

6

**CMARP -- OUTLINE FOR THE FINAL REPORT**

Draft 10/19/98

Table of contents

List of Figures

List of Tables

List of Acronyms and Abbreviations

Glossary

I. EXECUTIVE SUMMARY 10

II. INTRODUCTION 3

A. Background – how this effort came about.

- 1) Mission and Principles of CALFED
- 2) Charge of Policy Group to CMARP

B. Purposes of CMARP

- Purposes of monitoring, assessment and research
- Why CALFED needs monitoring, assessment and research

C. Purposes of the Report

- Recognize importance of monitoring, assessment and research
- Document process employed
- Describe consensus reached on monitoring program and research
- Describe data management and assessment reporting results
- Suggest organizational ingredients for implementation

D. Reader's Guide -- How the report is organized

III. SCOPE OF CMARP AND APPROACH TO DESIGN 4

A. CMARP Scope

- 1) Overview of CMARP's organization (use of organization chart)
- 2) CMARP's perspective of the CALFED common programs – early implementation needing CMARP activities vs. long-term needs
- 3) Other monitoring support for the CALFED program – Describe other types of monitoring support needed for CALFED, e.g. mitigation, compliance and real-time monitoring
- 4) Related agency programs proposed to be included in CMARP (also ties into no.3 above).

B. Approach to Design

- clarifying goals/objectives and conceptual models leads to design and organizational ingredients necessary for implementing program;
- short timeframe for initial design required simultaneous progress on most elements, achieving consensus on what and why, and generally on when and where, but postponing the how and who.

- Labor divided among work teams aligned with CALFED common programs. Charges to monitoring/research design team, conceptual model design team, data management and DART teams. Workshop and e-communication tools used to resolve linkages among programs and among teams.

#### IV. CONCEPTUAL MODELS AND INDICATORS 7

- A. Uses of Conceptual Models in Monitoring and Research Design
  - 1) Identifies indicators and how they relate
  - 2) Suggests hypotheses for responding to management actions
  - 3) Highlights of conceptual model workshop report
  - 4) Synthesize concepts developed by work teams
- B. Status of Indicator Development by CMARP
  - 1) Summarize base-level indicators developed by groups (differentiate base-level from other types)
  - 2) Progress on management-level indicators

#### V. MONITORING AND FOCUSED RESEARCH PROGRAM DESIGN

- A. Introduction /Reader's guide – Describes how the chapter is organized and notes that the appendices are used for detailed information.

Note: Each section to follow (excluding Category III) would summarize the following:

- I. Pertinent CALFED mission, goals and objectives immediately following main heading of each major element (Ecosystem Restoration, Water Quality, etc).
  - II. Goals and objectives of monitoring plan — this discussion should also address the problem statement, that is, why these monitoring elements are needed.
  - III. Corresponding monitoring elements (level one indicators) – Summarize major recommended elements. Refer to appendix for details.
  - IV. Research questions – Summarize research needs. Refer to appendix for details.
  - V. Linkages among program elements – describe links to other CMARP elements and CALFED programs
- B. Ecosystem restoration
    - 1) aquatic communities
    - 2) physical processes – flow and transport, sediment, geomorphology
    - 3) habitat – riparian, shallow water, delta wetlands (also including island subsidence, E-T changes with wetland restoration), fish-X2
  - C. Water quality
    - 1) environmental contaminants
    - 2) for agriculture
    - 3) drinking water (point back to island subsidence issue)

- D. Delta levees
  - 1) levee subsidence (point back to island subsidence issue)
  - 2) seismic risk
  - 3) delta channel bathymetry (point to next item)
- E. Storage and conveyance
  - 1) delta channel bathymetry (point to previous item)
  - 2) streamflow measurement network (point back to water quality?)
  - 3) snowmelt runoff forecast
  - 4) conjunctive use (may be easiest to shift to Water Transfers, where presently described)
- F. Water transfers
- G. Water use efficiency
  - 1) conservation
  - 2) recycling
- H. Watershed management
- I. Category III program – Summary of temporary process established to address monitoring and reporting issues. Tie into Institutional Structure for recommendations for a permanent monitoring and evaluation process.

## VI. RECORDING AND ASSESSING DATA AND REPORT INFORMATION

- A. Purpose -- To communicate status and trends of indicators to evaluate the CALFED program; to provide information for adaptive management; generate new correlations and hypotheses.
- B. Process
  - 1) Data Management System – Brief description of data management structure design, including general uses of the system, staffing and summary of the pilot project.
  - 2) Anticipated needs of CALFED, stakeholders and the general public
  - 3) Definition of a decision support system with diagram
  - 4) Summary of relevant points from review of other decision support systems
  - 5) Development of a technical group (tie into recommendations from ERP Strategic Plan)
  - 6) Indicator development and use – provide CMARP recommendations on indicator development and use of such indicators in synthesis and evaluation. Link discussion to CALFED Indicators document
  - 7) Gathering of Data and Basic Information -- Summarize QA/QC recommendations within and across programs
  - 8) Analysis and Reporting – Recommend analytical tools (GIS, statistical, computer modeling, risk analysis) for use in analyzing data. Provide recommendations on types of reports and who their audiences are.

## VII. INSTITUTIONAL STRUCTURE

Identify critical components needed to enable a CMARP to function. Include conceptual plan. Tie to ERP's Strategic Plan and CALFEDs Assurance Document.

## VIII. IMPLEMENTATION OF CMARP

This chapter includes a description of the tasks to be done to implement portions of CMARP by July 1, 1999. Included here would be:

- A. Priority Programs – 1999 CMARP additions to present agency programs.  
What we start working on between January 31 and July 1, 1999. (To a large extent priority is established by CALFED's Stage 1 actions).
- B. Program Refinement During 1999
  - 1) specific programs for which more details are needed; e.g. conservation strategy; mitigation monitoring
  - 2) refinement of management-level indicators – summary of past and current indicator work
- C. Program Financing and Costs
- D. Steps to a CMARP Organizational Structure

## IX. LITERATURE CITED

Appendix A: Glossary of terms used by CMARP  
monitoring –  
assessment –  
focused research –

Appendix \_\_: Membership of CMARP teams

Appendix \_\_: CALFED Goals and Objectives

Appendix \_\_: Listings of existing monitoring programs

Appendix \_\_: Lists of variables/indicators to be measured/sampled –  
sorted by CALFED common program  
sorted by broad geographic area

Appendix \_\_: Lists of focused research questions sorted by  
priority  
program  
broad geographic area  
scientific discipline(?)

Appendix \_\_: Proposed RFP for focused research

Appendices \_ to \_: Monitoring reports by workteams

(Appendix \_\_: Proposed agenda for first CALFED science conference)

(Appendix \_\_: Comments and responses to earlier drafts)