Comments by Thu 21 NOV

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DRAFT For Review

CALFED Bay-Delta Program
Water Quality Program

Plan for Analysis of Proposed Water Quality Actions

General

The plan for analysis of proposed water quality actions will be presented to the Water Quality Technical Work Group(WQTWG) and will be adopted by the group. The CALFED Program Team will undertake the agreed upon studies, reporting the results to the WQTWG. A modeling technical support team composed of WQTWG participants will be organized to provide technical advice and support for necessary mathematical modeling work that may be needed. Other technical teams may be organized as necessary to provide assistance in particular aspects of the studies. The recommendations of the modeling support team and any other technical teams will be subject to review and approval by the WQTWG.

All of the water quality actions identified for initial study will be evaluated. An important part of this evaluation will be collection, analysis, and use of relevant data. In connection with this activity, a Quality Assurance/Quality Control Plan will be developed to establish a scientific basis for assuring the quality of data to be relied upon.

Based on study results, selected actions will be proposed for inclusion in the Water Quality Common Program. A Water Quality Common Program chapter will be included in the CALFED Component Refinement Report which will document the results of evaluative studies for the CALFED program as a whole.

During the development of the Programmatic Environmental Impact Report/Statement, other water quality actions may be evaluated for inclusion as components of specific project alternatives. A plan for any such studies will be prepared and submitted to the WQTWG for review and approval. Like the studies currently planned as part of Common Water Quality Program development, the WQTWG will continue to be involved and to provide guidance as the technical evaluations progress to a final product.

Analytical Plan

Mine Drainage Remediation

Action:

Reduce tributary and Delta heavy metals loadings by implementation of moderate onsite mine drainage remediation measures developed in site-specific studies at the Walter, Malakoff Diggins, Leviathon, Iron Mountain and Penn mine sites and control runoff from these and other high priority mine sites based on current water quality objectives for pollutants. Fund remediation through pollution-credit trading (e.g., reduce loading from mines in lieu of more costly, but less effective, wastewater treatment plan upgrades or other means.

Study Steps:

1. Meet with relevant staff from the Environmental Protection Agency and other agencies to clarify current status of inactive mine sites with potentially responsible parties and abandoned mine sites.

2. Acquire existing plans for remediation of the Walker, Malakoff Diggins, Leviathan, Iron Mountain, and Penn mines.

3. Evaluate the effectiveness of the proposed remediation actions with respect to reducing metals loadings.

    a. Acquire, evaluate, and summarize existing water quality data to establish current conditions.

    b. Compute mass balances and resulting concentrations in receiving waters which would result from drainage remediation actions, and compare these values to existing conditions at key locations in Delta tributaries.

    c. Perform mathematical modeling as necessary or feasible. A modeling advisory team will be organized to provide technical advice and recommendations to the Program Team for identifying useable mathematical modeling tools and for evaluating and recommending modeling assumptions and model operations.

    d. Present results to WQTWG for review and comment. Incorporate reviewer comments.

4. Evaluate the technical feasibility of proposed mine remediation actions. Existing remediation plans will be reviewed to assess the probability of success associated

with proposed actions. Considerations will include the degree to which unproven technologies or lack of sufficient data would increase the risk of project failure. Results will be presented to WQTWG for review and comment. Reviewer comments will be incorporated.

5. Conduct economic analyses of proposed actions, updating existing cost estimates to a common basis for comparison among the existing mine remediation plans. Present results to WQTWG for review and comment, and incorporate reviewer comments.

6. Prioritize proposed mine remediation actions according to effectiveness, technical feasibility and cost. This step occurs after the criteria are determined.

7. Submit a prioritized list of mine remediation actions, with supporting information, to Financial Work Group for evaluation and recommendation of financing alternatives.

8. Prepare documentation presenting prioritized actions and identifying the need for filling data gaps.

Pesticide Salt and Microbial Agent Reduction by ~~Source~~ Control of Agricultural Sources

This section addresses more than pesticides and focuses only on ag so the title should reflect this.

Action:

Reduce surface water concentrations of pesticides, concentrated mineral salts, and microbial agents by expansion and extension of existing agricultural source control programs. Action may include provision of incentives or other means to modify field drainage systems to reduce drainage volumes, manage irrigation tail water to reduce drainage volumes, manage irrigation tailwater to reduce pesticide residues, adopting BMPs to reduce rainfall induced discharge of pesticides to watercourses, higher water use efficiency to reduce the amount of agricultural drainage and reduced agrochemical loading, use of Efficient Water Management Practices or expansion of these practices by more suppliers and water users.

There usually is not much salt in surface runoff. Maybe we can define ~~salt~~ what we mean by salt. How is it different from nut section. (see *)

I don't believe that is a criteria for pesticide etc. control

Study Steps:

Could also give examples of microbial constituents. Are we talk applied or pesticides or microbial pathogens or nutrients or soil mess.

1. Collect, evaluate, and summarize relevant data to assess current pesticide, salt, and microbial constituent concentrations. Identify significant data gaps.

2. Based on existing data, identify agricultural areas which are the largest contributors of pesticides, concentrated mineral salts and microbial agents. Describe uncertainties associated with lack of adequate data, if such uncertainties are found to exist.

3. Identify, describe, and evaluate the effectiveness of existing agricultural source

fyi - we are preparing a workplan for developing salinity objectives + an implementation program for the San Joaquin River. It will contain many of the tasks listed here.

Rudy

control programs. Identify which existing programs appear to have the largest potential for greater success, given incentives or other means of encouragement.

4. Provide the Finance Work Group with details of existing agricultural source control programs having apparent potential for expansion, and request recommendations for providing appropriate incentives or other encouragement.

5. Evaluate the effectiveness of existing tailwater management programs in reducing pesticide residues. Consult with Regional Water Quality Control Board, Department of Food and Agriculture, Department of Pesticide Regulation, and agricultural interests to identify:

   a. Which pesticide residues are found in receiving waters, and what toxicities are associated with these residues?

   b. Of the pesticide residues causing problems in receiving waters, which would be susceptible to adequate removal through tailwater management?

   c. What are the scientific uncertainties associated with lack of data, lack of adequate toxicity information, lack of chemical fate information, or other factors?

6. Consult with Regional Water Quality Control Board, Department of Food and Agriculture, Department of Pesticide Regulation, and agricultural interests to identify Best Management Practices for reducing rainfall induced discharge of pesticides to watercourses. Evaluate the effectiveness of implementing BMPs to accomplish this purpose.

7. Consult with Regional Water Quality Control Board, Department of Food and Agriculture, Department of Pesticide Regulation, Department of Water Resources and agricultural interests to identify Best Management Practices for higher water use efficiency. Evaluate whether implementing such practices will reduce loadings and concentrations of agricultural chemicals in agricultural drainage.

8. Perform economic evaluations to estimate costs of adopting and implementing source control actions.

9. Prepare documentation prioritizing areas for pesticide, salt, and microbial reduction through expansion of existing source control programs through adoption of Best Management Practices. Priorities will be established based on effectiveness, cost, and technical feasibility.

Salt, Trace Element & Organic Carbon

~~Pesticide~~ Reduction by Land Fallowing

why are we emphasizing land fallowing?

Pesticides are not directly addressed by the following actions. This is a discussion of salt control measures and I would prefer not to have pesticides added to the "mix"

Action:

Reduce surface water concentrations ~~of pesticides~~, concentrated mineral salts, and microbial agents by provision of incentives for retirement or fallowing of lands (especially during drought). Action targeted at San Joaquin Valley and Delta lands that contribute to drainage problems on the San Joaquin and/or detrimental water quality problems within the Delta. Areas targeted would be those with the most severe drainage problems and where most cost effective. Action would also reduce demand for irrigation water. CALFED would establish a program to retire, by compensated purchase, marginally productive (and voluntarily retired by landowners) agricultural lands that have drainage problems.

d.f. ie? —

Removal ~~to~~ ~~reflect~~ ~~into~~ ~~camp~~

Study Steps:

So much do this has already been done + $$$ spent, why do we need to redo it?

1. Collect, evaluate, and summarize existing data to establish current water quality conditions in San Joaquin Valley drainage and receiving waters. Identify any significant data gaps.

2. Define "severe drainage problems" and "marginally productive" with respect to this study. The proposed definitions would be reviewed and approved by the WQTWG.

useful →

3. Identify and evaluate the extent of drainage problems on the San Joaquin River and water quality problems within the Delta resulting from San Joaquin Valley and Delta agricultural drainage.

4. Identify and map areas having the most severe drainage problems, as defined.

useful →

5. Evaluate the effect of retiring or fallowing lands with drainage problems on concentrations of salts, toxic elements, and organic carbon in San Joaquin River and Delta receiving waters. Mathematical models may be utilized, with assistance of the modeling technical support team.

Beware of too much emphasis on land retirement. It will not solve the entire problem because so much of the shallow groundwater has salt + salts in it.

6. Conduct economic analysis to determine the cost of land retirement or fallowing in the areas having the most severe drainage problems. Existing evaluations may be used, with cost estimates updated to provide for uniform comparisons.

7. Provide the Finance Work Group with the necessary information to enable the group to identify and recommend financing alternatives.

8. Prepare documentation presenting the results of the study and recommending a priority list for lands to be removed from production. Priorities will be established according to technical feasibility, cost, and effectiveness in improving water quality in the San Joaquin River and Delta. The documentation will also present recommendations for development of additional data or other information as necessary to further refine action plans.

Reduce Urban Pollutant Loadings by Source Control

Action:

What are the constituents of concern?

Reduce urban and industrial constituent loadings through provision of incentives for additional source control of urban and industrial runoff.

Study Steps:

1. Identify existing municipal and industrial storm water management programs in the watersheds of the Bay-Delta, and obtain these plans. From these, estimate volumes of storm water runoff by municipality.

2. Establish current conditions by obtaining, evaluating, and summarizing existing data on the quality of storm water runoff and its effects on receiving waters. Estimate pollutant loadings and concentrations from storm water runoff. Identify any significant data gaps.

3. Meet with officials responsible for implementing major municipal and industrial storm water management program to seek advice on opportunities for better controlling or eliminating sources within the jurisdiction. Obtain copies of any existing studies to support the need for, feasibility of, and cost of, implementing specific source control actions.

4. Based on volumes and concentrations of pollutants in storm water runoff and cost, technical feasibility and water quality benefits, develop a list of priority storm water management projects.

5. Document the study, present a priority storm water management action list, and recommend collection of any needed information to support further action refinement.

Reduce Urban Pollutant Loadings by Better Planning of New Construction

Action:

Reduce urban and industrial constituent loadings through better planning of new developments to reduce urban and industrial runoff.

Study Steps:

1. Obtain storm water management guidelines and regulations to identify planning actions that can result in improved storm water management.

2. Based on consultations with the State and Regional Water Quality Control

Boards, formulate proposed storm water management planning guidelines that should apply to the watersheds of the Bay-Delta.

3. Identify options for implementing planning requirements through incentive and/or regulatory programs, with emphasis on voluntary actions.

4. Evaluate the cost and water quality benefits that would be associated with adopting each identified planning feature.

5. Prepare documentation of study results, including a prioritized list of storm water management planning requirements that should be met in new construction. Recommend acquisition of any information needed for further action refinement.

Source Control by Watershed Management

Action:

Could define what is meant by point + non-point source control in the context.

Focus on point and non-point source control and habitat restoration through coordination and/or development of incentives with ongoing watershed management programs that promote and protect Delta water quality and fisheries. A geographic focus includes programs both inside and outside the Delta that contribute to, or are able to mitigate, problems within the Delta.

Study Steps:

1. Identify all significant watershed management programs and activities within the watersheds of the Delta. Meet and confer with managers of these programs, obtain all available planning documents.

2. Coordinate with other watershed management programs by attending meetings of those entities and inviting their participation in the CALFED Water Quality Program, and to join the WQTWG.

3. Identify specific watershed pollution control activities planned or being undertaken by others.

Good!

4. Evaluate the water quality benefits ~~and~~ vs costs of planned watershed management projects, and from this analysis, develop a draft list of projects of high priority for the CALFED program. The WQTWG will be asked to review and approve this list.

5. Identify the implementation status of the watershed management projects having highest priority to CALFED. Determine which projects will go forward with no intervention of CALFED, and which require financing to enable implementation.

6. Identify and prioritize watershed management projects that probably would not be implemented without CALFED involvement, according to water quality benefits to be obtained, cost, and technical feasibility. Submit this list to the Finance Work Group for recommendations on financing options.

7. Document study results, present a prioritized list of watershed management projects for CALFED consideration, and recommend any needed additional studies to enable further action refinement.

Time San Joaquin Valley Drainage to Improve Water Quality

Action:

Reduce concentrations of pollutants entering the Delta and its tributaries during low flow periods by altering the timing of agricultural drainage discharges from the San Joaquin Valley to better match discharges with dilution flows. Priority given to those lands with costly and severe drainage problems.

1. Obtain existing data and other information to establish existing water quality conditions in major San Joaquin Valley drainage areas, in the San Joaquin River, and the Delta, as related to this proposed action. Identify significant data gaps.

2. Identify and map San Joaquin Valley lands with costly and severe drainage problems, and estimate drainage volumes. why? state purpose

3. Meet with water rights specialists to identify water rights issues to be anticipated as a result of altering stream flow in connection with this action.

4. Meet with other water users, such as South Delta agricultural interests, to better understand the potential water quality and quantity effects of changing the timing of drainage flows.

5. Bring the proposed action to the attention of participants in the CALFED Ecological Program for an opinion of possible ecological effects to be anticipated in the San Joaquin River and Delta ecosystems as a result of changing the timing of drainage flows. An ecological opinion will also be sought on the desirability of impounding Valley agricultural drainage with respect to its potential for adverse or beneficial ecological effects.

6. In consultation with the modeling technical support team, develop a generalized operational plan, estimate the size of ~~the~~ any needed impoundments, and estimate concentrations of selenium and salts that would be found in the San Joaquin River as a result of implementing the action.

7. Estimate the cost of implementing the action.

We are already involved in this concept but we don't have the resources to do all of this work.

8. Document the study, and present a recommendation whether, based on cost, water quality benefits, and other factors, to incorporate drainage timing adjustments into the Water Quality Common Program, and present a proposed range of drainage volumes that might be affected, along with an estimated range of resulting water quality. Recommend collection of additional information as required for further action refinement.

Control Waste Discharges from Boats in the Delta

Action:

Control discharges of domestic wastes from boats within the Delta and its tributaries by more extensive enforcement of existing regulations.

Study Steps:

1. Identify regulatory agencies, such as the U.S. Coast Guard, having regulatory authority over waste discharges from boats. Obtain copies of relevant regulations.

2. Interview regulatory agency officials to develop improved understanding of the enforcement mechanisms being utilized, and to better understand opportunities for improving control of boat discharges.

3. Obtain data and other information to delineate water quality problems from boat discharges. Identify any significant data gaps.

4. Based on data and interviews with regulatory officials determine whether, in fact, discharges of domestic wastes from boats in the Delta and its tributaries constitute a significant water quality problem.

5. If boat discharges are confirmed as a water quality problem in the Delta and its tributaries, identify what additional enforcement resources would be necessary to adequately control these sources, and estimate the cost of these resources.

6. Estimate the water quality benefits that would be attained by improved enforcement, and describe any scientific uncertainties that may affect the estimate.

7. Submit the study results to the Finance Work Group for a recommendation on financing options.

8. Document study results, recommending additional enforcement as appropriate, presenting cost estimates, and providing recommendations for any additional information to enable further action refinement.

Undertake Toxicity Bioassay and Identification Testing

Action:

Identify potential toxicity in water and sediment through toxicity testing and toxicity identification evaluations or other appropriate methods.

Study Steps:

1. Obtain existing toxicity testing and toxicity identification evaluation data. Evaluate and summarize the data. Identify significant data gaps.

2. In consultation with the WQTWG, participants in the CALFED Ecological Program, and other experts, identify appropriate methods for assessing toxicity in water and sediment. Describe these methods, along with their specific strengths and limitations. In consultation with the above entities, determine what methods should be used for collecting additional data.

3. Based on identified data gaps, prepare a draft monitoring plan that would provide the needed information. The draft would detail the locations, frequencies, and media (water/sediment) to be sampled, and would provide a cost estimate for quality assurance/quality control, sample collection, handling, and analysis, and data management. The plan will be submitted for review and approval of the WQTWG.

4. Document the study and present a proposed monitoring plan for development of needed toxicity data.

<u>Financial Incentives for Integrated Pest Management for Agriculture</u>

Action:

Provide financial incentives for integrated pest management for agriculture, in order to reduce agricultural chemical residues in Delta waters through reduced chemical usage.

Study Steps:

1. Obtain existing data on agricultural chemical use in the watersheds of the Delta, in order to identify the chemicals of primary interest.

2. Identify the agricultural chemicals most frequently found in surface waters of the Delta and its tributaries. Identify any significant data gaps.

3. Rank the agricultural chemicals most frequently found in surface waters of the Delta and its tributaries with respect to aquatic toxicity. Identify any significant data gaps.

4. Consult with Department of Pesticide Regulation officials, Department of Food and Agriculture officials, County Agricultural Commissioners, and integrated pest management experts regarding opportunities for reducing use of the agricultural chemicals of primary relevance to the Delta estuary through integrated pest management technology. Emphasis will be placed on the integrated pest management activities having highest potential to improve water quality in the CALFED study area. The effectiveness of such activities must be demonstrable.

5. For each of the chemicals on the list of those most frequently found in surface waters of the Delta and its tributaries, list integrated pest management alternatives.

6. Based on aquatic toxicity, frequency of observation in surface waters, quantities applied in the watershed, and the existence of integrated pest management alternatives, create a priority list for integrated pest management. The WQTWG will be asked to review, comment on, and approve the priority list.

7. An economic analysis will be made to estimate costs of implementing integrated pest management actions, on a pesticide-specific basis. Results of the analysis will be presented to the WQTWG for review and approval.

8. The Finance Work Group will be asked to recommend funding alternatives through mil taxes on pesticides and/or water users, or other options. The Finance Work Group will also be asked to suggest the forms incentives might take.

9. Document the study and present a priority list for implementing increased integrated pest management activities for specific pesticides.

- Need urban component
- Need to form some group to develop BMPs and/or evaluate ~~relative~~ feasibility. ~~when~~ Maybe state should contribute $ here.
- Pass to Frank Zalom for comment. 752-8350
- If practical economically feasible alternatives are documented then how do we get the community to voluntarily implement.

comments by the 27 NOV

Set A

DRAFT For Review

CALFED Bay-Delta Program
Water Quality Program

Plan for Analysis of Proposed Water Quality Actions

General

The plan for analysis of proposed water quality actions will be presented to the Water Quality Technical Work Group(WQTWG) and will be adopted by the group. The CALFED Program Team will undertake the agreed upon studies, reporting the results to the WQTWG. A modeling technical support team composed of WQTWG participants will be organized to provide technical advice and support for necessary mathematical modeling work that may be needed. Other technical teams may be organized as necessary to provide assistance in particular aspects of the studies. The recommendations of the modeling support team and any other technical teams will be subject to review and approval by the WQTWG.

All of the water quality actions identified for initial study will be evaluated. An important part of this evaluation will be collection, analysis, and use of relevant data. In connection with this activity, a Quality Assurance/Quality Control Plan will be developed to establish a scientific basis for assuring the quality of data to be relied upon.

Based on study results, selected actions will be proposed for inclusion in the Water Quality Common Program. A Water Quality Common Program chapter will be included in the CALFED Component Refinement Report which will document the results of evaluative studies for the CALFED program as a whole.

During the development of the Programmatic Environmental Impact Report/Statement, other water quality actions may be evaluated for inclusion as components of specific project alternatives. A plan for any such studies will be prepared and submitted to the WQTWG for review and approval. Like the studies currently planned as part of Common Water Quality Program development, the WQTWG will continue to be involved and to provide guidance as the technical evaluations progress to a final product.

+ Could we look at feasibility of reducing sediment transport into major State & federal reservoirs. Rationale is that protecting their storage capacity may be more cost effective than construction of new facilities

Analytical Plan

Mine Drainage Remediation

Action:

Reduce tributary and Delta heavy metals loadings by implementation of moderate onsite mine drainage remediation measures developed in site-specific studies at the Walter, Malakoff Diggins, Leviathon, Iron Mountain and Penn mine sites and control runoff from these and other high priority mine sites based on current water quality objectives for pollutants. Fund remediation through pollution-credit trading (e.g., reduce loading from mines in lieu of more costly, but less effective, wastewater treatment plan upgrades or other means.

Study Steps:

1. Meet with relevant staff from the Environmental Protection Agency and other agencies to clarify current status of inactive mine sites with potentially responsible parties and abandoned mine sites.

2. Acquire ~~existing plans for remediation of~~ the Walker, Malakoff Diggins, Leviathan, Iron Mountain, and Penn mines.

3. Evaluate the effectiveness of the ~~proposed~~ remediation actions with respect to reducing metals loadings.

   a. Acquire, evaluate, and summarize existing water quality data to establish current conditions.

   b. Compute mass balances and resulting concentrations in receiving waters which would result from drainage remediation actions, and compare these values to existing conditions at key locations in Delta tributaries.

   c. Perform mathematical modeling as necessary or feasible. A modeling advisory team will be organized to provide technical advice and recommendations to the Program Team for identifying useable mathematical modeling tools and for evaluating and recommending modeling assumptions and model operations.

   d. Present results to WQTWG for review and comment. Incorporate reviewer comments.

4. Evaluate the technical feasibility of ~~proposed~~ mine remediation actions. Existing remediation plans will be reviewed to assess the probability of success associated

with proposed actions. Considerations will include the degree to which unproven technologies or lack of sufficient data would increase the risk of project failure. Results will be presented to WQTWG for review and comment. Reviewer comments will be incorporated.

4 ~~5~~. Conduct economic analyses of proposed actions, updating existing cost estimates to a common basis for comparison among the existing mine remediation plans. Present results to WQTWG for review and comment, and incorporate reviewer comments.

6. Prioritize proposed mine remediation actions at abandoned sites according to effectiveness, technical feasibility and cost. This step occurs after the criteria are determined.

7. Submit a prioritized list of mine remediation actions, with supporting information, to Financial Work Group for evaluation and recommendation of financing alternatives.

8. Prepare documentation presenting prioritized actions and identifying the need for filling data gaps.

9. Identify sites for early implementation.

Pesticide Reduction by Source Control — MCPA ONLY

need to separate salt, pesticide & microbial actions. I think this out describes a salt action. Eliminate the other constituents.

Action:

Reduce surface water concentrations of pesticides, concentrated mineral salts, and microbial agents by expansion and extension of existing agricultural source control programs. Action may include provision of incentives or other means to modify field drainage systems to reduce drainage volumes, manage irrigation tail water to reduce drainage volumes, manage irrigation tailwater to reduce pesticide residues, adopting BMPs to reduce rainfall induced discharge of pesticides to watercourses, higher water use efficiency to reduce the amount of agricultural drainage and reduced agrochemical loading, use of Efficient Water Management Practices or expansion of these practices by more suppliers and water users.

Study Steps:

1. Collect, evaluate, and summarize relevant data to assess current pesticide, salt, and microbial constituent concentrations. Identify significant data gaps.

2. Based on existing data, identify agricultural areas which are the largest contributors of pesticides, concentrated mineral salts and microbial agents. Describe uncertainties associated with lack of adequate data, if such uncertainties are found to exist.

3. Identify, describe, and evaluate the effectiveness of existing agricultural source

control programs. Identify which existing programs appear to have the largest potential for greater success, given incentives or other means of encouragement.

4. Provide the Finance Work Group with details of existing agricultural source control programs having apparent potential for expansion, and request recommendations for providing appropriate incentives or other encouragement.

Create new action

5. Evaluate the effectiveness of existing tailwater management programs in reducing pesticide residues. Consult with Regional Water Quality Control Board, Department of Food and Agriculture, Department of Pesticide Regulation, and agricultural interests to identify:

   a. Which pesticide residues are found in receiving waters, and what toxicities are associated with these residues?

   b. Of the pesticide residues causing problems in receiving waters, which would be susceptible to adequate removal through tailwater management?

   c. What are the scientific uncertainties associated with lack of data, lack of adequate toxicity information, lack of chemical fate information, or other factors?

6. Consult with Regional Water Quality Control Board, Department of Food and Agriculture, Department of Pesticide Regulation, and agricultural interests to identify Best Management Practices for reducing rainfall induced discharge of pesticides to watercourses. Evaluate the effectiveness of implementing BMPs to accomplish this purpose.

7. Consult with Regional Water Quality Control Board, Department of Food and Agriculture, Department of Pesticide Regulation, Department of Water Resources and agricultural interests to identify Best Management Practices for higher water use efficiency. Evaluate whether implementing such practices will reduce loadings and concentrations of agricultural chemicals in agricultural drainage.

8. Perform economic evaluations to estimate costs of adopting and implementing source control actions.

9. Prepare documentation prioritizing areas for pesticide, salt, and microbial reduction through expansion of existing source control programs through adoption of Best Management Practices. Priorities will be established based on effectiveness, cost, and technical feasibility.

<u>Pesticide Reduction by Land Fallowing</u>

Action:

Reduce surface water concentrations of pesticides, concentrated mineral salts, and microbial agents by provision of incentives for retirement or fallowing of lands (especially during drought). Action targeted at San Joaquin Valley and Delta lands that contribute to drainage problems on the San Joaquin and/or detrimental water quality problems within the Delta. Areas targeted would be those with the most severe drainage problems and where most cost effective. Action would also reduce demand for irrigation water. CALFED would establish a program to retire, by compensated purchase, marginally productive (and voluntarily retired by landowners) agricultural lands that have drainage problems.

Assume I think this is a salt action. Should not consider removing land because of pesticide runoff.

Study Steps:

1. Collect, evaluate, and summarize existing data to establish current water quality conditions in San Joaquin Valley drainage and receiving waters. Identify any significant data gaps.

2. Define "severe drainage problems" and "marginally productive" with respect to this study. The proposed definitions would be reviewed and approved by the WQTWG.

3. Identify and evaluate the extent of drainage problems on the San Joaquin River and water quality problems within the Delta resulting from San Joaquin Valley and Delta agricultural drainage.

4. Identify and map areas having the most severe drainage problems, as defined.

5. Evaluate the effect of retiring or fallowing lands with drainage problems on concentrations of salts, toxic elements, and organic carbon in San Joaquin River and Delta receiving waters. Mathematical models may be utilized, with assistance of the modeling technical support team.

6. Conduct economic analysis to determine the cost of land retirement or fallowing in the areas having the most severe drainage problems. Existing evaluations may be used, with cost estimates updated to provide for uniform comparisons.

7. Provide the Finance Work Group with the necessary information to enable the group to identify and recommend financing alternatives.

8. Prepare documentation presenting the results of the study and recommending a priority list for lands to be removed from production. Priorities will be established according to technical feasibility, cost, and effectiveness in improving water quality in the San Joaquin River and Delta. The documentation will also present recommendations for development of additional data or other information as necessary to further refine action plans.

Reduce Urban Pollutant Loadings by Source Control

Action:

Reduce urban and industrial constituent loadings through provision of incentives for additional source control of urban and industrial runoff.

Study Steps:

1. Identify existing municipal and industrial storm water management programs in the watersheds of the Bay-Delta, and obtain these plans. From these, estimate volumes of storm water runoff by municipality.

2. Establish current conditions by obtaining, evaluating, and summarizing existing data on the quality of storm water runoff and its effects on receiving waters. Estimate pollutant loadings and concentrations from storm water runoff. Identify any significant data gaps.

3. Meet with officials responsible for implementing major municipal and industrial storm water management program to seek advice on opportunities for better controlling or eliminating sources within the jurisdiction. Obtain copies of any existing studies to support the need for, feasibility of, and cost of, implementing specific source control actions.

4. Based on volumes and concentrations of pollutants in storm water runoff and cost, technical feasibility and water quality benefits, develop a list of priority storm water management projects.

5. Document the study, present a priority storm water management action list, and recommend collection of any needed information to support further action refinement.

Reduce Urban Pollutant Loadings by Better Planning of New Construction

Action:

Reduce urban and industrial constituent loadings through better planning of new developments to reduce urban and industrial runoff.

Study Steps:

1. Obtain storm water management guidelines and regulations to identify planning actions that can result in improved storm water management.

2. Based on consultations with the State and Regional Water Quality Control

Boards, formulate proposed storm water management planning guidelines that should apply to the watersheds of the Bay-Delta.

May have to further develop and BMP's and facilities to ensure key contaminants

3. Identify options for implementing planning requirements through incentive and/or regulatory programs, with emphasis on voluntary actions.

4. Evaluate the cost and water quality benefits that would be associated with adopting each identified planning feature.

5. Prepare documentation of study results, including a prioritized list of storm water management planning requirements that should be met in new construction. Recommend acquisition of any information needed for further action refinement.

Source Control by Watershed Management

Action:

Focus on point and non-point source control and habitat restoration through coordination and/or development of incentives with ongoing watershed management programs that promote and protect Delta water quality and fisheries. A geographic focus includes programs both inside and outside the Delta that contribute to, or are able to mitigate, problems within the Delta.

Study Steps:

1. Identify all significant watershed management programs and activities within the watersheds of the Delta. Meet and confer with managers of these programs, obtain all available planning documents.

2. Coordinate with other watershed management programs by attending meetings of those entities and inviting their participation in the CALFED Water Quality Program, and to join the WQTWG.

3. Identify specific watershed pollution control activities planned or being undertaken by others.

4. Evaluate the water quality benefits and costs of planned watershed management projects, and from this analysis, develop a draft list of projects of high priority for the CALFED program. The WQTWG will be asked to review and approve this list.

5. Identify the implementation status of the watershed management projects having highest priority to CALFED. Determine which projects will go forward with no intervention of CALFED, and which require financing to enable implementation.

Determine whether existing watershed management frameworks can be used to implement CALFED actions

6. Identify and prioritize watershed management projects that probably would not be implemented without CALFED involvement, according to water quality benefits to be obtained, cost, and technical feasibility. Submit this list to the Finance Work Group for recommendations on financing options.

7. Document study results, present a prioritized list of watershed management projects for CALFED consideration, and recommend any needed additional studies to enable further action refinement.

Time San Joaquin Valley Drainage to Improve Water Quality

Action:

Reduce concentrations of pollutants entering the Delta and its tributaries during low flow periods by altering the timing of agricultural drainage discharges from the San Joaquin Valley to better match discharges with dilution flows. Priority given to those lands with costly and severe drainage problems.

1. Obtain existing data and other information to establish existing water quality conditions in major San Joaquin Valley drainage, in the San Joaquin River, and the Delta, as related to this proposed action. Identify significant data gaps.

2. Identify and map San Joaquin Valley lands with costly and severe drainage problems, and estimate drainage volumes.

3. Meet with water rights specialists to identify water rights issues to be anticipated as a result of altering stream flow in connection with this action.

4. Meet with other water users, such as South Delta agricultural interests, to better understand the potential water quality and quantity effects of changing the timing of drainage flows.

5. Bring the proposed action to the attention of participants in the CALFED Ecological Program for an opinion of possible ecological effects to be anticipated in the San Joaquin River and Delta ecosystems as a result of changing the timing of drainage flows. An ecological opinion will also be sought on the desirability of impounding Valley agricultural drainage with respect to its potential for adverse or beneficial ecological effects.

6. In consultation with the modeling technical support team, develop a generalized operational plan, estimate the size of the needed impoundments, and estimate concentrations of selenium and salts that would be found in the San Joaquin River as a result of implementing the action.

7. Estimate the cost of implementing the action.

8. Document the study, and present a recommendation whether, based on cost, water quality benefits, and other factors, to incorporate drainage timing adjustments into the Water Quality Common Program, and present a proposed range of drainage volumes that might be affected, along with an estimated range of resulting water quality. Recommend collection of additional information as required for further action refinement.

Control Waste Discharges from Boats in the Delta

Action:

Control discharges of domestic wastes from boats within the Delta and its tributaries by more extensive enforcement of existing regulations.

Study Steps:

1. Identify regulatory agencies, such as the U.S. Coast Guard, having regulatory authority over waste discharges from boats. Obtain copies of relevant regulations.

2. Interview regulatory agency officials to develop improved understanding of the enforcement mechanisms being utilized, and to better understand opportunities for improving control of boat discharges.

3. Obtain data and other information to delineate water quality problems from boat discharges. Identify any significant data gaps.

4. Based on data and interviews with regulatory officials determine whether, in fact, discharges of domestic wastes from boats in the Delta and its tributaries constitute a significant water quality problem.

5. If boat discharges are confirmed as a water quality problem in the Delta and its tributaries, identify what additional enforcement resources would be necessary to adequately control these sources, and estimate the cost of these resources.

6. Estimate the water quality benefits that would be attained by improved enforcement, and describe any scientific uncertainties that may affect the estimate.

7. Submit the study results to the Finance Work Group for a recommendation on financing options.

8. Document study results, recommending additional enforcement as appropriate, presenting cost estimates, and providing recommendations for any additional information to enable further action refinement.

Undertake Toxicity Bioassay and Identification Testing

This sections is a very Important part of a number of other actions. Mines, levees, Ag, Urban
This action will be required to address WQC for various dredge material reuse projects.

Action:

Identify potential toxicity in water and sediment through toxicity testing and toxicity identification evaluations or other appropriate methods.

Study Steps:

1. Obtain existing toxicity testing and toxicity identification evaluation data. Evaluate and summarize the data. Identify significant data gaps.

2. In consultation with the WQTWG, participants in the CALFED Ecological Program, and other experts, identify appropriate methods for assessing toxicity in water and sediment. Describe these methods, along with their specific strengths and limitations. In consultation with the above entities, determine what methods should be used for collecting additional data.

3. Based on identified data gaps, prepare a draft monitoring plan that would provide the needed information. The draft would detail the locations, frequencies, and media (water/sediment) to be sampled, and would provide a cost estimate for quality assurance/quality control, sample collection, handling, and analysis, and data management. The plan will be submitted for review and approval of the WQTWG.

4. Document the study and present a proposed monitoring plan for development of needed toxicity data.

leads to refined WQC for both water and sediment.

we need to reassess exists Criteria or develope new ones?

Financial Incentives for Integrated Pest Management for Agriculture

Action:

Provide financial incentives for integrated pest management for agriculture, in order to reduce agricultural chemical residues in Delta waters through reduced chemical usage.

Study Steps:

1. Obtain existing data on agricultural chemical use in the watersheds of the Delta, in order to identify the chemicals of primary interest.

2. Identify the agricultural chemicals most frequently found in surface waters of the Delta and its tributaries. Identify any significant data gaps.

3. Rank the agricultural chemicals most frequently found in surface waters of the Delta and its tributaries with respect to aquatic toxicity. Identify any significant data gaps.

this should be part of a general action aimed at pesticides.

4. Consult with Department of Pesticide Regulation officials, Department of Food and Agriculture officials, County Agricultural Commissioners, and integrated pest management experts regarding opportunities for reducing use of the agricultural chemicals of primary relevance to the Delta estuary through integrated pest management technology. Emphasis will be placed on the integrated pest management activities having highest potential to improve water quality in the CALFED study area. The effectiveness of such activities must be demonstrable.

5. For each of the chemicals on the list of those most frequently found in surface waters of the Delta and its tributaries, list integrated pest management alternatives.

6. Based on aquatic toxicity, frequency of observation in surface waters, quantities applied in the watershed, and the existence of integrated pest management alternatives, create a priority list for integrated pest management. The WQTWG will be asked to review, comment on, and approve the priority list.

7. An economic analysis will be made to estimate costs of implementing integrated pest management actions, on a pesticide-specific basis. Results of the analysis will be presented to the WQTWG for review and approval.

8. The Finance Work Group will be asked to recommend funding alternatives through mil taxes on pesticides and/or water users, or other options. The Finance Work Group will also be asked to suggest the forms incentives might take.

9. Document the study and present a priority list for implementing increased integrated pest management activities for specific pesticides.

10. want to encourage programs that ultimately will be self sustaining.