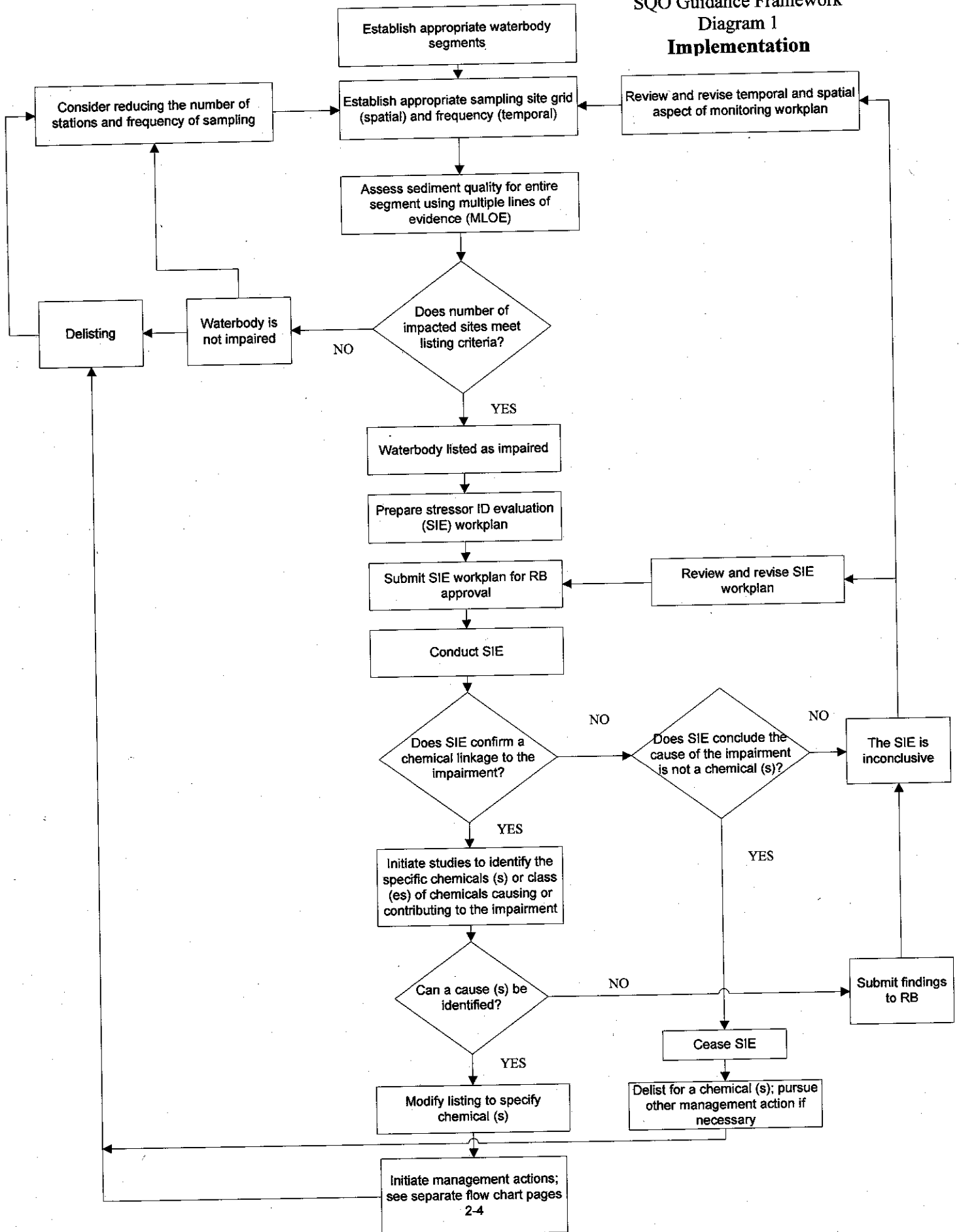


Bill Busath, Chair
California Stormwater Quality Association

cc: CASQA Board of Directors and Executive Program Committee

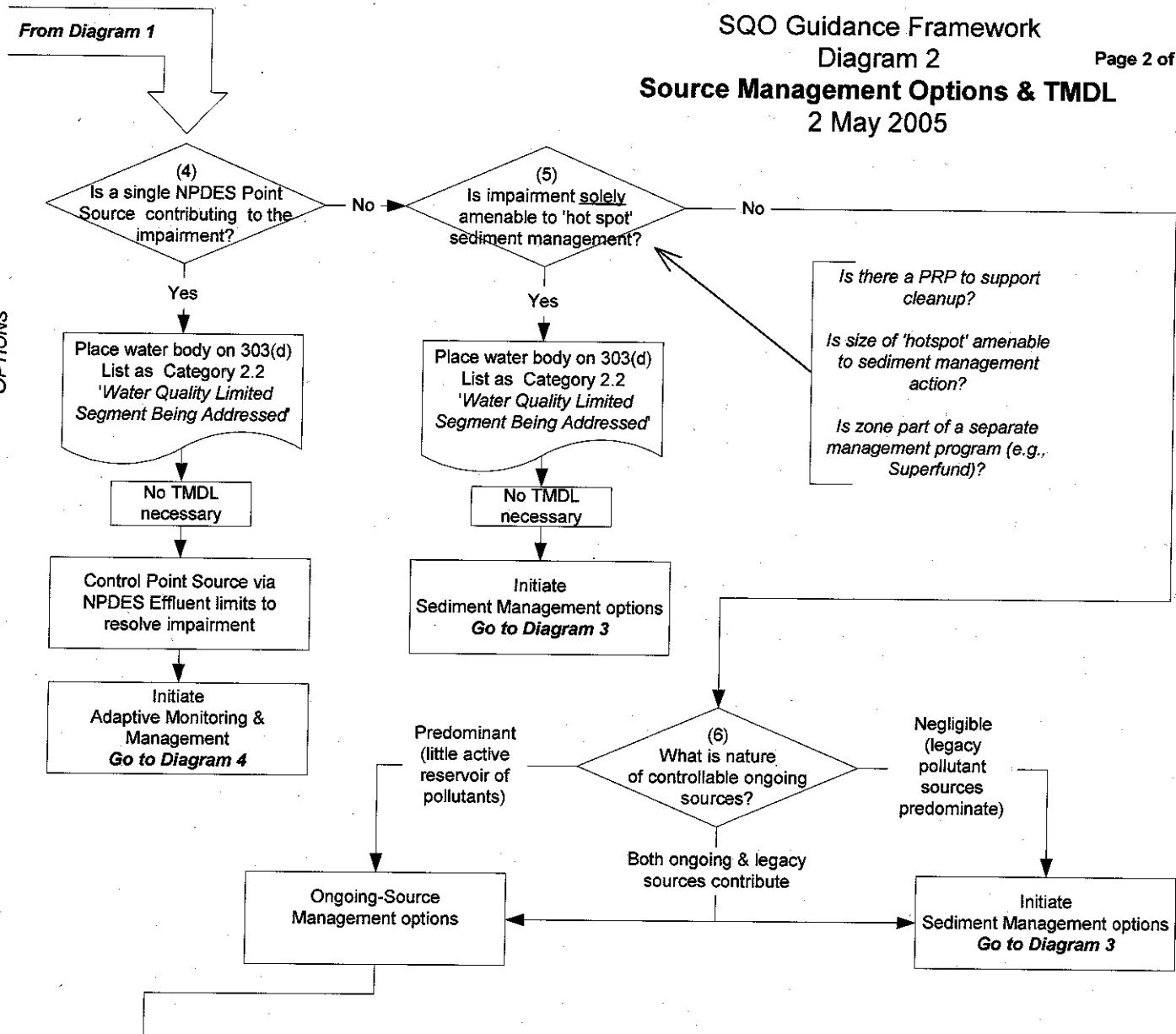
attachments: Diagrams 1-4; SQO Guidance Framework

SQO Guidance Framework
Diagram 1
Implementation

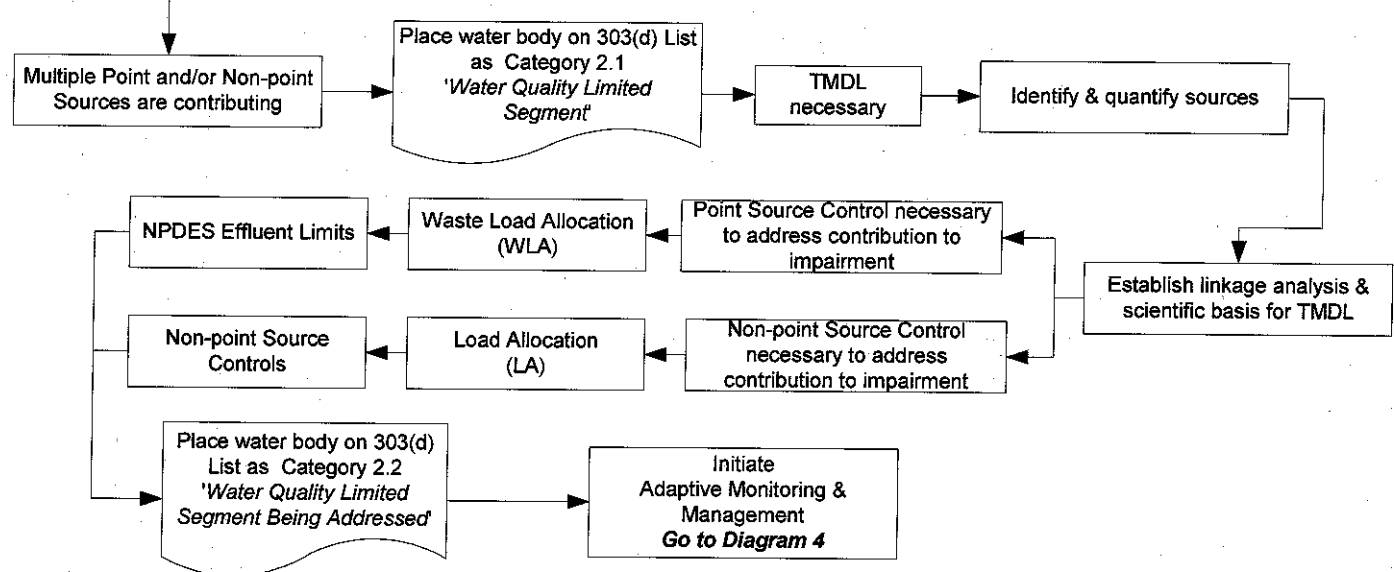


SQO Guidance Framework
 Diagram 2
Source Management Options & TMDL
 2 May 2005

EVALUATION OF SOURCE MANAGEMENT OPTIONS

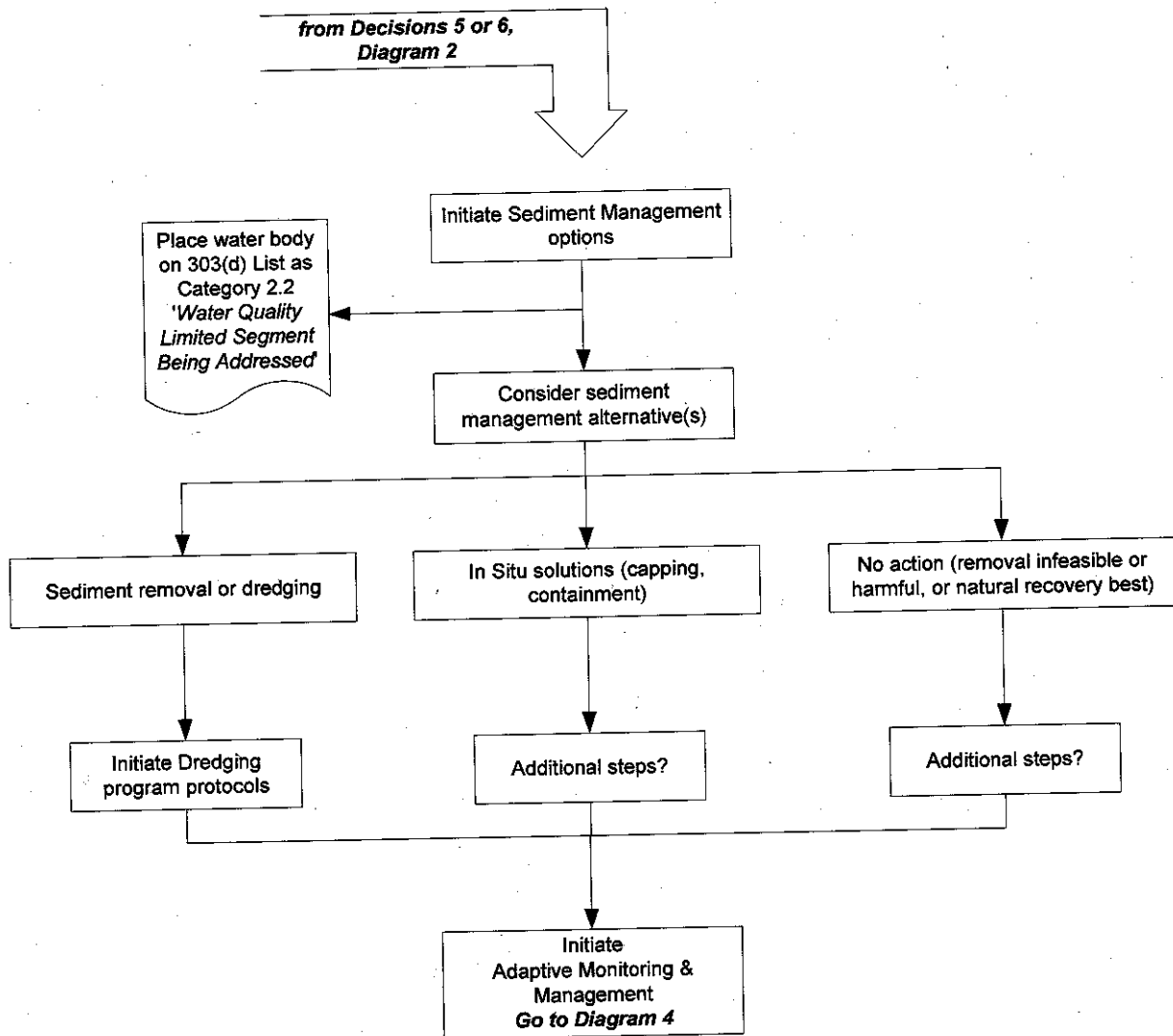


TMDL



SQO Guidance Framework
Diagram 3
Sediment Management Options
2 May 2005

EVALUATION OF SEDIMENT MANAGEMENT
OPTIONS



SQO Guidance Framework
Diagram 4
Adaptive Monitoring & Management
2 May 2005

