

**STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION – CENTRAL VALLEY WATER BOARD  
DECEMBER 6, 2011**

**SUBJECT**

INFORMATIONAL ITEM: CENTRAL VALLEY SALINITY ALTERNATIVES FOR LONG-TERM SUSTAINABILITY (CV-SALTS) ANNUAL PROGRESS REPORT

**BACKGROUND**

CV-SALTS is a stakeholder lead initiative developing a Central Valley-wide salt and nitrate management plan. Cleanup and Abatement (CAA) funds were authorized in two separate resolutions to provide seed money for the initiative. Resolution #2009-0023 authorized \$1.2-million and Resolution #2010-0042 authorized \$3.8-million. Resolution #2010-0042 included a requirement that the Central Valley Water Board report annual progress on the initiative at a publicly noticed State Water Board meeting. The progress report is to include a detailed accounting of expenditures, services received, a line item report of in-kind and contract services contributions from Central Valley Salinity Coalition (CVSC) members and/or additional public and private entities, a summary of work accomplishments to date and timeline for completion of work.

Details of the required information are included in the attached staff report and it is anticipated that an expanded discussion of the project will be provided at a joint State and Regional Water Board workshop in early 2012. For this informational item a brief summary is provided below.

Expenditures and Cost Share: Total expenditures for the CV-SALTS initiative since 2008, are \$5,569,502. Of this total \$5,319,614 (96%) has been expended by CV-SALTS Stakeholders, which include CVSC members, other organizations, and agencies. CVSC members have provided over \$ 1-million in financial contributions through membership fees. CVSC members and other organizations have also provided studies, grants and other support for the CV-SALTS effort totaling more than \$ 4-million. Of the \$1.2-million in CAA funding provided through Resolution #2009-0023 all funding has been obligated to contracts. As of September 2011, \$250,000 has been expended.

None of the \$3.8-million provided through Resolution #2010-0042 has been expended as of 30 September 2011, in part due to the fact that the contract encumbering the funding had not been approved. CV-SALTS has completed qualification reviews and is drafting scopes of work for contractors to conduct tasks outlined in the new contract when approved.

Services Provided: The amounts listed above do not account for the time spent by stakeholders to participate on policy and technical committees that identify tasks, scope the work, conduct and oversee work, and review and approve final products (approximately monthly policy meetings and two meetings per month for various technical subcommittees). Stakeholder produced products are discussed under accomplishments. Contracted services included a GIS based system to identify Central Valley water bodies, their beneficial uses and water quality objectives as well as a Project Management Team which provided administrative, technical and facilitation coordination to accomplish items listed below.

## Accomplishments to Date:

### Stakeholder Driven:

- ✓ Pilot salt source identification/ interaction studies covering 14% of the Central Valley;
  - Evaluation of completeness of the three studies conducted in the Sacramento, San Joaquin, and Tulare Basins;
- ✓ Preliminary framework for standardizing future salt source studies;
- ✓ February 2011 Leadership Team meeting to review progress;
- ✓ Interim and Subsequent Salinity Project Funding Plan
- ✓ Pilot studies for desalinization and containment alternatives
- ✓ Screening mechanism for management practices in order to develop a validated “toolbox” to support industry in reducing salt and nitrate impacts;
- ✓ Technical recommendations regarding use of modeling tools to develop site specific salinity objectives;
- ✓ Scoped salinity and nitrate water quality criteria review for stock watering; and
- ✓ Drafted revised Chapter 18 (Salt and Salinity Management) for the California Water Plan.

### Contract Supported:

- ✓ GIS database and beneficial use maps for the Central Valley and Delta;
- ✓ Scoped salinity and nitrate water quality criteria review for aquatic life; and,
- ✓ Improved functionality of the CV-SALTS website.

Timeline for Completion of Work: The timeline for completion of a Central Valley Salt and Nutrient Management Plan is May 14, 2014 which satisfies the State Water Board’s Recycled Water Policy. CV-SALTS is currently updating its initial scope and workplan to meet that deadline.

## **DISCUSSION**

Summaries of the expenditures and accomplishments to date as well as future activities and timelines will be presented. Detailed discussion is anticipated at a joint State and Regional Water Board workshop in early 2012.

## **POLICY ISSUE**

None. Informational Item Only.

## **FISCAL IMPACT**

None. Informational Item Only.

## **ENVIRONMENTAL IMPACT**

None. Informational Item Only.

## **REGIONAL BOARD IMPACT**

None. Informational Item Only.

**STAFF RECOMMENDATION**

None. Informational Item Only.

This information item assists the Water Boards in reaching Goal 5 of the Strategic Plan Update: 2008-2012 to improve transparency and accountability.

## **STAFF REPORT CV-SALTS ANNUAL PROGRESS REPORT—NOVEMBER 2011**

On September 7, 2010, the State Water Resources Control Board approved Resolution 2010-0042 authorizing \$3.8-million from the Cleanup and Abatement Account (CAA) to augment funding for the development of the Central Valley salinity and nitrate management plan (Project). The Project is being conducted by stakeholders under the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative. The funding augments \$1.2-million provided through Resolution #2009-0023.

Resolution #2010-0042, included a requirement that the Central Valley Water Board report annual progress on the initiative at a publicly noticed State Water Board meeting. The progress report is to include a detailed accounting of expenditures, services received, a line item report of in-kind and contract services contributions from Central Valley Salinity Coalition (CVSC) members and/or additional public and private entities, a summary of work accomplishments to date and timeline for completion of work. The following document provides the required information. It is anticipated that an expanded discussion of the project will be provided at a joint State and Regional Water Board workshop in early 2012.

### Expenditures for Services and Contributions from Stakeholders

Table 1 provides a detailed accounting of the expenditures for services received and documents both expenditures from Clean-up and Abatement (CAA) funds as well as contributions from other stakeholder groups including members of the Central Valley Salinity Coalition and other agencies. The table dates back to July 2008, which is when the CVSC formed. A Memorandum of Agreement (MOA) was signed between the State Water Board, Central Valley Water Board and CVSC and an initial \$1.2-million of CAA funding was provided to the initiative during 2009. The table continues to 2014 with anticipated expenditures and contributions based on scopes of work currently under development and commitments from stakeholders.

Figure 1 summarizes the cumulative available funding, encumbered funding (funding allocated to specific tasks), and actual expenditures by year. Based on the summary information, total expenditures for the CV-SALTS initiative since July 2008, are \$5,569,502. Funding has been provided through CVSC member contributions (\$1,011,249), related work from other agencies (\$4,308,364), and CAA funding through Resolution 2009-0023 (\$250,000 expended through September 2011). To date, stakeholders have contributed 96% of the total funds expended.

None of the \$3.8-million provided through Resolution #2010-0042 has been expended as of 30 September 2011, in part due to the fact that the contract encumbering the funding had not yet been approved. (The initial version of the contract was provided to DAS in May with agreed to versions routed to DFA and OCC in August.) CV-SALTS has completed qualification reviews and is drafting scopes of work for contractors to conduct tasks outlined in the new contract, but can not move forward until the funding is accessible.

The funding and expenditures documented in Table 1 and Figure 1, do not account for the time spent by stakeholders to participate on policy and technical committees that identify tasks, scope work, conduct and oversee work, and review and approve final

products (approximately monthly policy meetings and two meetings per month for various technical subcommittees). Rather than attempt detailed accounting by individual hourly rates a rough estimate can be determined by assuming a standard rate of \$100/hr per person. Based on the number of meetings and attendance, between July 2009 and August 2010, CV-SALTS Committee Members contributed more than 1800 hours participating in Committee meetings and more than 1150 hours in Subcommittees supporting CV-SALTS. This represents expenditure by the stakeholder of \$293,500 for the period.

The CV-SALTS Executive Committee has asked the regulated community Stakeholders to help provide documentation of expenditures to reduce salt or nitrates either voluntarily or as required by permit. Further information will be provided when compiled.

Services provided to date have ranged from coordinating administrative, technical and facilitation support to developing screening tools and technical recommendations to completing technical studies. The specific services are listed as part of Table 1 while the results are listed under accomplishments.

### Work Accomplishments to Date

Accomplishments can be summarized by those completed by the stakeholders as committee projects and those completed as contracted elements as follows:

#### Stakeholder Driven:

- ✓ Salt source identification/interaction studies covering 14% of the Central Valley;
  - Knowledge Gained Subcommittee Review of Salinity Source Pilot Study and Turlock Basin Salinity Study (major salt source and interaction studies conducted in the Sacramento, San Joaquin, and Tulare Basins);
- ✓ Knowledge Gained Subcommittee Guidance for future Salinity Identification Studies;
- ✓ February 2011 Leadership Team meeting to review progress.
- ✓ Interim and Subsequent Salinity Project Funding Plan
  - New CVSC Members and Expansion Plans
- ✓ Pilot studies for desalinization and containment alternatives
  - Tulare Lake Drainage District sponsored:
    - Ag Drainage RO system feasibility study (\$150,000)
    - Ag Drainage RO pilot (\$1,692,000)
    - Biofuel/zero liquid discharge (\$186,131)
    - Polymer based resin RO (\$731,941)
    - Selenium removal (\$248,802)
    - RO de-clogging (\$350,000)
    - RO to useable by-products (\$10,000)
    - Enhanced evaporation (\$365,491)
- ✓ Management Practices Subcommittee Guidance for Development of a Salt and Nitrate BMP Toolbox;
- ✓ Technical recommendations regarding use of modeling tools to develop site specific salinity objectives;
- ✓ Scoped salinity and nitrate water quality criteria review for stock watering; and
- ✓ Draft revised Chapter 18 (Salt and Salinity Management) for the California Water Plan.

Contract Supported:

- ✓ GIS database and beneficial use maps for the Central Valley and Delta;
- ✓ Scoped salinity and nitrate water quality criteria review for aquatic life; and,
- ✓ Improved functionality of the CV-SALTS website.

Additional discussion of CV-SALTS activities is provided below.

During Fiscal Year 10/11, the Executive Committee has focused on the development of a more robust project policy and framework and retooling the project scope and workplan accordingly. This work builds off of the projects completed to date and is a critical element to guide future CV-SALTS activities. Discussions have been focused on appropriate beneficial use designation in both surface and ground water (primarily for municipal/domestic supply and agricultural irrigation/stock watering) with future meetings scheduled to review appropriate salt and nitrate water quality objectives related to beneficial uses, consideration of the anti-degradation policy, and options available to amend current basin plan language.

To support and provide consistency for the stakeholder driven effort, the Executive Committee hired full-time program coordinators. An Administrative Program Coordinator was hired in January 2011, to facilitate policy meetings, update the existing workplan and initiate contracts for the needed technical work. In June 2011, following a Request for Qualifications process, a recommendation was made for a Technical Program Manager to insure technical information needed to support the initiative and a final basin plan amendment, are completed on time and on budget.

The various committees completed additional key tasks as noted below.

The Executive Committee held the annual Central Valley Salinity Leadership Group meeting in February 2011. The Leadership Group serves as the steering committee for the CV-SALTS initiative and provides for the opportunity to solicit feedback and recommendations from executive level representatives of state, federal, and local agencies as well as stakeholder representatives on the direction of the initiative, current status, and level of progress. Information was presented on major issues CV-SALTS is vetting through its prioritization process, current budget, and constraints experienced during the past year, the future vision of the program, and proposed milestones to track progress in 2011.

The Funding and Fundraising Committee developed a two phase plan for fundraising. Phase 1 continues the addition of members to the CVSC to support ongoing planning efforts and the development of matching funding for the planning efforts. Phase 2, grant support of salinity management and nitrate projects, is in the early steps. These efforts will be divided into two stages: 1. Funding within existing programs; and, 2. Developing new funding programs. Stage 1 continues support for CVSC Members and CV-SALTS participants in securing grants from existing programs at the State and federal levels. Stage 2 will engage the help of legislators and agencies to develop new funding sources for the implementation plan that will be required for CV-SALTS.

The Lower San Joaquin River Committee continued its work on developing salinity objectives upstream of Vernalis and has recently been reviewing the most recent State Water Resources Control Board public scoping document focused on southern Delta salinity and San Joaquin River flow objectives and the program of implementation for

those objectives. Both efforts must remain closely integrated for reasonable management of the San Joaquin River Basin. To aid with the water quality objective evaluation, a request for proposal to evaluate criteria for aquatic life and stock watering was released in May. Dairy Cares through the California Department of Food and Agriculture will fund the criteria review for stock watering while CAA funds will be used for the aquatic life criteria review. Final reports are anticipated in late FY 11/12.

The Beneficial Use and Objectives Study Subcommittee oversaw a contract to develop a GIS database and beneficial use maps for the Central Valley and Delta. In August 2010, the beta version was released for final review. Stakeholders and the Boards will be able to use this material to review current beneficial uses and objectives and develop recommendations for any changes. The project also provided an interactive web map utility and geo-database for future efforts. This interactive web map utility and geo-database has been recognized by the State Water Board staff and contractors developing the web portal for basin plans envisioned as part of the Strategic Plan. Discussions are occurring between State Water Board staff and CV-SALTS to determine whether the State project can build off of the existing Central Valley system.

In August 2010 the Knowledge Gained subcommittee prepared a technical memorandum providing recommendations for improving the administration of future projects. In June 2011, the subcommittee presented a completed preliminary framework for standardizing future salt source studies and completed an evaluation of completeness of two major studies conducted in the Sacramento, San Joaquin, and Tulare Basins. The studies funded by CVSC and a consultant, covered approximately 14% of the area of the Central Valley and specifically focused on: the Yolo County, Davis and Woodland area; Modesto area; Tule River area and Turlock Irrigation District. In addition, the US Bureau of Reclamation is nearing completion of a similar study for the Westside of the San Joaquin River Basin covering an additional 15% of the Central Valley. The subcommittee will utilize results from the evaluations to refine/change the approach utilized in additional watersheds in the region.

The Management Practices Subcommittee is continuing work toward developing a screening mechanism for management practices in order to develop a validated "toolbox" to support industry in reducing salt and nitrate impacts. The current tool is being beta tested using management practices supplied by various industries (agriculture, food processors, wine industry, municipalities and others).

Based on recommendations from the Education and Outreach subcommittee, funding has been directed to revise the main CV-SALTS webpage to clarify content and improve usability. Final revisions and beta testing are to be completed by October 2011. The site is currently located at: <http://cvsalinity.org> (the site address may be revised when revisions are completed).

The Technical Subcommittee has reviewed information developed by the Management Practices Subcommittee and Knowledge Gained Subcommittee. In addition, the Technical Subcommittee reviewed the City of Davis' workplan for developing site specific salinity objectives and provided technical recommendations related to: applicability of data collected as part of an earlier Woodland study to the current effort; use of the Hoffman model as a check on the Gratten model; appropriateness of using either model to evaluate boron, chloride or sodium; means of determining leaching fraction; and other issues raised by committee members. These recommendations have

been provided to the City of Davis and Central Valley Water Board permitting staff and will be utilized by both the Executive Committee and the Lower San Joaquin River Committee as they move forward with identification of appropriate salinity objectives within the Central Valley.

#### Timeline for Completion of Work

The Executive Committee is in the process of revising the existing scope and timeline of the project so that the updated workplan better reflects resource and time constraints. Ultimate project completion, the development of a Central Valley Salt and Nitrate Management Plan, is slated for May 2014.

To provide focus, stakeholders have identified archetypes for areas that address priorities identified including: appropriate application of municipal and domestic supply and agricultural supply beneficial uses in both surface and ground water; review of appropriate water quality objectives; and implementation alternatives in areas already impaired. Each archetype is being evaluated within a matrix of alternatives (refined beneficial uses, site specific objectives, refined compliance point/monitoring, direct solutions such as prohibition of discharge, and potential offsets within management zones) and anticipated results (potential benefits, cost, timeline, and likelihood of acceptance). Processes for addressing the archetypes will provide realistic alternatives and a structure for developing the final management plan. Archetypes currently under discussion include high priorities for the stakeholders and Central Valley Water Board (agricultural drains receiving POTW discharges, the Lower San Joaquin River, Tulare Lake ground water basin, and disadvantaged communities with elevated nitrate in their municipal and domestic groundwater supply).

Current draft timelines under considerations are:

#### September – January 2012

- ✓ Finalize workplan for agreed tasks
- ✓ Scope and initial contract documents for technical studies to address archetypes
- ✓ Scope and initial contract documents for salt and nitrate source/interaction conceptual model for Central Valley sub-basins

#### September 2011 – March 2012

- ✓ Complete policy discussions on beneficial uses and appropriate water quality objectives, including:
  - Criteria for “incidental” MUN
  - Default values for crop protection and leaching fractions for use with salinity models;
  - Recommendation for determining the most limiting crop within a sub-basin

#### January 2012 – December 2012

- ✓ Complete conceptual model for salt and nitrate source/interaction
- ✓ Complete upgrades to Central Valley beneficial use and water quality objective geospatial data base
- ✓ Complete technical studies for archetypes
- ✓ Identify management alternatives
- ✓ Hold CEQA scoping session(s)



January 2013 – December 2013

- ✓ Refine and identify additional management alternatives
- ✓ Initiate economic review of alternatives
- ✓ Initiate CEQA Equivalent Documentation
- ✓ Notice and Initiate Central Valley Salt and Nitrate Management Plan

January 2014 – May 2014

- ✓ Finalize CEQA Equivalent Documentation
- ✓ Hold Designated Public Meetings
- ✓ Finalize and Submit Central Valley Salt and Nitrate Management Plan
- ✓ Initiate Draft Basin Plan Amendment Language

A more thorough review of the process is anticipated at a joint State and Regional Water Board workshop in early 2012.

Table 1. CV-SALTS Funding, Expenditures and Services: 2008 - 2014

Stakeholder Contributions	Calendar Year						Total Amount
	2008-2009	2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014	
Contracted by CVSC							
Project Support	\$228,491	\$206,942					\$435,433
CVSC Support			\$113,784				\$113,784
Technical Studies							\$0
a. Salt Source Pilot Study	\$170,228	\$100,000	\$100,000	\$68,896			\$439,124
b. Consultant Contribution		\$55,588					\$55,588
<b>Subtotal CVSC Expenditures:</b>	<b>\$398,719</b>	<b>\$362,530</b>	<b>\$213,784</b>	<b>\$68,896</b>			<b>\$1,043,929</b>
Other Sources							
Studies							
a. USBR Westside Studies	\$100,000	\$100,000	\$200,000				\$400,000
b. EKI Turlock Basin Study		\$50,000					\$50,000
c. Animal Drinking Criteria				\$29,000			\$29,000
d. TLDD treatment Studies (ave)	\$1,244,788	\$1,244,788	\$1,244,788				\$3,734,365
Grants							
FREP Low Salt Peeling/ ETC.			\$100,000				\$100,000
Pledges							
CVSC Membership			\$36,216	\$181,104	\$250,000	\$250,000	\$717,320
CVSC Member Projects*					\$100,000	\$150,000	\$250,000
Other Support							
a. Co-Chair Support		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$60,000
<b>Subtotal Stakeholder Committed:</b>	<b>\$1,344,788</b>	<b>\$1,406,788</b>	<b>\$1,593,004</b>	<b>\$222,104</b>	<b>\$362,000</b>	<b>\$412,000</b>	<b>\$5,340,685</b>
<b>Annual Total:</b>	<b>\$1,743,507</b>	<b>\$1,769,318</b>	<b>\$1,806,788</b>	<b>\$291,000</b>	<b>\$362,000</b>	<b>\$412,000</b>	<b>\$6,384,614</b>
<b>Cummulative Annual Total:</b>	<b>\$1,743,507</b>	<b>\$3,512,825</b>	<b>\$5,319,614</b>	<b>\$5,610,614</b>	<b>\$5,972,614</b>	<b>\$6,384,614</b>	

CAA Funding	Fiscal Year					Total
	FY09/10	FY10/11	Projected FY11/12	Projected FY12/13	Projected FY13/14	
<b>Resolution 2009-0023 (\$1.2-mil)</b>						
Contracted SJVDA						
a. SJVDA Mgt. Services	\$82,262					\$82,262
b. BUOS Phase I	\$49,982					\$49,982
c. Program Mgt/Facilitation		\$376,185	\$291,571			\$667,756
d. Technical Support			\$400,000			\$400,000
<b>Subtotal Contracted:</b>	<b>\$132,244</b>	<b>\$376,185</b>	<b>\$691,571</b>			<b>\$1,200,000</b>
Expended						
a. SJVDA Mgt. Services		\$29,006	\$11,421			\$40,427
b. BUOS Phase I		\$49,982	\$0			\$49,982
c. Program Mgt/Facilitation		\$70,015	\$89,465			\$159,480
d. Technical Support						
<b>Subtotal Expended:</b>		<b>\$149,003</b>	<b>\$100,886</b>			<b>\$249,889</b>
Remaining						
a. SJVDA Mgt. Services						\$41,835
b. BUOS Phase I						\$0
c. Program Mgt/Facilitation						\$508,276
d. Technical Support						\$400,000
<b>Subtotal Remaining:</b>						<b>\$950,111</b>
<b>Resolution 2010-0042 (\$3.8-mil)</b>						
Pending Contract SJVDA						
a. SJVDA Mgt. Services			\$176,500	\$142,500		\$319,000
a. Technical Support			\$486,000			\$486,000
b. BUOS Phase II			\$75,000			\$75,000
c. Conceptual Model			\$750,000			\$750,000
d. Technical Studies			\$512,500	\$307,500		\$820,000
e. Economic Analysis				\$250,000		\$250,000
f. CEQA Documentation				\$750,000		\$750,000
g. CV Salt/Nitrate MP				\$300,000		\$300,000
h. Draft BPA Language				\$50,000		\$50,000
<b>Subtotal Expended:</b>			<b>\$0</b>	<b>\$0</b>		<b>\$0</b>
<b>Subtotal Remaining:</b>			<b>\$2,000,000</b>	<b>\$1,800,000</b>		<b>\$3,800,000</b>
<b>Total Expended:</b>		<b>\$149,003</b>	<b>\$100,886</b>	<b>\$0</b>		<b>\$249,889</b>
<b>Total Remaining:</b>	<b>\$1,200,000</b>	<b>\$1,050,997</b>	<b>\$2,950,111</b>	<b>\$4,750,111</b>	<b>\$4,750,111</b>	<b>\$4,750,111</b>

Annual	Year					
	2009	2010	2011	2012	2013	2014
CVSC	\$398,719	\$362,530	\$250,000	\$250,000	\$250,000	\$250,000
Other Stakeholder	\$1,344,788	\$1,406,788	\$1,556,788	\$41,000	\$112,000	\$162,000
CAA Committed to Contracts	\$132,244	\$376,185	\$691,571			
CAA Expended		\$149,003	\$100,886			
CAA Projected				\$2,000,000	\$1,800,000	
Expended	\$1,743,507	\$1,918,321	\$1,907,674			
<b>Cumulative</b>						
	2009	2010	2011	2012	2013	2014
CVSC Funds	\$398,719	\$761,249	\$1,011,249	\$1,261,249	\$1,511,249	\$1,761,249
Other Stakeholder	\$1,344,788	\$2,751,576	\$4,308,364	\$4,349,364	\$4,461,364	\$4,623,364
CAA Uncontracted	\$1,067,756	\$4,491,571	\$3,800,000	\$1,800,000	\$0	\$0
CAA Committed to Contracts	\$132,244	\$508,429	\$1,200,000	\$3,200,000	\$5,000,000	\$5,000,000
CAA Expended	\$0	\$149,003	\$249,889			
Expended	\$1,743,507	\$3,661,828	\$5,569,502			
% of Expended by stakeholders	100%	96%	96%			

