

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – CENTRAL VALLEY WATER BOARD
DECEMBER 4, 2012**

SUBJECT

CENTRAL VALLEY SALINITY ALTERNATIVES FOR LONG-TERM SUSTAINABILITY (CV-SALTS): ANNUAL PROGRESS REPORT AND CONSIDERATION OF PROPOSED RESOLUTION TO RELEASE REMAINING \$1.8-MILLION OF CAA FUNDING ALLOCATED TO THE PROJECT BASED ON DEMONSTRATION OF ADEQUATE PROGRESS

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. The \$3.8-million was allocated in two phases with \$2.0-million available upon adoption of the resolution and \$1.8-million held in reserve for release based on determination by the State Water Board that the project is demonstrating adequate progress. To track progress, 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. A brief summary is provided below in addition to a proposed resolution releasing the remaining \$1.8-million in order to meet contracting requirements related to the timeline for completion of work.

Expenditures and Cost Share: Since 2008, total expenditures related to the February 2012 workplan for the CV-SALTS initiative, not including implementation expenditures, are \$10,319,945. Of this total \$9,331,578 (90%) has been expended by CV-SALTS Stakeholders, which include CVSC members, other organizations, and agencies. CVSC members have provided over \$ 1,374,000 in cash contributions through membership fees. Of the \$1.2-million in CAA funding provided through Resolution #2009-0023 all funding has been obligated to contracts. As of August 2012, \$752,355 has been expended.

Of the \$3.8-million provided through Resolution #2010-0042, \$2.0-million has been encumbered into a contract with an option to increase the base contract amount by \$1.8-million upon release of the remaining CAA project funds. Subcontracts totaling \$1,311,309 have been initiated or are in progress, with \$236,012 expended as of August 2012.

In addition, CVSC members and other organizations have completed studies, grants and other activities that are being evaluated as part of the CV-SALTS effort to document

current conditions and potential implementation alternatives. A sampling of these efforts identified projects totaling more than \$48-million.

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 include a Project Management Team which provides 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 to protect irrigated agriculture;
- ✓ Technical review of salinity and nitrate water quality criteria and recommendations to protect stock watering;
- ✓ June 2012 Central Valley Water Board Workshop;
- ✓ Co-sponsor of and participant in the Groundwater Resources Association Salinity and Nitrate Conference in Fresno (June 2012);
- ✓ Drafted revised Chapter 18 (Salt and Salinity Management) for the California Water Plan; and,
- ✓ Coordination, oversight and cost share of case studies identified below.

Contract Supported:

- ✓ Updated 2012 Strategic Plan, Framework and Workplan
- ✓ GIS database and beneficial use maps for the Central Valley and Delta (updates in progress/coordinated with State Water Board effort);
- ✓ Initial salinity/nitrate source and fate conceptual model for Central Valley (in progress);
- ✓ Salinity water quality criteria review for aquatic life (in progress);
- ✓ White paper on salinity and nitrate impacts on municipal and domestic supply;
- ✓ White paper on salinity impacts on irrigated agriculture;
- ✓ Management zone based evaluation of appropriate default salinity water quality objectives to protect irrigated agriculture (in progress);
- ✓ Strategic Salt Accumulation Land and Transport Study (SSALTS) evaluation salt disposal options (workplan complete and contract initiated);
- ✓ Improved functionality of the CV-SALTS website;
- ✓ Salinity Impacts in the Central Valley brochure;

- ✓ Project workplan for Lower San Joaquin River upstream salt and boron objective setting project;
- ✓ Draft problem statement, basin background, and beneficial use evaluation for Lower San Joaquin River project; and,
- ✓ Case studies to ground-truth policy and implementation recommendations (in progress):
 - Appropriate application and protection of municipal and domestic supply in agriculturally dominated surface water bodies (Publicly Owned Treatment Works receiving waters in the Sacramento River Basin);
 - Appropriate application and protection of municipal and domestic supply in a portion of the unconfined aquifer within the Tulare Lake Bed;
 - Lower San Joaquin River salinity and boron water quality objectives and implementation program; and
 - Early implementation project to provide safe drinking water for disadvantaged community

Timeline for Completion of Work: The timeline for completion of a draft Central Valley Salt and Nutrient Management Plan is May 14, 2014. It is anticipated that the stakeholders will request a two year time extension from the Central Valley Water Board during 2013, in order to insure thorough environmental and economic review of proposed alternatives before submitting a final plan. A two year time extension is consistent with requirements of the State Water Board's Recycled Water Policy. The proposed timeline will be discussed at the annual June Central Valley CV-SALTS workshop in 2013.

In order to meet the above timeline, the remaining \$1.8-million of CAA funding authorized for the Project under Resolution No. 2010-0042 will need to be available in early 2013, to both continue as well as initiate additional technical activities.

DISCUSSION

Summaries of the expenditures and accomplishments to date as well as future activities and timelines will be presented. Stakeholders will request release of the remaining \$1.8-million CAA project funding based on demonstration of adequate progress in order to complete anticipated future activities within the proposed timeline.

POLICY ISSUE

Has adequate progress been demonstrated by the stakeholder lead CV-SALTS initiative to justify release of remaining \$1.8-million CAA project funds?

FISCAL IMPACT

None. The \$1.8-million CAA project funding was allocated to the effort in 2010 under Resolution #2010-0042, with release for use dependent on demonstration of adequate progress to the State Water Board.

ENVIRONMENTAL IMPACT

None..

REGIONAL BOARD IMPACT

None.

STAFF RECOMMENDATION

Release the final \$1.8-million of CAA project funds allocated under Resolution #2010-0042, to insure continued progress toward development of a Central Valley salt and nitrate management plan.

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

**STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2012-_____**

TO RELEASE REMAINING \$1.8-MILLION FROM THE CLEANUP AND ABATEMENT ACCOUNT (CAA) IN ACCORDANCE WITH RESOLUTION NO. 2010-0042, TO FUND THE DEVELOPMENT OF THE CENTRAL VALLEY SALINITY AND NUTRIENT MANAGEMENT PLAN (PROJECT)

WHEREAS:

1. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) was awarded \$3.8 million in accordance with Resolution No. 2010-0042, to conduct years two and three of a three-year Project in support of the development of a salinity and nutrient management plan for the Central Valley. It is expected that the project will provide the basis for a Central Valley Water Board Basin Plan amendment that will address ongoing salinity and nutrient concerns in the Central Valley Region;
2. Resolution No. 2010-0042 provided \$2 million for year two and \$1.8 million for year three. Funding for year three was contingent upon whether sufficient progress in implementing the Project has been demonstrated and outside stakeholder support and funding has been developed;
3. In accordance with Resolution No. 2010-0042, the Central Valley Board and members of the Central Valley Salinity Coalition reported to the State Water Resources Control Board (State Water Board) at a public board meeting on the cumulative progress achieved during years one and two. The progress report included a detailed accounting of expenditures, services received, a line item report of in-kind and contract services contributions from Coalition members and/or additional public and private entities, a summary of work accomplishments to date and timeline for completion of work;
4. The public report on cumulative progress provided the demonstration of sufficient progress in implementing the project and that stakeholder support and funding has been developed;
5. The requested release of the original allocation is consistent with the purposes of Water Code Section 13442. Section 13442 provides that the State Water Board may order moneys to be paid from the CAA to a public agency with the authority to cleanup or abate the effects of a waste in order "to assist it in cleaning up the waste or abating its effects on the waters of the state."

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the release of the remaining \$1.8-million from the CAA originally allocated in Resolution No. 2010-0042, to the Central Valley Water Board to complete year three of the Project;
2. Requires the Central Valley Water Board to continue to report progress on this effort to the State Water Board on at least an annual basis at a publicly noticed State Water Board meeting. The progress report will continue to include a detailed accounting of expenditures, services received, a line item report of in-kind and contract services contributions from Coalition members and/or additional public and private entities, a summary of work accomplishments to date and timeline for completion of work. If the Project is not completed by June 1, 2014, the Central Valley Water Board will provide

estimates of when work is expected to be complete and identify additional funding sources, if necessary, that will be utilized to complete the project; and

3. If sufficient progress is not demonstrated in achieving the Project Goals, the State Water Board may disencumber any remaining unexpended funds; snf
4. Any unexpended funds shall revert to the CAA as of June 1, 2014, unless the Deputy Director or Assistant Deputy Director of the Division of Financial Assistance authorizes an extension. The funds will be available until June 1, 2014.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on December 4, 2012.

AYE:

NAY:

ABSENT:

ABSTAIN:

STAFF REPORT CV-SALTS ANNUAL PROGRESS REPORT—DECEMBER 2012

The Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative is a stakeholder-led process to develop a Salt and Nitrate Management Plan (SNMP) for the Central Valley and basin plan amendment recommendations to support implementation of the SNMP. The initiative was formally recognized under a signed Memorandum of Agreement between the State Water Board, Central Valley Water Board and Central Valley Salinity Coalition (non-profit stakeholder group) in March 2010. Several committees and subcommittees have been formed to work on both policy and technical issues with meetings held on a monthly basis. The Executive Committee is the primary decision making body and is comprised of members of the stakeholder coalition as well as state and federal agencies and members of disadvantaged communities and the public.

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 funding augments \$1.2-million provided through Resolution #2009-0023.

Resolution #2010-0042, allocated the \$3.8-million in two phases with \$2.0-million available upon adoption of the resolution and \$1.8-million held in reserve for release based on determination by the State Water Board that the project is demonstrating adequate progress. To track progress, the resolution 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. Expanded discussion of the project is provided at annual Central Valley Water Board workshops each June.

Expenditures for Services and Contributions from Stakeholders

Table 1 provides a detailed accounting of the expenditures for services received utilizing Clean-up and Abatement (CAA) funds. Table 2 documents contributions from other stakeholder groups including members of the Central Valley Salinity Coalition and other agencies. Both tables date back to July 2008, which is when the CVSC formed. The tables project anticipated expenditures and contributions through 2014 based on the project workplan approved in February 2012, scopes of work currently under development and commitments from stakeholders.

Table 3 and Figure 1 summarize the cumulative available funding, encumbered funding (funding allocated to specific tasks), and actual expenditures by year that are related to the February 2012 workplan. Based on the summary information, total expenditures for the CV-SALTS initiative since July 2008, were \$10,319,945, in addition to this amount more than \$30 million was expended for the implementation of projects that reduce salt and nitrate. Funding has been provided through CVSC member cash contributions \$1,374,000, plus \$732,888 has been expended to support basin planning and an

additionally \$4,978,606 has been spend on treatment alternative studies which will be utilized during the review of implementation alternatives). Stakeholder agencies have also expended \$4,130,000 in gathering water quality information. CAA funding through Resolution 2009-0023 (\$752,355) and Resolution 2010-0042 (\$236,012) have been expended through September 2012. To date, stakeholders have contributed 90% of the total funds expended.

Of the \$3.8-million provided through Resolution #2010-0042, \$2.0-million has been has been encumbered into a contract with an option to increase the contract amount upon release of the remaining \$1.8-million. Approximately 66% of the available \$2.0-million has been obligated to approved and/or in progress contracts with an expectation to obligate most of the remaining funds in the first half of 2013 (Table 1).

Based on February 2012 workplan projections, approximately \$800,000 of the remaining \$1.8-million would need to be obligated to subcontracts by June 2013, to continue Phase 2 of the Conceptual Model and allow completion of the Strategic Salt Accumulation and Land Transport Study (SSALTS) which evaluates alternative salt disposal option and serves as the basis for long-term implementation review. Remaining funding would be allocated to tasks related to fine tuning implementation alternatives and conducting environmental and economic analyses during Fiscal Year 2013/14. Statements of qualifications have been received and are under review for the potential future work, however, contracting cannot be initiated until the additional \$1.8-million is available and encumbered. Delays in contracting for the needed work would cause overall timeline delays for the project.

The funding and expenditures documented in Tables 2 and 3 and Figure 1, do not fully account for funding expended by stakeholders on feasibility studies and implementation efforts to control salt and nitrate today or ongoing efforts by groups and agencies that are linked to the CV-SALTS effort and will provide valuable information for documenting current salinity and nitrate levels and effectiveness of implementation activities. A sampling of the various activities was provided by CVSC members and partner agencies with a broad summary provided in Table 4. The summary documents both costs incurred by members voluntarily as well as costs incurred through current regulation. The voluntary costs (over \$48-million) reflect a broad array of activities including: investigating various treatment alternatives for agricultural, urban and industrial drainage and wastewater; supporting basin planning activities; gathering water quality information to feed the decision processes; and implementing on the ground practices to control salt and nitrate. The permit required costs (over \$7-million) include just a sampling of the types of costs faced by dischargers to quantify salt sources, develop salt minimization plans, and monitor/evaluate management practices. Some key efforts identified include the San Joaquin River Real-time Water Quality Monitoring by the CA Department of Water Resources, the Representative Monitoring Program by Dairy Cares and Western United Dairymen, and programs to control and management subsurface agricultural drainage being implemented by Grassland Area Farmers.

Tables 2 and 3 and Figure 1, also 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 and administrative meetings and two meetings per month for various technical committees and subcommittee). A rough estimate of stakeholder participation 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 October 2012, CV-SALTS Committee Members contributed more than 9580 hours participating in Committee and subcommittee meetings supporting CV-SALTS. This participation represents an additional expenditure by the stakeholder of \$958,000 for the period.

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 2 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:

- ✓ 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;
- ✓ Knowledge Gained Subcommittee Guidance for Salt Source Identification Studies
- ✓ Interim and Subsequent Salinity Project Funding Plan
 - New CVSC Members and forthcoming Expansion Plans
 - Contributions in Direct and Indirect studies as well as support for CV-SALTS and Implementation of projects to control salinity and nitrates (Tables 2 and 4)
- ✓ 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 to protect irrigated agriculture;
- ✓ Technical review of salinity and nitrate water quality criteria and recommendations to protected stock watering;
- ✓ June 2012 Central Valley Water Board Workshop;
- ✓ Co-sponsor of and participant in the Groundwater Resources Association Salinity and Nitrate June 2012 Conference in Fresno;
- ✓ Draft revised Chapter 18 (Salt and Salinity Management) for the California Water Plan; and,
- ✓ Coordination, oversight and cost share of case studies identified below.

Contract Supported:

- ✓ Update 2012 Strategic Framework and Workplan;
- ✓ GIS database and beneficial use maps for the Central Valley and Delta (updates in progress/coordinated with State Water Board effort);
- ✓ Initial salinity/nitrate source and fate conceptual model for Central Valley (in progress);
- ✓ Salinity water quality criteria review for aquatic life (in progress);
- ✓ White paper on salinity and nitrate impacts on municipal and domestic supply (MUN);
- ✓ White paper on salinity impacts on irrigated agriculture;

- ✓ Management zone based evaluation on appropriate default salinity water quality objectives to protect irrigated agriculture (in progress);
- ✓ Strategic Salt Accumulation Land and Transport Study (SSALTS) implementation alternatives study (workplan complete and contract initiated);
- ✓ Improved functionality of the CV-SALTS website;
- ✓ Salinity Impacts on the Central Valley brochure;
- ✓ Project workplan for Lower San Joaquin River salt and boron objective setting project;
- ✓ Draft problem statement, basin background, and beneficial use evaluation for Lower San Joaquin River project; and,
- ✓ Case studies to ground-truth policy and implementation recommendations (in progress):
 - Appropriate application and protection of municipal and domestic supply in agriculturally dominated surface water bodies (Publicly Owned Treatment Works receiving waters in the Sacramento River Basin);
 - Appropriate application and protection of municipal and domestic supply in a portion of the unconfined aquifer within the Tulare Lake Bed;
 - Lower San Joaquin River salinity and boron water quality objectives and implementation program; and
 - Planning and coordination for early implementation project to provide safe drinking water for disadvantaged community

Additional discussion of CV-SALTS activities is provided below.

During 2012, the Executive Committee continued to lay the foundation to insure that its updated strategy and workplan elements are initiated and completed on schedule. The strategy envisions an overarching framework to provide consistency throughout the Central Valley with case studies conducted to ground-truth policy and technical recommendations. Therefore, contracts were put in place for the development of the salt and nitrate source and fate model, enhancement of the GIS based beneficial use and objectives mapping tool, and Strategic Salt Accumulation Land and Transportation Study (SSALTS) that evaluates alternative salt disposal options. In addition, case studies are being developed that evaluate: appropriate application and reasonable protection of Municipal and Domestic Supply beneficial uses in surface and ground water (Sacramento Valley POTW receiving waters and Tulare Lake Bed perched groundwater, respectively); appropriate salt and boron water quality objectives to protect beneficial uses and implementation alternatives (the Lower San Joaquin River); and development of appropriate salinity water quality objectives to protect agricultural supply beneficial uses within broad management zones throughout the Central Valley.

As the technical efforts and case studies got underway, the Executive Committee continued focused policy discussions on reasonable protection of municipal and domestic supply (MUN) and irrigation supply (AGR) beneficial uses. Two white papers were developed to support the discussions: 1) Salinity Effects on MUN-Related Uses of Water; and 2) Salinity Effects on Crop Yields. The group continues to closely coordinate with work being conducted by stakeholders in the Tulare Lake Basin to identify safe drinking water pilot projects. CV-SALTS is attempting to identify one of the projects as a potential case study for early implementation efforts.

The first of annual Central Valley Water Board workshops on the initiative was conducted in June 2012, with discussion of state resources spent to date, match

contribution by participating stakeholders, products produced, updated project timeline and focus on the developing case studies and how they fit into the broader valley-wide framework.

The various committees completed additional key tasks as noted below.

Members of the Executive Committee participated in the development and provided presentations for the Groundwater Resources Association Salt and Nitrate Conference held in Fresno in June 2012.

The Lower San Joaquin River Committee hired a committee manager; entered into a contract with East Stanislaus Resource Conservation District for technical contracting services, updated its project workplan, drafted language for a problem statement, basin background and beneficial use evaluation; entered into negotiations with the Department of Water Resources and U.S. Bureau of Reclamation for in kind support of water quality data compilation, modeling and outreach; and initiated development of a Scope of Work for additional technical needs.

The Technical Committee provided technical recommendations to the Central Valley Water Board NPDES Program Manager on the use of various models (e.g. Hoffman and Gratten) to calculate site specific electrical conductivity objectives for the protection of irrigated agriculture. The recommendations included default leaching fractions and comparison of key model inputs. The committee also highlighted and deferred to the Executive Committee key policy recommendations including:

- Reasonable yield protections;
- Special considerations during seasons or under drought conditions;
- Selection of most sensitive crop within an area; and
- Role of management and grower input in determining appropriate objectives.

The Technical Committee is also overseeing a project evaluating current salinity criteria utilized to protect stock watering as well as criteria to protect aquatic life.

The Funding and Fundraising Committee continued work on its 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. During 2012, two new members joined bringing the total membership to 26, covering most of the irrigated agriculture within the Central Valley in addition to representatives for most of the urban areas, food processors, and dairy industry.

Phase 2, targets grant support of salinity management and nitrate projects, which has resulted in USDA funding of a specialty crop grant for nitrogen management. Although current efforts have focused on funding within existing programs, the group continues to evaluate opportunities to develop new funding programs for salt and nitrate management. Support for CVSC Members and CV-SALTS participants in securing grants from existing programs at the State and federal levels will continue as will efforts to engage the help of legislators and agencies to develop new funding sources for the implementation plan that will be required for CV-SALTS.

Based on recommendations from the Education and Outreach subcommittee, funding was directed to develop a brochure on salinity impacts on the Central Valley. The Brochure is available at:
http://cvsalinity.org/index.php/document-listing/doc_download/984-salt-story-brochure.

Funding was also directed to revise the main CV-SALTS webpage to clarify content and improve usability. The site is located at: <http://cvsalinity.org>

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. A Technical Program Manager was hired in September 2011 and replaced in August 2012, to insure technical information needed to support the initiative and a final basin plan amendment, are completed on time and on budget.

Timeline for Completion of Work

In early 2012, the Executive Committee updated the existing scope and timeline of the project so that the updated workplan better reflects resource and time constraints. The development of a draft Central Valley Salt and Nitrate Management Plan for review by the Central Valley Water Board, is slated for May 2014, with ultimate project completion in May 2016. The timeline provides for detailed environmental and economic review of the alternatives evaluated and final recommendations and is consistent with requirements of the State Water Board's Recycled Water Policy.

Current timelines are:

January 2012 – December 2012

- ✓ Finalize workplan for agreed tasks
- ✓ Scope and initiate contract for technical studies to address archetypes
- ✓ Scope and initiate contract for Phase 1 salt and nitrate source/interaction conceptual model for Central Valley sub-basins
- ✓ Initiate upgrades to Central Valley beneficial use and water quality objective geospatial data base
- ✓ Initiate technical studies for archetypes
- ✓ Initiate evaluation of management alternatives (SSALTS)
- ✓ Initiate evaluation of appropriate water quality objectives to protect irrigated agriculture in management zones within the Central Valley
- ✓ 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 2013 – June 2013

- ✓ Hold CEQA scoping session(s)
- ✓ Complete Phase 1 conceptual model for salt and nitrate source/interaction

- ✓ Complete upgrades to Central Valley beneficial use and water quality objective geospatial data base
- ✓ Complete evaluation of salinity water quality objectives protective of aquatic life
- ✓ Complete draft evaluation of water quality objectives protective of agriculture irrigation supply within Central Valley management zones
- ✓ Continue work on archetypes and evaluation of implementation alternatives
- ✓ Initiate Phase 2 of the Conceptual Model

June 2013 – December 2013

- ✓ Complete Phase 2 Conceptual Model
- ✓ Initiate Phase 3 of Conceptual Model
- ✓ Complete initial implementation analyses (SSALTS)
- ✓ Initiate economic review of alternatives
- ✓ Initiate CEQA Equivalent Documentation

January 2014 – May 2014

- ✓ Refine and identify additional management alternatives
- ✓ Continue economic review of alternatives
- ✓ Continue CEQA Equivalent Documentation
- ✓ Complete Archetypes
- ✓ Prepare draft SNMP
- ✓ Submit Draft Central Valley Salt and Nitrate Management Plan for Central Valley Water Board review

Annual December updates to the State Water Board and June workshops for the Central Valley Water Board are included within the workplan to evaluate progress and keep the public apprised of activities.

In order to meet the activities and timelines identified above and in Figure 2, the remaining \$1.8-million in CAA funds authorized in Resolution No. 2010-0042, would need to be released and available to be encumbered into contracts by January 2013.

Table 1. Cleanup and Abatement Account Fund Expenditures Resolutions #2009-0023 and #2010-0042 (1 Nov 2012)

CAA Funding	Resolution 2009-0023 (\$1.2-mil)					Total
	Obligated	Expended	Remaining	Projected FY12/13	Projected FY13/14	
SJVDA Contract #09-076-150 (\$1.2-million)						
a. SJVDA Mgt. Services	\$82,262	\$68,663	\$13,599	\$10,000	\$3,599	\$82,262
b. BUOS Phase I	\$49,982	\$49,982				\$49,982
c. Program Mgt./Facilitation	\$667,756	\$521,795	\$145,961	\$145,961		\$667,756
+Strategy/Framework/Workplan Feb 2012						
+Facilitation of Policy Discussions						
+Outreach (website, brochure, workshops)						
d. Technical Support						
•Technical Project Management (\$111,915)	\$111,915	\$111,915				\$111,915
+Framing Conceptual Model; finalize Salt Source guidance; Initial budget reviews						
•Long Term LSJR Committee Manager (\$288,085)			\$288,085	\$188,085	\$100,000	\$288,085
Total:	\$911,915	\$752,355	\$447,645	\$344,046	\$103,599	\$1,200,000
Percent of \$1.2-million:	76	63	37			100

•Work Products

CAA Funding	Resolution 2010-0042 (\$3.8-mil)					Total
	Obligated	Expended	Remaining	Projected FY12/13	Projected FY13/14	
SJVDA Contract #11-123-555 (\$2-million)						
a. SJVDA Mgt. Services	\$176,500	\$18,630	\$157,870	\$130,000	\$27,870	\$176,500
b. Technical Support						
•Technical Project Manager (\$296,098)	\$296,098	\$0	\$296,098	\$148,049	\$148,049	\$296,098
*Scopes of work: Concept Model; BUOS II; AGR Zone; Groundwater MUN; LSJR wkplan						
•Basin Planning Support (\$129,789)	\$129,789	\$123,061	\$6,728	\$6,728		\$129,789
+White Paper-Salinity Effects on MUN-Related Uses of Water						
+White Paper-Salinity Effects on AGR-Related Uses of Water						
•Interim LSJR Committee Manager (\$50,000)	\$50,000	\$30,475	\$19,525	\$19,525		\$50,000
*Final wkplan; problem statement; background; bene use review; RFQ for technical work						
c. Refine BUOS Phase II						
•Additional GIS Work (\$100,004)	\$100,004	\$20,875	\$79,129	\$79,129		\$100,004
d. Conceptual Model (Three Phases)						
•Initial Conceptual Model Phase 1 (\$473,918)	\$473,918	\$42,971	\$430,947	\$430,893		\$473,918
•Conceptual Model Phase 2: SNMP (\$275,000)			\$275,000	\$275,000		\$275,000
*Assess sustainable salt/nitrate balanced						
*ID large scale MP's for evaluation						
e. Technical Studies						
•Aquatic Life Criteria Review (\$32,000)			\$32,000	\$32,000		\$32,000
•Tulare Lake Bed GW MUN Archetype (\$100,000)			\$100,000	\$100,000		\$100,000
•MUN POTW Archetype (\$150,000)	\$60,000		\$90,000	\$90,000		\$150,000
•AGR Water Quality Zones (\$100,000)			\$100,000	\$100,000		\$100,000
•Strategic Salt Accumulation Land and Transportation Study (SSALTS)-\$116,691	\$25,000		\$91,691	\$91,691		\$116,691
Subtotal:	\$1,311,309	\$236,012	\$1,678,988	\$1,503,015		\$2,000,000
Percent of \$2-million:	66	12	84			100
SJVDA Contract #11-123-555 (\$1.8-million pending release)						
a. SJVDA Mgt. Services			\$142,500	\$100,000	\$42,500	
•Facilitation of Policy Discussions			\$135,000	\$135,000		
e. Technical Studies						
•Conceptual Model Phase 2: SNMP (\$350,000)			\$350,000	\$350,000		
*Incorporate Changes to BUs and WQOs from Archetypes						
*Prepare CV SNMP Assessment						
*Review and Prepare SNMP Document						
•Conceptual Model Phase 3: refine SNMP (\$375,000)			\$375,000		\$375,000	
*Incorporate regional SNMP info in Conceptual Model						
*Conduct Economic Analyses						
*Perform Antidegradation Analysis						
•Completion SSALTS Implementation Study (\$320,000)			\$320,000	\$320,000		
f. Economic Analysis (Refine Conceptual Model Phase 3)					\$150,000	
g. CEQA Documentation					\$170,500	
h. CV SNMP					\$75,000	
i. Draft BPA Language					\$50,000	
Subtotal of \$1.8-million:			\$1,800,000	\$937,000	\$863,000	\$1,800,000
Percent of \$1.8-million:			100	52	48	100

Obligated = subcontract approved and/or in progress

Table 2 CV-SALTS Stakeholder Contributions: 2008 - 2012 DRAFT for Exec Review

As of 11/1/12

Stakeholder Contributions	Calendar Year						Projected Total
	2008-2009	2010	2011	2012	Projected 2013 **	Projected 2014 **	
Contracted by CVSC							
Project Support	\$228,491	\$206,942	\$120,000	\$48,000	\$200,000	\$277,443	\$1,080,876
Technical Studies							
a. Salt Source Pilot Study	\$170,228	\$100,000	\$100,000	\$68,896	\$0	\$0	\$439,124
b. Consultant Contribution		\$55,588					\$55,588
Subtotal:	\$398,719	\$362,530	\$220,000	\$116,896	\$200,000	\$277,443	\$1,575,588
Stakeholder Workplan Contributions *							
Treatment Alternative Studies							\$4,978,606
City of Vacaville			\$302,588				\$302,588
Tulare Lake Drainage District			\$2,760,072	\$725,491	\$200,000		\$3,685,563
Sac Regional Salt Mgt. Plan				\$63,064			\$63,064
FREP Low Salt Processes			\$100,000	\$100,000		\$100,000	\$300,000
Cures Nitrate BMP Study Grant					\$348,377		\$348,377
Dairy Waste Pond Studies				\$279,014			\$279,014
Direct Support for Basin Planning							\$732,888
CVCWA Variance BPA			\$129,744	\$129,744			\$259,488
Animal Drinking Water Criteria				\$29,000			\$29,000
Planning Support Various Agencies			\$111,100	\$111,100	\$111,100	\$111,100	\$444,400
Gathering Water Quality Information							\$4,130,000
USBR West Side Study	\$100,000	\$100,000	\$200,000	\$25,000			\$425,000
USBR Real Time Mgt Support	\$100,000	\$200,000	\$200,000	\$225,000	\$150,000	\$150,000	\$1,025,000
Dairy Cares Representative Monitoring	\$500,000	\$500,000	\$500,000	\$630,000	\$250,000	\$250,000	\$2,630,000
EKI Turlock Basin Study		\$50,000					\$50,000
Implementation Salt and Nitrate Mgt.							\$38,764,871
Grassland Area Farmers SJRIP	\$4,230,250	\$4,230,250	\$4,230,250	\$4,230,250	\$4,000,000	\$4,000,000	\$24,921,000
Grassland Area Farmers Firebaugh	\$2,386,250	\$2,386,250	\$2,386,250	\$2,386,250			\$9,545,000
Dairy Cares Industry Source Study				\$35,265			\$35,265
Tulare Lake Drainage District Spray Enh.				\$4,263,606			\$4,263,606
Subtotal:	\$7,316,500	\$7,466,500	\$10,920,004	\$13,232,784	\$5,059,477	\$4,611,100	\$48,606,365
Total:	\$7,715,219	\$7,829,030	\$11,140,004	\$13,349,680	\$5,259,477	\$4,888,543	\$50,181,953

* Project details included in Table 4, Summary of Stakeholder Contributions

** Projected totals based on past efforts not agency commitments

Ongoing multi-year projects averaged over period

Costs above do not include efforts required by RWQCB Permits

Table 3 CV-SALTS Annual Resources: Available Funding, Expenditures and Projections through 2014

Annual	Year					
	2009	2010	2011	2012	2013	2014
CVSC	\$398,719	\$306,942	\$220,000	\$235,000	\$200,000	\$277,443
Other Stakeholder*	\$700,000	\$850,000	\$4,303,504	\$2,317,413	\$1,059,477	\$611,100
CAA Expended	\$0	\$387,764	\$433,527	\$167,076		
CAA Projected				\$692,924	\$1,500,000	\$1,818,709
Expended To Date	\$1,098,719	\$1,544,706	\$4,957,031	\$2,719,489	\$1,259,477	\$888,543
Cumulative						
	2009	2010	2011	2012	2013	2014
CVSC Funds	\$398,719	\$705,661	\$925,661	\$1,160,661	\$1,360,661	\$1,638,104
Other Stakeholder*	\$700,000	\$1,550,000	\$5,853,504	\$8,170,917	\$9,230,394	\$9,841,494
CAA Uncontracted	\$1,054,070	\$745,294	\$976,776			
CAA Committed to Contracts	\$145,930	\$454,706	\$2,223,224	\$2,916,148	\$4,416,148	\$5,000,000
Expended To Date	\$1,098,719	\$2,643,425	\$7,600,456	\$10,319,945		
Projected Expenditures					\$15,000,000	\$17,000,000
% of Expended funds by stakeholders	100%	85%	89%	90%		

* Other Stakeholder expenditures for this chart do not include Implementation Costs of \$38,764,871

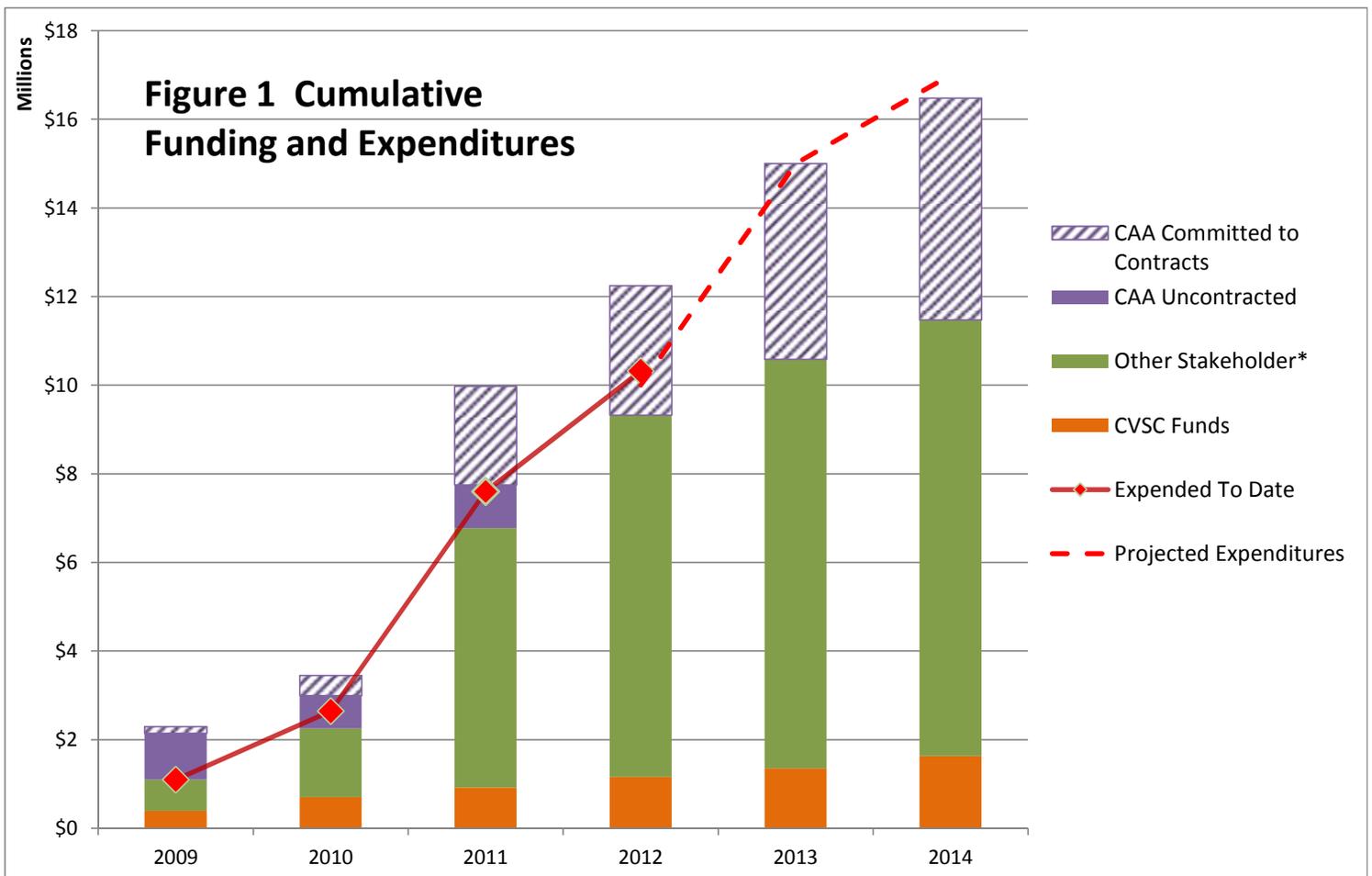


Figure 2 Summarized CV-SALTS Workplan Schedule

CV-SALTS Program Element	2011	2012	2013	2014	2015	2016	2017	+
<i>Revised 11/1/12</i>								
<i>Draft SNMP To Regional Board →</i>								
<i>Final SNMP →</i>								
Program Management								
Funding								
Policy Development and Planning								
Outreach and Scoping ✦ = Meetings			✦	✦	✦			
Technical Studies								
Conceptual Model (Initial Phase)						Final SNMP		
Phase II (SNMP)								
Final Phase								
Beneficial Use and Objective GIS Mapping (BUOS I)								
BUOS II--update with additional GIS layers								
Ag Water Quality Zoning Map								
Criteria Evaluations (AGR, MUN, Aquatic Life)								
Other Technical Studies and Documents								
Archetypes/Case Studies								
Groundwater MUN (Tulare)								
Surface Water MUN (Sac Valley POTWs)								
Related/Integrated Efforts								
Management Practice Development								
Lower San Joaquin River Salt and Boron Objectives								
Implementation Planning								
Implementation Prototype Documentation								
SSALTS								
Effective Management Practice Evaluation								
SNMP Documentation								
Monitoring & Reporting Plan Development								
Economic Review								
Documentation for Approval								
CEQA Equivalent Documentation								
BPA Documentation Process Support								
Initial Implementation								
Management Practice Implementation								
DAC Assistance - Nitrate								
Salt and Nitrate Control Project Implementation								
Archetype Template Implementation								
Local SNMP Implementation								
Monitoring and Reporting								
Phase II SNMP								

Tasks to be funded in part with final \$1.8 M Request

Table 4. Summary of Selected Stakeholder Contributions to Manage Central Valley Salt and Nitrate

Type of Contribution/Agency Project/Effort Name	Contributes to CV-SALTS by:	Cost to Date	
		Voluntary	Permit Required
Treatment Alternatives			
City of Vacaville			
Alternate Water Supply and Source Water Treatment Feasibility Cost Analysis	Alternate Water Supply and Source Water Treatment Feasibility Cost Analysis	\$62,588	
Major permitted industrial users conduct Salinity Treatment Feasibility Cost Analysis.	Determine feasibility and costs of treating major salinity waste streams, identified from Source Identification Studies, to achieve a specified reducing in salinity mass loading.	\$240,000	\$40,800
Receiving Water Study	Characterize Receiving water follow-on work from the WQM Study		\$57,988
Tulare Lake Drainage District			
Metropolitan Water District Drainage Water Treatment Feasibility Study	TLDD and MWD evaluated the feasibility of using agricultural drainage water to secure additional water supplies by processing the drainage water through reverse osmosis	\$150,000	
Pearl H2O Pilot Drainage Water Treatment Trial	Engineering designed and tested a lab scale pilot that treated TLDD's drainage water utilizing an anaerobic selenium bioreactor and reverse osmosis	\$1,692,000	
Combined Solar Technologies Drainage Water Treatment Pilot	Pilot plant treating TLDD's drainage water with local bio-fuel, thermal reactors, and boilers to convert drainage water into product water and zero-liquid discharge	\$186,131	
Renewable Energy and Water Drainage Water Pilot	Evaluated the feasibility of treating TLDD's drainage water with an on-site pilot plant utilizing a polymer based resin and reverse osmosis	\$731,941	
UCLA Water Technology Research for RO advances	UCLA researchers testing new class of reverse-osmosis membranes for desalination that resists the clogging from drainage water desalination.	\$350,000	
New Sky Energy Ag Water Treatment Pilot	Developing technology to treat agricultural drainage water with reverse osmosis and convert the waste concentrate into useable products	\$10,000	
Merlin Bird Radar and Deterrent Technology	Merlin tested the bird deterrent effectiveness of their radar controlled automated tracking and long range acoustical sound devise on TLDD's evaporation basins	\$30,000	
Enhanced Evaporation Trial with Large Impact Sprinklers	Tested the effectiveness of enhancing evaporation over an evaporation basin cell utilizing large volume impact sprinkler heads	\$115,000	
Spray Field (Enhanced Evaporation) Pilot Trial with Small Micron Nozzles (1 Acre)	Testing the effectiveness of "enhanced evaporation" over ponded water in a basin cell employing closely spaced small micron spray heads for drainage water disposal	\$220,491	
Spray Field (Enhanced Evaporation) project with Small Micron Nozzles (120) Acres	Full Scale trial project utilizing "enhanced evaporation" over ponded water in a basin cell employing closely spaced small micron spray heads for drainage water disposal	\$4,263,606	
Sac Regional CSD			
Salinity Minimization Plan	Sac Regional has completed a Salinity Minimization Plan under their NPDES Permit to manage salts identifying salt sources for CV-SALTS.		\$63,064
Food Processors/Wine			
Low Salt Peeling Research and Development (FREP Grant)	Implementation study by UC and CSU facilities under FREP into the source reduction options for food processing by low salt or steam peeling while maintaining product quality.	\$200,000	
Coalition Urban Rural Environmental Stewardship (CURES)			
Cost Efficient Nitrate BMP Development for Irrigated Agriculture (FREP Grant)	Study Identify and pilot test methods for measuring movement of nitrates beyond the root zone of irrigated crops by a nutrient management plans via Specialty Crop Block Grant.	\$348,377	
Dairy Cares/Western United Dairymen			
Animal Waste Pond Studies	2007 and 2012 studies reviewed literature on pond performance as salinity and nutrient sources to groundwater and recommendation pond characterization method	\$279,014	
Support for Basin Planning Activities			
City of Vacaville			
General Salinity Public Education and Outreach	To increase awareness of salinity impacts to the wastewater treatment plant effluent and environment.		\$13,886
Central Valley Clean Water Association			
Variance Basin Plan Amendment Assistance	Provides the regulatory option while CV-SALTS is developed to participate in CV-SALTS and ultimate long term solutions rather than immediate low benefit projects.	\$129,744	
Gathering Water Quality Information			
City of Vacaville			

Table 4. Summary of Selected Stakeholder Contributions to Manage Central Valley Salt and Nitrate

Type of Contribution/Agency Project/Effort Name	Contributes to CV-SALTS by:	Cost to Date	
		Voluntary	Permit Required
Household Self Regenerating Water Softener Study	Determines contribution of salinity, if any, from residential water softeners relative to baseline levels from homes without water softeners.		\$61,391
Conduct Electrical Conductivity Monitoring in Sanitary Sewer System	Quantify contribution of salinity from sanitary sewer service areas based on continuous measurement of electrical conductivity.		\$28,678
Conduct Citywide Water Softener Survey	To obtain an estimate of the number, location, age, type, and status of water softeners installed at residential, commercial, and industrial addresses.		\$37,886
Industrial User Monitoring of Source Water and Wastewater	Determine maximum salinity mass loading reduction by determining change in salinity from source water to wastewater.		\$17,856
Major industrial users conduct Salinity Source Identification Studies	To quantify salinity sources of various waste streams generated within major industrial permitted industries.		\$120,000
Ironhouse Sanitary District			
Salinity Management Plan	Determining sources of salinity from a 95% domestic system		\$37,310
Dairy Cares/Western United Dairymen Representative Monitoring Program	Conducts groundwater monitoring on 45 dairies/300 monitoring wells plus dairy operating and physical conditions to assess management practices. Provides info to CV-SALTS	\$2,130,000	\$2,500,000
Implementation Activities to Manage Salt and Nitrate			
Grassland Area Farmers			
San Joaquin River Improvement Project	The SJRIP has many project components some of the elements that are most related to salinity management and CV-SALTS are included. Only Local districts and federal funds shown.	\$16,921,215	\$4,230,304
Grasslands Area Firebaugh Canal WD salinity reduction projects	Many projects which reduce salinity through reduction of seepage in canals which result in problematic saline waters in the environment. Only local funding share shown.	\$9,545,000	
Dairy Cares/Western United Dairymen			
California dairy industry-wide study of salinity sources and management practices	Study identified main salinity sources on dairies, irrigation water/feeds and identified management practices used to reduce or minimize salinity	\$35,265	
Totals:		\$37,640,372	\$7,209,163

Ongoing Agency Efforts That Parallel and are Linked to CV-SALTS		Approx. Annual Budget	Total Since 2008
CA Department of Water Resources			
Agricultural Drainage Program	Participating in the CV Salts program and conducting the Ag. Drainage Program which activities are compatible with the goals of the CV Salts.	\$1,950,000	\$9,750,000
San Joaquin River Real-time WQ Monitoring	Meeting SJR water quality objectives for salinity near Vernalis and preserving high quality New Melones water while lowering salt concentrations entering the Delta.	\$250,000	\$1,250,000
		\$2,200,000	\$11,000,000