

Lower San Joaquin River Committee  
Scope of Work for Development of a Basin Plan Amendment for Salt and Boron in the Lower San Joaquin  
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## Introduction

The Central Valley Salinity Coalition (CVSC) was formed in 2008 to integrate and augment the efforts of the Central Valley Salinity Alternatives for Long Term Sustainability (CV-SALTS) Initiative. The purpose of the organization is the governance and organization of the efforts needed to plan, develop and implement the Salinity and Nitrate Management Plan (SNMP) for the Central Valley.

The Lower San Joaquin River Committee (LSJRC) is a stakeholder subgroup of CV-SALTS that was formed to guide the development of a basin plan amendment (BPA) for salt and boron in the Lower San Joaquin River (LSJR) from the Merced River to Vernalis. This effort will define the beneficial uses of the LSJR, propose water quality objectives for salinity and boron, and develop implementation mechanisms that ensure the objectives are met and provide the basis for a BPA to support its application.

On December 18, 2012, the LSJRC released a request for proposals to provide technical assistance to the committee for completion of a BPA. Larry Walker Associates, Inc.<sup>1</sup> (LWA) was awarded the contract and has jointly developed this scope of work with the LSJRC. Included in this scope of work are the following elements:

- Administrative information detailing project management, organizational structure, and coordination activities;
- Individual tasks and subtasks to be performed; and
- Project budget and timeline.

The tasks that are to be completed by the LWA Team are described and contained within the scope of work below. Any adjustments to the listed activities including any budget adjustments, will be coordinated with the LWA Team and the LSJRC Manager and approved by the LSJRC and East Stanislaus Resource Conservation District (ESRCD) Contract Manager.

Prior to the initiation of each of the tasks listed below, the LWA Team will review, in detail, the scope of work, deliverables, budget, and schedule with the LSJRC Manager and Contract Manager so that there is agreement on any assumptions and data/information needed to complete the task. The results of each of these discussions will be summarized in an email and distributed as needed.

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<sup>1</sup> Although LWA was awarded the contract as the prime, the LWA Team consists of the following firms: Carollo Engineers, Kennedy/Jenks Consultants, Systech Water Resources, PlanTierra, Luhdorff and Scalmanini Consulting Engineers, Ascent Environmental, and Dr. Richard Howitt.

## Scope of Work

The Contractor will provide planning and technical oversight and expertise, coordination, and assistance to implement this scope of work for completion of the needed studies and regulatory documents. The Contractor is expected to conduct the technical tasks needed to complete a BPA for salinity and boron water quality objectives in the Lower San Joaquin River. The Contractor must also manage and/or complete the work described below with the general direction of the LSJRC. The Contractor is expected to work closely with the LSJRC Manager as work progresses on each task to ensure that tasks are performed in a timely and efficient manner.

## Project Management, Organization, and Coordination

The project management, organization, and coordination activities that will be utilized by the LWA Team are described below. These activities will be employed to maintain a clear focus on the assignments, to clearly communicate progress on the necessary technical information, to receive early feedback from the LSJRC, and to most effectively apply the knowledge gained toward the successful completion of the project. Given the compressed schedule and budget for this work, it will be important to streamline the project management approach and deliverable approval process, track progress closely, communicate frequently, and support the sharing of information and advice needed to complete the project.

The overall project coordination between the LWA Team and the LSJRC is illustrated in **Figure 1** and discussed in detail below. The key roles and responsibilities include the following:

- The LSJRC Manager and day-to-day contact is Michael Johnson.
- On behalf of CV-SALTS and the LSJRC, Jamie Meek, the ESRC Administrative Manager, will oversee the contract administration services for this work effort. Jeanne Chilcott, as ESRC contract manager, will have invoice approval authority.
- The LSJRC Manager will function as the day-to-day contact for the LSJRC.
- As the PM for this work effort, Karen Ashby will provide overall project management and oversight and will be the day-to-day contact on behalf of the LWA Team.
  - The LWA Team Strategic Advisors will provide review and advisory support at key decision points throughout the project.
  - The LWA Team Task Leads will provide oversight for their related tasks and coordinate closely with Ms. Ashby.
- Ms. Ashby will work closely with the LSJRC Manager to ensure that the work is coordinated, to the extent that it needs to be, with other CV-SALTS work efforts.
- Ms. Ashby will work closely with Ms. Meek to ensure that all of the invoicing is completed and submitted on time. On a monthly basis, Ms. Ashby will provide an invoice to Ms. Meek. The invoices will be provided by the 10-15<sup>th</sup> of each month and will include a brief description of work completed for activities being invoice.
- The LSJRC Manager will provide technical and policy direction to the LWA Team, as well as early feedback and direction for all Tasks.

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- The LSJRC Manager will compile all comments on deliverables received and reconcile conflicting comments. The LSJRC Manager will provide one consolidated set of comments to the LWA Team for all deliverables undergoing review<sup>2</sup>.
- The LSJRC and other CV-SALTS Committees will receive regular updates and feedback from the LSJRC Manager regarding the status of the work products and upcoming deliverables.
- The LSJRC Manager will be the principal liaison to the LSJRC and other CV-SALTS Committees on behalf of this project<sup>3</sup>. LWA Team members, Karen Ashby and Tom Grovhoug may be able to attend some of the other CV-SALTS Committee meetings; however, attendance at these meetings is not included within the current scope and budget.

In addition to the specific sub-tasks listed below, during the duration of the project, the following project management and coordination approaches will be used as a part of each task and sub-task to ensure that the work is completed effectively and cost efficiently:

- Ms. Ashby will work closely with the Task Leads and the LSJRC Manager to ensure that the work meets the overall project needs and is completed on schedule and within budget.
- For quality control and consistency, the schedule for each deliverable includes the following review process:
  - Task Leads review work product before providing to PM;
  - PM and/or Strategic Advisors review work product before providing to the LSJRC Manager<sup>4</sup>
- To facilitate internal communication, LWA Team members will communicate in the following manner, as needed, to promote the understanding of the project and/or to answer key questions that have been raised:
  - To the extent possible, and as needed, the telephonic communication with LSJRC individuals and/or committees will include Ms. Ashby.
  - For those telephonic communications that do not involve Ms. Ashby, telephone summaries will be prepared and emailed to Ms. Ashby within 24 hours of the call(s) by the LWA team member involved.
  - All email communication from the LWA Team members will be copied to Ms. Ashby.

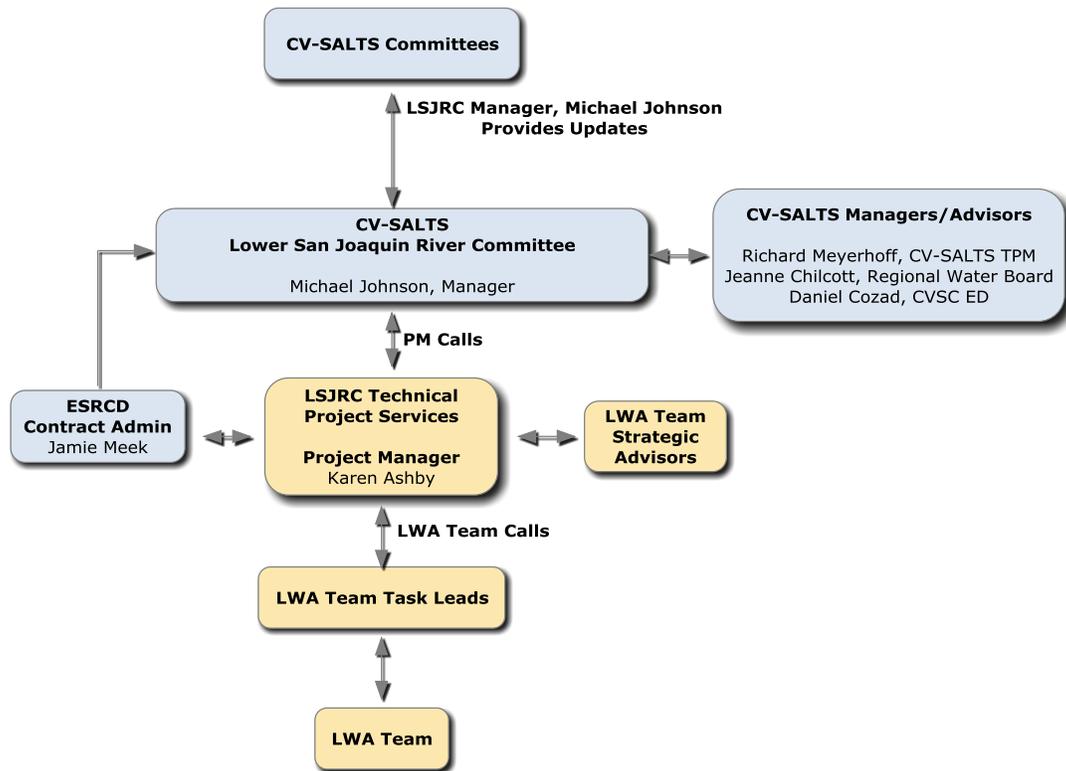
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<sup>2</sup> Given the schedule and budget for the completion of the work, the deliverables include one draft and one final version, with the comments received on the draft incorporated into the final.

<sup>3</sup> Given the need to focus the available budget on the technical work, the LWA Team needs support in communicating with the multiple CV-SALTS Committees. If it is desired to have the LWA Team members attend more meetings than are currently scoped, additional budget will be required.

<sup>4</sup> For work products of high importance, with specialized or novel technical information, and for high-profile tasks, suitable experts from the LWA Team may also be designated by the PM as reviewers.

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**Figure 1. Organizational and Communication Structure**

### Coordination meetings

As illustrated by the communication pathways included in **Figure 1**, there are several types of coordination meetings that need to take place to ensure that the project’s deliverables meet the goals and objectives of the Scope of Work, as well as the aggressive schedule. The coordination meetings include:

- LWA Team Calls – Throughout the duration of the project the LWA Team members<sup>5</sup> will participate in conference calls to ensure that work is on schedule and budget. These meetings will occur once every 2 weeks and typically last 1 hour. These calls will focus on the work that is currently being completed, as well as the upcoming tasks that the Team will need to plan for. Any issues encountered with the project will be discussed during these calls. There are twenty four (24) calls that are budgeted as a part of this coordination.
- PM Calls – The LWA Team PM is responsible for coordinating the technical activities and regularly communicating with the LSJRC Project Manager to discuss technical work status, major discussion items in upcoming meetings, actual or projected issues or difficulties, and/or near-term plans. Throughout the duration of the project, the LWA Team PM and Strategic Advisor (Tom Grovhoug) will participate in conference calls with the LSJRC Manager to ensure

<sup>5</sup> The LWA Team members participating on the call will fluctuate from week to week depending on the specific tasks that are in progress. However, the Team members will typically include the PM, one or more Strategic Advisors, one or more Task Leads, and any technical support staff, as needed.

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that work is on schedule and budget<sup>6</sup>. These meetings will occur once every 4 weeks and typically last 1 hour. These calls will focus on the work that is currently being completed, as well as the upcoming tasks, as needed. Any issues encountered with the project will be discussed during these calls. There are twelve (12) calls that are budgeted as a part of this coordination. Additional calls between the LSJRC Manager and PM can occur at any time and will be tracked accordingly.

- **Kickoff Meeting** – Once the Workplan is approved and the LWA Team is authorized to initiate work, a kickoff meeting will be held with the LSJRC Project Manager and other key individuals as soon as possible to review the Workplan and associated tasks. The kickoff meeting will include a discussion of the objectives, expectations, assumptions, and deliverables for each task as well as the overall management of the project and interface with the LSJRC.
- **LSJRC Monthly Meetings** – Ms. Ashby and/or other LWA Team members will participate in the monthly LSJRC meetings via telephone to support the LSJRC Project Manager. There are eight (8) meetings budgeted as a part of this task.

### **Deliverables**

- Twenty four (24) LWA Team coordination calls
- Twelve (12) LWA Team/ LSJRC Manager coordination calls
- Attendance at the kickoff meeting and production of a meeting summary
- Attendance via telephone at the LSJRC meetings

### **Task 1. Finalize Draft Agricultural Supply (AGR) EC Objectives**

Central Valley Water Board staff wrote a report titled “Salt Tolerance of Crops in the Lower San Joaquin River Basin (2010)”. Public comments were received and classified into policy and technical comments. The Contractor will address the technical comments and provide responses and recommendations for review by the LSJRC. The Contractor will also assess the potential for changes in model outcomes when using the policy recommendations developed by the CV-SALTS Executive Committee as model inputs (e.g. 95% crop yield protection)<sup>7</sup>. If it appears that using the CV-SALTS recommendations on appropriate levels of irrigated agriculture protection would change the results of the report substantially, then the Contractor will work with the LSJRC to identify options for additional, future work to obtain new model results<sup>8</sup>.

Subtask 1.1. Develop responses to technical comments using work which has been conducted for CV-SALTS since the report was written.

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<sup>6</sup> Other LWA Team Strategic Advisors and/or key Team members will participate in these calls on an as-needed basis.

<sup>7</sup> These policy recommendations are still ongoing within the CV-SALTS Executive Committee. In addition, work conducted for this task will be coordinated to the extent practicable with the related work being conducted pursuant to Geographic Information System (GIS) Task 5 under the LWA ICM project. However, progress on the GIS Task 5 work will not dictate the timing of the work done for Task 3 in this work plan.

<sup>8</sup> This scope of work does not include the additional work to obtain new model results.

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Subtask 1.2. Qualitatively evaluate the results of the staff report using the policy recommendations generated by the CV-SALTS Executive Committee and make recommendations as to any future work that should be completed.

**Deliverables**

- Draft tech memo including draft response to technical comments and recommendations on whether re-running the model with revised inputs is appropriate with options for how any needed work might be accomplished
- Final tech memo including final responses to technical comments
- The agricultural supply EC objectives identified in the final tech memo will be included in the Task 3 deliverables

**Task 2. Conduct Water Quality and Baseline Salt Loading Characterization**

**Task 2a. Compile and Update Water Quality and Salt Loading Data**

Subwatersheds in the LSJR watershed have been identified as part of the Salt and Boron LSJR Total Maximum Daily Load (TMDL) BPA analysis. Using information for the LSJR itself and the subwatersheds, the Contractor will identify, compile, and develop into a database available water quality and salt loading data needed for determining baseline salt loading to the LSJR as well as evaluating current water quality conditions within and estimating compliance with water quality objectives being considered for the river (see Task 3)<sup>9</sup>. The Contractor will update existing data compilations with data from 1995 to the present<sup>10</sup>.

Subtask 2a.1. Identify, compile, and develop into a database available water quality and salt loading data needed for determining baseline salt loading, evaluating current water quality conditions, and estimating compliance with water quality objectives being considered for the river. The data should include, as available, flow, EC, TDS, and constituents of salt (sodium, magnesium, calcium, potassium, carbonate, bicarbonate, chloride, sulfate, and boron). **The starting point is to use the data from the Vernalis TMDL (Salt and Boron) report and to update with more recent data (1995 to the present) from the same sources.** This effort should be supplemented with data from other relevant sources, including the United States Bureau of Reclamation (USBR) and the California Department of Water Resources (DWR). The Contractor will work closely with USBR and DWR committee representatives to access and compile relevant data from those agencies. Inclusion of data from the CVRWQCB and Irrigated Lands Program Agricultural Coalitions should also be considered<sup>11</sup>.

**Deliverables**

- Database with water quality and salt loading data from 1968 to present
- Technical memo summarizing data (and sources of the data) included in the update.

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<sup>9</sup> This task does not include a thorough quality assurance/quality control (QA/QC) of the dataset. In addition, much of this data, which has already been entered into the WARMF database, does not include the associated metadata.

<sup>10</sup> The CVRWQCB will provide the data compilation with the data from 1968 – 1995. The Contractor will add the data from 1995 to present to this database.

<sup>11</sup> The data from the Irrigated Agricultural Coalitions will be coordinated to the extent practicable with the Irrigated Agriculture Water Quality Data Request, April 2013 that was submitted pursuant to the Geographic Information Systems (GIS) Task 5 work effort. However, progress on the GIS Task 5 work will not dictate the timing of the work done for Task 5 in this work plan.

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- The documentation regarding the water quality and salt loading data will be incorporated, as needed, into the Task 3 deliverables

### **Task 2b. Update Analysis of Baseline Salt Loading to the LSJR**

The Contractor will identify and/or develop the necessary tools for generating the required salt loading analysis, including the significant salt sources in the LSJR basin, quantify salt loading from those sources and from the various subwatersheds, and describe the timing of salt loading to the river<sup>12</sup>. Mass emissions from the LSJR should also be quantified. Once the salt loads have been quantified, a water balance and salt budget will be developed. The Contractor will work closely with USBR and DWR committee representatives in conducting this work.

Subtask 2b.1. Identify and/or develop the necessary tools for generating the required salt loading information<sup>15</sup>.

Subtask 2b.2. Identify the significant salt sources in the LSJR basin, quantify salt loading from those sources and from the various subwatersheds, and describe the timing of salt loading to the river. Quantify mass emissions from the LSJR.

Subtask 2b.3. After quantifying salt loads, develop a water balance and salt budget for the LSJR region.

#### **Deliverables**

- The information detailing the salt loading in the watersheds in the LSJR Basin, as well as the salt sources and sinks will be incorporated into the Task 7 deliverables

### **Task 3. Conduct Water Quality Modeling**

#### **Task 3a. Identify Potential Ranges of Water Quality Objectives**

Using the results developed under Tasks 1 and 8; the Contractor will evaluate the range of water quality objectives identified for protection of the proposed beneficial uses. A range of objectives will be identified for Drinking Water, Stock Drinking Water, Aquatic Life, and Agricultural Irrigation source water. The justification for the ranges will be provided. The evaluation will include a review of compliance with relevant state and federal regulations and mandates including, but not limited to: the Sources of Drinking Water Policy, state and federal drinking water regulations, and other state and federal mandates regarding drinking water, stock drinking watering, aquatic life protection, and agricultural irrigation uses.

Subtask 3a.1. Based on the work completed under Tasks 1 and 8, finalize a set of water quality objectives for further analysis<sup>13</sup>.

#### **Deliverables**

- Draft set of water quality objectives with the rationale for the selection of those objectives
- Final set of water quality objectives with the rationale for the selection of those objectives

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<sup>12</sup> The Contractor will only use the Watershed Analysis Risk Management Framework (WARMF) for the analysis of the baseline salt loading to the LSJR.

<sup>13</sup> Prior to initiation of work on the task, the LSJRC will provide to the LWA team, options for consideration. Those options may involve multiple objectives that are stratified by season, precipitation, or other relevant factors. The final objectives may or may not include those options.

### **Task 3b. Conduct Evaluation and Analysis of Existing Water Quality and Compliance with Water Quality Objectives being Considered in the LSJR**

The Contractor will evaluate compliance with the proposed water quality objectives for salinity for key reaches within the LSJR: upstream of the Merced (for background); between the Merced and Tuolumne Rivers; and between the Tuolumne and Stanislaus River. For evaluating the extent of compliance with the water quality objectives, monthly, seasonal (based on specific periods of beneficial use)<sup>14</sup> and water-year type analysis will be conducted with the present data or models being used. The evaluation will include an analysis of the rate of compliance with proposed water quality objectives under current conditions including present water operations. The evaluation will also include an estimate of salt load reductions necessary to comply with the proposed salinity objectives (identified in Task 4). The Contractor will work closely with USBR and DWR committee representatives in conducting this evaluation of water quality and compliance with objectives.

Subtask 3b.1. Conduct monthly, seasonal and water-year analysis of water quality conditions to determine the river water quality since 1995, identify changes or trends in water quality and differences in water quality between key reaches of the river. The analysis will include a determination of the rate of compliance with the proposed water quality objectives under the current conditions described above.

#### **Deliverables**

- Draft Report summarizing the results from Tasks 2 and 3
- Final Report summarizing the results from Tasks 2 and 3

### **Task 4. Conduct Implementation Planning**

The Contractor will evaluate the following resources to describe or understand the actions being taken on salinity control within the Lower San Joaquin River Basin for compliance with the proposed range of water quality objectives. These resources include:

- Strategic Salt Accumulation Land and Transport Study (SSALTS) deliverables;
- The San Joaquin River at Vernalis salt and Boron TMDL documents.

The evaluation needs to include a list of potential salinity control actions, ranging from large regional solutions to best management practices, and develop information on how well suited these actions are for controlling salinity inputs to the Lower San Joaquin River<sup>15</sup>. There will be an evaluation of alternatives available for compliance with the proposed range of salinity-related water quality objectives. This includes, but is not limited to, an evaluation of a no action alternative and the USBR Real-Time Management initiative<sup>16</sup>. Screening criteria will be developed and the criteria will be used to identify/prioritize a number of alternatives for technical feasibility, economic viability, and ability to implement in a timely manner.

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<sup>14</sup> Irrigation vs. non-irrigation

<sup>15</sup> This will be coordinated with the ongoing Strategic Salt Accumulation Land and Transport Study (SSALTS) work.

<sup>16</sup> The contractor will work closely with USBR and DWR committee representatives in evaluating the real-time management implementation alternative.

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Based on recommendations from the Contractor and input from the LSJRC, three (3) alternatives will be identified for more detailed analysis. The three alternatives will each include one agreed upon set of assumptions regarding water project operational conditions<sup>17</sup>.

The more detailed modeling analysis conducted for each of the three alternatives will consider the agreed upon assumptions regarding the operations of water projects and discharges and the resulting salt loading. The alternatives will be evaluated to determine if the alternative's implementation actions can reasonably be achieved and are within the authority of the implementing agency. The evaluation will determine if the alternative's implementation actions produce a sufficient economic impact that further analysis is warranted. An initial evaluation will be made as to whether the alternative's implementation actions are, or can be in compliance with State and federal laws.

Subtask 4.1. Identify the range of salinity control alternatives for the LSJR.

Subtask 4.2. Develop methods and criteria for screening those alternatives through the use of a matrix.

Subtask 4.3. Propose three (3) alternatives to the LSJRC for detailed analysis. The three alternatives will each include one set of recommended assumptions regarding the changes in water operations and discharges that will be considered as a part of the analyses. The three alternatives and corresponding water operations assumptions will be discussed and agreed upon with the LSJRC prior to the completion of Subtask 3.4. If appropriate, and if time and budget allows, additional assumptions may be identified for analysis.

Subtask 4.4. Conduct detailed analyses of three (3) alternatives selected by the LSJRC, including water quality modeling for compliance.

Subtask 4.5. Propose alternative(s) for implementation.

Subtask 4.6. Develop and define a program of implementation.

#### **Deliverables**

- Technical memo identifying range of implementation scenarios, screening criteria for prioritizing the list of alternatives, and the proposed alternatives that will receive detailed analysis with the rationale used for the selection of the alternatives
- Technical memo providing the analysis of the implementation alternatives and the ramifications of the selection of each alternative with respect to the criteria listed above

#### **Task 5. Economic Analysis**

To support the implementation plan and the draft BPA, there will be a review of selected programs and strategies for effectiveness and cost benefit analysis. Planning level cost estimates, appropriate for use in screening alternatives, will be used.

Subtask 5.1. Based on the results from Task 8, conduct an economic analysis showing the costs of implementation of the selected alternatives for various discharge sectors. The analysis must include the costs of alternative water quality objectives that may provide a higher level of protection. The analysis will also include a qualitative cost benefit evaluation.

#### **Deliverables**

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<sup>17</sup> The types of water project- operational conditions considered may include the following: Grassland Bypass Project Waste Discharge Requirements, South Delta flows, San Joaquin River main stem restoration, and/or the FERC licensing proceedings for the Merced River.

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- Draft Economic analysis of the selected implementation actions
- Final Economic analysis of the selected implementation actions

### **Task 6. Long-term Monitoring Program**

To support the implementation actions, there is a need for a long-term monitoring program. The Contractor, in conjunction with the LSJRC, will develop the goals of a long-term monitoring and compliance reporting program. The Contractor will prepare a draft long-term monitoring and reporting program to determine compliance with water quality objectives and the effectiveness of the implementation program. The draft will identify ongoing monitoring efforts that could be included in the overall program. The monitoring and reporting program will identify, as needed, the type of monitoring (discrete and/or continuous), monitoring locations, constituents, frequency, funding and resource needs and sources, entities that can be contracted for monitoring, purpose of monitoring, and means of reporting results<sup>18</sup>.

Subtask 6.1. Develop goals for a long-term monitoring and reporting program.

Subtask 6.2. Prepare a monitoring program to evaluate compliance with water quality objectives and the effectiveness of the implementation program.

#### **Deliverables**

- Draft Monitoring Plan
- Final Monitoring Plan

### **Task 7. Substitute Environmental Documentation**

The Contractor will utilize the scoping efforts previously completed by the Central Valley Water Board staff on the scope of the environmental analysis of the proposed water quality objectives and implementation plan. The Contractor will prepare the environmental analysis of the proposed water quality objectives and implementation plan.

Subtask 7.1. Prepare the Substitute Environmental Documentation (SED) to serve as the CEQA functional equivalent documentation. The SED will include the Central Valley Water Board staff report<sup>19</sup> containing an environmental analysis of the project, a completed Environmental Checklist, and other associated documentation and administrative records for support of the proposed basin plan amendment. The final draft of the SED language will be prepared according to Central Valley Water Board requirements.

#### **Deliverables**

- Draft Substitute Environmental Documentation
- Final Substitute Environmental Documentation

### **Task 8. Central Valley Basin Plan Amendment Documentation**

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<sup>18</sup> The monitoring program will reference the Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Program Plan (QAPP).

<sup>19</sup> To be provided by the Central Valley Regional Water Quality Control Board.

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### **Task 8a. Finalize Beneficial Uses Review**

The LSJRC developed an evaluation of existing and potential beneficial uses in Reach 83 of the San Joaquin River (Merced River inflow to Vernalis)<sup>20</sup> and proposed draft Basin Plan language to reflect the potential refinement of existing uses. The evaluation includes a description of the existing and potential beneficial uses, and recommends changes to those beneficial uses based on recent information. The proposed language includes a strike-out/underlined version of current Basin Plan language. The Contractor will assist the LSJRC in reviewing the evaluation, make a determination of the appropriateness of the recommendations in the evaluation, evaluate the sufficiency of the available technical information to support the recommendations, and finalize the decisions about any changes (or lack thereof) in beneficial uses<sup>21</sup> (with a primary focus on those most related to salinity). The Contractor will use the final evaluation as a basis for finalizing the draft Basin Plan language for proposed changes in the designated beneficial uses.

Subtask 8.1 Review and finalize existing and potential beneficial uses evaluation for the Lower San Joaquin River from the Merced River inflow to Vernalis.

Subtask 8.2 Finalize proposed Basin Plan language for any proposed changes in designated beneficial uses.

#### **Deliverables**

- Draft of Final Evaluation document (redline/strikeout of existing document)
- Final Evaluation document (with accepted changes)
- Draft Basin Plan language
- Final Basin Plan language

### **Task 8b. Finalize Water Quality Criteria Review**

CV SALTS contracted for reviews of water quality criteria for stock watering and aquatic life which are in the final stages of completion. There are additional reviews of criteria for municipal drinking water and irrigation supply water. Contractor will review and summarize the findings from the following reports once the reports are finalized:

- Drinking Water: Salinity Effects on MUN-Related Uses of Water, July 2012
- Stock Drinking Watering: Salt and Nutrients: Literature Review for Stock Drinking Water, May 2013
- Aquatic Life: Task 1 Memorandum, 2013. It is assumed that water quality objectives found to be sufficiently protective of aquatic life beneficial uses will also be sufficiently protective of wetlands and wetland water supplies.
- Agricultural Irrigation Source Water: See Task 3
- Two Central Valley Water Board staff reports reviewing boron and salinity criteria
  - Davis, H. January 1999 Draft. Boron: A Literature Summary for Developing Water Quality Objectives. Central Valley Water Board.
  - Davis, H. January 2000 Draft. Salinity: A Literature Summary for Developing Water Quality Objectives. Central Valley Water Board.

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<sup>20</sup> Existing and Potential Beneficial uses in Reach 83 of the San Joaquin River (Merced River Inflow to Vernalis)

<sup>21</sup> This scope of work does not include the development of the corresponding section of the staff report or the scientific documentation to support the proposed changes in the designated beneficial uses.

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Subtask 8.1. Provide a summary review of these documents as a part of Task 3, Identify  
Potential Ranges of Water Quality Objectives.

**Deliverables**

- Summary review of water quality criteria documents to be included in the Task 3 deliverables

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## Project Budget

The budget summary for the tasks outlined in this Scope of Work is provided in **Table 1**. The overall, not-to-exceed amount is \$689,000.

**Table 1. LWA Team Budget Summary by Task**

Task Description		LWA Team Budget
	Project Management, Organization, and Coordination	\$75,759
T.1	Finalize Draft Agricultural Supply (AGR) EC Objectives	\$30,000
T.2	Conduct Water Quality and Baseline Salt Loading Characterization	
T.2a	Compile and Update Water Quality and Salt Loading Data	\$50,460
T.2b	Update Analysis of Baseline Salt Loading to LSJR	\$83,820
T.3	Conduct Water Quality Modeling	
T.3a	Identify Potential Ranges of Water Quality Objectives	\$15,000
T.3b	Conduct Evaluation and Analysis of Existing Water Quality and Compliance with WQOs Being Considered	\$68,240
T.4	Conduct Implementation Planning	\$149,998
T.5	Economic Analysis	\$85,273
T.6	Long-Term Monitoring Program	\$20,000
T.7	Substitute Environmental Documentation	\$90,450
T8	Central Valley Basin Plan Amendment Documentation	
T.8a	Finalize Beneficial Uses Review	\$10,000
T.8b	Finalize Water Quality Criteria Review	\$10,000
<b>Total</b>		<b>\$689,000</b>

## Project Schedule

The project schedule was developed to meet the needs for work products that are described in this Workplan. Adherence to the proposed schedule will require that work product development and review timelines are met by all parties participating in the various work efforts. Should certain schedule steps require additional time, the LWA Team will take reasonable measures to accommodate the changes while minimizing disruption to other schedule elements. However, in some cases, delayed completion of schedule elements could cause delays in the completion of the overall work effort. The LWA Team will, in all instances, promptly identify the best possible manner to maintain the schedule, and will communicate a revised schedule to the LSJRC Project Manager.

Use of a scheduling tool, such as Microsoft Project, will facilitate clear communication within the Technical Committee to identify progress, scheduling constraints, upcoming deadlines, and status updates. Parameters used to frame this schedule include the following:

- Contractor Agreement was executed on April 10, 2013;
- Start date for this work will be June 10, 2013; and
- It is assumed that all reviews and approvals of work products will be completed within the timeframes identified within the proposed schedule.

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Adherence to the proposed schedule will require that work product development and review timelines be met. The detailed schedule, which includes a breakdown by tasks and sub-tasks, is included as **Attachment A**.

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Attachment A. Schedule of Work

See attached.