

Jan 2000
Response to Comments
v1 Impact Analysis

EPA comments

5.3 Water Quality

IA-5.3-1

Comment: CALFED should adopt long term and intermediate targets and milestones for drinking water quality, such as bromide, TOC and salinity.

(PH2) CALFED's long term water quality objectives for drinking water are for a TOC concentration of 3.0 mg/L and a bromide level of 50 ug/L, or an equivalent level of public health protection to be provided by a cost-effective combination of alternate source water, source control, and treatment. CALFED is committed to help suppliers of drinking water from the Delta meet current and future regulatory requirements by attaining these objectives. Stakeholders have also recommended establishment of intermediate water quality milestones for drinking water constituents such as bromide and TOC. The recommended values are for salinity targets of 150-220 mg/l, bromide less than 300 ug/L and TOC less than 4.0 mg/L by 2002 and bromide less than 100-150 ug/L and TOC less than 3.5 mg/L by 2005, expressed as quarterly averages.

Because we do not yet know what ~~approaches could bring about an equivalent level of public health protection, we cannot yet make an unequivocal commitment to achieving long term numerical objectives for drinking water protection that might force construction of facilities.~~ ^{parameters will ultimately be relevant to and necessary for} ~~The same considerations apply to committing to meet intermediate numerical goals; numeric goals could be set, but these would have to also include an alternative to provide an equivalent level of public health protection.~~ ^{approach} Because it is not clear what actions will be needed to meet the CALFED public health protection objective for drinking water, it is not now possible to commit to a timetable implementing necessary actions. Similarly, due to a lack of knowledge, it is not currently possible to analyze impacts of failure to meet needed drinking water objectives. The CALFED Program must simultaneously address ecosystem, water supply reliability, ^{isvee} system integrity and water quality problems. While facilities would have undoubted advantages for the quality of drinking water supplies taken from the Delta, it is not presently clear that such facilities would produce the best overall solutions to the problems of the Bay-Delta estuary. The Delta Drinking Water Council will be asked to consider the question of intermediate drinking water quality targets and to make recommendations to the Bay-Delta Advisory Council and to CALFED management. The deliberations of the Council will also be supported by technical teams composed of drinking water stakeholders, and by the work of independent scientists that will be commissioned as needed to achieve balanced, scientifically supportable perspectives. 1226.3; 1226.33; 1274.1; 1191.16; 1391.4; 1185.1; 1409.1; 1245.1; 1390.2; 14T; 1178.17; 1194.6; 1226.68; 1191.16; 6T16.2; 1T37.1; 8T17.4; 2T14.1; 1363.1; 1213.3; 1413.6; 1331.3; 1211.37; 12T15.1; 1194.15; 1T37.1; 10T16.4; 100.3; 1000.6; 1000.4; 1185.4; 1215.8; 1245.1; 0990.5; 16T51.1*; T15-32.3*; *;

CALFED is ^{now} committed to protecting public health through a cost-effective combination of source control, alternate source and treatment actions.

IA-5.3-2

Comment: PPA relies too heavily on conveyance and storage to solve water quality problems. A mix that includes watershed management, water use efficiency/reclamation, exchanges/transfers, local water supply reliability, etc. would be more cost effective, adaptive and environmentally friendly.

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CALFED's approach to the PPA is consistent with this Comment. CALFED believes that the PPA approach includes a balanced mix of tools including watershed management, water use efficiency, waste water recycling, water exchanges and transfers, and local water supply reliability, as well as storage and conveyance. 1082.2

IA-5.3-3

Comment: Requests changes to Figure 5.3.2 through 5.3.5.

The EIS/EIR has been revised. Footnotes have been added to figures and tables to make it clear that the modeled version of the Preferred Program Alternative contains a diversion at Hood. 1215 Enc.2, p53

IA-5.3-4

* Comment: Provide detailed analysis of the water quality impacts of changes to the flow regime and to Suisun Marsh habitats.

Due to the need to make the Programmatic EIS/EIR readable, the decision was made not to include all supporting detail in the document. Detailed modeling investigations have been performed to support development of the PEIS/EIR, and detailed results of this work, including salinity predictions, are posted on the CALFED Internet site <http://calfed.ca.gov/>. Persons who have further technical questions are encouraged to contact CALFED staff who performed, or provided technical oversight of, the work. Contact information for CALFED staff is also available on the CALFED web site. A subgroup of CALFED's Suisun Marsh Levee Investigation Team is conducting more site specific modeling and other evaluations of the salinity and biological effects of breaching Marsh levees. This is a continuation of work conducted for the programmatic EIS/EIR. 1238.4; 1238.5

5.3.1 SUMMARY

IA-5.3.1-1 (to 5.3.7)

Comment:

(i) Page 5.3-2 PEIR summary does not discuss impacts to the North Bay Aqueduct under the Preferred Program Alternative. Need to analyze impact to all export and diversions locations, and discuss potential impacts of the Ecosystem Restoration Program. Also need to provide more information on TOC.

(ii) Page 5.3-4 PEIR: TDS must be included in the list of constituents of concern that should be controlled through improved wastewater treatment.

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(iii) Page 5.3-5 PEIR: Do not have adequate data on sources and loads of TOC in Delta and do not know extent to which CALFED actions can reduce TOC at the Delta pumping plants.

(iv) Page 5.3-9 PEIR: TOC, TDS and pathogens do not have environmental objectives, only drinking water objectives.

(v) Page 5.3-10 PEIR: Nutrients should be specified in Table 5.3-1.

(vi) Page 5.3-12 PEIR: Statement regarding DOC on page 5.3-12 implies maximum concentrations of 6 mg/l. Need to mention peaks of 13 mg/l and 20 mg/l found at Barker Slough.

(vii) Page 5.3-23 PEIR: CALFED fails to address increased mercury methylation related to proposed habitat restoration.

(viii) Page 5.3-24 PEIR: Land that has been targeted for wetland development is too close to Barker Slough Pumping Station.

(ix) Page 5.3-25 PEIR: The PPA does not include relocating intakes and the statement that municipal users of Delta water will benefit from relocating intakes should be removed from this section.

(x) Page 5.3-32 PEIR: Calfed should acknowledge that modeling performed shows that PPA will have no impact on NBA water quality and statement that "the PPA is projected to improve in-Delta and export water quality" should be modified to state that although most Delta exporters and diverters will benefit from improved water quality, the NBA contractors will not.

(xi) Page 5.3-35 PEIR: It is difficult to understand how reduced diversions in Barker Slough as a result of extending the Tehama-Colusa Canal to the NBA or relocating the NBA intake to the Sacramento River, could result in "less dilution of pollutants in Barker Slough and contiguous channels". This statement needs further explanation.

(i) It is important to note, though, that under the existing conditions, 20 to 50 percent of the THM precursors to Delta waters originate from drainage water from peat soil on Delta islands (Amy, G.L., Thompson, J.M., Tan, L., Davis, M.K., and Drassner, S.W. 10990 Evaluation of THM precursor contribution from agricultural drains. *Research and Technology* 82:57-64). CALFED modeling results do indeed demonstrate that none of the alternatives will significantly affect water quality at the North Bay Pumping Plant intake. Also, CALFED ecosystem restoration actions have the potential for negative impacts on North Bay Aqueduct water quality; and, the Preferred Alternative is not likely to significantly improve North Bay Aqueduct water quality. These facts will be acknowledged in the document, and specific mitigation language will be included if the ecosystem restoration program actions have adverse impacts on water quality or result in further pumping restrictions at the Barker Slough Pumping Plant.

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(ii) The document will be amended to include total dissolved solids as a constituent of concern that could be addressed through improved salt management in waste water systems.

(iii) The WQPP Section 3.7.2 does contain some information on organic carbon concentrations at selected Delta locations (Figure 11, page 3-45). There is also additional information on research studies being conducted and/or proposed in the Organic Carbon Drinking Water Quality Workshop Proceedings (August 26 & 27, 1999). The commentor is correct that additional analysis of TOC for the various alternatives would be helpful, and is being evaluated by the CALFED Program.

(iv) These constituents are not of concern regarding environmental beneficial uses. The only concern regarding TDS in freshwater environments may be about drastic TDS increase (10 times higher than Delta water TDS value) in areas that are not estuarine in nature.

(v) The footnote at the bottom of the table lists all the constituents included under Nutrients. It includes all nutrients listed in the comment.

(vi) The text will be revised to indicate TOC maxima that have been observed at the NBA intake.

(vii) CALFED ecosystem restoration actions may have the potential for degrading water quality, at least over the near term. The monitoring and assessment that will accompany each of these actions will determine whether any negative water quality impacts are occurring and, if this should prove to be the case, mitigation measures will be employed to reduce the impact to less than significant. Potential mitigation measures might include actions such as impounding water to reduce impacts of turbidity; treatment of discharges to remove metals, organic carbon and other undesirable constituents; and, relocation of the North Bay Aqueduct intake if that should become necessary.

(viii) *See response (vii) above.*

(ix) Table 4 at the end of the WQPP indicates that relocation of the Barker Slough intake would be conducted as part of the Stage 1 Actions (see bottom, page 12-23).

(x) The commentor is correct that the model predictions for the NBA do not show any improvement. One of the difficulties is that the DWR model is considered less reliable in the area around the NBA. In any case, the text will be changed to indicate that model predictions, although somewhat more uncertain in this area, indicate no improvements in salinity at the NBA Barker Slough intake.

(xi) Connection of the Tehama-Colusa Canal with the North Bay Aqueduct intake would result in a higher proportion of Canal water in the North Bay Aqueduct, with an associated reduction in flow through the channels leading to the NBA intake, and reduced capacity to dilute pollutants entering these waterways. A reduction in water quality could therefore occur in these channels.
1307.6; 1307.2

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IA-5.3.1-2

Comment: Water quality effects of converting irrigated agriculture in the Delta to wetlands.

It is not yet known if conversion of irrigated agriculture to wetlands in the Delta will improve or diminish water quality with respect to organic carbon, biochemical oxygen demand, toxic metals, nutrients, and other water quality parameters. Further investigation, including pilot-scale testing, will be conducted as part of implementation planning and the results documented in project-specific environmental documentation that will be prepared during the implementation phase of the CALFED program. 1217.51

IA-5.3.1-3

Comment: Releasing water from storage to improve water quality should only be considered if it does not affect water supply reliability

Comment noted. The Preferred Program Alternative would improve water supply reliability in dry and critically dry years, with the added advantage of improving water quality at the South Delta drinking water intakes. 1215.227

IA-5.3.1-4

Comment: Improvement of water treatment plants

It is expected that the Preferred Program Alternative would have a net beneficial effect on DOC concentrations at the export pumps in the South Delta but it may not improve water quality sufficiently to avoid treatment to remove DOC. *The EIS/EIR has been revised.* 1215.228

IA-5.3.1-5

Comment: Ultra-filtration is not a disinfection process

Comment noted. *The EIS/EIR has been revised.* 1215.229

IA 5.3.1-6

Comment EIS/EIR defers health risk studies

Because the Preferred Program Alternative would improve water quality at the export pumps no adverse impact on the health of water consumers would be expected. 1002.17

IA-5.3.1-7

Comment: No near-term improvements in drinking water quality. On the contrary, the EIR/EIS stated there is a strong potential that drinking water quality may degrade due to CALFED's ecosystem restoration. The technical analysis in the EIS/EIR indicates the preferred alternative

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will not meet CALFED's public health protection objectives, at least with respect to bromide.

(ERPP) CALFED's long term water quality objectives for drinking water are for a TOC concentration of 3.0 mg/L and a bromide level of 50 ug/L, or an equivalent level of public health protection. The Water Quality Program Plan provides evidence to suggest the Pacific Ocean is the primary source of bromide and salinity in Delta drinking water supplies, and that the importance of this source is not likely to be greatly affected by CALFED Stage I actions. Similarly, the Program Plan casts doubt on the feasibility of controlling organic carbon generated within the Delta. However, because significant public health, treatment technology, and regulatory questions remain unresolved, it is not yet clear what level of reduction of that reducing bromide and salts from the ocean and organic carbon from the Delta is going to prove essential necessary to adequately meet the CALFED goal of protecting public health. CALFED commits to work with agencies and stakeholders to make these determinations as the program moves into its implementation phase.

Because we do not yet know what ~~approaches could bring about an equivalent level of~~ public health protection, we cannot yet make an unequivocal commitment to achieving numerical objectives for drinking water protection. Nor is it possible at this time to quantify the cost of failure to attain adequate public health protection, if that should happen, nor to quantify the costs that would be involved in protecting public health in other ways. ~~Exploring source water exchanges, advanced treatment technology, or other means of providing an acceptable level of public health protection can be undertaken, however, and are very much within the intended scope of the Water Quality Program.~~ *parameters will ultimately be relevant to and necessary for health through a cost-effective combination of source control, alternate sources and treatment actions.*

Stage I water quality actions are expected to result in continuously reduced inputs of constituents that adversely affect drinking water supply. *the effects of* A number of the planned CALFED water quality actions will be measurable in terms of reduced loadings of pollutants entering the waters of the Delta estuary, as compared to existing conditions. Whether these improvements will always be measurable at diversion points, or whether they will be sufficient to fully meet the CALFED goal of protecting public health with regard to drinking water supplies taken from the Delta, cannot be known at this time. Even in the absence of quantitative estimates of the effects of these actions on drinking water supply diversions, taking such actions is clearly consistent with the concept of employing source prevention and source control measures as part of a multiple barrier approach to drinking water protection.

Future water quality needs will be identified based on results of ongoing health effects research and regulatory developments. Adverse impacts of other CALFED actions, such as may result from habitat restoration, will be determined through monitoring and assessment. If these assessments indicate that Stage I water quality actions are inadequate to protect public health, or that other CALFED actions are causing negative effects on water quality, additional actions will be taken to protect public health and reduce negative impacts to less than significant. This approach is consistent with the CALFED adaptive management philosophy. The Delta Drinking Water Council will participate in evaluating CALFED actions and recommending needed

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changes to the program on an ongoing basis to assure program goals are met. The CALFED environmental assessment documents will be amended as appropriate to acknowledge that Stage I water quality actions, taken by themselves, have limited capacity for improving drinking water quality. 1226.15; 12T3.3(?); 1147.4; 1209.6

IA-5.3.1-8

Comment: TDS is excluded from the list of constituents of concern to be controlled by treatment at wastewater plants. Must be included in this list.

The document will be amended to include total dissolved solids as a constituent of concern that could be addressed through improved salt management in waste water systems. 1307.6; 1226.56

IA-5.3.1-9

Comment: CALFED must provide assurances that water supply quality already paid for by water users will continue.

(PH2) CALFED acknowledges that drinking water purveyors using Delta waters have made considerable investments to be able to reliably produce safe drinking water from the Delta. CALFED commits to work with agencies using Delta water to preserve previous investments for improving the quality of Delta water supplies, and to extend these investments as appropriate. 1274.3; 1226.33

IA-5.3.1-10

Comment: The CALFED program needs to establish a strong linkage from water quality objectives and real-time water quality measurements to specific actions that will improve the water quality of SWP deliveries. Such linkages need to be described in the Final PEIS/EIR and stated as a part of the Record of Decision.

As is appropriate to a Programmatic analysis such as is presented in the CALFED Draft PEIS/EIR, the program does not contain a level of detail that would enable establishment of strong linkages between real-time water quality measurements and specific actions to improve the quality of SWP deliveries. These linkages need to be, and will be, developed as specific action plans are developed during the implementation phase of the program and as project-specific environmental documentation is prepared. Detailed action plans will enable the necessary linkages to be identified and implemented. 1162.2

IA-5.3.1-11

Comment: A drain or other means of disposing salts outside the SJV must be explored and implemented as part of the CALFED program.

(IA-1) The question of whether the scope of the CALFED program should include a solution to

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the problem of salt accumulation in the San Joaquin Valley was considered at length during the scoping period of the program. Because there is an existing program (San Joaquin Valley Drainage Implementation Program) that has primary responsibility for addressing the drainage problems of the Valley, it was decided that CALFED would act in a supporting role to the SJVDIP, and would provide funding and other support as appropriate to the primary CALFED mission of reducing conflict in the system by improving ecosystem functions, providing good water quality for all beneficial uses, increasing water supply reliability, and improving levee system integrity. A drain or other mechanism for eliminating salts from the Valley could be considered as one alternative under the SJVDIP. 1003.7; 1003.8; 1203.148*

IA-5.3.1-12

Comment: We are concerned with the lack of mitigation actions from increased discharges due to population growth in the Central Valley.

The goal of the CALFED Program is to reduce conflicts over water supply reliability, water supply system integrity, water quality and ecosystem health in the Bay-Delta estuary. Program plans in each of these areas provide a blueprint for actions that will reduce conflict in the system. It is true that the CALFED Program will not resolve all problems associated with quantity, quality, and reliability of water supplies throughout California, especially as the population of the State continues to grow rapidly. The CALFED Program is intended to improve the quality of municipal water supplies taken from the Delta to the extent consistent with ecosystem, agricultural, recreational, and other uses of Delta waters. Because the program will fall short of solving all drinking water quality problems, it will probably not result in solutions that eliminate the need for any future investments on the part of drinking water utilities to continue protecting public health. 1178.17

IA-5.3.1-13

Comment: The Draft EIS/EIR does not analyze a reasonable range of alternatives for improving water quality, even though the Delta is a major source of drinking water supply for millions of Californians. CALFED needs a credible social, environmental, and economic analysis of meeting public health objectives through advanced water treatment and water exchanges in the Central Valley, and these potential actions need to be compared against in-Delta actions and a dual system of conveyance. This analysis needs to include the social and economic cost of no action.

In addition to source control actions, storage facilities, and conveyance facilities, advanced drinking water treatment and water exchanges have significant potential for helping to meet the CALFED goal of protecting public health related to drinking water supplies taken from the Delta. Because advanced treatment technologies that might overcome the limitations of Delta water quality are not yet sufficiently well developed, it is not presently possible to perform

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meaningful analyses of the feasibility and cost effectiveness of these technologies, as compared to other actions. Similarly, at the current Programmatic level of detail, specific water exchange projects have not been identified and, as a consequence, the relative merits of such projects can not be compared at the present time. As research and development of drinking water technologies reaches the stage where comparisons can be made, and as specific water exchange projects are proposed during the implementation phase of the program, they will be evaluated along with all other potentially workable solutions. 1162.1

IA-5.3.1-14

Comment: Waste water Treatment Plant - While we understand the benefits of additional water quality improvement for fish habitat, we are concerned regarding the nature and extent of upgrades required at our wastewater treatment plant to achieve more stringent discharge standards.

Stormwater runoff - The City of Modesto uses dry wells and stormwater detention ponds for disposal and treatment of urban runoff. The costs of upgrading the quality of our stormwater discharge would be too large for us to absorb under current fiscal conditions. We recommend the CALFED program include financing mechanisms to assist urban areas in upgrading stormwater discharge systems to improve downstream water quality.

Vernalis Quality Objectives - The burden for water quality improvements needed to meet Vernalis quality objectives should be attributed to the appropriate upstream users and should not be shifted to urban users.

Dischargers of treated waste water must comply with Federal Clean Water Act regulations for protecting the quality of waters receiving such discharges, and the CALFED program will not diminish the responsibility of dischargers to comply with these regulations. However, CALFED was founded on the principles that responsible parties and beneficiaries should pay, and that significant redirected impacts to third parties must not result from CALFED actions. CALFED actions to improve water quality could, conceivably, have cost impacts on dischargers. In such cases, it is consistent with CALFED principles that funding be provided to accomplish needed improvements that would not be required in the absence of the program. 0971.4

IA-5.3.1-15

Comment: Despite the CALFED conclusion that new upstream storage will improve water quality, the decision to go ahead with new storage is premised on triggers such as water conservation, transfers, and recycling targets. There is no logical reason for those targets to become prerequisites to improve water quality.

The primary need for storage is to improve water supply reliability and plan for drought contingencies which, in turn, provides opportunities to enhance ecosystem function and to improve water quality. The requirement to implement water use efficiency and water transfer

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The PEIS/EIR indicates safe drinking water will be assured through the CALFED program by a cost-effective combination of source control, alternative sources, and treatment. Phase I of the program is directed primarily at source control activities, as these will prevent pollution and, thus, improve water quality for all beneficial uses, not least of which are fishery and wildlife resources. Alternate sources are included in the scope of the program; arranging water transfers among willing parties is one approach that will be considered. The possibility of relocating intakes is primarily applicable to individual water intakes, such as the intake to the North Bay Aqueduct which is subject to water quality degradation from local watershed influences.. A Peripheral Canal could, however, be considered as a larger scale relocation that would affect all or most drinking water intakes in the Delta. Advanced treatment is another major category of activity envisioned for the Water Quality Program that will have a significant role in comprehensive solutions to the water quality problems of the Delta.

Ecosystem restoration activities may improve or, in some cases, degrade the quality of drinking water supplies. As part of the required planning for ecosystem projects, pilot and field investigations will be conducted to evaluate the impacts of such projects and plans will be formulated to mitigate any negative impacts to below the level of significance as a condition of proceeding with projects. Flows designed to benefit the ecosystem may be useful for improving the quality of drinking water supplies taken from the Delta, and will be utilized for that purpose, consistent with the need to realize ecosystem benefits. 1210.43; 1210.65

IA-5.3.1-18

*Comment: The PEIS/EIR does not evaluate the relative economic and environmental advantages of alternative strategies to ensure high quality drinking water. The document should be revised to include an analysis of the cost effectiveness and environmental impacts and benefits of different strategies.

Although cost analyses are not a required part of the CALFED PEIS/EIR, affordability is a key Solution Principle, and will be analyzed as the implementation phase of the program gets underway, and as project-level detail is developed to support the necessary environmental documentation. 1210.43; 1210.65

IA-5.3.1-19

* Comment: Impacts to the water quality being supplied to agricultural customers, costs of supplying the water, etc. should be analyzed if modifications to the existing system or practices are proposed.

As one of its Solution Principles, CALFED is pledged to avoid significant redirected impacts of its actions. There are a number of actions contemplated within the CALFED Program that could have the potential to affect the quality, quantity, and cost of water supplies. Prior to

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implementation, proposed CALFED actions must be studied in detail and their environmental consequences fully disclosed. In the event significant impacts were redirected to users of Delta waters, these impacts would have to be mitigated to less than significant as a condition of proceeding with the project. 1366.11; 1366.75

IA-5.3.1-20

* Comment: Impairment of Water Quality Impacts on Conservation and Recycling - The Water Quality Program Plan potentially results in lower quality export water from the Delta that could affect conservation and water recycling efforts in areas importing water from the Bay-Delta. To the extent that lower quality source water reduces the feasibility of conservation and recycling programs, there will be an increase in usable wastewater which will be discharged through wastewater outfalls to streams or the ocean. A reduction in recycled water supplies or an increase in the cost of recycled water will result in a higher demand for source water to replace those supplies, including overproduction from groundwater basins, and greater diversions from other water sources. The Draft PEIS/EIR fails to address these impacts or to discuss the effect of alternative projects on these environmental impacts or mitigation measures to eliminate the impacts.

CALFED is committed to continuous improvement in water quality for all beneficial uses of Delta waters, and to avoiding significant redirected impacts of its actions. Therefore, inherent in CALFED planning is the need to avoid water quality degradation as a condition of being able to proceed with program implementation. CALFED analyses indicate that, when the program is implemented, the mineral quality of water diverted from the Delta will be at least as good as would be the case in the absence of the CALFED program; and, CALFED water quality actions will be geared toward maximizing this improvement. Therefore, long term negative water quality impacts on diverters of Delta waters should not result from CALFED actions, although short term impacts are possible as a result of such factors as construction activities and the effects of normal year-to-year hydrologic variations on CALFED actions. Impacts of this nature resulting from CALFED activities would be subject to disclosure in project-specific environmental documentation, and subject to mitigation.

CALFED ecosystem restoration actions may have the potential for degrading water quality, at least over the near term. The pilot scale testing, monitoring and assessment that will accompany these actions will determine whether any negative water quality impacts are to be expected and, if this should prove to be the case, mitigation measures will be employed to reduce the impact to less than significant, as a condition of proceeding with projects. Potential mitigation measures might include actions such as impounding water to reduce impacts of turbidity; treatment of discharges to remove metals, organic carbon, salts, and other undesirable constituents; and, relocation of the North Bay Aqueduct intake if that should become necessary.

1203.120; 1190.3; 1190.5; 1002.17

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IA-5.3.1-21

* Comment: The document places greater emphasis on conveyance than on source control, blending, alternate water supplies, projected treatment infrastructure upgrading, new treatment technologies, or other potential tools as strategies to provide adequate drinking water quality. The document should be revised to include a balanced program, including a balanced level of effort and funding, for a full range of potential drinking water quality strategies.

CALFED water quality actions planned for the first phase of program implementation focus primarily on source prevention and control in recognition that preventing pollution is an inherently superior and cost effective approach to solving water quality problems. CALFED's drinking water quality plan envisions protecting public health by employing a cost-effective combination of alternate source water, source control, and treatment. Actions in these categories will receive priority for implementation as resources become available, and with continuing involvement of stakeholders. The Ecosystem Water Quality Program and the Drinking Water Quality Program will be implemented as energetically as available resources permit. If sufficient resources become available, CALFED could assume a leadership role in fostering development of advanced treatment technologies, for example. To assure an energetic and successful water quality program, balanced funding among CALFED elements is critically important, ~~and should be insisted upon by stakeholders and legislative bodies.~~ Storage would be constructed primarily to enhance ecosystem flows and water supply reliability, although incidental water quality benefits might be realized, depending on how the system would be operated. CALFED will work with stakeholders to evaluate and maximize water quality benefits that could result from improved storage capacity as part of a broad program directed at all aspects of water quality improvement. 1198.47

5.3.2 AREAS OF CONTROVERSY

IA-5.3.2-1

Comment There is no firm commitment in the EIR/EIS to fund export facility improvements

Although the NEPA/CEQA guidelines do not require that a cost analysis or financing plan be prepared for alternatives, affordability is one of the six guiding principles of the CALFED Bay-Delta Program. The Water Quality Program Plan envisions investment in advanced treatment methods, along with source control and alternative sources as approaches to protecting the health of persons consuming water from the Delta. The level of investment in these activities will depend on available resources, and on how these investments are apportioned among the various alternatives. The Delta Drinking Water Council and the Bay-Delta Advisory Council are the primary forums through which stakeholders can affect these determinations. 0935.3

IA-5.3.2-2

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Comment: Section on areas of controversy is satisfactory.

Comment noted. No response is necessary. 1217.52

IA-5.3.2-3

Comment: Drinking water regulations are an area of controversy.

Comment noted. *The EIS/EIR has been revised.* 1209.12B

IA-5.3.2-4

Comment: The future of drinking water regulations and the ability of water agencies to meet future regulations with existing and advanced technologies should be included as an area of controversy in the document.

This discussion will be added to the document. 1226.56

IA-5.3.2-5

Comment: Add other factors that are currently unknown: currently inadequate knowledge of existing or baseline concentrations of TOC at key locations, or loads from various sources, nor the extent to which CALFED actions will reduce TOC at Delta pumping plants, including Barker Slough.

The recommended changes will be made in the document. 1307.6

IA-5.3.2-6

Comment: On page 5.3-5 of the PEIS, Add other significant factors that are unknown: inadequate knowledge of baseline conditions of TOC at key Delta locaitons and tributaries. Inadequate data on TOC loads and we do not know the extent to which CALFED actions will reduce TOC at the pumps.

The recommended changes will be made in the document. 1226.56

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5.3.3 AFFECTED ENVIRONMENT/EXISTING CONDITIONS

IA-5.3.3-1

Comment: Few references are cited for Affected Environment Section

In order to make the document more readable, CALFED made the determination that it would not provide detailed citations for information contained in its documents, but would instead cumulatively list the sources of information that were used. Persons interested in these details are requested to contact the appropriate CALFED Program Manager. ~~who will be made available to answer questions and provide detailed supporting documents and calculations on request.~~
1217.5; 1215.292; 1215.255

5.3.3.1 Delta Region

IA-5.3.3.1-1

Comment: The discussion regarding mercury and actions regarding mercury evaluation and abatement should be revised to include the potential for dredged material reuse for habitat and levee reuse purposes to reduced mercury loadings to the Estuary (Revised Phase II Report, 115, and 5.3-14).

*4/16/05
connected
between
West side
CVP*

The utilization of sediments containing mercury for habitat and levee reuse purposes is a possible use of such sediments, if data on mercury levels were collected and an analysis of the methylation potential were conducted and showed that the ecological risk associated with such a use is acceptable. Under no circumstances would mercury laden sediments be intentionally released into the estuary. 1198.48

IA-5.3.3.1-2

Comment: The major cause of elevated salinity levels in the South Delta are the result of high salinity surface and subsurface agricultural flows originating from the CVP's west side San Joaquin Valley service area, not salt water intrusion as indicated in the document.

The text in the second paragraph under "Salinity, Total Dissolved Solids, and Electrical Conductivity" (Section 5.3.3.1), will be changed to emphasize your point, and to emphasize that although the ultimate source of salts to the Valley is primarily from ocean intrusion into the water supply of the CVP. 1350.10

IA-5.3.3.1-3

Comment: Increased water stage and improved water quality in the South Delta as described

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under the Preferred Program Alternative should be ascribed to the South Delta Barrier Program, not any other Calfed Actions.

The predicted changes in water levels and water quality under the PPA reflect the combined effects of all elements considered as part of the PPA, including the South Delta Improvements, North Delta improvements, and through Delta conveyance improvements (e.g., as described in the Revised Phase II Report). The modeling was not conducted to isolate the effects of the South Delta Barrier Program alone. 1350.10

IA-5.3.3.1-4

Comment: (i) TOC and pathogens are not regulated in wastewaters

(ii) Dairies and feedlots should be listed as a source of nutrients

(iii) Ecosystem and drinking water quality requirements are not the same.

(iv) Growth in the Central Valley is a cause of water quality degradation.

(i) While it is correct that municipal and industrial discharges are not regulated for TOC and pathogens, they are for biochemical oxygen demand (BOD) and total coliforms, which can serve as surrogates or indicators for most types of municipal and industrial wastewater. TOC is a measure of organic carbon content and BOD is a predictor of the oxygen demand that will be exerted on a receiving water from a discharge. Total coliforms is used as an indicator organism for pathogens.

(ii) Comment noted. *The EIS/EIR has been revised.*

(iii) Comment noted. *The EIS/EIR has been revised.*

(iv) The commentator is correct. Water quality improvements produced by the Water Quality Program are likely to be less than the adverse water quality effects of growth. *The EIS/EIR has been revised.* 1209.12

IA-5.3.3.1-5

Comment: Qualifications should be placed on data summary.

Comment noted. *The EIS/EIR has been revised.* 1215.253

5.3.3.1 Delta Region

IA-5.3.3.1-6

IA Section 5.3 - Water Quality

Comment: Statement in second paragraph implies DOC at Barker during wet season is 6 mg/L. DWR data indicate DOC range is 6 to 13 mg/L and TOC 6 to 20 mg/L at Barker Sl. Pumping Plant. Minimum concentration in wet season is about 6 mg/L, with concentrations ranging much higher.

The recommended changes will be made in the document. 1307.6

IA-5.3.3.1-7

~~Comment: Statement in second paragraph implies DOC at Barker during wet season is 6 mg/L. DWR data indicate DOC range is 6 to 13 mg/L and TOC 6 to 20 mg/L at Barker Sl. Pumping Plant. Minimum concentration in wet season is about 6 mg/L, with concentrations ranging much higher.~~

~~The recommended changes will be made in the document. 1307.6~~

IA-5.3.3.1-8

Comment: While some wq objectives for environmental beneficial uses are more stringent than those for drinking water, there are objectives, i.e. for TOC, TDS, pathogens for which no environmental objectives are established.

The document will be changed to indicate TOC, TDS, and pathogens are drinking water parameters of concern for which no environmental objectives have been established. 1307.6

IA-5.3.3.1-9

Comment: Narrative or numerical WQ targets are listed for parameters of concern. Program alternatives and actions should be evaluated in the PEIS against these targets, or else acknowledge there is currently insufficient information to do so.

The recommended changes will be made in the document. 1307.2

IA-5.3.3.1-10

Comment: Industrial and municipal wastewater discharges are not regulated for TOC and pathogens - two important constituents for drinking water.

IA Section 5.3 - Water Quality

Wastewater discharges are regulated for certain bacteriological indicators, though it is true that Giardia and Cryptosporidium are not specifically regulated, and probably are not well reflected in the indicator organisms. The document will be changed to clarify this point. 1226.56

IA-5.3.3.1-11

Comment: Alter discussion on last paragraph to be clear that DBPs are not formed in the Delta, but as a byproduct of disinfecting the water.

The recommended changes will be made in the document. 1226.56

IA-5.3.3.1-12

Comment: Flood flow must reach the bay in order to keep our drinking water and fish from further contaminants. The Delta cannot continue to be the recipient of valley runoff and waste water, while water is exported from the Delta. The South Delta Program is a plan to keep fresh water from the upper river from mixing with San Joaquin Valley agricultural drainage on its way to the pumps, and to prevent toxic drainage water from being pumped back to its agricultural producers. More and more agricultural waste water is being put into our drinking water.

The CALFED program recognizes that storm water runoff, waste water discharges, and agricultural drainage are contributors to pollutant loads entering the Bay-Delta estuary, and actions are planned to reduce the entry of pollutants from these sources into the waterways of the estuary. There are many demands on the waters flowing into the Delta, including supplying agriculture within the Delta and San Joaquin Valley and providing drinking water to about two-thirds of the population of the state. Ecosystem and human needs for the water can, and do, conflict. The primary purpose of the CALFED program is to reduce this conflict by attaining the best possible balance of water uses. The problem is complex and is continually evolving. For this reason, the CALFED program will include a linked, step-wise set of actions that are continually revised and updated as the system changes and as our understanding of this complex system improves. 10T05.2

- 5.3.3.2 Bay Region
- 5.3.3.3 Sacramento River Region
- 5.3.3.4 San Joaquin River Region
- 5.3.3.5 Other SWP and CVP Service Areas

5.3.4 ASSESSMENT METHODS

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IA-5.3.4-1

Comment: CALFED must provide references for all water quality data presented, and must provide information regarding modeling assumptions and limitations of the methods used to perform the analysis.

In order to make the document more readable, CALFED made the determination that it would not cite all references to the information contained in the documents, but would instead cumulatively list the sources of information that were used. Persons interested in greater details are requested to contact the appropriate CALFED Program manager who will be available to answer questions and provide detailed supporting documents and calculations on request. Contact information is listed on the CALFED internet site address <http://calfed.ca.gov>. 1215.292; 1215.255; 1215.334*

IA-5.3.4-2

* Comment: The PEIS/EIR does not adequately analyze the water quality relationship between increased storage and increased Delta diversions. We recommend that the PEIS/EIR be revised to analyze adequately the water quality relationship between storage and Delta exports.

CALFED operations studies have investigated many combinations of storage and conveyance with respect to environmental flow capabilities and water quality consequences. Detailed modeling investigations have been performed to support development of the PEIS/EIR, and the results of this work are posted on the CALFED Internet site <http://calfed.ca.gov/>. 1210.43; 1210.65

5.3.5 SIGNIFICANCE CRITERIA

IA-5.3.5-1

Comment: (i) Notes error on Page 5.3-22.

(ii) Questions relationship between modeling inaccuracies and significance criteria.

(i) The EIS/EIR has been revised

(ii) For purposes of the Programmatic PEIS, a significant salinity impact was considered to be one that is measurable. The selection of 10% as the significance threshold relates to the supposed accuracy of the mathematical modeling tools used to make the predictions. Therefore, while in some cases a salinity change of less than 10% could be significant with respect to a public health protection objective, such changes would not be accurately predicted using available analytical tools. It would be desirable if water quality significance thresholds could be established at levels that have actual significance to beneficial uses of the water, and this will be

IA Section 5.3 - Water Quality

done when analytical tools are sufficiently sensitive to enable smaller differences to be resolved.
1217.54

IA-5.3.5-2

Comment: Questions whether modeling inaccuracies undermine significance determinations.

See response to Comment 1217.54. 1217.55

IA-5.3.5-3

Comment: A significant impact is arbitrarily defined as being a 10 percent change in salinity levels. CALFED must develop significance thresholds based on water quality improvement and public health protection objectives.

For purposes of the Programmatic PEIS, a significant salinity impact was considered to be one that is measurable. The selection of 10% as the significance threshold relates to the supposed accuracy of the mathematical modeling tools used to make the predictions. Therefore, while in some cases a salinity change of less than 10% could be significant with respect to a public health protection objective, such changes would not be accurately predicted using available analytical tools. It would be desirable if water quality significance thresholds could be established at levels that have actual significance to beneficial uses of the water, and this will be done when analytical tools are sufficiently sensitive to enable smaller differences to be resolved.
1215.226

IA-5.3.5-4

*Comment: The PEIS/EIR does not contain an adequate discussion of possible future drinking water standards. Some urban water districts have argued that a Peripheral Canal is needed to meet future water quality standards. The PEIS/EIR does not provide an adequate analysis regarding possible future standards or a clear statement from responsible state and federal agencies (e.g. EPA and the SWRCB) regarding these standards.

The PEIS/EIR has been amended to add substantial additional detail of prospective future drinking water standards. CALFED plans to meet these standards and protect public health by a cost-effective combination of source control, alternate sources of supply, and advanced treatment. Due to the numerous technical uncertainties surrounding the issue of new drinking water standards, it is unlikely that the U.S. Environmental Protection Agency or California Department of Health Services, the entities with regulatory authority over drinking water in California, would be prepared to make clear commitments to a particular course of regulatory action at this time. 1210.43; 1210.65; 1210.68

IA Section 5.3 - Water Quality

IA-5.3.5-5

5.3.6 NO ACTION ALTERNATIVE

IA-5.3.6-1

Comment:(i) Notes error in salinity tables.

(ii) Request qualitative assessment of program on substances other than salinity

(iii) Requests improved narrative explanation of tables summarizing salinity changes

(i) *The EIS/EIR has been revised.*

(ii) *The EIS/EIR has been revised*

(iii) *The EIS/EIR has been revised.* 1217.56

IA-5.3.6-2

Comment: The tables predict that, as compared to Existing Conditions, the No Action Alternative would cause salinity to increase from 5 to 8 percent, which could be reduced by storage. These slight changes are shown to have a beneficial effect. Why would increases in salinity have a beneficial effect? These are probably in error and should be reviewed.

In Tables 5.3-3a and 5.3-3b, predicted increases in salinity are shown as positive values, and represent a negative impact that was judged to be less than significant. The text appearing on page 5.3-22, third paragraph, specifies that salinity increases are expected. 1217.56

IA-5.3.6-3

* Comment: Conflicting statements as to the accuracy of the EC model results show plus or minus 10 percent in one location and plus and minus 10 umhos/cm in an other.

There was an error in the wording in section 5.3.6 of the Main Document that should have referred to plus or minus 10 percent rather than plus and minus 10 umhos/cm. The sentence has been changed to read, "(A change between \pm percent is considered within the margin of error of

IA Section 5.3 - Water Quality

the model analysis and is defined as less than significant.)” Accuracy of CALFED model results is estimated because there is, at present, no generally agreed upon method for scientifically determining confidence limits for the model estimates made for CALFED. CALFED model results assume future scenarios, including physical changes in the Delta. Because there is no certain means of verifying predictions of the water quality consequences of future changes in the system, it has not been possible to develop a better error estimate than the 10% value used in our analyses of environmental impact; this value was based on expert judgement, not on scientifically defensible computations. CALFED has, however, performed its modeling with the best analytical tools currently available, and with full involvement of expert stakeholders. The Delta Modeling Forum is one venue that has been used for developing CALFED modeling approaches, and CALFED has held a number of technical workshops to enable the best collective expert judgement to be brought to bear on its modeling challenges. CALFED will continue to actively solicit expert assistance to refine analytical approaches as the program evolves into its implementation phase. For the present, while considerable analytical uncertainties remain, CALFED management believes its modeling work has been accomplished with the strongest possible technical foundation. 1217.54

IA-5.3.6-4

* Comment: When comparing results of model runs for different alternatives, the uncertainties in the difference between Alternatives A and B increase beyond simply adding their uncertainties.

It is true that uncertainties multiply when alternatives are compared. However, because of the inability to quantify the error of model results beyond subjective expert judgement, CALFED believes it would not add information to the analysis to try to quantitatively estimate total uncertainty that would result from combining uncertainties that, themselves, are imperfectly quantified. During the implementation phase of the program, detailed environmental assessments will be performed for projects that are developed pursuant to the framework established by the CALFED Programmatic Environmental Impact Statement/Report. The level of detail of these assessments will be improved, reflecting the greater specificity of planned projects. To the extent that quantitative error estimates for later modeling results can be made scientifically, computations of combined error of estimates will also be quantified. 1217.55

5.3.7 CONSEQUENCES: PROGRAM ELEMENTS COMMON

TO ALL ALTERNATIVES 5.3-23

IA Section 5.3 - Water Quality

IA-5.3.7-1

Comment: (i) Effects of created wetlands on salinity.

(ii) Water quality effects of created wetland

(iii) Basis for comparison

(i) The environmental consequences of the Ecosystem Restoration Program are described in general terms in the EIS/EIR. The possibility that the conversion of agricultural lands to wetlands could increase salinity in Delta channels is acknowledged in the EIS/EIR. No attempt was made to make a numerical estimate of this effect because the Ecological Restoration Program is not defined in detail. It is expected that any change in salinity would be less than the 10% threshold of significance that reflects the resolution of currently available analytical tools.

(ii) Delta lands that would be converted to wetlands are currently used for agriculture. They are typically irrigated for about six months in the summer and flooded for one or two months in the winter to remove excess salt. Fields drain to perimeter ditches that are pumped out to Delta channels. Water discharged to the channels contains may contain elevated concentrations of salts, DOC and nutrients. Any emissions of pollutants from proposed wetlands have to be compared to pollutant emissions from the current land use, if any.

It is not yet known if conversion of irrigated agriculture to wetlands in the Delta will increase or decrease DOC concentrations. The conversion of agricultural land to wetlands is likely to reduce the emission of nutrients. Fertilizer is applied to the agricultural lands. It will not be applied to the wetlands. The same is true for pesticides. It is not expected that the conversion would have much effect on the emission of bacteria. Waterfowl gather in large numbers on flooded agricultural fields in the winter months and would be expected to gather in the wetlands that replace the fields.

(iii) The impacts of the other program alternatives were compared to both the existing condition and the No Action Alternative. 1217.57

5.3.7.1 Ecosystem Restoration Program

IA-5.3.7.1-1

Comment: Effects of wetland creation on water salinity

IA Section 5.3 - Water Quality

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The environmental consequences of the Ecosystem Restoration Program are described in general terms in the EIS/EIR. The possibility that the conversion of agricultural lands to wetlands could increase salinity in Delta channels is acknowledged in the EIS/EIR. No attempt was made to make a numerical estimate of this effect because the Ecological Restoration Program is not defined in detail. It is expected that any change in salinity would be less than the 10% threshold of significance that reflects the resolution of currently available analytical tools. Implementation of CALFED Ecosystem Restoration Program actions has the potential to change land and water use patterns, and could potentially cause impacts such as increased evaporation and increased salinity levels in some areas and at some times and, possibly, some alteration in the ability to control salinity intrusion from the ocean. At the current Programmatic level of detail, it is not yet possible to define CALFED ecosystem restoration projects with sufficient clarity to enable a quantitative analysis of salinity effects. Through its adaptive management process, CALFED will develop and apply analytical tools, such as mathematical modeling, to thoroughly assess projects as they are developed, to prepare the necessary environmental impact documentation, and to implement appropriate mitigation measures as a condition of going forward with projects. Examples of possible mitigation measures might include funding alternative water sources, and funding treatment and/or prevention measures to reduce water quality impacts below the level of significance. 1153.10

IA-5.3.7.1-2

Comment: CALFED ecosystem restoration actions may increase TOC and/or bromide in drinking water supplies taken from the Delta. CALFED must ensure agencies taking municipal water supplies from the Delta do not receive water of degraded quality as a result of Stage I actions, and that continuous improvement is not precluded.

(ERPP) CALFED ecosystem restoration actions may have the potential for degrading water quality, at least over the near term. The pilot scale testing, monitoring and assessment that will accompany each of these actions will determine whether any negative water quality impacts are occurring and, if this should prove to be the case, mitigation measures will be employed to reduce the impact to less than significant. Potential mitigation measures might include actions such as impounding water to reduce impacts of turbidity; treatment of discharges to remove metals, organic carbon and other undesirable constituents. 1226.56; 1307.5; 1307.6; 12T23.3; 1229.10; 1230.7; 1209.12; 1203.122*; 1203.126*

IA-5.3.7.1-3

Comment: Furthermore, the Draft PEIS/EIR contains insufficient analysis of the adverse impacts on water quality caused by implementation of some of the Ecosystem Restoration Program elements. The WOPP recognizes that the San Joaquin River already has the most heavily concentrated sources of salinity, thus, implementation of the Ecosystem Restoration actions that may have an adverse affect on water quality must be thoroughly analyzed and the true impacts disclosed and mitigated. If mitigation is not feasible, then those Ecosystem

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Restoration actions cannot be implemented.

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(ERPP) CALFED ecosystem restoration actions may have the potential for degrading water quality, at least over the near term. The pilot scale testing, monitoring and assessment that will accompany each of these actions will determine whether any negative water quality impacts are occurring and, if this should prove to be the case, mitigation measures will be employed to reduce the impact to less than significant. Potential mitigation measures might include actions such as impounding water to reduce impacts of turbidity; treatment of discharges to remove metals, organic carbon, salts, and other undesirable constituents; and, relocation of the North Bay Aqueduct intake if that should become necessary. 1180.13

IA-5.3.7.1-4

Comment: The Water Quality Program Plan states that implementation of portions of the CALFED Ecosystem Restoration Program, particularly the creation of wetlands, could change the salinity outflow characteristics and reduce the amount of fresh water available to repel salinity which would have an adverse impact on drinking water quality. Why is this not analyzed in the Draft PEIS/EIR? If more freshwater will be needed in order to repel salinity, where will the water come from? Page 5.3-24: The Draft PEIS/EIR notes that replacing irrigated cropland with wetlands could result in a net increase in water salinity because evaporation would increase. Will implementation of some of the Ecosystem Restoration Program elements require increased releases from New Melones to meet the water quality standard at Vernalis? How will altering the management of New Melones to provide more water for environmental purposes impact water

answer

(ERPP) Implementation of CALFED Ecosystem Restoration Program actions has the potential to change land and water use patterns, and could potentially cause impacts such as increased evaporation and increased salinity levels in some areas and at some times and, possibly, some alteration in the ability to control salinity intrusion from the ocean. At the current Programmatic level of detail, it is not yet possible to define CALFED ecosystem restoration projects with sufficient clarity to enable a quantitative analysis of salinity effects. Through its adaptive management process, CALFED will develop and apply analytical tools, such as mathematical modeling, to thoroughly assess projects as they are developed, to prepare the necessary environmental impact documentation, and to implement appropriate mitigation measures as a condition of going forward with projects. Examples of possible mitigation measures might include funding alternative water sources, and funding treatment and/or prevention measures to reduce water quality impacts below the level of significance. See response to IA-5.3.7.1-1 1180.6; 1153.10

5.3.7.2 Water Quality Program

IA-5.3.7.2-1

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Comment: Because low salinity source water is necessary for recycling and groundwater recharge, the document must provide drinking water quality and salinity targets and establish schedule and performance milestones.

CALFED's long term water quality objectives for drinking water are for a TOC concentration of 3.0 mg/L and a bromide level of 50 ug/L, or an equivalent level of public health protection to be provided by a cost-effective combination of alternate source water, source control, and treatment. Stakeholders have also recommended establishment of intermediate water quality milestones for drinking water constituents such as salinity, bromide and TOC. Values of 220 mg/L and 150 mg/L have been recommended as salinity targets, and a recommendation has been received that bromide should be less than 300 ug/L and TOC less than 4.0 mg/L by 2002 and bromide less than 100-150 ug/L and TOC less than 3.5 mg/L by 2005, expressed as quarterly averages.

Because we do not yet know what approaches could bring about an equivalent level of parameters will ultimately be relevant to and necessary for public health protection, we cannot yet make an unequivocal commitment to achieving long term numerical objectives for drinking water protection that might force construction of facilities. CALFED is, however, committed to protecting public health through a cost-effective combination of source control, alternate source, and treatment actions. The same considerations apply to ~~establishing more intermediate~~ numerical goals; numeric goals could be set, but these would have to also include an alternative to provide an equivalent level of public health protection. The CALFED Program must simultaneously address ecosystem, water supply reliability, levee system integrity and water quality problems. While facilities would have undoubtedly advantages for the quality of drinking water supplies taken from the Delta, it is not presently clear that such facilities would produce the best overall solutions to the problems of the Bay-Delta estuary. The Delta Drinking Water Council will be asked to consider the question of intermediate drinking water quality targets and to make recommendations to the Bay-Delta Advisory Council and to CALFED management. The deliberations of the Council will also be supported by technical teams composed of drinking water stakeholders, and by the work of independent scientists that will be commissioned as needed to achieve balanced, scientifically supportable perspectives. 1.3.

Comment: PEIS/PEIR does not analyze effects of creation of wetlands on salinity outflow characteristics, and does not address the source of water needed to repel salinity or how potentially significant impacts will be mitigated.

Several points are raised in this comment. The commentator states that the discussion of salinity changes resulting from the Ecosystem Restoration Program contained in the Water Quality Program Plan are not reflected in the EIS/EIR. Section 5.3.7.2 of the EIS/EIR includes a discussion of the effects of the Ecosystem Restoration Program on water salinity.

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The commentator asks whether water will have to be released from upstream reservoirs to compensate for the increase in salinity produced by the Ecosystem Restoration Program. It is expected that any adverse change in salinity attributable to the Ecosystem Restoration Program would be small compared to the beneficial changes in salinity produced by other elements of the Preferred Program Alternative. The net effect of the Preferred Program Alternative on salinity in the Delta as a whole would be beneficial and so no mitigation measures such as increased releases from reservoirs would be necessary. The Ecosystem Restoration Program could have an adverse effect on salinity in the San Joaquin River which could be mitigated by releases from upstream reservoirs. Revisions have been made to the EIS/EIR to this effect.

The only portions of the Ecosystem Restoration Program with the potential to most affect salinity in the San Joaquin River would be projects that convert irrigated agriculture to wetlands in the San Joaquin River drainage. ~~The bulk of the Ecosystem Restoration Program is likely to take place in the Delta and along the Sacramento River and its tributaries.~~

The commentator expresses the view that no actions should be taken that increase the salinity of San Joaquin River waters. The CALFED alternatives are intended to achieve a better balance between competing uses of Delta water. The Preferred Program Alternative produces a net reduction in salinity in the Delta primarily by conveyance improvements and for the benefit of most municipal and agricultural water users. The Ecosystem Restoration Program is needed to protect environmental values. It may be desirable to locate Ecological Restoration Program projects in the Delta and Sacramento River watershed rather than the San Joaquin river watershed if it is not feasible to offset salinity increases in the San Joaquin River by releases from reservoirs *or other mitigation measures.*

The commentator expresses the view that the responsibility for diluting pollution in the San Joaquin River should belong to those causing the pollution. Poor water quality in the San Joaquin River results from a combination of agricultural and municipal discharges and stream flow changes that benefit agriculture and municipal water suppliers; the responsibility for its current condition is, therefore, shared by many. ~~Completion of an effective system for removing agricultural drainage water from the San Joaquin Valley is the single action most likely to improve conditions in the San Joaquin River.~~ 1180.6

IA-5.3.7.2-3

Comment: Source control measures alone will not improve water quality

The commentator is correct that the measures contained in the Water Quality Program Plan are primarily source control measures. Although the Preferred Program Alternative will likely result in better water quality than the No Action Alternative, source control measures may only slow the deterioration of water quality rather than improve it. *The EIS/EIR has been revised.* 1209.5

IA-5.3.7.2-4

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Comment: EIS/EIR fails to discuss effects of pollutant discharges.

The CALFED program is expected to produce an overall reduction in pollutant discharge in the Sacramento and San Joaquin River watersheds. Consequently, the program is not expected to increase pollutants levels in waterways. It may change salinity and TOC levels as discussed in the EIS/EIR. 1208.7

IA-5.3.7.2-5

Comment: Benefits of Water Quality Program to municipal water suppliers are unproven.

The Water Quality Program would decrease the discharge of a variety of contaminants to the Sacramento and San Joaquin Rivers and their tributaries relative to the No Action Alternative. It is logical to believe that any diminution of contaminants in the system would benefit water suppliers. The commentator is correct in observing the effectiveness of the Water Quality Program is unknown and there are reasons to believe that it might produce only modest changes in water quality. 1215.254

IA-5.3.7.2-6

Comment: Relocation of of water supply intakes is not part of the Pref. Alt, so the statement that municipal users of Delta waters will benefit from relocating intakes should be removed.

Relocation of the North Bay Aqueduct intake is among the Stage I actions listed on Table 4, page 12-19, of the Water Quality Program Plan and is, therefore, an element of the Preferred Alternative. 1307.6

IA-5.3.7.2-7

Comment: The number one issue is supposedly water quality. It is interesting that there is a discussion of adding salts to potable water, and yet it is the other way around. You are adding fresh water to the ocean and dumping it all in there, instead of being able to use it in a more expeditious manner.

Especially during wet seasons, fresh water flows through the Sacramento-San Delta, into San Pablo and San Francisco Bays, and to the ocean. When flows are high it is often the case that storage capacity is inadequate to prevent large quantities of fresh water from moving into the ocean and being lost to further use. This is a natural condition, however, and has ecological benefits that should not be lost. Not least among the benefits of high flows is the ability to flush pollutants from the Bay-Delta system. The question of how much fresh water outflow is required to preserve a healthy ecosystem, while providing adequate supplies for the people of California is among the central issues that must be resolved by the CALFED program. The result is likely to be a delicate balance of water user and ecosystem needs. All interested.

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parties should join CALFED in helping to identify this optimum balance.2T12.4

IA Section 5.3 - Water Quality

5.3.7.3	Levee System Integrity Program	5.3-26
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IA-5.3.7.3-1

Comment: The document fails to discuss the salinity concerns raised by the potential reuse of Bay dredged material in the Delta.

Text will be added to Section 5.3.7.3 that indicates that any imported dredge material would be tested and be required to meet criteria acceptable to the agencies such as the Regional Water Quality Control Boards and U.S. Corps of Engineers, to ensure that the use of such material would not result in adverse water quality conditions. 1198.58

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5.3.7.4 Water Use Efficiency Program

IA-5.3.7.4-1

Comment: Request for health effects studies

The commentator calls for studies of the health effects associated with the use as a drinking water source of groundwater bodies that have been recharged with reclaimed wastewater. The Department of Health Services has regulatory authority over ground water recharge projects using reclaimed wastewater, and must approve of any such project. Considerable research on this topic is already available; however, additional studies may fall within the scope of CALFED activities to the extent such investigations would pursue CALFED objectives. 6T28.2

IA-5.3.7.4-2

Comment: Water efficiency program could adversely affect water and soil salinity

The EIS/EIR acknowledges that actions designed to increase the efficiency of water use may increase salinity in some waterways, and lists possible mitigation measures. (EIS/EIR Section 5.3.7.4). In areas where mitigation is not possible it may not be possible to implement water efficiency measures. *The EIS/EIR has been revised.* 1239.14; 1237.13

5.3.7.5 Water Transfer Program

5.3.7.6 Watershed Program

IA-5.3.7.6-1

Comment: Drinking water quality treatment should be restored by funding watershed restoration programs.

CALFED recognizes that drinking water quality, and water quality in general, is a function of watershed influences. Accordingly, protection of drinking water sources is a critical element of the CALFED drinking water program. Watershed activities that reduce pollutant loads and improve the consistency of water quality are eligible for consideration as CALFED projects, in partnership with existing watershed protection entities. 10T21.1

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5.3.7.7 Impacts Related to Construction for Storage and Conveyance Elements

IA-5.3.7.7-1

*Comment: PEIS/EIR does not adequately analyze the water quality relationship between increased storage and increased Delta diversions.

CALFED has performed extensive mathematical modeling to predict the water quality consequences of increased storage, increased environmental flows, and increased diversions, that would result from the CALFED program. CALFED is continuing to perform this work, with extensive stakeholder involvement, as the program evolves and additional project detail is developed. The results of completed work are publicly available, and will continue to be made available, and stakeholders will continue to be invited to public workshops and other venues through which they may participate in these developments. The ability to perform detailed analysis is constrained by the lack of certainty as to where storage might be constructed, what capacity such new storage might have, what conveyance improvements might occur, what regulatory constraints might be placed on the system, and how the system would be operated. CALFED has approached this problem by predicting ranges of consequences based on different assumptions that, while not providing all answers, does indicate the range of potential consequences resulting from the given assumptions. 1210.66

5.3.8 CONSEQUENCES: PROGRAM ELEMENTS THAT DIFFER AMONG ALTERNATIVES

IA-5.3.8-1

Comment: Effects of diversion at Hood

Comment noted. No response necessary. 1217.58

IA-5.3.8-2

Comment: Requests release of fingerprint model

All official CALFED documents are available for inspection by the public. 1215.255

IA-5.3.8-3

IA Section 5.3 - Water Quality

Comment: In addition, the CALFED EIS/EIR only evaluated the impacts on water quality in terms of salinity, dissolved organic carbon and bromides. There is no evaluation of DO levels although much of the south and central Delta regions are often in violation of the Basin Plan for DO objectives. As we discussed earlier, the reduction of flow down Old River paired with the bathtub effect caused by the downstream barriers will cause more water quality problems than just increased salinity.

The Water Quality Program plan contains a substantial discussion of the currently available information on problems with dissolved oxygen in the Delta. However, as analytical tools are lacking for performing quantitative predictions of the performance of CALFED alternatives with respect to dissolved oxygen concentrations, it was not possible to carry the analysis further. Similarly, the ability to predict performance of water quality parameters other than salinity is limited by the lack of available tools. Developmental work is underway to improve analytical capabilities. 0887.3

IA-5.3.8-4

Comment: CALFED should propose solutions to meet current and future regulatory requirements using the latest technology available towards removing total organic compounds and reducing bromide levels. The Preferred Alternative would increase the cost and environmental impacts of treatment to meet drinking water standards. The EIS/EIR fails to discuss these impacts, or to discuss alternatives and mitigation measures.

CALFED ^{is committed to} ~~intends to assure~~ protection ^{of} public health by employing a strategic combination of source control, alternative sources, and advanced drinking water treatment actions. Because of the lack of scientific knowledge and changing drinking water regulations, it is not clear what combination of these actions will be necessary to meet CALFED's drinking water goal. Because of these unknown elements, it has not been possible to identify or quantify the impacts and mitigation measures that may be needed if planned actions fall short of adequately protecting public health. 1000.3

5.3.8.1 Preferred Program Alternative

IA-5.3.8.1-1

Comment: The document indicates that the Preferred Alternative would decrease salinity (and bromide) at the Delta Pumps (5.3-32) and increase bromide at Old and Middle Rivers (5.3-33). The reasons for these different results at such proximate locations is not adequately explained.

The modeling results shown in Table 5.3-4a (all water year types) and Table 5.3-4b (dry and critical years) indicate that the salinity will be reduced at Old and Middle Rivers, as well as at

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the Delta Pumps. 1198.49

IA-5.3.8.1-2

Comment: Increased water stage and improved water quality in the South Delta as described under the Preferred Program Alternative should be ascribed to the South Delta Barrier Program, not any other Calfed Actions.

The predicted changes in water levels and water quality under the PPA reflect the combined effects of all elements considered as part of the PPA, including the South Delta Improvements, North Delta improvements, and through Delta conveyance improvements (e.g., as described in the Revised Phase II Report). The modeling was not conducted to isolate the effects of the South Delta Barrier Program alone. 1350.10

IA-5.3.8.1-3

Comment: The statement states that there may be the potential for increased TDS in portions of the Delta. If that statement is ascribed to the effects of the South Delta Barrier Program, that is unacceptable because DWR's analysis indicates that any TDS increases are quickly diluted.

The text for the PPA does not ascribe the potential for localized increases in TDS to the South Delta Barrier Program. According to the modeling results, under the PPA, TDS is predicted to improve or remain unchanged in the South Delta (see Tables 5.3-4a & 5.3-4b). 1350.41

IA-5.3.8.1-4

Comment: South Delta Agriculture adds no significant salts to the waters. The salts that are in its drainage originated from the same Delta waters and are merely concentrated as they would be from any consumptive use of water. It is unfair and illogical to equate riparian use of stream water with discharges by entities who receive imported salts.

There is precedence for addressing discharges of concentrated salts. Uses that affect the quality of the water to serve other beneficial uses can be subject to regulation as discharges through the National Pollutant Discharge Elimination System. Examples include industrial cooling operations that increase salt concentrations by evaporative uses of fresh water. Although agricultural discharges generally are not subject to NPDES discharge permits, we believe any uses that degrade the quality of Bay-Delta waters by addition or concentration of salts or other pollutants fall within the scope of improvements that can be made through the CALFED program. Agricultural activities that concentrate but do not add pollutants do not increase the overall loading of pollutants and, from that perspective, do not degrade overall water quality. However, because water quality impacts of some constituents are concentration-based, the act of concentration can cause impacts, particularly localized ones, such as increasing the toxicity of

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the water to sensitive species in waterways near discharges. Also, discharges of concentrated materials near drinking water intakes can increase concentrations of constituents, such as total organic carbon, for which concentration-based drinking water quality criteria exist. Due to these considerations, actions that address water quality impacts of pollutant concentration, including concentration caused by agricultural activities, are included within the scope of potential CALFED Program investments. 1350.42

IA-5.3.8.1-5

Comment: Additional proposed groundwater extraction in Northern Sacramento Valley has potential for deterioration of water quality. Thorough studies, including the possible health effects and increased water treatment costs, should be made prior to any detectable degradation of ground water quality.

CALFED is committed to a strategy of using sound scientific principles to evaluate any suggested solution through monitoring and research before identifying the alternatives for implementation. Moreover, CALFED is committed to supporting non-degradation of existing good water quality conditions, in both surface and groundwater sources, as a condition of commitments to action. 1004.12

IA-5.3.8.1-6 (or WQ-App D)

Comment: Construction of the peripheral canal will alter Bromide concentration and water quality

The CALFED Program must simultaneously address ecosystem, water supply reliability, levee system integrity and water quality problems. While facilities to avoid negative influences on the quality of drinking water supplies diverted from the Delta would have definite advantages for the quality of the water, it is not presently clear that such facilities would produce the best overall solutions to the problems of the Bay-Delta estuary, and CALFED must address all these problems simultaneously. The scope of the program includes facilities if further investigation determines they are necessary to accomplish CALFED goals. 15T29.3

IA-5.3.8.1-7

Comment: Please provide technical analysis to support the statement that all regions would experience "substantial" potential benefits from source control measures of the WQPP. (Page 3-10) Response revised and comment recoded to 1209.24 and forwarded to Chuck V. in Chapter 3 of IA.

~~The statement that all regions would experience substantial potential benefits from source control measures does not appear to be on Page 3-10 of the WQPP. Nonetheless actions as shown in the table on page 3-11 that include pollution prevention as well as treatment are intended to improve water quality, although it is difficult to quantify. As stated on page 3-11,~~

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~~such actions are not likely to address problems associated with saltwater intrusion, especially bromide. 1209.20~~

IA-5.3.8.1-8

Comment: Southern California wants quality water supplies

CALFED is committed to developing the Drinking Water Program with the continuing assistance and participation of stakeholders, particularly through the Delta Drinking Water Council and its technical support groups of stakeholders. Water quality actions have not yet been developed to the point of making an absolute commitment to implementation in Stage 1A or Stage 1, and that is why there is some lack of clarity as to the difference between planned actions, identification of information needs, and assignment of priorities for action. Work on developing the actions will proceed at a high pace, consistent with the need for continual involvement of stakeholders. 2T15.1

IA-5.3.8.1-9

Comment: Requests complete analysis of effects of CALFED program on water quality entering San Francisco Bay.

Estimates were made of salinity changes in the West Delta and Suisun Bay that are attributable to CALFED alternatives. (See Table 5.3-4 in the EIS/EIR). Both beneficial and adverse changes were estimated to be less than 2%, and thus judged to be less than significant. 1238.4

IA-5.3.8.1-10

Comment: Requests detailed analysis of effects on Suisun Bay water quality.

See response to Comment 1238.4-IA-5.3.8.1. Reductions in peak Delta freshwater flows would increase salinity in San Francisco Bay relative to the No Action Alternative. 1238.5

IA-5.3.8.1-11

Comment: Effects of salinity changes on tidal wetlands in Suisun Bay

See response to Comment 1238.4. The Preferred Program Alternative would result in an average increase in salinity in Suisun Bay of 1 to 2 % (See Table 5.3-4 in the EIS/EIR). Any change in wildlife habitat values attributable to salinity change was judged to be less than significant. 1238.11

IA-5.3.8.1-12 (and 5.3.11)

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Comment: PPA would increase costs and impacts of treatment to meet drinking water standards; eir fails to discuss these impacts or discuss alternatives and mitigation measures toward eliminating or mitigating these impacts

CALFED's long term water quality objectives for drinking water are for a TOC concentration of 3.0 mg/L and a bromide level of 50 ug/L, or an equivalent level of public health protection. The Water Quality Program Plan provides evidence to suggest the Pacific Ocean is the primary source of bromide and salinity in Delta drinking water supplies, and that the importance of this source is not likely to be greatly affected by CALFED Stage I actions. Similarly, the Program Plan casts doubt on the feasibility of controlling organic carbon generated within the Delta. However, because significant public health, treatment, technology and regulatory questions remain unresolved, it is not clear that reducing bromide and salts from the ocean and organic carbon from the Delta is going to prove essential to adequately meet the CALFED goal of protecting public health.

Because we do not yet know what ~~approaches could bring about an equivalent level of~~ public health protection, we cannot yet make an unequivocal commitment to achieving numerical objectives for drinking water protection. Nor is it possible at this time to quantify the cost of failure to attain adequate public health protection, if that should happen, nor to quantify the costs that would be involved in protecting public health in other ways. ~~Exploring source water exchanges, advanced treatment technology, or other means of providing an acceptable level of public health protection can be undertaken, however, and are very much within the intended scope of the Water Quality Program.~~ *parameters will ultimately be relevant to and necessary for*

~~CALFED is, however, committed to protecting public health through a cost-effective combination of source control, alternate source and treatment actions.~~ Stage I water quality actions are expected to result in continuously reduced inputs of constituents that adversely affect drinking water supply. A number of the planned CALFED water quality actions will be measurable in terms of reduced loadings of pollutants entering the waters of the Delta estuary, as compared to existing conditions. Whether these improvements will always be measurable at diversion points, or whether they will be sufficient to fully meet the CALFED goal of protecting public health with regard to drinking water supplies taken from the Delta, cannot be known at this time. Even in the absence of quantitative estimates of the effects of these actions on drinking water supply diversions, taking such actions is clearly consistent with the concept of employing source prevention and source control measures as part of a multiple barrier approach to drinking water protection.

Future water quality needs will be identified based on results of ongoing health effects research and regulatory developments. Adverse impacts of other CALFED actions, such as may result from habitat restoration, will be determined through monitoring and assessment. If these assessments indicate that Stage I water quality actions are inadequate to protect public health, or that other CALFED actions are causing negative effects on water quality, additional actions will be taken to protect public health and reduce negative impacts to less than significant. This approach is consistent with CALFED's adaptive management philosophy. The Delta Drinking Water Council will participate in evaluating CALFED actions and recommending needed

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changes to the program on an ongoing basis to assure program goals are met. The CALFED environmental assessment documents will be amended as appropriate to acknowledge that Stage I water quality actions, taken by themselves, have limited capacity for improving drinking water quality. 1331.1

IA-5.3.8.1-13

Comment: Page 3-10 Need to provide technical analysis and define measures of benefits to support page 3-10 statement that all regions would experience substantial benefit from source control measures. Regional water suppliers will need to "blend" the benefit throughout service area.

Redundant comment; see response to comment 1209.20. 1209.27 Same comment and response as 1209.24 which is forwarded to Chuck V. in Chapter 3 of IA.

IA-5.3.8.1-14

Comment: How could reduced diversions in Barker Slough from extending the Tehama-Colusa Canal to the NBA or relocating the NBA intake to the Sacramento River result in "less dilution of pollutants in barker Slough and contiguous channels?"

Connection of the Tehama-Colusa Canal with the North Bay Aqueduct intake would result in a higher proportion of Canal water in the North Bay Aqueduct, with an associated reduction in flow through the channels leading to the NBA intake, and reduced capacity to dilute pollutants entering these waterways. A reduction in water quality could therefore occur in these channels. . 1307.6

IA-5.3.8.1-15

* Comment: The water quality analysis in Chapter 5 indicates that without a Hood diversion, the performance of the PPA with respect to water quality is similar to that of Alternative I (i.e., bromide levels at CCFB would increase by 2020 compared to current levels). Please provide technical analysis that supports the suggestion that WQP actions alone could consistently achieve CALFED's water quality objectives. It is not clear that the PPA, even with the Hood diversion, could achieve CALFED's objective of the public health equivalent of 50 ppb bromide.

We do not agree that the PPA will necessarily reduce the loads and impacts of bromide and salinity. The water quality analysis in Section 5 indicates that only with the Hood diversion will the PPA reduce salinity and bromide levels and, even then, the amount of salinity and bromide reduction will depend on how the system is operated. According to the PEIS/EIR, construction of the Hood diversion is contingent on a finding of no adverse impacts on fish populations.

Please disclose the potential in-Delta water quality problems involved, how they would be caused, and why they could not be mitigated. Please describe the relation between this paragraph, and the paragraph on Page 5-3-44, which states that, "Through careful water

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management. Alternative 3 is projected to improve both in-Delta and export water quality." Please disclose why it is reasonable to sacrifice potentially more effective fish recovery and improved water quality for M&I and agricultural use locally and elsewhere, for the potential in-Delta water quality problems.

CALFED has performed extensive mathematical modeling to predict the water quality consequences of the CALFED program, and is continuing to perform this work, with extensive stakeholder involvement, as the program evolves and additional project detail is developed. The results of completed work are publicly available, and will continue to be made available, and stakeholders will continue to be invited to public workshops and other venues through which they may participate in these developments. If the publicly available information is inadequate to answer technical questions, stakeholders are encouraged to contact the responsible CALFED Program Manager. The CALFED internet site <http://calfed.ca.gov/> contains the results of completed studies and lists contact information for program staff. The analytical work that has been done indicates the Preferred Program Alternative, even with the Hood diversion, would not result in bromide concentrations as low as 50 ug/L; this body of work also indicates that the degree of improvement in Delta water quality would be considerably dependent on how the system would be operated. The Hood diversion would be constructed only if further investigation demonstrated the ecological impacts of the facility were acceptable.

should reference LT objectives as numerical equivalent of public health protection

Of the fresh water inflows to the Delta, the Sacramento River is the largest source of good quality inflow. Diversion of part of this flow out of Delta channels would benefit users of the water by avoiding a number of adverse water quality influences in the Delta, the most important of which would be saline ocean water mixing with the fresh water supply. However, such a diversion would also deprive the Delta of some good quality inflow and would tend to reduce dilution of pollutants and reduce circulation in south Delta channels. CALFED studies have shown that the impact to Delta water quality of an upstream diversion of Sacramento River water could be considerably reduced by maintaining some diversion from south Delta channels and perhaps by constructing barriers at strategic locations to direct Delta channel flows. Through these approaches, it may be possible to significantly improve the quality of diversions from the Delta while maintaining Delta water quality. 1209.20; 1209.27*

5.3.8.2 Alternative 1

IA-5.3.8.2-1

Comment: Need studies to record baseline information, possible health effects, and increased treatment costs associated with deterioration of water quality. Concern regarding effect of

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extensive groundwater extraction

There is a considerable amount of baseline water quality data for the major water sources to the Bay-Delta, collected over many years. As the commenter has noted, the Northern Sacramento valley basins enjoy good quality water at present and this baseline has been recorded. Predictions of impacts as a result of change can be made using the ample knowledge related to processes that may cause water quality deterioration, and mitigation measures will be taken to minimize deterioration. Although an analysis of costs is not required as part of the EIS/EIR, affordability is one of the basic principles upon which CALFED solutions must be based. Rigorous analysis and pilot scale testing will be conducted in advance of full scale implementation of projects, and the results detailed in project-specific environmental documentation that will be required in the implementation phase of the CALFED program. The adaptive management component of the program will be used to avoid over-pumping from groundwater aquifers so that irreversible salinization of the aquifers and other impacts are prevented. Groundwater recharge plans are included in Stage I of the Program. 1004.12

IA-5.3.8.2-2

Comment: The EIR/EIS does not address any thresholds of quality standards or facilities for pretreatment of the exported water regarding organic loading.

CALFED's intention is to focus equally on environmental and water quality issues. Recent studies indicate there is reason for increased concern about health effects of some disinfection byproducts. Further studies will be conducted over the next few years and drinking water regulations will be re-evaluated to assure they adequately protect the health of consumers. CALFED actions to improve water quality, and the choice among CALFED alternatives, have the potential to improve the quality of drinking water supplies from the Delta. But, according to CALFED's Basic Solutions Principles, this and other CALFED objectives must be met without redirecting impacts to others (Index #44).

Under the Preferred Program Alternative the overall water quality would improve by reducing the loadings of many constituents of concern that enter the Delta tributaries from point and nonpoint sources. Actions under these program elements would reduce concentrations of key contaminants contained in receiving waters, especially the Bay-Delta system. Precursors of disinfection byproducts, including bromide and organic carbon, are among the principal targeted constituents. Research and development of approaches to reducing organic carbon and bromide will receive appropriate emphasis in the CALFED Program. 0935.2

IA-5.3.8.2-3 (3&4)

Comment: Bromide concentrations provided on pages 5.3-39 (Sect. 5.3.8.2), 5.3-42 (Sect 5.3.8.3), and 5.3-46 (Section 5.3.8.4), should be in mg/l not ug/l.

The commentor is correct, the units have been changed from ug/l to mg/l. 1209.12h

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5.3.8.3 Alternative 2

5.3.8.4 Alternative 3

IA-5.3.8.4-1

Comment: Alternative 3 would provide greater water quality-related public health benefits than the PPA. The document should reflect this

Tables 5.3-7a/b and 5.3-11a/b show the predicted improvements in salinity compared to the No Action Alternative and Existing Conditions. These were considered the preferred base conditions for the PEIR. 1209.22; 1209.29 — *Response revised and recoded to 1209.26 and forwarded to Chuck V. in Chapter 3 of IA.*

5.3.9 PROGRAM ALTERNATIVES COMPARED TO EXISTING CONDITIONS

5.3.9.1 Preferred Program Alternative

5.3.9.2 Alternative 1

5.3.9.3 Alternative 2

5.3.9.4 Alternative 3

5.3.10 ADDITIONAL IMPACT ANALYSIS

IA-5.3.10-1

Comment: Avoiding impacts to Old River's beneficial uses (municipal, industrial and agricultural supply; recreation; freshwater habitat; wildlife habitat; migration; spawning; and navigation) requires meeting the Basin Plan objectives for water quality, at a minimum. The water quality evaluation presented in the CALFED EIS/EIR for the south Delta is inadequate for determining the effect on the beneficial uses in Old River, except for the drinking water supply. Consequently dischargers, such as the City of Tracy, are unable to adequately determine if their discharges will impact the beneficial uses under the proposed EIS/EIR alternatives. However, it

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is likely that water quality in Old River will be impaired by all the alternatives and therefore the City will be unable to meet their discharge requirements, which are based on protection of the beneficial uses of Old River. In an effort to respond to the CALFED EIS/EIR (under any of the project alternatives) and to protect the environmental and fisheries resources in Old River, the City of Tracy could be presented with a situation forcing the relocation of their facilities.

The Water Quality Program plan contains a substantial discussion of the currently available information on problems associated with various water quality parameters. Unfortunately, data are lacking for some constituents, and adequate analytical tools for predicting the performance of constituents other than salinity are generally unavailable. Therefore, it was not possible to thoroughly assess the potential impacts of CALFED alternatives on all water quality constituents of concern. In the absence of more definitive information, CALFED is committed to continued development of data and analytical tools as the program moves forward, and to use the information to investigate the impacts of its planned actions. Where new impacts are identified, mitigation measures will be implemented. Examples might include funding alternative water sources, and funding treatment and/or prevention measures to reduce water quality impacts below the level of significance. 0727.2

IA-5.3.10-2

* Comment: The PEIS/EIR suggests that improvements in water quality could induce urban growth. We do not agree that improved supply reliability induces growth.

Depending on a number of factors, including the success of Water Quality Program actions, the quality of Delta waters will improve, but the degree of improvement is unknown. If Delta water quality improves significantly, past experience suggests this would have a tendency to induce growth. The Programmatic EIS/EIR is required to disclose all potentially significant impacts, and CALFED disclosure of potential growth inducing impacts of improved water quality is consistent with this requirement, even though the actual magnitude of such an impact could prove to be negligible. 1209.23

IA-5.3.10-3

* Comment: This section states that past, present, and probable future projects have been evaluated for their potential to create cumulative effects when combined with the preferred program alternative. It then states which project would result in negligible effects on water quality projects which have already been considered in the environmental analysis for this Program. Eight projects are listed that would result in cumulative effects that are considered potentially significant and would affect salinity, bromide, TDS, TOC, temperature, DO, and organic and inorganic suspended solids. The section gives no data or details of how these would cause potentially significant impacts on water quality.

NEPA and CEQA both require a discussion of cumulative impacts. Eight projects were identified as having the potential for cumulative impacts with the CALFED Program. No

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detailed analysis of the eight projects was made but all have the potential to significantly reduce flows in the Delta or in Delta tributaries or contribute pollutants to the Delta system. For example, water storage and diversion projects are likely to adversely affect flow into the Delta and San Francisco Bay at certain times of the year. Also, continued rapid urbanization in the Central Valley would result in increases in wastewater and urban storm water discharges. Combined with the CALFED Program, these projects have the potential to produce significant adverse impacts on Delta water quality. More information on the topic can be found in Attachment A to the PEIS/EIR.

The CALFED Program would not necessarily solve the cumulative impact problems; NEPA and CEQA only require that they be identified. 1279.59

5.3.11 MITIGATION STRATEGIES

A-5.3.11-1

Comment: Mitigation measures for Ecosystem Restoration Program

Mitigation strategies for DOC would, in general, also be effective for reducing BOD. It is not expected that bacteria emissions would be increased by the Ecosystem Restoration Program so no mitigation measures are proposed. 1217.60

IA-5.3.11-2

Comment: Pathogen monitoring

The pathogen counts were performed on untreated water samples. 1217.61

IA-5.3.11-3

Comment: Mitigation strategies must not compromise drinking water quality.

The purpose of mitigation strategies listed would be to lessen any adverse impacts of the Preferred Program Alternative including impacts on water suppliers. The mitigation may only be possible if new storage is built. 1209.12a

IA-5.3.11-4

Comment: Implementation actions must address contaminant levels of concern for in-Delta, south Delta and urban export drinking water uses and to ensure protection of public health. Implementation actions may include Delta conveyance changes or a cost-effective combination of alternative source waters, source improvement, and treatment facilities. Water quality improvements need to be implemented in a timely manner to allow sufficient time to meet the effective date of drinking water quality regulations.

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The Draft Programmatic CALFED EIS/EIR is intended to establish an overall framework within which detailed project planning and implementation will go forward. It is therefore appropriate and necessary that detail should be lacking from the Programmatic document. CALFED is committed to the principle of continuous improvement in the water quality of the Bay-Delta estuary until these waters are of good quality to support all beneficial uses, including drinking water supply. CALFED is also committed to ongoing stakeholder involvement in planning and implementing effective water quality improvement actions. CALFED has recently formed a Delta Drinking Water Council comprised of interested stakeholders including suppliers of drinking water taken from the Delta. The Council, supported by a committee of stakeholder technical experts and by independent scientists as needed, will advise CALFED management on implementation of effective drinking water quality actions. The scope of planned drinking water quality actions is by no means limited to source control, although some source control actions were given high priority for implementation because they could be rapidly implemented, because implementation costs can be lower than for more complex actions, and because they are expected to produce measurable results in terms of reduced loadings of constituents.

Other
Currently proposed CALFED source control actions are likely to be somewhat limited in their capacity to improve Delta water quality. On the other hand, safe drinking water is presently being produced from the Delta, as defined by current ability to meet drinking water standards. If drinking water regulations were to remain unchanged, it is probable that safe drinking water could continue to be produced from the Delta, even without CALFED actions. It is not yet clear what level of source water quality improvement will be necessary to meet CALFED drinking water quality goals, as it cannot now be determined what future standards will have to be met, or what the schedule for needed changes should be. CALFED's adaptive management approach is designed to be responsive to changing needs and conditions, to arrive at solutions that fit future needs. If meeting these needs requires further actions, these are within the scope of the program. 1147.5; 0935.2

5.3.12 POTENTIALLY SIGNIFICANT UNAVOIDABLE

IMPACTS

IA-5.3.12-1

Comment: Freshwater flow to San Francisco Bay not needed.

The commentator states that freshwater from the Delta is not needed to "flush" San Francisco Bay. State water quality standards at Chipps Island require the release of freshwater into the Bay, in recognition of the need for fresh water outflows to approximate natural hydrologic conditions upon which many sensitive estuarine species depend. 0998.1

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General and Unclassifiable Comments (also listed in separate document)

IA-5.3.General-1

Comment: Calls for better linkage between cause and effect.

There is sufficient uncertainty about the environmental consequences of the alternatives considered in the Draft EIS/EIR that it is not currently possible to establish a strong linkage between actions and consequences. Water quality and other monitoring and research is needed to quantify anticipated impacts and to determine the effectiveness of early actions. Later actions would depend on the success of earlier actions, consistent with CALFED's adaptive management philosophy. 1162.1

IA-5.3.General-2

Comment: Recommend that CALFED delete any reference to plans for a screened diversion of up to 4000 cfs at Hood.

The alternatives were chosen to include a range of actions to address the various needs for improving the Bay-Delta System and responding to the needs of all the stakeholders. The screened diversion in the Preferred Alternative is intended to help provide better quality water to the Central Delta and various drinking water diversions, and at the same time utilize state-of-the-art screening technology to minimize potential adverse effects on fish and other aquatic resources. The actual magnitude of the diversion would be determined as part of a project design and would at that time be subject to a project-specific NEPA/CEQA evaluation and permitting. 1341.6

IA-5.1/5.3.General-3

Comment: The document places too great an emphasis on conveyance than on source control, blending, alternate water supplies, projected treatment infrastructure upgrading, new treatment technologies, or other potential tools as strategies to provide adequate drinking water quality.

The elements of CALFED's drinking water strategy is described on page 43 of the Revised Phase II Report and includes a combination of actions and studies developed and performed under the scrutiny of a public advisory group called the Delta Drinking Water Council. A broad range of actions and studies are planned including source control, conveyance, storage and operations, monitoring and assessment, treatment, health effects, and alternative sources. Participation by stakeholders in the Delta Drinking Water Council is intended to ensure that a comprehensive approach is taken in providing for adequate drinking water quality. 1198.47

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IA-5.3.General-4

Comment: The Preferred Alternative, by exporting more water from the Delta, will further prevent the Bureau from meeting their obligation to maintain salinity at Vernalis set forth in the 1995 Water Quality Control Plan.

According to the DWR modeling results shown for the Preferred Program Alternative (Tables 5.3-4a (all water year types) and 5.3-4b (dry and critical years), salinity at the export pumps would be improved which in turn would reduce the salt loads entering the San Joaquin River Region from the Delta Mendota Canal. Also see *CALFED Common Response #19*. 1350.2

IA-5.3-General-5 (or WQ-App D)

Comment: Relates to applicability of water quality standards versus goals and anti-backsliding

No response.. 0991.14

IA-5.3.General-6

Comment: Increase in non-point pollution due to growth in the export area (growth induced by the Preferred Alternative) should be addressed both for upstream (water source) areas and export areas. The WQ Program will have adverse effect on rural roadways because current road maintenance practices will be hindered.

Non-point pollution associated with urban growth in both the export area and the upstream areas will be regulated under the existing EPA Stormwater management regulations that require states to permit selected urban areas discharging pollutants to water bodies. On October 29, 1999 those regulations (referred to as Phase II NPDES Stormwater Regulations) were signed by EPA. These regulations will cover smaller cities (the Phase I program covered urban areas with population greater than 100,000) and will require such cities to obtain permits by February, 2003. These requirements are national requirements and are not mandated by CALFED. They are included in the WQPP because that plan incorporates existing regulatory tools where appropriate.

Consistent with the principle that CALFED actions not result in significant redirected impacts, any impacts of the Water Quality Program on the capability for road maintenance would be subject to mitigation. It is not clear, however, how such maintenance activities would be impacted by the Water Quality Program.

1218.43

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IA-5.3.General-7

Comment: Disagree with statement that "improvements in water quality could induce urban growth (Page 3-4, paragraph 4, PEIR) It is not apparent to us that the PPA will result in a meaningful reduction in the salinity of Delta Supplies.

Model predictions provided in Tables 5.3-4a and b indicate that the PPA may potentially reduce salinity at the export pumps; the improvement would depend on the storage options and the annual hydrology. If such were the case, and water quality were improved along with water supply reliability, the history of development in semi-arid lands in general, and in California in particular, would suggest that this would induce (or at least support along with other factors) further urban growth. 1209.19

IA-5.3.General-8

Comment: Public health impacts of reduced freshwater flows.

~~It is not expected that reduced freshwater flow from the Delta to San Francisco Bay would have any effect on the contaminant concentrations in edible fish. Tidal flow is the primary agent for removal of contaminants from San Francisco Bay rather than Delta outflow.~~

Reduced freshwater flow from the Delta to San Francisco Bay would affect circulation patterns and could, theoretically, have an influence on accumulation of toxicants in Bay fish and shellfish consumed by humans. Because fresh water outflow constitutes a small proportion of circulation flows in the Bay (the preponderance of flow is tidal), and because CALFED actions would have only incremental effects on freshwater outflows, it is unlikely that human health effects of ingesting accumulated toxicants from Bay fish and shellfish would be significantly affected by CALFED actions. 1233.17

IA-5.3.General-9

Comment: Requests more information on impacts of CALFED alternatives on parameters other than salinity

The EIS/EIR has been revised. 1217.50

IA-5.3.General-10

Comment: Southern California should receive high quality water for reasons of equity.

The commentator notes that high quality water is piped directly to some residents of the Bay Area and that equity demands that Southern California residents receive the same benefit. While some Southern Californians already receive high quality water delivered by the Los Angeles

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Aqueduct, CALFED recognizes that the quality of water delivered from the Delta through the State Water Project is not of similar quality. The CALFED Program has as a fundamental objective, improving the quality of drinking water supply to Southern California, consistent with the need to simultaneously address the ecosystem, water supply reliability, and levee system integrity problems of the Bay-Delta estuary. 6T28.3

IA-5.3-General-11

Comment: Water quality goals are too high, making an isolated facility inevitable.

The CALFED program proposes an incremental approach to improving water quality in the Delta. Near-term actions will be implemented and their effectiveness will be determined with respect to the CALFED drinking water quality objective of providing safe, affordable drinking water from the Delta. Actions to be taken at later stages of the program will depend on the results of the near-term actions, consistent with CALFED's adaptive management philosophy. While facilities could be considered if earlier actions fail to address drinking water quality requirements, other approaches including advanced treatment, alternative source water, and source control actions may be sufficient. 1239.18; 1237.17

IA-5.3-General-12

Comment: Diversion at Hood

The commentator accurately notes that if the Stage 1 actions fail to produce satisfactory water quality at the export pumps, construction of a diversion at Hood will be constructed. 1244.1

IA-5.3-General-13

Comment: Enzymes in marsh systems

The Ecological Restoration Program includes the creation of thousands of acres of wetlands. The ecological benefits of the wetlands can be realized without necessarily requiring proprietary systems employing enzymes. 1244.6

IA-5.3-General-14

Comment: Requests funding details for CALFED program

The CALFED EIS/EIR is a programmatic document for which there is not a requirement for inclusion of detailed information on schedules, costs and financing mechanisms, although affordability is a key CALFED Solution Principle that must be satisfied. CALFED has recently formed a Delta Drinking Water Council comprised of interested stakeholders including suppliers of drinking water taken from the Delta. The Council, supported by a committee of stakeholder

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technical experts and by independent scientists as needed, will advise CALFED management on implementation of effective drinking water quality actions, and can be asked to consider affordability 1235.20

See also Common Response #1: Programmatic Nature of the Document.

IA-5.3.General-15

Comment: The EIS/EIR fails to address the impacts of not providing water that meets drinking water standards

CALFED is committed to providing good quality water to serve all beneficial uses of the Bay-Delta estuary, including drinking water supply. The Preferred Program Alternative is expected to reduce sources of pollutants and, thereby, to improve the quality of water supplies diverted from the Delta. However, because of the need to simultaneously address ecosystem, water supply reliability, and levee system integrity problems, it is not expected that CALFED actions will be sufficiently successful to avoid the need for any further investments on the part of drinking water purveyors to meet future drinking water regulations and assure safe drinking water. During the implementation phase of the program, CALFED will prepare project-specific environmental documentation that provides detailed analysis of project impacts on drinking water quality. 1215.41

IA-5.3.General-16

Comment: Lack of Stage 1 actions that would demonstrate continuous improvement in water quality, failure to describe adequate mitigation measures to address potable water quality degradation from ecosystem restoration

The source control actions planned for Stage I will certainly reduce inputs of pollutants into Delta waters and will result in continual improvement in the quality of these waters as the actions proceed, as compared to the situation that would exist in the absence of the program. CALFED ecosystem restoration actions may have the potential for degrading water quality, at least over the near term. Pilot scale evaluations of project impacts will be performed prior to full scale implementations. Also, the monitoring and assessment that will accompany each of these actions will determine whether any negative water quality impacts are occurring and, if this should prove to be the case, mitigation measures will be employed to reduce the impact to less than significant. Potential mitigation measures might include actions such as impounding water

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to reduce impacts of turbidity, and treatment of discharges to remove metals, organic carbon, or other undesirable constituents. While the CALFED program is intended to reduce conflicts among beneficial uses of the waters of the Bay-Delta estuary, it has been acknowledged from the outset that not all problems associated with water supply, water quality and water management in California can be solved through the CALFED program. The Program can, however, exert leadership toward the goal of optimum management of the state's water resources. 1211.8

IA-5.3.General-17

Comment: Page 3-4, para. 4 - Commenter understands last sentence on page 3-4 paragraph 4 as a statement suggesting that improved water quality will induce growth and assumes that it would be due to lower salinity that enables reuse. Because the commenter thinks that the Preferred alternative will not reduce salinity, the statement is incorrect

Redundant comment; see response to comment 1209.19. 1209.26

IA-5.3-General-18

Comment: Water conservation practices have resulted in elevated salinity levels in agricultural lands and associated groundwater sources, and in reduced rice yields. Salinity in water is a key issue not just in the Delta and for export water quality standards, but for all California and CALFED should treat the issue accordingly.

While salinity has been identified as a water quality constituent of concern for the CALFED program, no explicit salinity objectives have been established, although values of 220 mg/L and 150 mg/L TDS have been recommended as salinity targets. A salinity target may be established through further stakeholder involvement, but whether or not a specific target is established, CALFED will address salinity as a critically important water quality constituent affecting the usability of Delta water supplies for agricultural, industrial, and municipal uses. 1219.14

IA-5.3.General-19

Comment: Wetland creation will increase TOC and water will require more treatment

Wetland creation may or may not increase TOC, depending on substrate and flooding regimes. Peat soils are a source of organic carbon, but concentrations vary greatly in water overlaying peat soils over the summer and the winter in response to biological assimilation and release processes and in response to exposure to oxygen. There is not enough information at this point to predict exactly when, where, and how much TOC will be added to the system (or subtracted from it) as a result of wetland creation, and there are ample management practices that can be used to minimize release.

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Impacts of ecosystem restoration projects will be evaluated in pilot-scale testing and the results documented as an element of project planning during the implementation phase of the CALFED program. 1219.15