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**Comprehensive Monitoring,  
Assessment, and Research Program**  
Responses to Comments

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# COMPREHENSIVE MONITORING, ASSESSMENT, AND RESEARCH PROGRAM RESPONSES TO COMMENTS

## 0. General Responses

CM-B-1

An institutional structure to implement the Comprehensive Monitoring, Assessment, and Research Program (CMARP) is proposed in the CMARP. An important element of the structure is development of a science review board that will play a role in guiding the decision-making body with regard to its use of science in adaptive management and decision making. The CALFED Bay-Delta Program (CALFED Program) maintains that it is critically important that this board remain independent and objective during their assessment of the use of science in the CALFED Program.

CM-B-2

Discussions on a long-term institutional structure for the CMARP and funding needs and sources are found in Chapters 6 and 7 in the CMARP. Chapter 6 discusses the attributes, functions, and elements of a CMARP institutional structure but does not specify or recommend a particular structure. Chapter 7 discusses estimating program costs and financing the CMARP. As for the institutional structure, Chapter 7 does not provide specific recommendations. The CMARP report authors did not feel they could make specific recommendations on these issues until after a CALFED structure had been decided on, which is now taking place through the governance process. The necessary CMARP elements identified in the document are a part of the governance discussions. It is expected that the governance process will result in decisions that will allow CMARP staff to develop specific recommendations regarding CMARP institutional and funding issues.

CM-B-3

The CMARP does not necessarily represent an additional layer of obligations on stakeholders beyond current programs. The CMARP strategy includes an identification and review of current monitoring and research programs within the Bay-Delta to determine which are currently useful for CALFED's needs, and how some may be revised to meet anticipated needs. In some cases, program revision may be accomplished without additional costs, simply by replacing some variables for others. In other cases, additional costs may be incurred.

Chapters 6 and 7 in the CMARP document discuss the necessary attributes, functions, and elements of an institutional structure that enable a CMARP not only to execute the science correctly, but also to ensure that the right science is being done. Specific recommendations regarding an institutional structure and funding depend on the CALFED Program formalizing its institutional structure through the governance process.

CM-B-4

The monitoring and research recommendations in the CMARP document addressing water use efficiency (Section 4.8 in the document) were developed by agency staff and agricultural and urban water use stakeholders

to identify, on a broad scale, water use efficiency monitoring and research needs, and to provide examples on how a CMARP could meet these kinds of information needs for the CALFED Program. Inclusion of these recommendations are not meant to imply that they in fact constitute a program of monitoring and research for the Water Use Efficiency Program. The actual objectives and information needs of the Water Use Efficiency Program are being developed by the program itself. The CMARP's role is to meet those stated needs by developing a program of monitoring and research for the program.

CM-B-5

CALFED recognizes the role of uncertainty in evaluating the results of CALFED management actions. Recognizing that absolute certainty can never be achieved at any cost, CALFED will strive through the CMARP to reduce the information gaps to reasonable levels. This can be done to some extent by implementing adaptive management principles and by tightening the linkages between research, monitoring, assessment, and reporting.

CM-B-6

If CALFED's science program determines that South Bay watershed stormwater data and other efforts are needed, CALFED will fund those efforts. At this time, however, it does not appear that those information needs are necessary for the CALFED Program.

CM-B-7

CALFED does support and will continue to support all ongoing efforts that provide information necessary to achieving CALFED objectives. Financial support will be considered for additional efforts that may be requested by CALFED to meet specific information needs.

CM-B-8

Thank you.

CM-B-9

Complying with federal and state Endangered Species Act (ESA) requirements should not be confused with adaptive management actions or the principles of adaptive management. Adaptive management seeks to directly address uncertainties by identifying them and taking specific actions from which we expect to learn, thus reducing the level of uncertainty. However, because an uncertainty is being directly addressed, inherent risk to associated resources is involved, depending on the type of action selected. On the other hand, ESA provisions already presume some benefit from a mandated action. This implies a minimal uncertainty in the action being taken and a minimal risk to the targeted resource. Complying with ESA requirements are not adaptive management actions, at least in the scientific sense where the concept of "adaptive environmental management" originated. In fact, complying with ESA provisions will make the practice of adaptive management challenging, if not very difficult.

CM-B-10

The CALFED Program's overall emphasis and direction should not be alluded from the CMARP report or any single CALFED technical report. The CMARP report emphasizes environmental considerations (including water quality) because that is where the greatest information needs and critical uncertainties exist that can be addressed by a program of research, monitoring, and assessment.

CALFED intends to support those research and monitoring activities that provide information useful to the CALFED Program. It should be recognized, however, that the CALFED Program has specific information needs that agencies/institutions are not addressing. These needs will need to be met through a program of research and monitoring; therefore, the advent of the CMARP.

The CMARP does not necessarily represent an additional layer of obligations on stakeholders beyond current programs. CMARP's strategy includes an identification and review of current monitoring and research programs within the Bay-Delta to determine which are currently useful for CALFED's needs, and how some may be revised to meet anticipated needs. In some cases, program revision may be accomplished without additional costs, simply by replacing some variables for others. In other cases, additional costs may be incurred. The idea of collaboration is not to create a new bureaucracy but rather to take advantage of the work already being done. It is true that the adaptive management program proposed by the CMARP requires a significant investment in monitoring and research. The information needed by CALFED is critical to the program, and can be obtained only by investments in research and monitoring. This is what adaptive management entails. The costs will be substantial; therefore, it is important to take advantage of and collaborate with existing work.

Science plays a critical role in the CALFED Program. Given the scope of the ecosystem restoration, water quality, levee system integrity, water management, watershed, and other programs, it is obvious that CALFED is in large part, a science program. The information obtained through the science process is only as good as the questions being asked; the science process follows to address the questions. The science that resides within the different CALFED programs needs to be addressed in a coherent, integrative, and consistent fashion. The chief scientist would fill this need. The process for appointing a chief scientist still needs to be addressed by the CALFED Program.

More work is needed to better define the CMARP's role in the CALFED Program and to integrate the CMARP with the Ecosystem Restoration Program and other CALFED programs. On several fronts, however, some of that work is proceeding. For example, the Ecosystem Restoration Program and the CMARP are jointly working on developing "white papers" to identify what we know and do not know about major ecological processes, habitats, species, and stressors that are the focus of the Ecosystem Restoration Program. These papers will provide guidance on the kinds of restoration actions to take within geographical areas, research to be conducted to address uncertainties, and monitoring to assess baseline conditions and changes to the conditions as a result of restoration actions.

The CMARP activities described in the Stage 1 document are not close matches to the Ecosystem Restoration Program activities. They have been carefully considered by agency staff and stakeholders involved in the CMARP effort, however, and will provide much of the important information and tools needed by the Ecosystem Restoration Program and other CALFED programs to conduct their activities. As mentioned above, we agree that additional work is needed to better tie the support and mainstream activities of the CMARP to those of the Ecosystem Restoration Program, Multi-Species Conservation Strategy, and other CALFED programs; and to better describe how CMARP science will generally mesh with the other CALFED programs.

CM-B-14

When applied correctly, adaptive environmental management is much more than trial and error. It is a scientific process that results in learning from a set of actions that can then be applied to a similar set of actions. Before engaging in an adaptive management experiment (and they are experiments), hypotheses are developed, the process by which the hypotheses will be addressed are established, and a program of monitoring and or research is established to test the hypotheses. In this respect, the practice of adaptive management can be used to achieve stated goals if decision-makers make their decisions based on what they have learned from the experiment.

CM-B-15

The CALFED Program is taking specified steps to identify what types of adaptive management experiments can be conducted at the start of Stage 1 and where the experiments should be conducted. A “white paper” process that identifies what we know and do not know about major ecological processes, habitats, species, and stressors is underway. These papers will provide guidance on the kinds of restoration actions and adaptive management experiments to take within geographical areas. Public workshops will be held to review and discuss the white paper results. We understand that developing and implementing adaptive management actions are not simple, nor are they cheap. To be truly successful, adaptive management requires a commitment from decision makers to make use of the information learned from the experiments when making subsequent decisions.

CM-B-16

About \$19 million dollars is spent annually on biological, water quality, and hydrologic monitoring programs within the Bay-Delta watershed. Of this amount, about \$6.5 million is spent annually on biological, water quality, and hydrologic monitoring activities in the northern portion of the Sacramento River (above Sacramento) and its tributaries.

### Part C. Water Quality

CM-4.3-1

The frequency and magnitudes of previous pesticide detections are included as parameters in the design of a pesticide sampling program.

CM-4.3-2

This section recognizes and considers pesticides as a significant environmental contaminant.

### Information Gathering and Organization

CM-5.4-3

CALFED agrees that activities related to database management and development will be coordinated with appropriate entities, including entities like the California Department of Pesticide Regulation, that have developed their own databases for monitoring and research specific tasks.