

**CV Salinity and Nutrient (Nitrate) Management Plan**  
**DRAFT Work Plan Version 9**  
**Interim Approval 5/09 Committee**  
*Incorporating committee member changes*  
*Including significant contributions by Jim Martin and Lisa Holm*

## **Background**

Elevated salinity, including nitrates, in surface water and groundwater in California's Central Valley is an increasing problem affecting much of California, other western states, and arid regions throughout the world. As surface and groundwater supplies become intensely used and as wastewater streams become more concentrated, salinity and nutrient impairments are occurring with greater frequency and magnitude. The Central Valley Water Board and State Water Board have initiated a comprehensive effort to address salinity problems in California's Central Valley and adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is an effort to develop and implement a comprehensive salinity/nutrient management program. The goal of CV-SALTS is to maintain a healthy environment and a good quality of life for all Californians by protecting our most essential and vulnerable resource: WATER.

The Central Valley Water Board and State Water Board have convened a stakeholder process to develop a Salinity/Nutrient Management Plan that will fully incorporate a Basin Plan Amendment to protect water quality. This work plan has been developed to outline the technical, policy, and administrative elements needed to support a basin plan amendment.

## **Introduction**

The Work Plan provided below is a first attempt to capture the efforts needed to complete a basin plan amendment and produce an implementable Salinity/Nutrient Management Plan for the Central Valley. It is meant to be further refined throughout the CV-SALTS stakeholder process. The outline lays out a technical and administrative process to establish the beneficial uses of surface water and groundwater in the Central Valley Basins, and recommend either numeric or modified narrative objectives for salts as elements of an overall Salinity/Nutrient Management Plan, to achieve sustainable salt and nutrient management for the three basins in the Central Valley. New or modified objectives must be adopted by the Regional Board in a Basin Plan amendment. The process leading up to adoption of water quality objectives must be performed in compliance with the requirements of the California Water Code. The Water Code requires consideration of various factors, including the means by which the objectives can be attained, economics, the need for housing and others. The Work Plan includes the development of an implementation plan to demonstrate the means by which proposed objectives will be achieved and other information to fulfill Water Code requirements. The product of this Work Plan would also fulfill the State Water Board's goal for every region to develop a salt/nutrient plan by 2014 (Recycled Water Policy draft November 4, 2008).

This Work Plan will be a living document and will evolve as more information is known, but will establish the framework and timing of needs to demonstrate adequate progress by the stakeholders. All efforts will make efficient use of the existing data from all sources, with the goal of minimizing duplication of past efforts. All efforts must be coordinated with other regulatory processes, anti-degradation, recycled water, Delta Waters and others. The Work Plan outlines a process that is transparent and open to all stakeholders and the public.

Several additions need to be developed as this work plan outline is completed. The outline needs a graphic depiction of the relationships between the major efforts and their implementation tasks or cooperative efforts. Also Tasks 1, 2, and 3 will be developed and implemented simultaneously with high interaction between them. A preliminary summary schedule and preliminary budget should be developed with the committee to provide a more completed picture of the tasks required.

## **Goals of the Salinity and Nutrient (Nitrate) Management Plan**

In development of the Work Plan Outline the Executive Committee discussed the following goals for the program. The CV-SALTS initiative will succeed when it accomplishes:

1. Comprehensive plan to achieve salt balance in the region which is inclusive of all current and developing water uses and economic developments
2. Achievable solutions for long term water uses and salt and nitrate management for a sustainable future
3. Entire program is well coordinated at all levels internally and externally, including Delta issues, other regulatory programs and emerging issues
4. Broad public understanding and ownership within and beyond the Central Valley
5. A salt and nutrient management system in the public interest and supported by public funding
6. Engaged stakeholder participants drive completion of the Basin Plan Amendment
7. Objectives and implementation based on good science
8. Beneficial uses maximize the benefits to the region rather than mutual conflict
9. Regulatory certainty to encourage capital investment and long range approach including needed adaptability and flexibility
10. Common language, understanding and decision tools

### **Definitions**

For clarity or to reduce the text in the following outline several definitions are provided:

***Salinity/Nutrient Management Plan*** – all documentation required understanding, setting and documenting the process leading to basin objectives, limits and regulatory and non-regulatory implementation plans to achieve effective salt management for all Central Valley Basins. It is anticipated that the Board will use the plan to implement amendments to the existing basin plans.

***Program and Purpose*** –to complete required tasks, study, documentation and process to complete a Salinity/Nutrient Management Basin Plan amendment consistent with stakeholder input and funding for Board approval in a 5-year time frame.

***Contractor*** or Collaborative Support – Task may be contracted to consultants to provide expertise and assistance with accomplishing some or all of this task

***Salts /Nutrients***– unless specifically listed includes constituents of concern listed salts, nutrients such as nitrate and related local constituents identified as critical to the management of salinity and nutrients.

***Historic Data*** – denotes conditions prior to the establishment of regulatory objectives for a constituent. This date may be changed by further work but will be assumed to be 1975 the adoption of the first basin plan related to salinity.

***Current or Recent Data*** – the most recent valid available quality data representing the current conditions of groundwater basins or of water bodies.

## Work Plan Outline

### Management/Administration

#### 1) Program Management

##### a) Program Development

*Program development includes the tasks shown below and the development and implementation of efforts needed to complete the basin salinity/nutrient management plan*

##### i) Initial scoping and work plan outline development

*Identify and conduct preliminary scoping of tasks needed to develop the Salinity/Nutrient Management Plan within a work plan and put into an outline framework. The outline should include management plan goals, task descriptions, and, where possible, identification of leads, schedule, and budget.*

Lead: Salt Sources Subcommittee TAC/EC Schedule: Completion and approval by Feb. 2009

##### ii) Schedule, Critical path, and milestone monitoring & enforcement

*Critical pathways to work plan implementation and key milestones should be identified in the work plan. Work plan management should focus on ensuring critical pathways and key milestones stay on schedule and control costs, adapting the work plan or redistributing resources as necessary. [Additional support from Salt Sources Subcommittee work group]*

Lead: Individual(s) or work group with CVSC Schedule: Completion & approval by March 09, with continual adaptation and refinement throughout the process

##### iii) Identify initial tasks and prepare detailed scopes of initial tasks

*Identify tasks, which must proceed immediately (i.e. due to critical path or length of effort). Prepare detailed scopes of work and schedules, and determine task leads for those tasks. Prepare Requests for proposals where needed for Procurement (see Task 1.b). [Additional support from Salt Sources Subcommittee work group]*

Lead: Individual(s) or work group with TAC Schedule: Completion & approval by May 2009

##### iv) Budget/funding plan and financing program (5 year)

###### (1) Cost Budget

*Prepare a detailed estimated cost budget for the work plan, including financial and in-kind resource requirements from any and all parties. Review expenditures and refine and update cost budget on a regular basis (half yearly and annual) [Additional support from Salt Sources Subcommittee work group]*

Lead: Work Group with CVSC Schedule: Completion & approval by May 2009

###### (2) Revenue and Funding plan

*Prepare a detailed plan for obtaining stakeholder, grant, and other funding and financing resources needed over the duration of the budgeted activities for all elements of the program.*

Lead: Individual(s) or work with CVSC and EC Schedule: Completion & approval by May 2009

##### v) Non-financial resources and requirements planning

*Identify non-financial in-kind and stakeholder contributed studies and opportunities to have others contribute in non-financial ways. Additionally prepare a section specifically to meet the needs of the Waterboards and basin plan needs for this program.*

Lead: Work Group with EC Schedule: Completion & approval by May 2009

##### vi) Program organization governance, staffing plan and support

*Develop an organizational chart and contact list for the CVSALTS initiative effort. Develop clear lines of leadership responsibilities, including project, funding, and technical oversight. Develop process for determination of leadership, roles and responsibilities of committees and subcommittees. Determine and implement management structure for oversight of work plan and Basin Plan Amendment. Manage contractors. Document contractual or other relationships*

Lead: CVSC Schedule: Completion & approval by April 2009

##### vii) Prepare detailed scopes of remaining tasks

- Prepare detailed scopes of work, schedules and determine task lead for tasks required subsequent to those initially critical tasks identified in Iaiii above. Prepare Requests for Qualifications and Proposals where needed for immediate procurement.*
- Lead: \_\_\_\_\_ Schedule: 9 months–1 year (starting in January)
- b) Procurement
- i) Financial administration  
*Administration of funds and grants. Oversee procurement of goods and services. Develop and implement accounting procedures. Produce quarterly financial reports for work plan.*  
Lead: CVSC \_\_\_\_\_ Schedule: Ongoing beginning February 2009  
with Salt Sources Study
- ii) Procurement of services  
*Develop and implement a process for oversight of procurement of services. This should include development of scope of work, identification of contractors, solicitation and evaluation of proposal, and bids, as well as contracting for the work to be performed and ensuring the projects are completed and paid.*  
Lead: CVSC \_\_\_\_\_ Schedule: Ongoing beginning February 2009 with Salt Sources Study
- c) Stakeholder management and outreach
- i) Stakeholder coordination and process management  
*Planning, managing and coordinating the committee meetings and interactions with current and future stakeholders.*  
Lead: CVSC \_\_\_\_\_ Schedule: Throughout life of project
- ii) Outreach communication and public information  
*Insert scope of the Stakeholder and Public Education Committee.*  
Lead: CVSC and Public Education and Outreach Committee Schedule: Throughout life of project
- d) Related/Integrated project coordination  
*This task requires coordination with related or integrated projects, policies, and other efforts that affect salinity management which are outside this work plan. Such efforts may include Delta changes (BDCP) or conveyance, changes in operation or restoration of the San Joaquin Rivers or the effects of climate change or drought. Those activities may also include other salt management controls or activities, water management or planning processes, major hydrologic or water quality projects proposed. The efforts will be to integrate and manage work overseen by other groups or committees. (Prepare an initial report of those efforts with highest potential to affect existing conditions.). [Additional edits forthcoming from Econ Committee Chair]*  
Lead: TAC/EC or consultant \_\_\_\_\_ Schedule: Throughout life of project
- e) Periodic reporting and communications  
*Coordinate with the Public Education and Stakeholder Outreach Committee to provide appropriate information on the Salinity/Nutrient Management Plan development and implementation to the audiences of the program on a timely and appropriate basis. Prepare official reports to the executive committee, the Waterboards, and all funding agencies and groups. Prepare and present updates to Waterboards and others as needed.*  
Lead: CVSC and PEO Committee \_\_\_\_\_ Schedule: Throughout life of project
- f) Basin planning process compliance (joint with RWQCB)
- i) Record keeping  
*Work with Waterboard staff to identify record keeping needs for the Basin Plan Amendment. Develop guidelines on needed records, a filing system, and a records retention schedule. Ensure that the appropriate records are retained and filed accordingly.*  
Lead: CVSC \_\_\_\_\_ Schedule: Throughout life of project
- ii) Other process requirements  
*Placeholder.*  
Lead: \_\_\_\_\_ Schedule: \_\_\_\_\_

## Technical

### 2) Identify Salt Constituents and Data Requirements

- a) Determine salt and nutrients constituents, standardize data collection, analysis, & assessment approach, set minimum data quality criteria for screening old data

*Establish a process for including constituents in the Salinity/Nutrient Management Plan beyond EC/TDS and nitrate. The process should include steps similar to the following: 1. Identify all potential constituents of concern to the management of salts and nutrients. 2. Develop screening criteria (i.e. data availability, documented impacts on beneficial use, identified constituents of concern, etc.) to determine and recommend which constituents are ready for what level of objective setting (i.e. numeric vs. narrative vs. review in 10 years). 3. Establish a schedule for the next review of constituents. Also, a separate but important task is to develop a standard approach to be taken when collecting, analyzing, and assessing data.*

Lead: TAC to scope and Consultant      Schedule: Should begin immediately 4 month duration

- b) Beneficial uses and requirements

*Identify beneficial uses that have the potential to be impacted by the identified constituents of concern (now or in the future). Identify in which water bodies these beneficial uses currently apply. Document how these beneficial uses are currently protected from these constituents of concern (numeric or narrative objectives, or objectives set in end uses, such as drinking water MCLs). Document areas where beneficial uses do not currently exist in protected areas, or document areas, which are especially challenged by constituents of concern. Identify water bodies that need beneficial uses designated and/or reviewed*

Lead: TAC to scope and Consultant      Schedule: Should begin immediately 12 months duration

- c) Identify surface water quality data requirements

*Define geographic scope. Prepare a metadata report on available historic surface water quality data for constituents of concern. (This first item is finished). Prepare literature search and summarize what is currently known about the constituents of concern in surface water bodies (rank by state of knowledge and by applicable data quality).*

*For water bodies within the scope of the Plan, collect information on current regulation and 303(d) listings for water quality constituents, and information on current flow standards for fishery protection. Use this material to determine current regulatory overlap with the identified constituents of concern (for conflicts and for leveraging opportunities). Examine any proposed numeric or narrative salinity/nutrient objectives for conflicts with existing programs.*

Acquiring access to available data to determine the historic and current surface water quality for constituents of concern, flows and characteristics of waterbodies is included in task 3 b) below.

Lead: Contractor

Schedule:

- d) Identify groundwater quality data requirements

*Define geographic scope. Prepare a metadata report on available historic ground water quality data for constituents of concern. (This first item is finished). Prepare literature search and summarize what is currently known about the constituents of concern in ground water basins (rank by state of knowledge, by state of quality).*

*For groundwater basins within the scope of the Plan, collect information on current regulation and drinking water quality monitoring for all water quality constituents, on current water quality studies or improvement/maintenance programs, and currently implemented regulations. Use this data to determine current regulatory/program overlap with the identified constituents of concern (for conflicts and for leveraging opportunities). Examine any proposed numeric or narrative salinity/nutrient objectives for conflicts with existing programs.*

Acquiring access to available data to determine the historic and current groundwater quality for constituents of concern, subsurface hydrologic and aquifer characteristics is included in task 3 b) below.



are to both support and inform conceptual models and to assist in public understanding of salinity and nutrient conditions, sources, distribution, drivers, and management alternatives.

Lead: Contractor

Schedule:

f) Data summary report for basin planning

*Throughout data process, prepare periodic summary analysis reports on the data received to date, the quality and usability of the data for salinity and nutrient planning and management, and data processing efforts. Prepare final summary report to TAC and Waterboard specifications for use in the Basin Plan Amendment.*

Lead: Contractor

Schedule:

g) Database ongoing and periodic update and maintenance

*The database investment should be preserved by continuous automated process or periodic maintenance process(R-8 uses a 3 year period) a frequency for updating the database should be set and resources allocated to accomplish this effort*

4) Monitoring or Other Methods to Fill Data Gaps

a) Identify areas where data is unavailable and develop plan for acquiring additional data

*Using the results of task 3d, develop criteria to prioritize the need to conduct monitoring to fill data gaps. In some cases, there may be mathematical models, alternative geophysical or other techniques that can fill these gaps. Determine what monitoring or other techniques may be critical to support a Basin Plan Amendment and prioritize other gaps for future monitoring. Critical data gaps may also affect the cut off date set in Task 3b, or be analyzed separately as addenda to the described analyses.*

Lead: TAC

Schedule:

b) Develop additional data - collection and monitoring program

*Based on the results of Task 4a, document the level of monitoring or other techniques that are needed and develop a schedule budget and program. For immediate monitoring needs, develop an appropriate sampling and analysis plan following the Regional Waterboard QAPP requirements. The plan can also cover future monitoring needs as appropriate for current planning. Identify which regional or sub-regional groups can most effectively and efficiently perform these efforts.*

Lead: Contractor

Schedule:

c) Conduct essential monitoring

*Implement sampling and analysis plan as effectively and efficiently as possible.*

Lead: Regional and Subregional groups, Contractors

Schedule:

d) Develop ongoing monitoring program, where required

*It may be determined that the Salinity/Nutrient Management Plan is best served by the addition of specific monitoring stations to existing long-term monitoring programs. In this case, an appropriate course of action should be proposed by the TAC: this could include forming cooperative agreements with monitoring programs to provide additional resources to support new stations, or advocating increasing appropriate budgets.*

Lead: Contractor and TAC/EC

Schedule:

5) Develop Conceptual Models and Decision Assistance Tools

a) Develop model requirements

*Develop the goals of the conceptual models and decision assistance tools (i.e. mathematical models). These goals should consider planning, objective setting, and implementation needs of the program.*

Lead: Contractor

Schedule:

b) Identify and evaluate existing conceptual and analytical models, and develop plan for meeting modeling needs

*Identify and review existing conceptual models and decision assistance tools. Evaluate how existing tools meet the goals developed in Task 5a, and whether existing tools are adequate for planning and implementation needs of the program. If tools are not adequate, formulate a plan for either refining or augmenting existing tools or creating new tools to meet program needs. Determine scale of conceptual model documentation.*

Lead: Contractor/TAC

Schedule:

c) Select conceptual and analytical models

*Based on Task 5b, select conceptual and analytical models. If needed, prepare statements of work for needed refinement, augmentation or new development of models. Models should be calibrated, validated, and peer reviewed and publicly vetted.*

Lead: TAC

Schedule:

d) Data assumptions and dynamic modeling

*Use the goals developed in Task 5a to develop scenarios for the analytical modeling. If other than historic conditions are needed to inform boundary and initial conditions, use the TAC or other professional expertise to define. Use analytical models to test conceptual assumptions and any assumptions used to fill data gaps. Use model to determine sensitivity of system to data points.*

Lead: Contractor/TAC

Schedule:

e) Perform modeling and analysis and tools for planning

*Run analytical model scenarios. Analyze results in accordance with goals in order to set objectives limits and forecast future conditions. May also include model runs determined in other tasks such as anti-degradation analysis or updated for adaptive management.*

Lead: Contractor/TAC

Schedule:

6) Implementation Planning and Analysis

a) Classify salt sources

*Use available information (such as IRWMPs and other water quality programs), conceptual models, and regional pilot studies to classify types of salt and nutrient source activities, or other factors that are exacerbating salt and nutrient problems. This information will be used to ensure management strategies are fully investigated in Task 6b. The TAC may determine that this task is best completed by division into relevant regional or sub-regional areas or hydrologic basins.*

Lead:

Schedule:

b) Identify salt and nutrient management actions

*Develop a list of all known and potential physical salinity and nutrient management control actions – ranging from large regional solutions to best management practices. Develop information on how well suited the alternative management control actions are to the types of sources and situations identified in Task 6a.*

Lead:

Schedule:

c) Identify regulatory tools for salt and nutrient management

*Develop a white paper exploring the regulatory tools of the Waterboards that can be applied to salinity and nutrient management, and discussing the pros and cons of each. Develop information on how well suited the regulatory tools are to the types of sources and situations identified in Task 6a.*

Lead: Regional Waterboard Staff

Schedule:

d) Evaluate effectiveness of current or proposed limits and approaches

*Characterize current narrative or numeric objectives or limits and control systems and evaluate the effectiveness of their current implementation. Coordinated with modeling to provide future concentrations based on current or proposed regulatory and non-regulatory programs.*

Lead: Contractor and Waterboard Staff

Schedule:

e) Evaluate potential management alternatives

*Using information gathered in Tasks 6a – 6d, screen or prioritize management alternatives for technical feasibility, economic viability, and ability to implement, based on developed screening criteria. Develop comprehensive implementation scenarios and estimate ability to reduce salinity and nutrients in surface and ground waters.*

Lead: Contractor and TAC with Policy

Schedule:

f) Identify recommended suite of strategies and implementation program

*Develop screening criteria to determined comprehensive implementation scenarios worthy of pursuing. Screen scenarios and make recommendations. This task will overlap the technical and*

*the policy areas and should be thoroughly public vetted. These alternative scenarios should be prepared meet CEQA alternative requirements for Task 11. From the recommended suite indicate areas that may not be able to meet objectives with strategies and scenarios reviewed and areas where maximum benefit programs may result in lower cost and improved salt management.*

Lead: Contractor and TAC

Schedule:

### **Policy and Decision Making**

*Areas of regulatory, legal and political importance that are not primarily technical in nature are grouped under “Policy and Decision Making”. This area will focus on the opportunities and constraints posed by the technical, economic and public policy goals and requirements for managing salt and nutrients in the Region to protect water quality.*

#### 7) Identify Management Goals

*A number of technical tasks require the development and statement of goals. In addition to these, this effort would benefit by the clear statement of management goals for the Plan. Goals could be initially identified for:*

- *Salt balance/maximum benefit*
- *Scale of solutions*
- *Adaptive management efforts*
- *Implementability and assurances*

Lead: TAC/Exec Committees

Schedule:

#### 8) Identify Beneficial Uses and Achievable Protective levels

*The effort will be integrated and coordinated with tasks 2 through 6.*

##### a) Current beneficial use or reassessment

*Evaluate current beneficial uses identified in Task 3b and potentially reassess beneficial uses for listed and unlisted waters. Identify uses that may not be attained based on current programs and based on identified management alternatives.*

Lead:

Schedule:

##### b) Develop use attainability analysis

*If it is determined that some beneficial uses cannot be met at certain locations through the identified management alternatives, evaluate whether it is appropriate to conduct a use attainability analysis.*

Lead:

Schedule

##### c) Assess achievable protection levels and cost/implementability/sustainability

*From task 8a identify the likely achievable water quality in the current systems and the costs, implementability and sustainability of the current systems to protect water quality.*

Lead:

Schedule

#### 9) Identify Water Quality Goals, Objectives

*The following would be completed as policy counterpart with Task 2 and Task 8 above. This task will focus on the selection and documentation base on that technical policy development work.*

##### a) Select numerical objectives (surface and groundwater)

*Based on the beneficial uses and achievable protection proposed, evaluate and develop consensus around defensible numerical and narrative objectives to be supported in the program. Conduct anti-degradation analysis for the objectives providing the historical and current conditions in surface water bodies and in groundwater.*

Lead: Contractor and TAC/EC

Schedule

#### 10) Regulatory and Non-Regulatory Implementation Planning

##### a) Determine initial limitations based on objectives

*Based on the objectives needed to protect water quality and the current compliance with objective required to protect the beneficial uses for the water including cross media and other complicating constituents selenium, nitrates and others. Task will determine the needed reductions or limitations that may be needed to meet the objectives*

Lead: Contractor and TAC

Schedule

##### b) Model limitations and sensitivity

*Conduct modeling and analysis of the various potential proposed limitations for economic and implementation impacts/feasibility. Perform sensitivity analysis for objectives and proposed*

*limitations or reductions to determine economic impacts and limitation sensitivity to the goals of the program.*

Lead: TAC and Technical Contractor                      Schedule

- c) Document limitations for all sources/loads in all geographies  
*Based on the scientific data and achievable limitations, document economically viable and implementable limitations at appropriate geographic scales, and salt source types. The output of this effort will be use in the implementation planning.*  
Lead: Contractor and Waterboard Staff                      Schedule
- d) Develop implementation plan  
*Based on recommended strategies developed in Task 6, develop an implementation plan. Plan should include actions, schedule, responsible parties, institutional requirements, estimated costs, funding responsibilities and strategies, and contingency plans. This plan would also include policy and regulatory requirements that may be generated from maximum benefit, adaptive management or non-regulatory implementation scenarios.*  
Lead: Policy committee or contractor and EC                      Schedule
- e) Critical implementation components  
*During the development of the implementation plan, there may be issues that are identified as needing further exploration, such as potential regulatory, legal, funding, or institutional obstacles. Prepare white papers accordingly and use to inform the development of quantified, verifiable adaptive management or max benefit strategies and programs to assist with implementation where incomplete data or uncertain circumstances or effectiveness is present. These strategies will be folded into Task 10a.*  
Lead: Technical and Policy Contractors                      Schedule
- f) Implementation effectiveness and detailed cost benefit analysis  
*To support the implementation plan and the Basin Plan amendment, review the selected programs and strategies for effectiveness and cost benefit with the goal of ensuring that critical areas are prioritized, and that public and private capital is applied in the highest performing and most cost effective way.*  
Lead: Technical Contractor and EC/Policy                      Schedule
- g) Vet draft implementation plan with external participants  
*The draft implementation plan should be vetted at various stages. During development, there may be the need for vetting with various parties, and through wider public release and public workshops.*  
Lead: CVSC PEO and EC                      Schedule

## **Document Preparation**

### 11) CEQA Documentation

- a) Scoping Process  
*Prepare scope of the environmental analysis of the proposed water quality objectives and implementation plan. Solicit information and feedback on the scope of alternatives and the areas for analysis including implementation. Hold public workshops.*  
Lead:                      Schedule
- b) Draft CEQA Functional-Equivalent Documentation  
*Prepare environmental analysis of the proposed water quality objectives and implementation plan. Determine whether CEQA compliance is for the Basin Plan amendment alone, or whether it should be prepared to cover other implementation actions as well. This task also covers document production and posting requirements. Hold public workshops.*  
Lead:                      Schedule
- c) Final CEQA Functional-Equivalent Documentation  
*Prepare responses to comments and final environmental documentation. Post/notice and publicly release.*  
Lead: RWQCB with CVSC                      Schedule: 45 days prior to Waterboard meeting considering BPA

12) Draft Basin Plan Amendment

a) Draft Document Preparation

*Prepare the draft Basin Plan Amendment according to Waterboard requirements. Release for public review and comment. (Under supervision of Regional Waterboard staff). Presentation at Regional Waterboard meeting.*

Lead: ?

Schedule

b) Final Document Preparation

*Receive and respond to public comments (TAC, EC, Contractors). Prepare the final Basin Plan Amendment according to Waterboard requirements. Release for public review and comment. Presentation at Regional Waterboard meeting. (Under supervision of Regional Waterboard staff).*

Lead: Contractors

Schedule

13) Long-term Monitoring and Compliance Reporting

*Determine if a long-term monitoring and compliance reporting program is needed, or whether existing monitoring is adequate.*

i) Determine goals of monitoring and compliance reporting program

*Identify the goals of a long-term monitoring and compliance reporting program. Goals may include any monitoring for CEQA-requirements, or monitoring to inform adaptive management proposals.*

Lead: ?

Schedule

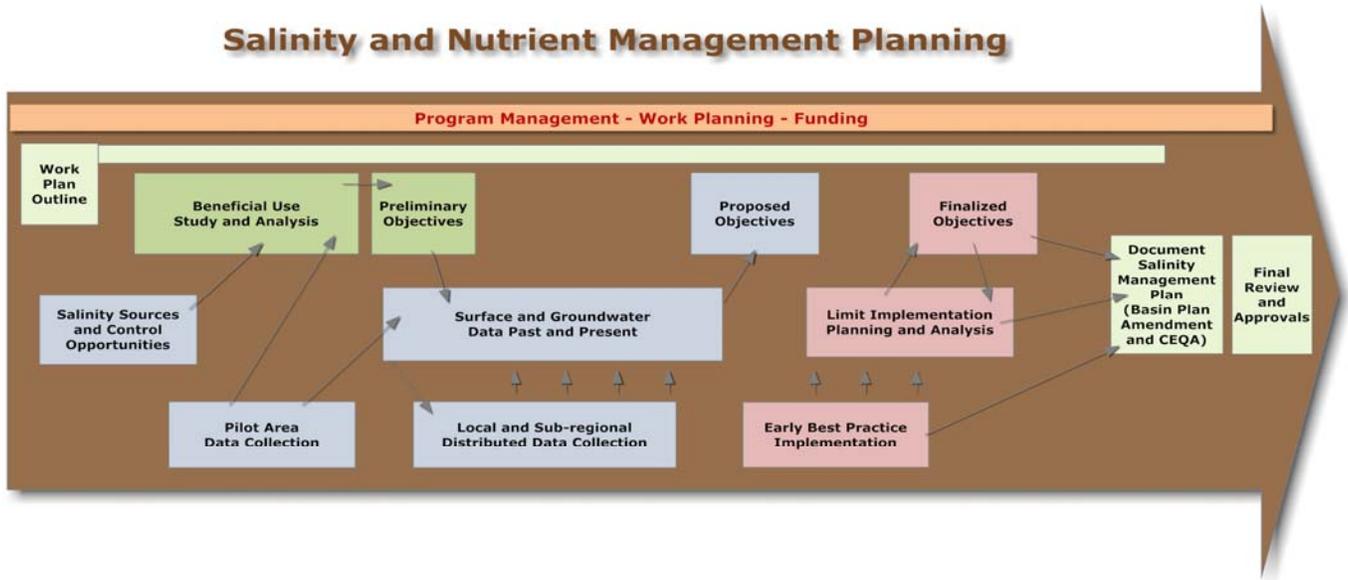
ii) Draft program

*Prepare draft long-term monitoring and compliance program. Plan may build off of short term monitoring plan prepared in Task 4b. Plan should identify monitoring locations, constituents, frequency, funding and resource needs and sources, monitoring leads, purpose of monitoring, and means of reporting results. Plan should also include a QAPP.*

Lead: ?

Schedule

Figure 1 Major Task Alignment (high level Brown Arrow diagram)



Attachments

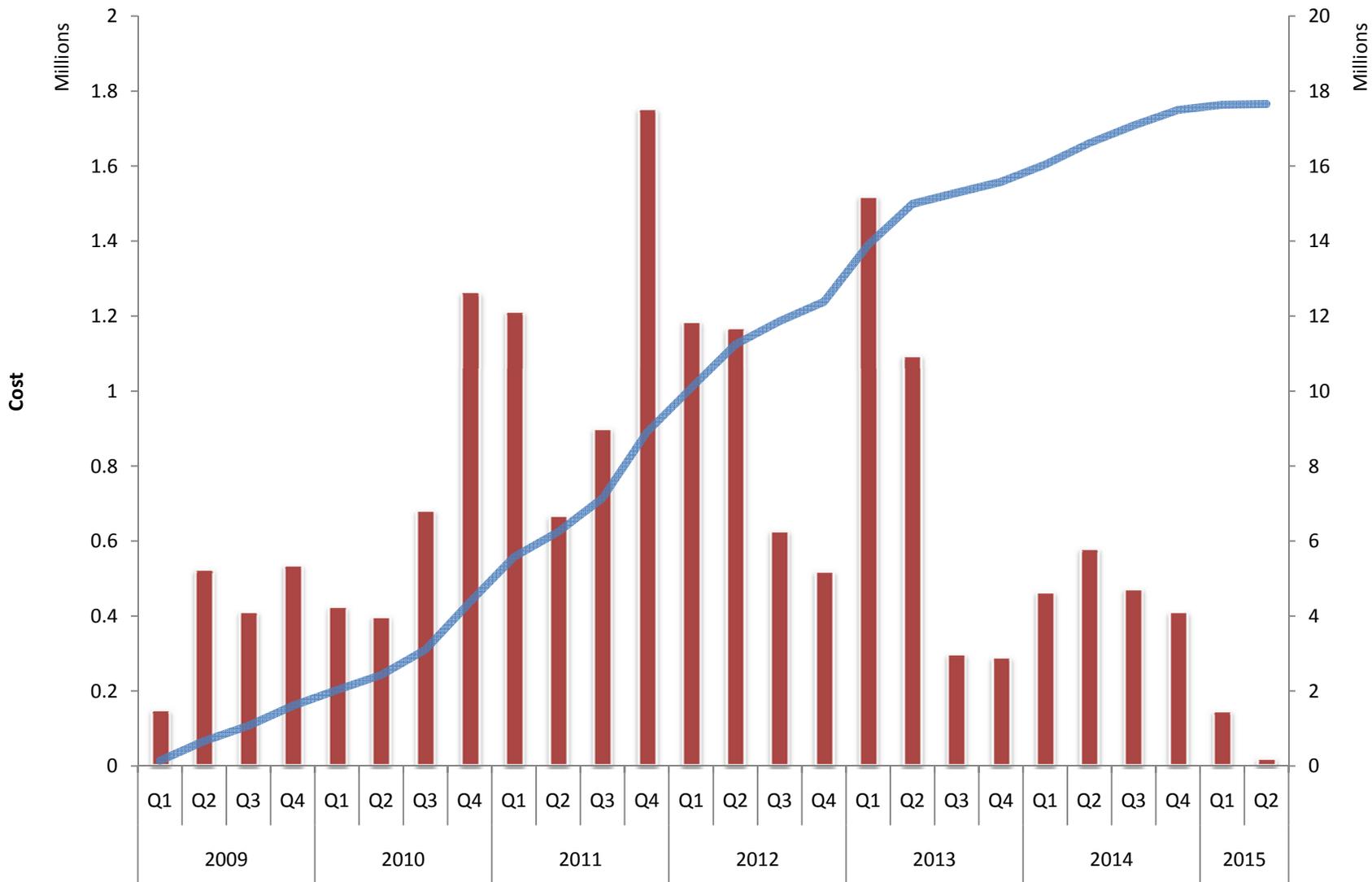
- Summary Schedule (high level task/subtask schedule)
- Summary Budget Estimate by Task
- Expenditures by Quarter and cumulative

Line	Task/Subtask	Short Dur	Long Dur	Cost Low	Cost High	Predicessors Line	Schedule	Lead
1	<b>Management/Administration</b>							
2	<b>1) Program Management</b>			\$ 1,575,000	\$ 3,835,000			
3	a) Program Development			\$ 85,000	\$ 95,000			
4	i) Initial scoping and work plan outline development	1 months	3 months	\$ 25,000	\$ 35,000		Complete/approve by Feb. 09	Salt Sources Subcommittee
5	ii) Schedule, Critical path, and milestone monitoring & enforcement	2 months	3 months	\$ 10,000	\$ 10,000	fs 4	Complete/approve by Mar 09	Individual(s) or work group with CVSC
6	iii) Identify initial tasks and prepare detailed scopes of initial tasks	3 months	3 months	\$ 50,000	\$ 50,000	fs 4	Complete/approval by May 09	Individual(s) or work group with TAC
7	iv) Budget/funding plan and financing program (5 year)			\$ 115,000	\$ 115,000			
8	(1) Cost Budget	3 months	3 months	\$ 10,000	\$ 10,000	fs 4	Complete/approve by May 09	Work Group with CVSC
9	(2) Revenue and Funding plan	2 months	3 months	\$ 25,000	\$ 25,000	fs 9	Complete/approve by May 09	Individual(s) or work with CVSC and EC
10	v) Non-financial resources and requirements planning	1 months	1 months	\$ 10,000	\$ 10,000	fs 4, 5, 6	Complete/approve by May 09	Work Group with EC
11	vi) Program organization governance, staffing plan and support	3 months	6 months	\$ 20,000	\$ 20,000	FS 7,8	Complete/approve by May 09	CVSC
12	vii) Prepare detailed scopes of remaining tasks	4 months	12 months	\$ 50,000	\$ 50,000	FS 4, 5, 6, 8, 9, 10		
13	b) Procurement			\$ 450,000	\$ 850,000			
14	i) Financial administration	60 months	84 months	\$ 300,000	\$ 500,000			CVSC
15	ii) Procurement of services	60 months	84 months	\$ 150,000	\$ 350,000			CVSC
16	c) Stakeholder management and outreach			\$ 700,000	\$ 2,375,000			
17	i) Stakeholder coordination and process management	60 months	84 months	\$ 250,000	\$ 500,000			CVSC
18	ii) Outreach communication and public information	60 months	84 months	\$ 200,000	\$ 1,500,000			CVSC and PEOC
19	d) Related/Integrated project coordination	60 months	84 months	\$ 125,000	\$ 125,000			TAC/EC or consultant
20	e) Periodic reporting and communications	60 months	84 months	\$ 125,000	\$ 250,000			CVSC and PEO Committee
21	f) Basin planning process compliance (joint with RWQCB)			\$ 225,000	\$ 400,000			
22	i) Record keeping	60 months	84 months	\$ 100,000	\$ 150,000			CVSC
23	ii) Other process requirements	0 months	0 months	\$ 125,000	\$ 250,000			
24	<b>Technical</b>			\$ 9,890,000	\$ 25,680,000			
25	<b>2) Identify Salt Constituents and Data Requirements</b>			\$ 935,000	\$ 2,850,000			
26	a) Determine salt and nutrients constituents, standardize data collection, analysis, & assessment approach, set minimum data quality criteria for screening old data	4 months	6 months	\$ 115,000	\$ 300,000		Begin immediately	to scope and Consultant
27	b) Beneficial uses and requirements	12 months	24 months	\$ 350,000	\$ 1,500,000	FS 26	Begin immediately	TAC to scope and Consultant
28	c) Identify surface water quality data requirements	3 months	6 months	\$ 50,000	\$ 75,000	FS 27		Contractor
29	d) Identify groundwater quality data requirements	3 months	6 months	\$ 50,000	\$ 75,000	FS 28		Contractor
30	e) Salt/nutrient sources and sinks – pilot implementation studies	6 months	9 months	\$ 300,000	\$ 600,000	FS 29		Contractor (see separate scope)
31	f) Geographic Data	4 months	9 months	\$ 70,000	\$ 300,000	FS 30		
32	<b>3) Develop and Populate Regional Database and Process Data</b>			\$ 3,795,000	\$ 8,650,000			
33	a) Database requirements and design using open systems	4 months	6 months	\$ 120,000	\$ 350,000	FS 29		Contractor
34	b) Aggregate/collect historic and recent data	18 months	60 months	\$ 3,000,000	\$ 6,500,000	FS 30, 33	Plus subregional work 24-36 mos	Contractor
35	c) Data validation and analysis	4 months	12 months	\$ 300,000	\$ 600,000	FS 34		Contractor
36	d) Data gap identification and management	2 months	3 months	\$ 50,000	\$ 250,000	FS 35		Contractor
37	e) Graphical Analysis/Presentation of Data	2 months	3 months	\$ 25,000	\$ 75,000	FS 36		Contractor
38	f) Data summary report for basin planning	3 months	4 months	\$ 50,000	\$ 125,000	FS 37		Contractor
39	g) Database ongoing and periodic update and maintenance	LOP	LOP	\$ 250,000	\$ 750,000	FS 38 +12 months	5 years	
40	<b>4) Monitoring or Other Methods to Fill Data Gaps</b>			\$ 3,050,000	\$ 9,340,000			
41	a) Identify areas where data is unavailable and develop plan for acquiring additional data	2 months	4 months	\$ 50,000	\$ 90,000	FS 37		TAC
42	b) Develop additional data - collection and monitoring program	12 months	18 months	\$ 250,000	\$ 500,000	FS 41		Contractor
43	c) Conduct essential monitoring	18 months	48 months	\$ 2,500,000	\$ 8,000,000	FS 42	Assumes half sub regional	Regional/Subregional groups, Contractors
44	d) Develop ongoing monitoring program, where required	4 months	12 months	\$ 250,000	\$ 750,000	FS 43		Contractor and TAC/EC
45	<b>5) Develop Conceptual Models and Decision Assistance Tools</b>			\$ 960,000	\$ 1,990,000			

Line	Task/Subtask	Short Dur	Long Dur	Cost Low	Cost High	Predicessors Line	Schedule	Lead
46	a) Develop model requirements	4 months	6 months	\$ 25,000	\$ 75,000	SS 37		Contractor
47	b) Identify and evaluate existing conceptual and analytical models, and develop plan for meeting modeling needs	2 months	6 months	\$ 25,000	\$ 75,000	FS 46		Contractor/TAC
48	c) Select conceptual and analytical models	2 months	4 months	\$ 10,000	\$ 40,000	FS 47		TAC
49	d) Data assumptions and dynamic modeling development Multiscale	4 months	9 months	\$ 150,000	\$ 600,000	FS 48		Contractor/TAC
50	e) Perform modeling and analysis and tools for planning	8 months	18 months	\$ 750,000	\$ 1,200,000	FS 37	8-12 mos	Contractor/TAC
51	<b>6) Implementation Planning and Analysis</b>			<b>\$ 1,150,000</b>	<b>\$ 2,850,000</b>			
52	a) Classify salt sources	2 months	6 months	\$ 100,000	\$ 200,000	FS 37		
53	b) Identify salt and nutrient management actions	3 months	6 months	\$ 100,000	\$ 300,000	FS 52		
54	c) Identify regulatory tools for salt and nutrient management	4 months	6 months	\$ 50,000	\$ 100,000	FS 53	Performed with RWQCB	Regional Waterboard Staff
55	d) Evaluate effectiveness of current or proposed limits and approaches	4 months	6 months	\$ 50,000	\$ 250,000	FS 54		Contractor and Waterboard Staff
56	e) Evaluate potential management alternatives	6 months	12 months	\$ 750,000	\$ 1,750,000	FS 55		Contractor and TAC with Policy
57	f) Identify recommended suite of strategies and implementation program	6 months	18 months	\$ 100,000	\$ 250,000	FS 56		Contractor and TAC
58	<b>Policy and Decision Making</b>			\$ 2,175,000	\$ 6,550,000			
59	<b>7) Identify Management Goals</b>	2 months	4 months	\$ 10,000	\$ 25,000			TAC/Exec Committees
60	<b>8) Identify Beneficial Uses and Achievable Protective levels</b>			\$ 750,000	\$ 2,800,000			
61	a) Current beneficial use or reassessment	9 months	36 months	\$ 300,000	\$ 2,000,000	FS 59	Assume SJR Reassessment	
62	b) Develop use attainability analysis	12 months	36 months	\$ 250,000	\$ 500,000	FS 61	Assumes data from Tech	
63	c) Assess achievable protection levels/cost/implementability/ sustainability	6 months	18 months	\$ 200,000	\$ 300,000	FS 62		
64	<b>9) Identify Water Quality Goals, Objectives</b>			\$ 250,000	\$ 750,000			
65	a) Select numerical objectives (surface and groundwater)	6 months	12 months	\$ 250,000	\$ 750,000	FS 38		Contractor and TAC/EC
66	<b>10) Regulatory and Non-Regulatory Implementation Planning</b>			\$ 1,175,000	\$ 3,000,000			
67	a) Determine initial limitations based on objectives	4 months	12 months	\$ 250,000	\$ 450,000	SS 65		Contractor and TAC
68	b) Model limitations and sensitivity	2 months	6 months	\$ 50,000	\$ 250,000	FS 67		TAC and Technical Contractor
69	c) Document limitations for all sources/loads in all geographies	2 months	4 months	\$ 125,000	\$ 200,000	FS 68	Assumes work from technical	Contractor and Waterboard Staff
70	d) Develop implementation plan	6 months	18 months	\$ 350,000	\$ 1,000,000	FS 69	Assumes work from technical	Policy committee or contractor and EC
71	e) Critical implementation components	2 months	12 months	\$ 100,000	\$ 200,000	FS 70	Assumes work from technical	Technical and Policy Contractors
72	f) Implementation effectiveness and detailed cost benefit analysis	4 months	12 months	\$ 250,000	\$ 800,000	FS 71	Assumes work from technical	Technical Contractor and EC/Policy
73	g) Vet draft implementation plan with external participants	4 months	8 months	\$ 50,000	\$ 100,000	FS 72		CVSC PEO and EC
74	<b>Document Preparation</b>			\$ 715,000	\$ 2,135,000			
75	<b>11) CEQA Documentation</b>			\$ 435,000	\$ 1,550,000			
76	a) Scoping Process	2 months	4 months	\$ 10,000	\$ 50,000	SS 73		
77	b) Draft CEQA Functional-Equivalent Documentation	6 months	18 months	\$ 350,000	\$ 1,200,000	FS 76		
78	c) Final CEQA Functional-Equivalent Documentation	4 months	6 months	\$ 75,000	\$ 300,000	FS 77	meeting considering BPA	RWQCB with CVSC
79	<b>12) Draft Basin Plan Amendment</b>			\$ 180,000	\$ 285,000			
80	a) Draft Document Preparation	8 months	18 months	\$ 150,000	\$ 225,000	FS 78		?
81	b) Final Document Preparation	4 months	6 months	\$ 30,000	\$ 60,000	FS 76	Contractors	
82	<b>13) Long-term Monitoring and Compliance Reporting</b>			\$ 100,000	\$ 300,000			
83	i) Determine goals of monitoring and compliance reporting program	4 months	6 months	\$ 50,000	\$ 100,000	FS 81	?	
84	ii) Draft program	4 months	12 months	\$ 50,000	\$ 200,000	FS 83	No Implementation Costs inc.	
	<b>TOTAL ALL AREAS</b>			<b>\$ 14,355,000</b>	<b>\$ 38,200,000</b>			
	Data Entry in Blue Areas Only			<b>\$ 8,000,000</b>	<b>\$ 4,000,000</b>	Local Costs		
	TBD to be determined LOP life of project			<b>\$ 22,355,000</b>	<b>\$ 42,200,000</b>	Ranges with local costs		
	FS = Finish start relationship SS = start start relationship							
	Dur = Duration							

# Budget by Quarter

Fixed Cost Cumulative Cost



# CV-SALTS Draft Work Plan Schedule

