

DRAFT AGENDA

**Combined Meeting of the
Economic and Social Impact and Technical Advisory Committees**

WHEN: Tuesday January 13, 2009
WHERE: CV Regional Water Quality Control Board Office
11020 Sun Center Drive #200, Rancho Cordova, CA
MAP: http://www.waterboards.ca.gov/centralvalley/contact_us/sacto_location.html
TIME: 10:00 AM to 12:00 Noon

TELECONFERENCE NO.: 916-227-1132 Limited lines available.

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| 1. Welcome and Introductions | 5 min |
| 2. Review of the Agenda and purpose | 5 min |
| 3. Salt Source Pilot Study Review and recommend approval | 15 min |
| 4. Work Plan outline for program | 10 min |
| 5. Scheduling exercise for work plan tasks | 45 min |
| 6. Salinity Management William Stringfellow | 20 min |
| 7. Review of Final "Things you can do" from PEO Committee | 5 min |
| 8. Actions/Recommendations/Report to the Executive Committee | 5 min |
| 9. Discuss next meeting date February 18th | 5min |
| 10. Adjourn 12:00 Noon | |

Salt Sources /Work Plan Subcommittee Teleconference-Meeting January ____

Please Note: Executive Committee Begins at 1:30 PM

Mission of the CVSPG:

The mission of the Central Valley Salinity Policy Group is to work closely, in a collaborative manner to create a comprehensive Central Valley Salinity Management Plan.

Mission of the CVSPG Social and Economic Impact Committee:

The mission of the Social and Economic Impact Committee is to provide guidance and direction for the on-going assessment of the social and economic impacts of salinity on the Central Valley and the State of California as an essential component in the development of a comprehensive Central Valley Salinity Management Plan

Mission of the CVSPG Technical Advisory Committee:

The mission of the Technical Advisory Committee is to provide guidance and direction for the ongoing compilation and management of data needed to develop a comprehensive Central Valley Salinity Management Plan

Salt and Nutrient Sources Pilot Study Scope of Work

Committee DRAFT VERSION 10 with edits from 1/9/09 meeting

Economic-Technical Subcommittee Members working on this document

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Text from this document will be used to prepare a solicitation package for procurement of these services from one or more consultants. Appendix A will be included as references for the project. Appendix B includes information related to the procurement process and will not be included in the scope. Phase 2 information will be provided to assist the consultant in understanding the long term use of the information and the workplan. Committee membership information above will also be deleted from the scope.

Performance Scope/Product Description

The selected consultant will provide all materials, equipment, labor, planning and coordination to provide the deliverables listed below with Technical and Economic Committee input and oversight. The consultant will provide a proposal documenting scope of work to be performed, project budget, project schedule and development of a peer/technical review panel. Each phase of this work may be separated in execution due to funding or program development timing.

Schedule and Budget

The consultant shall propose a budget and schedule for Phase 1 Task 1 separate from Task 2. The overall draft deliverable from Task 2 is due by September 2009 based on progress expectations from the regional board. The budget for the Phase 1 is expected to be between \$100,000 and \$250,000 for consultant efforts. The funding for the budget may be developed from multiple sources and this program may be contracted in component tasks due to funding

availability and timing. The consultant selected for Task 1 may or may not be retained for Task 2 or future phases of the program.

Phase 1 - Efforts and Deliverables

Task 1 and Task 2 are sequential and will be performed upon notice to proceed and approval of the contract. The work planning and data collection will be executed in an open and transparent process. Evaluation by the technical committee and stakeholders is critical to the success of the effort. All work will be coordinated with information or resources that may be available from participants, the regional board, prior works such as USGS NAWQA, WARMF model and the Central Valley Drinking Water Policy development and those listed in References in Attachment 1.

Task 1 - Pilot Work Plan

The pilot work plan shall select three to five areas representative of the Central Valley. Areas should represent the types of salt and nutrient-impacted communities across the region. Areas will be proposed by the consultant with review by the Technical and Executive committees. Pilot areas should also be picked based on factors such as: quantity and quality of available data, willingness to cooperate by local agencies, types of water use and salt and nutrient sources and representativeness for critical areas of the Central Valley.

The work plan will document the methods, manner and technical veracity of the work needed to characterize all “salt and nutrient sources of significance” in the pilot areas. Through the plan the consultant shall:

- define the term “salt and nutrient sources of significance” for the purposes of the plan and areas
- provide the methods and manner of collection and validation of the salt and nutrient source data for the pilot areas
- outline data that is currently available and the quality of the data
- identify additional data which will need to be developed
- indicate how the data collection shall account for
 - the total salt load salt balance and salt accumulation for each of the pilot areas
 - identify critical concentration discharges
- ensure the magnitude of each sources is accurate when combined into the overall salt balance
- identify how historic, current and future salt and nutrient source quantities will be collected or can be estimated to provide trend information
- identify and quantify areas where nutrients, especially nitrates are impacting beneficial uses of the waters
- select systems that will work for pilot areas and can be used in all other parts of the region.

It is critical for the consultant to propose methods that provide consistency in evaluation across sources and across the pilot areas. The methods must avoid double counting salt and nutrients as sources and validate salt and nutrients related to sources of water. Because of the linkages with water supply each of the pilot areas should be reviewed for wet, dry and normal hydrologic years.

The constituents contributing to salinity impacts should be identified in the work plan and should be prioritized into tiers as indicated below in an evaluation process with the committee:

1. Salts as Total Dissolved Solids and/or EC, and separately but with equal importance Nitrates/nitrogen species
2. Other salt constituents chloride, phosphate, sulfate, carbonate, and bi-carbonate or others of local interest as recommended by the consultant. Consultant should propose data collection methods for all constituents, methods or timing may vary as appropriate.

Other constituents may also be addressed if project scoping or information uncovered during Phase I indicates a data requirement. The plan should propose methods that are consistent with prior works indicated in References shown as Attachment A and provide the most efficient collection and utilization. All collection efforts are intended to lead to the broader basin plan amendment work plan and the tie to fate and transport studies in future work phases, not included in this study. The studies will proceed only upon approval of the work plan by the committees and upon adequate funding.

Potential Areas for Consideration

The Economic and Social Cost and Technical Committees developed the following list of areas to be considered as potential pilot areas:

- A Foothills location
- A San Joaquin location
- A Tulare location
- A Sacramento area location(minus Delta)
- Areas covered by the Modesto/Hilmar SEP
- Specific areas mentioned were
 - Westlands
 - Panoche
 - Porterville
 - Davis/Woodland
 - Dixon
 - Vacaville
 - Fresno
 - Colusa
 - Mountain House

The Economic and Social Cost and Technical Committees developed the following list of possible criteria to include in choosing pilot areas:

- Representative area criteria
 - Ag with surface and groundwater use
 - Urban areas with food processing/industry
 - Rural with surface water
 - Rural with groundwater

The specific areas listed above are not all inclusive and the consultant should recommend any additional areas representative of the CV-SALTS interests to determine salt and nutrients sources. Additionally the representative area criteria listed above is not all inclusive and the consultant may recommend other criteria not listed here that can assist in determining salt and nutrient sources for a small area that assist in characterizing salt and nutrient sources for a larger geographic region of the Central Valley.

Task 2 - Pilot Salt and Nutrient Studies and Report

For each approved area the consultant shall collect, review and validate constituent data for the region in accordance with the work plan. If possible, the pilot areas should attempt to use delineated by natural hydrological boundaries, such as hydrological basins and sub-basins, avoiding political and other artificial boundaries unless necessary. The data will be collected and entered into a publicly available database or data structure as described in the approved work plan. The data should be collected and entered in a manner that makes it available for future modeling and fate and transport analysis. It should be processed and stored in a manner consistent with prior work indicated in References shown as Attachment A maximizing future usefulness of the data. Data shall be presented in detail and in summary to explain the net balance of salt in the area and the totals for generation, concentration, importation, mobilization and disposal. Based on information gathered the report will present estimates of past and future salt and nutrient quantities in summary and overall trends where they appear.

ATTACHMENT A - LIST OF REFERENCES FOR SALINITY SOURCES SURVEY SCOPE OF WORK

Prior Works

- Drinking Water Policy Development for Central Valley Basin Plan
- Santa Ana Basin Salt and Nitrate Basin Plan Amendment
- Staff Report for the San Joaquin River at Vernalis Salt and Boron TMDL and Basin Plan Amendment
- Hilmar SEP
- Rainbow Report
- Nitrate in Drinking Water Report to the Legislature – 1988 by State Water Board
- Water Quality Survey of Tile Drainage Discharges in the San Joaquin River Basin – 1988 by CV Regional Water Quality Control Board

Potential Data Sources

- Metadata Guide for Salinity Data Sources for the Central Valley of California – 2008 by the California Water Institute
- Technical Analysis to Support Development of Drinking Water Policy for the Central Valley Basin Plan
- Staff Report for the San Joaquin River at Vernalis Salt and Boron TMDL and Basin Plan Amendment
- Rainbow Report
- Nitrate in Drinking Water Report to the Legislature – 1988 by State Water Board
- SWAMP
- GAMA Data Series Reports - <http://ca.water.usgs.gov/gama/publications.htm>.
- DWR has lists of groups that have received public money for GW studies in recent years: <http://www.grantsloans.water.ca.gov/grants/assistance.cfm> these lists may include work that is not included in GAMA or any of the more accessible datasets.

ATTACHMENT B INFORMATION RECOMMEND FOR PROCUREMENT

One member recommended a request for qualifications be submitted for approval prior to issuance of RFP.

Committee members recommended solicitation be provided to:

- Brown and Caldwell
- CH₂MHILL
- Bookman & Edmonston
- Kennedy Jenks
- USGS and CSUF, UC Merced, and UC Davis,
- Ecologic
- Wildermuth Environmental

Procurement Timeline (to be added)

Requirements

Terms and conditions

Funding contingency

Evaluation Criteria

Cost

Total cost

Breakdown of costs and explanation

Technical

Responsiveness to RFP

Proposed scope completeness

Qualifications

Experience

- Stakeholder projects
- Water quality
- Data acquisition and analysis
- Regional planning
- Salts and nutrients

Project Management

Qualifications

Cost and schedule

Coordination and reporting

NOTE - The Subcommittee has not completed review and changes to the Phase 2 effort. The Draft Sections below are intended only to provide an indication of future efforts.

Phase 2 Products and Deliverables

Regional Salt and Nutrient Sources Study

Phase 2 will expand on the pilot areas to cover all basins in the Central Valley, dependent on funding.

Regional Work plan

The consultant will prepare a work plan covering all aspects of the planning and implementation of the study needed to expand from the pilot areas to the rest of the region. The full study will integrate information from the pilots and the work plan will identify the minimum number of additional areas needed to achieve complete coverage of the region with a proposed level of certainty to be reviewed and approved by the committee. Work will include summarization of the total salt generated, imported, mobilized, concentrated or disposed in the region and show movements of salt from one area to another.

The studies will proceed only upon approval of the work plan by the committees and upon adequate funding.

Regional Salt and Nutrient Studies and Report

The Regional Salt and Nutrient Studies will implement the methodology and manner that was used in the pilot across the region and in accordance with the approved work plan. In addition to the data collected and summarized the report will classify salt and nutrient sources that have reduced or minimized their generation or concentration or that export salt from the basin. The report will identify salinity management best practices where possible and document them in the report.

Phase 3 Further Study Areas

Areas where information was estimated or where data was incomplete or could not be made available will be identified and investigated further in this phase.

- Develop Work plan
- Conduct Studies
- Prepare Report
- Incorporate into updated Regional Report

CV Salinity and Nutrient Management Plan

DRAFT Work Plan Version 5

Revised after 1/09/09 meeting

Incorporating committee member changes and questions and significant contributions by 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 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. 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 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 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. This Work Plan also has the potential to 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.

Definitions

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

Salinity/Nutrient Management Plan – all documentation required to understand, set and document basin objectives, limits and regulatory and non-regulatory implementation plans to achieve effective salt management for all Central Valley Basins. Implemented as an amendment to the existing basin plans.

Program and Purpose –to complete required tasks, study, documentation and process to complete a Salinity Management Basin Plan amendment consistent with stakeholder input and funding for Board approval in the 5-7 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.

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

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 management plan

i) Scoping and work plan development

Scope out tasks needed to develop the Salinity/Nutrient Management Plan within a work plan. Work plan should include task descriptions, identification of leads, schedule and budget.

Lead: Salt Sources Subcommittee (initially) TAC/EC Schedule: 3 months (starting in January)

ii) Critical path and milestone monitoring and 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.

Lead: CVSC and EC Schedule: throughout plan

iii) Identify initial tasks and prepare detailed scope

Identify tasks which must proceed immediately (i.e. due to critical path or length of effort). Prepare detailed scope of work and schedule and determine task lead. Prepare Requests for Qualifications and Proposals where needed for Procurement (see Task 2.b).

Lead: TAC/EC Schedule: 6-9 months (starting in January)

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)

Lead: TAC/EC then EC/CVSC Schedule: 6-9 months (starting in January)

(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: EC or Finance Committee and CVSC Schedule:

- v) Non-financial resources and requirements planning
Identify non-financial in-kind and stakeholder contributed studies and other opportunities to have other contribute in non-financial means. Additionally prepare a section specifically to meet the needs of the Waterboards and basin plan needs for this program.
 Lead: (EC with work from Waterboard staff) Schedule:
- vi) Program organization, staffing plan and support (governance?)
Develop an organizational chart and contact list for the CVSALTS initiative effort. Develop clear lines of leadership responsibilities, including funding, technical, and policy 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: EC/CVSC Schedule:
- 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/Finance Committee or EC Schedule:
- 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: TAC/EC then CVSC Schedule:
- 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: PEO Committee and CVSC Schedule: life of plan
- ii) Outreach communication and public information
Insert scope of the Stakeholder and Public Education Committee.
 Lead: Stakeholder and Public Education Committee Schedule: life of plan
- d) Related/Integrated project coordination
Coordinate with related or integrated projects, policies, and other efforts. Integrate and manage work overseen by one or more committees. (Prepare an initial report of those efforts with highest potential to affect existing conditions.)
 Lead: TAC/EC or consultant Schedule:
- 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: PEO Committee and CVSC Schedule:
- 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: Schedule:
- ii) Other process requirements
Placeholder.
 Lead: Schedule:

Technical

2) Identify Salt Constituents and Data Requirements

a) Determine salt and nutrients constituents

Establish a process for including constituents in the Salinity/Nutrient Management Plan. 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.

Lead: TAC

Schedule: Should begin immediately

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.

Lead: Regional Waterboard staff with TAC

Schedule: Should begin immediately

c) Surface water quality

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, by state of 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 the waterbodies is included in task 3 b) below.

Lead: Contractor

Schedule:

d) Groundwater quality

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 monitoring in all utilized for 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.

Lead: Contractor

Schedule:

e) Salt/nutrient sources and sinks – pilot implementation studies

Pilot studies to characterize salt/nutrient sources and sinks on a regional scale at points representative of the Central Valley's variability. Summarize pilot study methodology and applicability for subtasks c and d above in the plan. Use pilot studies results to direct future implementation and to revise other work where needed.

Lead: Contractor (see separate scope of work)

Schedule:

f) Geographic Data

Geographic and location data should be captured in compatible geographic information systems (GIS) formats to allow management, analysis, presentation and public access to the information at various levels of summarization.

3) Develop Regional Database and Populate

a) Database requirements and design using open systems

The Salinity/Nutrient Management Plan will acquire a great deal of data. To manage this data, and to enable a smooth process for adding in new data for future updates, develop priorities for database development. This could include evaluation of open or public access systems that may be accessed by the public as appropriate. Consults with database and portal design on large scale data aggregation and collection will be required. Prepare a requirements document that will become part of the scope of work for consultants who will complete tasks b through f (include design, structure, interfaces and content standards etc.)

Lead: Contractor

Schedule:

b) Aggregate/Collect historic and recent data

Establish a deadline for data collection (the cut-off date for data supporting the Salinity/Nutrient Management Plan). Based on the constituents of concern and beneficial use overlap defined in tasks 2a and b, and the geographic scope defined in tasks 2c and d and other needs (such as co-variants, like flow etc.), collect historic and recent data. Maximize efficiency by using previous collections of data where possible, coordinate and utilize regional and sub-regional groups to collect and manage data and provide aggregation node or data for the database.

Lead: Contractor

Schedule:

c) Data validation and analysis

Data validation will include temporal, spatial and quality assurance tests of the data by independent parties or reviewed by independent parties and stakeholders to ensure appropriate and scientifically valid data. Various analyses will be needed to determine the validity and appropriateness of the data depending on the purpose and sensitivity of decisions. (TAC with regional board should determine the validation level required for each type of data.)

Data that is needed but not standard quality will be researched for additional quality control information (with the program producing the data) and if not resolved will highlighted for review by the TAC and Regional Waterboard staff for review.

Lead: Contractor

Schedule:

d) Data gap identification and management

Prepare GIS maps of available data, indicating the number of data points at each location, for each constituent of concern to summarize data availability from subregional groups or region-wide sources. At the direction of the TAC, additional maps or graphics to determine seasonal gaps in data may also be requested. Gaps should be used to inform limitations of analysis and needs for future monitoring identified in Task 4 below. If gaps are determined to be critical, work with TAC to determine appropriate methods of monitoring or estimating the gaps.

Lead: Contractor

Schedule:

e) Graphical Analysis/Presentation of Data

Collected data will be analyzed temporally and geographically using simple charting methods and GIS analysis techniques. Analysis of flow to concentration relationships should include consultation with USGS and others studying the region and the TAC (to avoid duplication of efforts). All analysis and graphical presentation methods should first be proposed to the TAC (or representatives) for review prior to proceeding. Previous studies should be consulted to inform the analysis and avoid duplication of efforts. The goals of graphical analysis and presentation are to both support and inform conceptual models and to assist in public understanding of salinity and nutrient conditions, sources, distribution, and drivers.

Lead: Contractor

Schedule:

f) Data summary report for basin planning

Throughout data process, prepare periodic summary 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 area where data is unavailable

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 both planning, objective setting, and implementation needs of the program.

Lead: Contractor

Schedule:

b) Identify preliminary conceptual and analytical models

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. 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.

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.
Lead: Schedule
- 9) Identify Water Quality Goals, Objectives and Limits
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 and limits (surface and groundwater)
Based on the beneficial uses and achievable protection proposed, evaluate and develop consensus around defensible numerical and narrative objectives and limits to be supported in the program. Conduct anti-degradation analysis for the limits providing the historical and current conditions in surface waterbodies and in groundwater.
Lead: Contractor and TAC/EC Schedule
 - b) Model limits and limit sensitivity
Conduct modeling and analysis of the various potential proposed limits for economic and implementation impacts also analyze sensitivity of the proposed limits to the objectives.
Lead: TAC and Technical Contractor Schedule
 - c) Document limits for all discharge types in all geographies
Based on the scientific data and achievable limits, document economically viable and implementable limits at appropriate geographic scales, discharge types, and/or salt source types.
Lead: Contractor and Waterboard Staff Schedule
- 10) Regulatory and Non-Regulatory Implementation Planning
- a) 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
 - b) 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
 - c) 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
 - d) 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 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

- 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: 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

To be developed

Figure 2 Summary Schedule

Table 1 Summary Budget

DRAFT

Things You Can Do to Reduce Salt Impacts

(general public) Public Education and Outreach For Technical Review - Version 8

1. Use less or low salt detergents and products

Research shows that significant salt comes from our household detergents and cleaners; consider using liquid and low salt products.

2. Reduce salt in your diet

Salt you eat or use in cooking finds its way back into the environment. Not only does salt impact the water system of the Central Valley, but according to the American Heart Association salt can increase high blood pressure. For tips see <http://www.americanheart.org/presenter.jhtml?identifier=336>

3. Conserve water

Because all water has some salt; every use adds salt to the environment. Consider energy efficiency and water conservation as you buy, remodel, landscape and live in your home. Become involved and support your local water and wastewater supplier's conservation and salinity management efforts.

4. Water softener users should utilize only the highest efficiency systems

Ask a state licensed water conditioning professional if they can help you reduce your salt usage and discharge to the sewer. Older or out of adjustment systems waste salt which may be released to the environment.

5. Limit use of kitchen garbage disposals

Composting or disposal in the normal trash can reduce the salt released to the environment from our food preparation.

6. Conserve energy, electricity, oil and biofuel production concentrate salts

Because conventional electrical generation, oil and biofuel production concentrate salts any energy saved reduces salt load saves money. Buy products with consideration for reducing the fuel used in transportation.

7. Educate your friends and your community

Now that you have a variety of ways to reduce your salt impact and reduce future cost increases to water and sewer rates help your community do the same.

8. Be creative, look for other opportunities

We need your help with solutions for reducing salt impacts, reducing the sources or salt, finding economic uses for salt will require innovation.

Salt in food is mainly sodium chloride, table salt. In the environment all salts including nitrates must be managed. More information is available on the web at http://www.swrcb.ca.gov/rwqcb5/water_issues/salinity/

Things Your Community and Agencies Can Do to Reduce Salt Impacts

- 1. Actively participate in collaborative salt management efforts*
- 2. Evaluate and address sources of salt in your community*
- 3. Advocate all local, state and federal agencies and water purveyors address salt in operation of their facilities*
- 4. Conserve water, water saved is available to better manage salts*
- 5. Conserve energy, electricity, oil and biofuel production which can concentrate salts*
- 6. Incorporate salinity management in land use and economic development decisions*
- 7. Buy green and local products, and build efficient facilities*
- 8. Utilize appropriate water treatment systems to reduce salt impacts*
- 9. Incorporate salt management messages in community and public education efforts*
- 10. Be creative, look for opportunities to help manage salts*