

STRAWMAN PROPOSAL
DELTA DRINKING WATER COUNCIL

Background

The CALFED Program drinking water objective is to continuously improve source water quality that allows for municipal water suppliers to deliver safe, reliable, and affordable drinking water that meets, and where feasible is better than applicable drinking water standards. The Program has a series of short and long term implementation actions, developed through an extensive stakeholder process, which are designed to achieve the drinking water objective. A brief description of the proposed early implementation actions (1999 - 2000) and Stage 1 (2001 - 2007) for drinking water is attached.

The derivation of the Delta Drinking Water Council came from many discussions with agencies and stakeholders who commented on the need to have a high level of drinking water expertise to advise on the overall direction of the Program and to provide public involvement. The role of the Delta Drinking Water Council is integral to the success of the CALFED Water Quality Improvement Strategy (attached). It is under the scrutiny of the Delta Drinking Water Council that a combination of actions and studies will be developed and performed to drive important decisions on which additional measures or set of measures are most appropriate to implement to meet public health protection objectives for drinking water quality. The actions and studies to be performed as components of the Water Quality Improvement Strategy are discussed in the revised Phase II Report and Water Quality Program Plan (June 1999) and are summarized here:

Actions:

Source Control - this includes treatment or relocation of island drains in the Delta, management of upstream drainage, control of urban runoff and wastewater treatment discharges in the Delta, wastestream control of industry, and watershed activities above the reservoirs on the Sacramento and San Joaquin Rivers and their tributaries.

Conveyance Improvements - this includes a broad array of actions for the lower San Joaquin River and south Delta region to address ecosystem, water quality, and water supply availability.

Storage and Operations - this includes flexible management of water operations that may achieve benefits more efficiently than a prescribed regulatory approach.

Monitoring and Assessment - includes monitoring and assessment activities to provide relevant information necessary for adaptive management and decision making.

Studies:

Treatment - CALFED will support and work with water utilities and other organizations, including EPA and the American Water Works Association Research Foundation to collect information regarding the effectiveness of source control and treatment.

Health Effects - CALFED will work with the CDHS and EPA to ensure that there is adequate ongoing research on the health effects of drinking water, particularly

brominated compounds.

Alternative Sources - CALFED will work with both northern and southern California water users to identify opportunities for water exchanges in order to shift higher quality supplies to urban users for drinking water, while ensuring a reliable supply of water for agricultural and environmental uses.

Conveyance - CALFED identify opportunities to determine how additional conveyance improvements, including the potential screened diversion structure on the Sacramento River in the north Delta, can be developed and operated if the need occurs.

Storage and Operations - CALFED will conduct an Integrated Storage Investigation to evaluate the relationship between various types and locations of storage and the overall role of storage in water quality improvement.

Monitoring and Assessment - CALFED includes monitoring and assessment activities to develop information necessary for adaptive management and decision making.

Mission of the Delta Drinking Water Council

The Delta Drinking Water Council mission is to advise CALFED on the CALFED effort to reduce sources of bromide, organic carbon and pathogens in drinking water supplies taken from the Delta; improve the degree of protection of Delta watersheds to enhance reliability of drinking water treatment in supplies taken from the Delta; provide technical support for research and evaluations of human health effects and drinking water treatment technology; and, to explore opportunities for storage and operations, source water supply, and conveyance improvements.

Functions of the Delta Drinking Water Council

- Serves as FACA advice entity related to CALFED drinking water actions and studies. Operates as FACA working group of the Bay Delta Advisory Council. (See attached CALFED Water Quality Interim Governance Figure.)
- Based on performance of drinking water studies and actions, makes recommendations to the CALFED Program, CALFED agencies and BDAC on treatment, health effects, alternative water sources, conveyance improvements, storage and operations.
- Identifies monitoring, research and information needs and helps initiate collection efforts.
- Identifies opportunities for beneficial CALFED involvement in source water quality improvement activities.
- Recommends research into human health effects of Delta drinking water supplies.
- Recommends research and development of drinking water treatment technologies to effectively treat Delta water supplies.
- Regularly evaluates performance targets for source water to achieve water quality objectives.
- Identifies the highest priority projects for CALFED involvement, based on the quantity of drinking water quality benefit to be derived, cost of achieving the benefit, and inability of other methods to improve drinking water quality.
- Oversees preparation of plans, specifications and proposals for drinking water

quality improvement projects.

- Provides oversight of feasibility testing, pilot scale, and full scale project implementations, and formulates recommendations to CALFED for adaptive management actions to improve the success of CALFED drinking water quality actions.
- Utilizes independent experts, on an ad hoc basis, to provide scientific review of drinking water quality elements of the CALFED program and to provide recommendations for improving the overall success of the program.

Expertise Required

Drinking water regulatory processes
Human health effects (toxicological, epidemiological, etc.)
Water treatment
Delta hydrology and water quality
Water management and water quality modeling
Water quality monitoring
Source control

Involved Agencies

Department of Health Services, Division of Drinking Water and Environmental Management
(proposed lead)
Environmental Protection Agency (Region 9 and/or Headquarters)
Central Valley Regional Water Quality Control Board
State Office of Environmental Health Hazard Assessment
Department of Water Resources
Department of Food and Agriculture
State Water Resources Control Board

Involved Stakeholders

Urban water agencies
Delta interests
Business community
Environmental advocates
Wastewater agencies
Agricultural interests

Attachments:

Early Implementation Actions (1999-2000)
Stage I Actions (2001-2007)
Water Quality Improvement Strategy
Water Quality Program Interim Governing Structure

Early Implementation Actions

DESCRIPTION	DETAILS	GEOGRAPHIC AREA	INDICATORS OF SUCCESS
Veale Tract drainage discharge relocation feasibility study and environmental documentation	Several agricultural discharges from Veale Tract considerably increase salinity and organic matter. Environmental documentation for relocation or treatment of the drains is proposed.	South Delta, Veale Tract, and Old River	Reduced levels of total organic carbon (TOC), pathogens, and nutrients in Contra Costa Water District (CCWD) intake at Rock Slough
Feasibility study: Management, relocation, and/or treatment of Reclamation District (RD) 800 drain discharge	Urban and agricultural discharges in the RD 800 area may affect south Delta exports for drinking water. Impacts need to be managed.	South Delta, Discovery Bay, and the proposed Mountain House community	Implementation of watershed best management practices (BMPs) to prevent input of nutrients, pathogens, and TOC
Elimination of discharges of waste from watercraft in the Delta and tributaries	Certain laws currently allow discharges from watercraft, both recreational and commercial. Laws also allow the State to prohibit such discharges.	Bay and Delta	Elimination of nutrient and pathogen loading from watercraft
Barker Slough watershed restoration	The Barker Slough watershed contributes organic material to the North Bay Aqueduct (NBA) that, after treatment, produces DBPs. Watershed restoration is aimed at eliminating a majority of the organic carbon.	Barker Slough watershed	Reduced levels of TOC, pathogens, and nutrients in the NBA intake
Assessment of sources and magnitudes of loadings of constituents of concern for drinking water	A comprehensive, perpetual, and evolving study of loads of specific drinking water constituents of concern that are discharged, either by point sources or nonpoint sources to the Delta.	The entire Delta and tributaries, as necessary for problem definition and resolution	Reduced levels of TOC, pathogen, and nutrients
Evaluation of TOC	Source identification of TOC and pilot testing of treatment methods on agricultural drain water from Delta islands.	Delta island drains and lower river drains	Reduced levels of TOC that reach the intakes at pumping stations

Stage 1 Actions

STAGE 1 ACTIONS	DETAILS	GEOGRAPHIC AREA	INDICATORS OF SUCCESS
1. Prepare project-level environmental documentation and permitting as needed (Years 1-7).	The continuous process of developing and managing the Water Quality Program.	Bay-Delta solution area	
2. Coordinate with other Program elements to ensure that in-Delta modifications maximize the potential for Delta water quality improvements (Years 1-7).	Ongoing coordination and integration.	All areas	
3. Continue to clarify the use of and fine tune water quality performance targets and goals (Years 1-7).	Receive input and incorporate recommendations as results from studies and actions become available.	All areas	
12. Perform other actions specific to drinking water improvements:	Drinking water protection is complex. Much of the proposed actions are associated with source water protection, while some focus on treatment technology and health studies. Protecting drinking water quality likely will require significant success in many of the proposed actions.	Entire watershed and Bay-Delta	Reduced drinking water contaminants of concern sufficient to meet state and federal drinking water concentrations
<ul style="list-style-type: none"> • Control TOC contribution through control of algae, aquatic weeds, agricultural runoff, and watershed improvement (Years 1-7). 	Individual actions throughout the Bay-Delta to reduce TOC to appropriate levels.		
<ul style="list-style-type: none"> • Study brominated and chlorinated DBP operational controls at water treatment plants and implement incremental improvements as warranted (Years 1-7). 	Determine how much operational control can affect DBP production and encourage implementation of optimum operational procedures at individual treatment plant.		

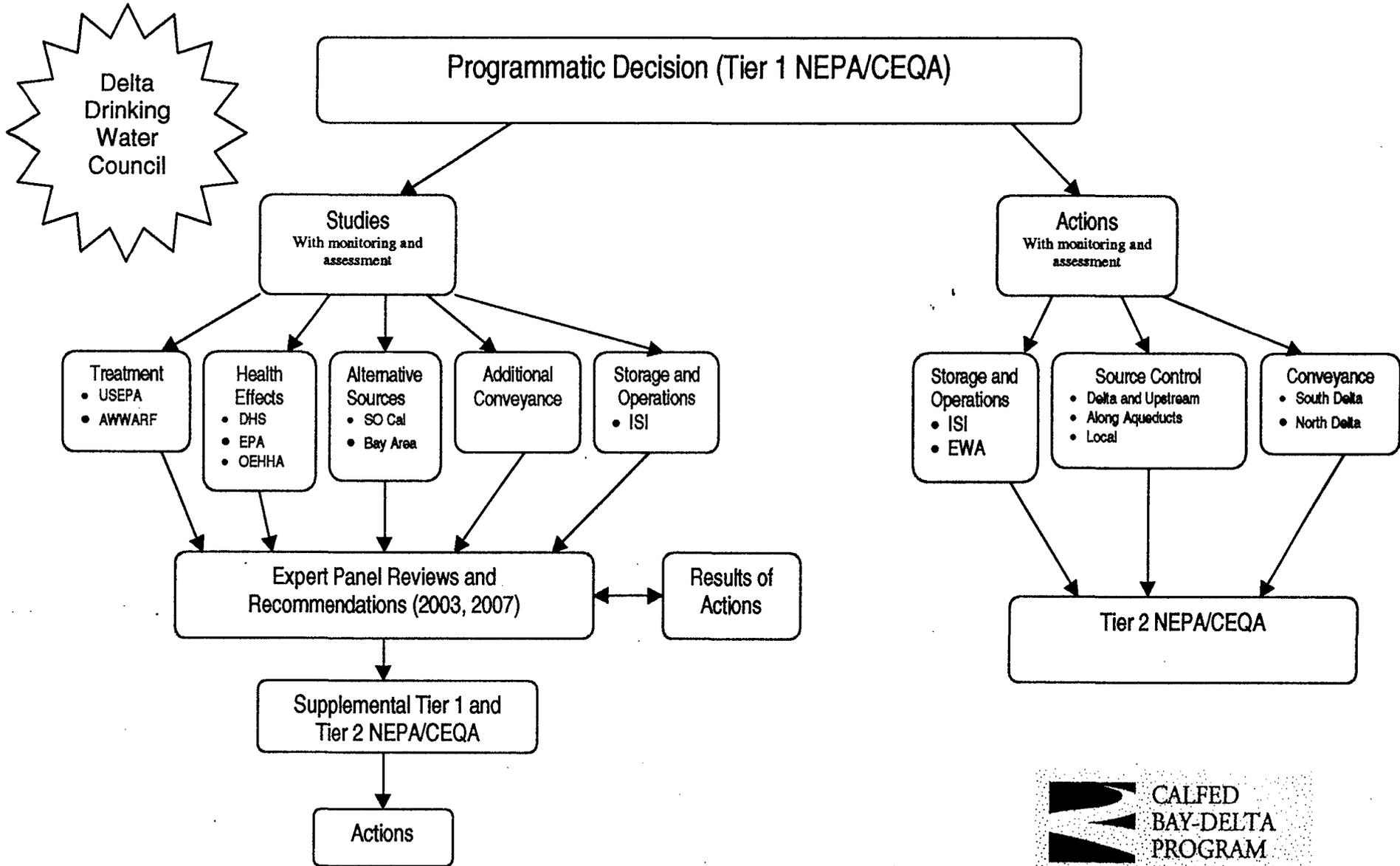
Stage 1 Actions (continued)

STAGE 1 ACTIONS	DETAILS	GEOGRAPHIC AREA	INDICATORS OF SUCCESS
<ul style="list-style-type: none"> • Control pathogens through control of cattle, urban stormwater, sewage, boat discharge, and possibly recreational swimming; Includes various projects depending on the area of Impact (Years 3-7). • Study impacts on recreational swimming impacts and impacts from wild animals (Year 4). 	<p>Pathogens from human and animal sources need to be reduced in source waters. Most control mechanisms are going to be educational and operational in nature. The objective is to reduce pathogens while preserving other beneficial uses such as recreation and agriculture.</p>	<p>Lakes, reservoirs, bays and estuaries within the Bay-Delta</p>	<p>Reduced Pathogens in supply water</p>
<ul style="list-style-type: none"> • Relocate Barker Slough intake (Years 7+). 	<p>Relocation of the Barker Slough intake would be considered if management practices in the watershed did not prove to be sufficiently effective at removing TOC, nutrients and pathogens.</p>	<p>Barker Slough area</p>	<p>Reduced TOC, Nutrients and pathogens in Barker Slough supply water</p>

Stage 1 Actions (continued)

STAGE 1 ACTIONS	DETAILS	GEOGRAPHIC AREA	INDICATORS OF SUCCESS
<i>Action 12 (cont.)</i>			
<ul style="list-style-type: none"> • Reduce methyl tert-butyl ether (MTBE) in various areas (Years 3-5). 	The gasoline additive MTBE accumulates in lakes, but is being phased out. No action necessary.		
<ul style="list-style-type: none"> • Address water quality problems in terminal reservoirs (Years 3-5). 	Reduce algae, pathogens, and other water quality problems in the terminal reservoirs.	Terminal reservoirs	Meet all drinking water standards
<ul style="list-style-type: none"> • Perform public health effects studies, as needed, to more specifically identify the potential health effects of bromide-related DBPs (Years 1-3). 	A detailed analysis of health effects are needed to, determine source water conditions required for health needs	Entire Bay-Delta	Numerical Targets in source water
<ul style="list-style-type: none"> • Investigate alternative sources and means of providing high-quality water supply for urban users of Delta water (Years 1-7). 	Alternative sources of water may exist for blending purposes to improve drinking water quality and enhance reuse options	Entire Bay-Delta	
<ul style="list-style-type: none"> • Investigate, as needed, advanced treatment technologies for the removal of salt, bromide, TOC, and pathogens from urban water supplies (Years 1-7). 	This is the study of specific treatment techniques and the combination of techniques to minimize development of DBPs	Entire Bay-Delta and service areas	
<ul style="list-style-type: none"> • Investigate combinations of new supplies and technologies that can minimize salt content of urban water supplies and provide greater public health protection (Years 1-7). 	This is a combination of the two above tasks.	Entire Bay-Delta and service areas	Meet all drinking water standards and enhance reuse of wastewater
<ul style="list-style-type: none"> • Convene a Delta Drinking Water Council in a public forum to consider relevant technical data and inform the governing entity in its consideration of solutions to identified public health issues for urban users of Delta water (Years 1-7). 			
<ul style="list-style-type: none"> • Develop a plan sufficient to meet forthcoming U.S. Environmental Protection Agency and Department of Health Services standards for brominated DBPs (by Year 7). 			

Water Quality Improvement Strategy



CALFED Water Quality Program

Interim Governing Structure

