DRAFT Agenda Lower San Joaquin River Committee Meeting

Stanislaus County Ag Center
3800 Cornucopia Way, Modesto, California 95358-9492
Rooms “H” and “I” (Ag Commissioner’s Conference Room)

Teleconference available (218) 339-4600  Participant Code: 927571#

Thursday, November 1, 2012 1:30 PM to 3:30 PM

Meeting Objectives:

• Determine future committee activities
  o Steps to secure Committee Manager (Item 2)
  o Identify selection committee to release RFQ and review responses (Item 3)
  o Set next meeting dates/topics (Item 7)
• Discuss/approve revised Prob. Statement, Basin Description, Bene. Use Report (Item 4)
• Identify new co-chair (Item 6)

1. Welcome, Introductions, Agenda revisions/Approval, Notes (all) - 10 min
   a. Introductions Room/Phone
   b. Review/revise/approve agenda
   c. Review/revise/approve notes from August 30, 2012 and review action items

2. Developing a Plan for Committee Manager Position - (Cory and Chilcott) - 30 min

3. Review/Comment RFQ for Technical Services Supporting the LSJR Project - (Martin) – 30 min
   - Potential In-Kind Services from DWR (Taylor)
   - Potential In-Kind Services from USBR (Tassey)

4. Problem Statement, Basin Description and Beneficial Uses Report - (Martin) – 20 min
   Review of Dennis Westcot’s revisions

5. Update on Status of South SWRCB’s So. Delta Objectives Project - (Gowdy) - 5 min

6. Selecting New Committee Co-chair - (Cory and Chilcott) - 10 min

7. Set Tentative Meeting Dates for Next 6 Months - (Cory and new Co-Chair) - 15 min

8. LSJR Committee Adjourns
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Minutes from August 30, 2012 Meeting of the CV-SALTS Lower San Joaquin River Committee
held at the Stanislaus County Ag Center, Room “G”

Attendance:

1. John Beam, Grassland Water District
2. Sherman Boone, East Stanislaus Resource Conservation District
3. Andrea Bowling, East Stanislaus Resource Conservation District
4. Jeanne Chilcott, Central Valley Regional Water Board
5. David Cory, San Joaquin Valley Drainage Authority
6. Karna Harrigfeld, Stockton East Water District
7. John Herrick, South Delta Water Agency-SDWA
8. Jamil S. Ibrahim, PH, MWH Americas.Inc (Phone)
9. Debra Liebersbach, Turlock Irrigation District
10. Jim Martin, Central Valley Regional Water Board
11. Nigel W. T. Quinn, Lawrence Berkeley National Laboratory
12. Ernie Taylor, California Department of Water Resources
13. Dianna Waller, USDA-NRCS
14. Dennis W. Westcot, San Joaquin River Group Authority
15. Jeff Willett, City of Stockton
16. Tom Orvis, Stanislaus Farm Bureau

1. Meeting called to order by Chair Dennis Westcot at 1:30 pm.
   - Attendees and participants by phone introduced themselves and identified the organization they represent.
   - Items 13-16 listed on Agenda will not be covered.
   - The minutes from 6/28/12 were approved.

   Action: Any additional changes to be forwarded to Dennis by COB on 9/4/12.

2. Update on SWRCB Decisions on Vernalis Salinity Objectives
   - Mark Gowdy was not in attendance. This item was not covered.

3. Workplan Development (Workplan Task I)
   - Dennis Westcot presented a modified schedule for the workplan. The time frame for completion of some items has been compressed, but the end date remains unchanged.

   Action: Dennis will update the document with a “REVISED AS OF ____,” and replace the green and red highlighting with alternate colors.

4. Budgeting/Funding/Financing/Contracting (Workplan Task II) - Update
   - Jim Martin advised the committee that the approved contract with ESRCRD should be received next week.

5. Stakeholder Outreach and Involvement (Workplan Task III)
   - Dennis Westcot updated the committee on the development of the stakeholder distribution list. The committee decided a new Lyrus list should be developed and utilized. A binder to retain copies of all documents for public access will be retained in
Jeanne Chilcott advised the committee that it is the documents that the committee uses to make final decisions that must be preserved for the administrative record.

Action: Jamil Ibrahim will provide the list they have developed to Reclamation to share with the committee. Dennis and Jamil will review that list, and any contacts without email addresses will be given to the Regional Board staff to search their list.

All members were asked to review the list and send any omissions to Dennis.

• The outreach letter will come from CV-SALTS, signed by both Parry Klassen & Dennis Westcot.

Action: Jeanne Chilcott will ask Pamela Creedon if she is willing to co-sign the letter.

6. Basin Description – finalization (Workplan task IV)

• Dennis Westcot reviewed the current basin description language for the committee, and advised the committee that in order to stay on track with the workplan time table this item must be concluded at the next meeting.

Action: Karna Harrigfeld had some specific edits that she will forward to Dennis. Any members with edits should forward to Dennis so they can be included in the final version for the next meeting.

7. Historical Water Use and Salinity Buildup in the Basin – finalization (Workplan Task V)

• Dennis presented the current version of the document. Nigel Quinn recommended the document be retained by the committee as a living document. John Herrick and Karna Harrigfeld still have significant comments they would like included in the document.

Action: Dennis Westcot will add John and Karna’s comments in a redline version and distribute for review at the next meeting.

8. Problem Statement – finalization (Workplan task VI)

• The committee reviewed the two-page statement and provided multiple suggestions for inclusions and revisions. Dennis requested all members review the document again and submit their edits.

Action: All members should forward comments on the current draft to Dennis.


• Dennis Westcot presented 5 recommendations for changes to beneficial use designations for the river.

Action: All members are to review proposed recommendations and provide comments back to Dennis by September 14th.

10. Water Quality Criteria – (Workplan task VIII)
Dennis Westcot has begun developing a library of water quality criteria documents, and will begin summarizing these documents for the committee. This will form a basis for future discussions of what ranges to be used for water quality objectives.

Action: Members should email Dennis if you want copies of any of the documents from the library.

11. Delineation of Water Quality Criteria (Workplan Task IX)
   • This item was not covered

12. LSJR Committee Adjourned
   • The committee set the following meeting dates: September 27th and November 1st
Two Statements of Qualifications (SOQs), one from Chester Anderson, Watershed LLC and the other from Summers Consulting LLC, were received in response to a request for qualifications sent out by San Joaquin Valley Drainage Authority (SJVDA) in mid-June. The Selection Committee reviewed the SOQs and, on August 30th, followed up their review with an interview of Dennis Westcot, representing Summers Consulting. On September 12th, based on their SOQ review and meeting with Summers Consulting, the Selection Committee recommended awarding the contract to Summers Consulting. The Lower San Joaquin River (LSJR) Committee subsequently concurred with that recommendation.

However, on October 8th, Summers Consulting informed the San Joaquin Valley Drainage Authority that, because of recent developments, they would need to withdraw their submittal. Mr. Westcot has indicated he would be able to act as an advisor to the LSJR Committee to provide some continuity and guidance to the project. Based on that offer, the SJVDA has implemented a no cost extension to their contract with the San Joaquin River Group Authority for Mr. Westcot’s services in an advisory capacity until the end of January 2013.

In response to this situation, the Selection Committee has been exploring various options for filling the position of a long-term committee manager. The following are the options considered:

1. **Awarding the contract to Chester Anderson, LLC**
   In considering this option, the Selection Committee again reviewed Chester Anderson’s original application and found that, although Mr. Anderson had significant experience and expertise in managing stakeholder watershed planning processes, he lacked the necessary qualifications in the critical areas of salinity, particular as relates to agriculture in the San Joaquin Valley, and in basin planning and regulatory matters. It is the Selection Committee’s opinion that Mr. Anderson would not be able to provide the LSJR Committee the leadership and guidance needed for a project as large, as specialized, and as complex as this.

2. **Utilizing the services of Richard Meyerhoff, the current Technical Project Manager for CV-SALTS**
   Mr. Meyerhoff is currently under contract with the SJVDA as the CV-SALTS Technical Project Manager. He was approached by the Selection Committee, but indicated he would not have the time to manage the LSJR committee in addition to fulfilling all of his other responsibilities.

3. **A limited-term position provided by the U.S. Bureau of Reclamation (USBR)**
   Under this scenario, USBR would provide the services of one of their employees, to be approved by the LSJR Committee, for a limited-term position. David Cory has been exploring this option and is trying to organize a meeting between USBR management and Eastside and Westside stakeholder interests to discuss the possibility further.

4. **Seeking proposals through the normal RFQ process**
   If Option 3 is not workable, another RFQ could be sent out, targeting a larger group of potential candidates for the position than the nine firms or organizations that received the initial RFQ. There may be web sites or publicly available lists for posting or distributing the RFQ, and an effort should be made to identify and utilize those tools where possible.

**Selection Committee Recommendation:**
The Selection Committee recommends that David Cory continue to pursue Option 3 with USBR. If that effort is not successful, the Committee recommends pursuing Option 4.
Request for Qualifications for Release January 4, 2013

Central Valley Salinity Coalition with CV-SALTS Initiative

Request for Qualifications (RFQ) 2012-00?

For Consulting Services to Provide Technical Project Services Supporting CV-SALTS and the Lower San Joaquin River Committee

1. INTRODUCTION

Organization Background

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 SNMP will include development of water quality objectives for salinity on the Lower San Joaquin River (LSJR) from the Merced River inflow to Vernalis, a river reach known to be impaired due to rising salinity levels. This effort will define beneficial uses of the LSJR, propose water quality objectives for salinity and develop implementation mechanisms that ensure protection of beneficial uses and provide the basis for a basin plan amendment to support its application.

Project Background

CV-SALTS is a stakeholder driven effort intended to provide long-term economic and environmental sustainability throughout the Central Valley while simultaneously satisfying the requirements of the State’s Recycled Water Policy. In February 2012, the CV-SALTS Executive Committee approved a 5-year work plan and strategy framework for the CV-SALTS program which can be viewed at: http://cvsalinity.org/index.php/agendas/doc_download/918-cv-salts-program-work-plan-v-8-approved-3912. Development of salinity water quality objectives in the LSJR was identified as one of the priority items to be completed by the end of 2014.

The Executive Committee recognized the importance of salinity control on the LSJR as the Basin Plan recognizes that the LSJR is the only outlet for salt from the San Joaquin River Basin. Allowing the LSJR to be used for salt control must be done in a manner that protects not only in-stream beneficial uses but also provides protection to downstream uses. In order to assess salinity control needs in the basin, CV-SALTS will be looking for a consultant to finalize reviews of the beneficial uses in the LSJR and range of water quality objectives protective of those uses, evaluate the alternatives available to meet those objectives and prepare the necessary documentation to support a basin plan amendment to establish those objectives.
The LSJR Committee has prepared a work plan for developing the water quality objectives in the LSJR. The RFQ will seek an entity (hereinafter referred to as Consultant) that will be responsible for assisting the LSJR Committee in defining the technical work needed to form the scientific basis of the basin plan amendment, and in developing, overseeing, managing and completing a variety of complex technical and quasi-regulatory projects needed to complete the basin plan amendment process. Consultant, as used in this document can mean a consultant team or a team of consultants.

The Consultant will need to develop the overall scope of work for the various tasks, but also must ensure that the tasks are completed as scoped, on time, and on budget, and are fully integrated and coordinated in order to support basin plan amendment process.

Consultants proposing under this RFQs must show through documentation of an in-depth understanding of the basin planning process. In addition, they must demonstrate the ability to provide:

a.) Guidance to the LSJR Committee on development of a basin plan amendment for salinity in the Lower San Joaquin River Basin;

b.) Scientifically defensible technical services needed to support development of the basin plan amendment; and
c.) Required environmental and administrative documentation to support a basin plan amendment.

Consultants also must demonstrate experience preparing use attainability assessments, site-specific objectives, variances and/or actual adopted Basin Plan Amendments that have been developed in a collaborative setting. The Consultants are expected to provide examples of projects related to tasks identified in the scope of work. Examples should include estimated and final costs and timelines to complete the described project.

The selected Consultant will receive oversight from the Lower San Joaquin River Committee, the LSJR Committee Manager and periodically from the CV-SALTS Technical and Executive Committees. The consultant will also be expected to participate with the LSJR Committee in development of final work plans and task orders that identify the critical technical studies needed to ensure successful completion of the proposed basin plan amendment.

The Lower San Joaquin River Committee and the Executive Committee of CV-SALTS have secured approximately $650,000 for completion of the present work plan and proposed basin plan amendment. The Draft Final salinity and boron basin plan amendment must be completed by May 2014.

2. ESRCD Contract, CVSC and CV-SALTS Coordination

The funding for the project may come from one or more sources including the State Water Resources Control Board (SWRCB) under contract with the East Stanislaus Resource Conservation District (ESRCD), from the CVSC, or potentially other sources. The LSJR Basin Plan Amendment contract will be executed between the ESRCD and the Consultant for the scope of work shown below, but may include funding for task orders to be approved in the future by the LSJR Committee and/or the CV-SALTS Executive Committee. Approximately $650,000 is currently available under the contract with the ESRCD for successful completion of a basin plan amendment for salinity and boron water quality objectives in the
Lower San Joaquin River. Additional funding may be made available for other tasks as may be directed by the LSJR Committee and/or the CV-SALTS Executive Committee.

Budgets for individual tasks may be adjusted and/or augmented upon approval by the LSJR Committee and/or the CV-SALTS Executive Committee. Other funding is available to the Executive Committee and they may direct the award of additional funds thorough other contracting mechanisms as they determine best, but it is currently anticipated that funding for the project will be primarily from a State Water Resources Control Board Cleanup and Abatement Fund Contract.

2.1 Request for Qualifications

This request is for a Statement of Qualifications (SOQ) for providers of professional services to accomplish the scope of work shown in Attachment A. Responding entities shall provide qualifications for all areas within the scope. The Consultant will provide a SOQ documenting their project approach, hourly rates for all staff listed in the qualifications document and needed to perform the scope of work, any other rates or charges for the staff, any travel costs for staff and any other charges including markup on subcontracting or any standard charges. Charges or fees not included in the SOQ will not be allowable costs under the contract.

The Consultant should address how they would manage Task Orders under their contract. They should address how they would determine and recommend work scope tasks be done by the Consultant’s staff or team, or by a third party. The Consultant should explain how they would manage the work of outside parties, subcontractors, other Consultants and volunteers or in-kind work provided.

2.2 LSJR Committee Work, Schedule and Budget

The Consultant’s SOQ should focus on qualifications for development of final work plans and task orders that identify the critical technical studies needed to ensure successful completion of the basin plan amendment. In addition, the Consultant’s SOQ should describe their approach to management of the project and how they will go about successful completion of the critical technical studies needed. The consultant should propose a budget, work breakdown structure and schedule based on a project completion date of July 2014.

Cost assumptions for the Consultant’s proposal should be well documented and organized to allow the LSJR Committee and/or the Executive Committee to increase or decrease efforts based on available funding, duration or workload. The Consultant should list all materials, equipment, labor, planning and coordination to provide the services listed in Attachment A.

The Consultant shall commit to providing a project manager for the duration of the program. Should the project manager become unavailable, the contract may be terminated. Should the Executive Committee elect not to terminate, the Consultant shall bear all costs related in any way to changes in staffing.

3. Scope of Work

The scope of work is shown in Attachment A.
4. Instructions

Responses to this RFQ must be made according to the requirements set forth herein and in the Scope of Work. Failure to adhere to these requirements or to include conditions, limitations, or misrepresentations may be cause for rejection of the submission. Any correction and resubmission by the proposer will not extend the time for evaluation of the submission. SOQ documents will be reviewed by a group composed of members of CV-SALTS Lower San Joaquin River Committee and Executive Committee.

Submit one electronic file and six (6) complete copies of the submission and related information to:

East Stanislaus Resource Conservation District
c/o Andrea Bowling
USDA NRCS Modesto Service Center
3800 Cornucopia Way
Modesto, CA 93232-9494
eaststanislausrcd@gmail.com

All submissions must be received by December 17, 2012 – 4:00 pm.

4.1 Required Information

All submissions must include the following information:
1. Cover letter, including name, telephone number, and address of the firm;
2. Table of contents;
3. Description of the firm’s business; i.e., individual, partnership, joint venture, etc.;
4. Background information about the proposer, including technical qualifications and licenses;
5. Description of the firm’s experience, including the scope of similar projects, timeline to complete project and total cost;
6. Organizational chart showing proposed management and project team;
7. Complete list of personnel, their qualifications for conducting basin planning work in California, this should also include any subcontractors that will be dedicated to this project;
8. Assigned personnel background, experience, and job title/classification;
9. Proposed scope of work for completion of a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River;
10. Detailed project schedule for completion of a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River;
11. Detailed Fee proposal which shall include breakdown of labor hours by employee billing classification, expense reimbursement schedule that includes cost of non-labor and subcontractor services for completion of a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River;
12. Hourly billing rates for personnel to be assigned to the project; and
13. Any exceptions to the Standard Services Agreement (Attachment C), exceptions will be considered in award qualifications.

5. Evaluation Criteria
Evaluation of Technical Qualifications will be conducted on the following:

1. Responsiveness to RFQ and SOQ organization and clarity;
2. Experience and qualifications of the Consultant and subcontractor firms in salinity and basin planning in relation to regulatory issues;
3. Experience and qualifications of the Technical staff and assigned individuals in salinity and basin planning issues in California;
4. Project approach and understanding;
5. Contractor ability to complete work products on the approved schedule;
6. Demonstrated ability to act independently and perform unbiased evaluations;
7. Experience and qualifications of the firm in:
   a. Project management in a stakeholder driven regulatory environment;
   b. Surface water modeling and groundwater accretions;
   c. Salt loading and salinity issues;
   d. Simplifying complex information into simplified concepts for presentation;
   e. Salts management issues in a surface water environment;
   f. Basin planning and successful Basin Plan Amendment completion;
   g. Technical skills and experience in completion of studies supporting Basin Planning; and
   h. Regional planning experience and understanding of Central Valley agricultural and salt management issues.
8. Project management qualifications of the firm and staff:
   a. Demonstrated management experience in stakeholder programs;
   b. Track record of completion of complex tasks on schedule;
   c. Scope, cost and schedule development and review;
   d. Clarity of the task order process including authorization and completion; and
   e. Coordination, reporting and responsiveness in a stakeholder environment.
9. Firm’s knowledge of State and Federal statues covering basin planning procedures and basin plan amendments.

Evaluation of Cost will be on the basis of the following:

10. Clarity and completeness of the breakdown of costs and explanation for completion of a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River;
11. Appropriateness of proposed fee structure and anticipated value and quality of services received for completion of a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River;
12. Total cost compared to the value of products and services; and
13. Demonstrated ability to complete project within budget.

The selection process is anticipated to include an evaluation of the qualifications and cost proposal for completion of a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River and may include an interview with top ranked firms.

6. General Requirements
All proposers are hereby advised that this RFQ is an informal solicitation and is not a commitment or offer to enter into an agreement or engage into any competitive bidding or negotiation pursuant to any statute, ordinance, rule, or regulation. CVSC, ESRCD and the Water Boards reserve the right to negotiate with any qualified source. CVSC, the ESRCD, and the Water Boards reserve the right to reject any or all submissions for any reason or for no reason at all.

CVSC, ESRCD and the Water Boards reserve the right to request further information from the proposer, either in writing or orally. Such request will be addressed to that person or persons authorized by the proposer to represent the proposer. CVSC, ESRCD and the Water Boards reserve the sole right to judge the proposer’s representations, either written or oral. The LSJR and Executive Committee of CV-SALTS will make the final selection decision for the award contracts.

Proposers understand and agree that submission of the SOQ constitutes acknowledgement and acceptance of, and a willingness to comply with, all terms, conditions, and criteria contained in this RFQ. False, incomplete, or unresponsive statements in connection with a submission may be sufficient cause for the rejection of the submission. The valuation and determination of the fulfillment of the above requirement will be CVSC, ESRCD, and THE Water Boards responsibility and their decision shall be final.

The CVSC, ESRCD and THE Water Boards reserve the right to interpret or change any provisions of this RFP/RFQ at any time prior to the submission date. Such interpretations or changes will be in the form of addenda to this RFQ. Such addenda will become part of this RFQ and may become part of any resultant contract.

Such addenda will be made available to each person or organization that is known to have received this RFQ. Should such addenda require additional information not previously requested, a firm’s failure to address the requirements of such addenda might result in the submission being disqualified or ranked lower in reviews. All SOQs submitted in response to this RFP will become the exclusive property of the CVSC, ESRCD and the Water Boards and will be made available to CV-SALTS stakeholders.

This project is intended to be funded from Cleanup and Abatement (CAA) funds awarded by the State Water Resource Control Board. The terms and condition of those funds and the requirements of that contract will apply to the contractor. The ESRCD or other CV-SALTS entities may at their discretion fund this project from proceeds of State, Federal or other grants or agreements and Consultant contract may be managed by the agency providing funding with different or additional requirements which must be complied with. These issues will be resolved at the time of contracting with the selected contractor.

The ESRCD and the Water Boards shall not in any way be liable for any costs incurred in connection with the preparation of any submission submitted in response to this RFQ.

The Consultant shall execute a Standard Agreement for services with the selected agency. The East Stanislaus Resource Conservation District terms are shown in Appendix C, Submission of an SOQ is deemed accepting terms and conditions without exception unless noted in the submission.

## 7. Schedule of Submission Events

The following table contains the expected schedule of events for the RFQ process. ESRCD and the CVSC retain the right to modify this schedule as needed to support unexpected circumstances.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFQ Distributed/posted to website</td>
<td>November 12, 2012</td>
</tr>
<tr>
<td>Submission Due</td>
<td>January 4, 2013 – 4:00 pm</td>
</tr>
<tr>
<td>LSJR Committee Recommendation of Award</td>
<td>January 31, 2013</td>
</tr>
<tr>
<td>CV-SALTS Executive Committee Approval</td>
<td>February 7, 2013</td>
</tr>
<tr>
<td>ESRCD Approval</td>
<td>February 28, 2013</td>
</tr>
<tr>
<td>Execution of Agreement with Contractor</td>
<td>March 13, 2013</td>
</tr>
</tbody>
</table>
8. SOQ Authorization

(Please provide this document on your letterhead)

I certify I am authorized to submit this SOQ on behalf of my company, _______________(company name), and this submission conforms to required specifications unless otherwise noted.

________________________________________
Company Name

________________________________________
Submission Submitted by

________________________________________
Title

________________________________________
Signature

________________________________________
Date

________________________________________
Email

________________________________________
Telephone Number

________________________________________
Facsimile Number
ATTACHMENT A

Scope of Work for Salinity and Boron Water Quality Objectives in the Lower San Joaquin River

The following work elements are intended to be contracted as a part of this RFQ or procured through other mechanisms:

1. **Finalize Beneficial Uses Review**
   Complete the review of current and potential beneficial uses of the Lower San Joaquin River from the Merced River inflow to Vernalis; describe and document those uses; and prepare draft Basin Plan language for any proposed changes in designated beneficial uses;

2. **Finalize Water Quality Criteria Review**
   Complete the review and delineation of water quality criteria for salinity and ions making up salinity to protect the designated beneficial uses of wetlands, and aquatic life;

3. **Finalize Draft EC Objectives Report**
   Respond to public comments and complete the Regional Board draft staff report entitled “Salt Tolerance of Crops in the Lower San Joaquin River Basin”;

4. **Identify Ranges of Water Quality Objectives**
   Evaluate the range of water quality objectives identified for protection of the proposed beneficial uses and finalize a set of water quality objectives for further analysis.

5. **Compile and Update Water Quality Data (DWR?)**
   Identify, gather, and compile current data (1997 to the present) for flow, salinity (EC and TDS) and ions that make up salinity (sodium, magnesium, chloride, sulfate, and boron) for the major and minor subareas of the Lower San Joaquin River (LSJR) basin. In addition, develop a detailed description of current salinity conditions in the LSJR seasonally, monthly and under different water year types.

6. **Update Baseline Salt Loading to the LSJR**
   Identify salt sources (subareas and source categories) in the LSJR basin, quantify salt loading from the various subareas and source categories, and describe the timing of salt loading to the river. Mass emissions from the LSJR should also be quantified. This task should include development of a water balance and salt budget useful for further water quality modeling;

7. **Model Existing Water Quality**
   Conduct monthly, seasonal and water-year analysis of existing conditions and evaluate the rate of compliance with proposed water quality objectives under current conditions;

8. **Conduct Implementation Planning**
   a. Identify and develop several implementation scenarios (alternatives) for further evaluation;
   b. Develop methods and criteria for screening those alternatives;
c. Participate in the process of selecting the alternatives for detailed analysis;
d. Conduct detailed analyses of selected alternatives, including water quality modeling for compliance;
e. Propose alternative(s) for implementation;
f. Develop and define a program of implementation;

9. **Economic Analysis**
   Conduct a full economic analysis showing the costs of implementation of the selected alternatives for various discharge sectors. This should include the costs of alternative water quality objectives that may provide a higher level of protection;

10. **Long-term Monitoring Program**
    Develop goals for a long-term monitoring and reporting program and prepare a program to evaluate compliance with water quality objectives and the effectiveness of the implementation program;

11. **Substitute Environmental Documentation**
    Prepare the Substitute Environmental Documentation (SED) to serve as the CEQA functional equivalent documentation, that includes the Regional Board staff report 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 Consultant and project management staff must have a strong understanding of the administrative, scientific and technical documentation required to support new regulatory requirements, as demonstrated by a history of actual adopted basin plan amendments, use attainability assessments, site-specific objectives, and/or variances developed in a collaborative setting.

The consultant will provide planning and technical oversight and expertise, coordination and assistance to develop and implement a scope of work for completion of the needed studies and regulatory documents. The consultant will be expected to prepare detailed work plans to conduct the technical and administrative work needed to complete a basin plan amendment for salinity and boron water quality objectives in the Lower San Joaquin River. The consultant must also manage and/or complete the work described in the approved workplans with the general direction of the LSJR Committee and the Executive Committee of CV-SALTS.
ATTACHMENT B
Explanation of CV-SALTS Program and Roles of Various Groups

The earlier sections detail the activities and role of the consultant firm. This section briefly describes the role of the other groups or functions within CV-SALTS. An organization chart is shown following the descriptions.

Executive Committee of CV-SALTS – is the programmatic Management Committee of the CV-SALTS initiative. They provide oversight of all committees and consultant work products to ensure review and policy acceptance. The Executive Committee has final authority in approval of scope, services and acceptance of products. The Committee directs the Program Manager and Policy Facilitator.

Program Manager – Provides overall program management and prime contract for administration, coordination and facilitation. Under the direction of the Executive Committee provides coordination, program definition and integration of policy, outreach and technical activities.

LSJR Committee Manager – Provides overall management and prime contract for administration, coordination and facilitation of activities undertaken by the Lower San Joaquin River Committee. Under the direction of the LSJR Committee provides coordination, program definition and integration of policy, outreach and technical activities.

Policy Facilitator – Working under the Program Management contract develops and facilitates agreement on the policy issues and requirements to be developed for the basin plan.

Technical and Economic Committees – Committee under the direction of the Executive Committee plans and manages technical studies and provides direction and reviews technical work making recommendations to the Executive Committee, including the Management Practice Subcommittee, Knowledge Gained Subcommittee and others named by the Technical and Economic Committees.

Central Valley Salinity Coalition – The Coalition is the organizing entity for the Stakeholders to provide funding and coordinate stakeholder issues for CV-SALTS. Many Coalition Board Members are members of the Executive Committee.

Regional Water Board – The Regional Water Board composed of appointed members who participate in meetings but have a primary responsibility for consideration and approval of the basin plan amendments when proposed. The Regional Board is a member of the MOA for CV-SALTS.

Regional Water Board Staff – Under direction of the Regional Board, participate as active stakeholders and provide oversight and feedback on efforts developed and coordination with other state agencies. The Regional Board is a member of the Executive Committee.

State Water Board – The Board is a member of the MOA for CV-SALTS and is a primary source of funding for the CV-SALTS efforts. Their primary responsibility will be for consideration and approval of the final basin plan when approved by the Regional Water Board.

State Board Staff – Participate as representative members of the MOA members to assist in coordination of State Board issues and as a participant and member of the Executive Committee.

US EPA – The US EPA should be represented as a participant in CV-SALTS and would have the role of coordination with their internal programs and with other federal agencies. Their primary responsibility will be for consideration and approval of the final basin plan amendment following approval by the State Water Board and Office of Administrative Law.

ESRCD – The East Stanislaus Resource Conservation District is a stakeholder in the Lower San Joaquin River Committee of CV-SALTS and has also volunteered to act as contracting agent for State Board Cleanup and Abatement Funding for CV-SALTS.
Salinity Problems on the Lower San Joaquin River

Water supply and irrigation development in the San Joaquin Valley and the hydrologic and geologic characteristics of the Lower San Joaquin River (LSJR) are the principal reasons this section of the river struggles with salinity management. Salinity in the LSJR has degraded significantly since the late 1940s. In the 1920s municipalities and water districts built large scale storage projects on all three of the major tributaries to the LSJR (Stanislaus, Tuolumne and Merced). Even though this reduced flows in the LSJR, the quality remained good. In the late 1940s, the U. S. Bureau of Reclamation constructed Friant Dam on the main-stream San Joaquin River upstream of the LSJR as part of the Central Valley Project (CVP). Friant Dam diverted almost all of the high quality upstream San Joaquin River flow south into the Tulare Lake Basin and north to Madera County. As part of the CVP, water users along the western side of the LSJR exchanged their existing San Joaquin River water rights for water supplied via the Delta through the Delta-Mendota Canal, a major component of the CVP.

The CVP upstream diversion and water exchange with Westside water users led to the salinity issues now facing the LSJR. Part of the LSJR salinity increase resulted from the exchange of high-quality water from the San Joaquin River for more reliable, but higher salinity water imported from the Delta. The second impact on salinity in the LSJR came from the intensification of irrigation on the western side of the San Joaquin River. This intensified irrigation quickly lead to high water tables and soil salinity issues in both the new lands being brought under irrigation and the lands previously supplied with San Joaquin River water. Because of the diversion of upstream San Joaquin River water by the CVP, drainage water from the Westside land was being discharged to the LSJR without the benefit of any upstream dilution water.

These two actions occurring simultaneously resulted in a significant degradation of the LSJR in less than a decade and prompted a declaration by the California Legislature in 1961 that the LSJR was impaired (California Water Code § 12230 – 12232). In the 1975 Basin Plan, water quality degradation in the LSJR was identified and the LSJR was classified as a Water Quality Limited Segment. At that time, it was envisioned that a Valley-wide Drain would be developed and the subsurface drainage water flows would then be discharged outside the Basin, thus improving river water quality. It is unlikely that this will occur in the near future.

The State Water Board in 2000 concluded in D-1641 that salinity management in the LSJR needed to improve and that the actions of the CVP are the principle cause of the salinity concentrations
exceeding the Vernalis water quality objective as they had 1) cut off high quality flows at Friant Dam, 2) had provided higher salinity water to the westside lands in lieu of the upstream higher quality flows and 3) had not provided drainage water management for the subsurface drainage flows from the CVP entering the LSJR. Exceedence of the Vernalis salinity objective results in impacts to Southern Delta agriculture. The State Water Board directed the Central Valley Regional Board to proceed with development of salinity water quality objectives in the LSJR and develop, if needed, a TMDL for meeting these objectives and the Vernalis salinity objective established as part of the State Water Board review of the Bay-Delta Water Quality Control Plan. In 2005, the Central Valley Board adopted a salt and boron TMDL for meeting the Vernalis objective. The control program under this TMDL is phased to allow for implementation actions to meet the Vernalis salinity objective as well as any future objectives on the LSJR.

Both the State and Regional Water Boards recognize that with the absence of a drain, increasing groundwater accretions along the river, and continued development in the basin, that the LSJR remains the only presently viable option for salt export from the basin. The basin plan policy allows this use provided that beneficial uses are protected both in the LSJR and downstream as higher salinity water has resulted in impacts to agriculture both in-basin and southern Delta downstream. Beneficial use protection must be the center piece of developing a salt management policy for the LSJR. To ensure all beneficial uses are defined and water quality objectives established to protect those uses, there needs to be a review of the Basin Plan and changes made, where needed. In addition, the Basin Plan review needs to consider ways to reduce or eliminate the intentional use of water to dilute salt as this water may be lost to other beneficial uses, ways to reduce salt imported into the basin and ways to export excess salt out of the basin while still protecting beneficial uses.

To conduct the review of beneficial uses and water quality objectives on the LSJR, CV-SALTS has established the Lower San Joaquin River Committee as a stakeholder effort to conduct this review and recommend changes to the Basin Plan, where needed, that will enable the Board to use its regulatory tools to maximize beneficial use protection and salt management in the basin.
The following changes are recommended for the Basin Description in the Introduction Chapter of the Basin Plan for the Sacramento River and San Joaquin River Basins. The basin description referred to here is contained on pages I-1.00 to I-4.00 in the 10 September 2004 version of the Basin Plan. The recommended changes are shown below and on the following pages in strikeouts and underlines that are highlighted in red:

INTRODUCTION

BASIN DESCRIPTION

This Basin Plan covers the entire area included in the Sacramento and San Joaquin River drainage basins. The basins are bound by the crests of the Sierra Nevada on the east and the Coast Range and Klamath Mountains on the west. They extend some 400 miles from the California - Oregon border southward to the headwaters of the San Joaquin River.

The Sacramento River and San Joaquin River Basins cover about one fourth of the total area of the State and over 30% of the State's irrigable land. The Sacramento and San Joaquin Rivers furnish roughly 51% of the State's water supply. Surface water from the two drainage basins meet and form the Delta, which ultimately drains to San Francisco Bay. Two major water projects, the Federal Central Valley Project and the State Water Project, deliver water from the Delta to Southern California, the San Joaquin Valley, Tulare Lake Basin, the San Francisco Bay area, as well as within the Delta boundaries.

The Delta is a maze of river channels and diked leveed islands covering roughly 1,150 square miles, including 78 square miles of water area. The legal boundary of the Delta is described in Section 12220 of the Water Code (also see Figure III-1 of this Basin Plan).

Ground water is defined as subsurface water that occurs beneath the ground surface in fully saturated zones within soils and other geologic formations. Where ground water occurs in a saturated geologic unit that contains sufficient permeability and thickness to yield significant quantities of water to wells or springs, it can be defined as an aquifer (USGS, Water Supply Paper 1988, 1972). A ground water basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers (Todd, Groundwater Hydrology, 1980).

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1 The planning boundary between the San Joaquin River Basin and the Tulare Lake Basin follows the southern watershed boundaries of the Little Panoche Creek, Moreno Gulch, and Capita Canyon to boundary of the Westlands Water District. From here, the boundary follows the northern edge of the Westlands Water District until its intersection with the Firebuagh Canal Company's Main Lift Canal. The basin boundary then follows the Main Lift Canal to the Mendota Pool and continues eastward along the channel of the San Joaquin River to Millerton Lake in the Sierra Nevada foothills, and then follows along the southern boundary of the San Joaquin River drainage.
Major ground water basins underlie both valley floors, and there are scattered smaller basins in the foothill areas and mountain valleys. In many parts of the Region, usable ground waters occur outside of these currently identified basins. There are water-bearing geologic units within ground water basins in the Region that do not meet the definition of an aquifer. Therefore, for basin planning and regulatory purposes, the term "ground water" includes all subsurface waters that occur in fully saturated zones and fractures within soils and other geologic formations, whether or not these waters meet the definition of an aquifer or occur within identified ground water basins.

**Sacramento River Basin**

The Sacramento River Basin covers 27,210 square miles and includes the entire area drained by the Sacramento River. For planning purposes, this includes all watersheds tributary to the Sacramento River that are north of the Cosumnes River watershed. It also includes the closed basin of Goose Lake and drainage sub-basins of Cache and Putah Creeks.

The principal streams are the Sacramento River and its larger tributaries: the Pit, Feather, Yuba, Bear, and American Rivers to the east; and Cottonwood, Stony, Cache, and Putah Creeks to the west. Major reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa.

DWR Bulletin 118-80 identifies 63 ground water basins in the Sacramento watershed area. The Sacramento Valley floor is divided into 2 ground water basins. Other basins are in the foothills or mountain valleys. There are areas other than those identified in the DWR Bulletin with ground waters that have beneficial uses.

**San Joaquin River Basin**

The San Joaquin River Basin covers 15,880 square miles and includes the entire area drained by the San Joaquin River. It includes all watersheds tributary to the San Joaquin River and the Delta south of the Sacramento River and south of the American River watershed. The southern planning boundary is described in the first paragraph of this page.

The principal streams in the basin are the San Joaquin River and its larger tributaries: the Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. Major reservoirs and lakes include Pardee, New Hogan, Millerton, McClure, Don Pedro, and New Melones.
DWR Bulletin 118-80 identifies 39 ground water basins in the San Joaquin watershed area. The San Joaquin Valley floor is divided into 15 separate ground water basins, largely based on political considerations. Other basins are in the foothills or mountain valleys. There are areas other than those identified in the DWR Bulletin with ground waters that have beneficial uses.

**Grassland Watershed**

The Grassland watershed is a valley floor sub-basin of the San Joaquin River Basin. The portion of the watershed for which agricultural subsurface drainage policies and regulations apply covers an area of approximately 370,000 acres and is bounded on the north by the alluvial fan of Orestimba Creek and by the Tulare Lake Basin to the south. The San Joaquin River forms the eastern boundary and Interstate Highway 5 forms the approximate western boundary. The San Joaquin River forms a wide flood plain in the region of the Grassland watershed.

The hydrology of the watershed has been irreversibly altered due to water projects and is presently governed by land uses. These uses are primarily, managed wetlands and agriculture. The wetlands form important waterfowl habitat for migratory waterfowl using the Pacific Flyway. The alluvial fans of the western and southern portions of the watershed contain salts and selenium which can be mobilized through irrigation practices and can impact beneficial uses of surface waters, and wetlands, and groundwater if not properly regulated.

**Lower San Joaquin River Watershed and Subareas**

Technical descriptions of the Lower San Joaquin River (LSJR) and its component subareas are contained in Appendix 41. General descriptions follow: The LSJR watershed encompasses approximately 4,580 square miles in Merced County and portions of Fresno, Madera, San Joaquin, and Stanislaus counties. For planning purposes, the LSJR watershed is defined as the area draining to the San Joaquin River downstream of the Mendota Dam and upstream of the Airport Way Bridge near Vernalis, excluding the areas upstream of dams on the major Eastside reservoirs: New Don Pedro, New Melones, Lake McClure, and similar Eastside reservoirs in the LSJR system. The LSJR watershed excludes all lands within Calaveras, Tuolumne, San Benito, and Mariposa Counties. The LSJR watershed has been subdivided into seven major sub areas. In some cases major subareas have been further subdivided into minor subareas to facilitate more effective and focused water quality planning (Table I-1).

**Table I-1 Lower San Joaquin River Subareas**

<table>
<thead>
<tr>
<th>Major Subareas</th>
<th>Minor Subareas</th>
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</thead>
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<tr>
<td>1 LSJR upstream of Salt Slough</td>
<td>1a Bear Creek</td>
</tr>
<tr>
<td></td>
<td>1b Fresno-Chowchilla</td>
</tr>
<tr>
<td>2 Grassland</td>
<td>-- --</td>
</tr>
</tbody>
</table>
1. **Lower San Joaquin River upstream of Salt Slough**

This subarea drains approximately 1,480 square miles on the east side of the LSJR upstream of the Salt Slough confluence. The subarea includes the portions of the Bear Creek, Chowchilla River and Fresno River watersheds that are contained within Merced and Madera Counties. The northern boundary of the subarea generally abuts the Merced River Watershed. The western and southern boundaries follow the San Joaquin River from the Lander Avenue Bridge to Friant, except for the lands within the Columbia Canal Company, which are excluded. Columbia Canal Company lands are included in the Grassland Subarea. This subarea is composed of the following drainage areas:

**1a. Bear Creek (effective drainage area)**

This minor subarea is a 620 square mile subset of lands within the LSJR upstream of Salt Slough Subarea. The Bear Creek Minor Subarea is predominantly comprised of the portion of the Bear Creek Watershed that is contained within Merced County.

**1b. Fresno-Chowchilla**

The Fresno-Chowchilla Minor Subarea is comprised of approximately 860 square miles of land within the southern portion of the LSJR upstream of Salt Slough Subarea. This minor subarea is located in southeastern Merced County and western Madera County and contains the land area that drains into the LSJR between Sack Dam and the Bear Creek confluence, including the drainages of the Fresno and Chowchilla Rivers.

2. **Grassland**

The Grassland Subarea drains approximately 1,370 square miles on the west side of the LSJR in portions of Merced, Stanislaus, and Fresno Counties. This subarea includes the Mud Slough, Salt Slough, and Los Banos Creek watersheds. The eastern boundary of this subarea is generally formed by the LSJR between the Merced River confluence and the Mendota Dam. The Grassland Subarea extends across the LSJR, into the east side of the San
Joaquin Valley, to include the lands within the Columbia Canal Company. The western boundary of the subarea generally follows the crest of the Coast Range with the exception of lands within San Benito County, which are excluded.

3. **East Valley Floor**

This subarea includes approximately 413 square miles of land on the east side of the LSJR that drains directly to the LSJR between the Airport Way Bridge near Vernalis and the Salt Slough confluence. The subarea is largely comprised of the land between the major east-side drainages of the Tuolumne, Stanislaus, and Merced Rivers. This subarea lies within central Stanislaus County and north-central Merced County. Numerous drainage canals, including the Harding Drain and natural drainages, drain this subarea. The subarea is comprised of the following minor subareas:

3a. **Northeast Bank**

This minor subarea of the East Valley Floor contains all of the land draining the east side of the San Joaquin River between the Maze Boulevard Bridge and the Crows Landing Road Bridge, except for the Tuolumne River subarea. The Northeast Bank covers approximately 123 square miles in central Stanislaus County.

3b. **North Stanislaus**

The North Stanislaus minor subarea is a subset of lands within the East Valley Floor Subarea. This minor subarea drains approximately 68 square miles of land between the Stanislaus and Tuolumne River watersheds that flows into the San Joaquin River between the Airport Way Bridge near Vernalis and the Maze Boulevard Bridge.

3c. **Stevinson**

This minor subarea of the East Valley Floor contains all of the land draining to the LSJR between the Merced River confluence and the Lander Avenue (Highway 165) Bridge. The Stevinson Minor Subarea occupies approximately 44 square miles in north-central Merced County.

3d. **Turlock Area**

This minor subarea of the East Valley Floor contains all of the land draining to the LSJR between the Crows Landing Road Bridge and the Merced River confluence. The Turlock Area Minor Subarea occupies approximately 178 square miles in south-central Stanislaus County and northern Merced County.
4. Northwest Side
This 574 square mile area generally includes the lands on the West side of the LSJR between the Airport Way Bridge near Vernalis and the Newman Waste way confluence. This subarea includes the entire drainage area of Orestimba, Del Puerto, and Hospital/Ingram Creeks. The subarea is primarily located in Western Stanislaus County except for a small area that extends into Merced County near the town of Newman and the Central California Irrigation District Main Canal.

4a. Greater Orestimba
The Greater Orestimba Minor Subarea is a 285 square mile subset of the Northwest Side Subarea located in southwest Stanislaus County and a small portion of western Merced County. It contains the entire Orestimba Creek watershed and the remaining area that drains into the LSJR from the west between the Crows Landing Road Bridge and the confluence of the Merced River, including Little Salad and Crow Creeks.

4b. Westside Creeks
This Minor Subarea is comprised of 277 square miles of the Northwest Side Subarea in western Stanislaus County. It consists of the areas that drain into the west side of the San Joaquin River between Maze Boulevard and Crows Landing Road, including the drainages of Del Puerto, Hospital, and Ingram Creeks.

4c. Vernalis North
The Vernalis North Minor Subarea is a 12 square mile subset of land within the most northern portion of the Northwest Side Subarea. It contains the land draining to the San Joaquin River from the west between the Maze Boulevard Bridge and the Airport Way Bridge near Vernalis.

5. Merced River
This 294 square mile subarea is comprised of the Merced River watershed downstream of the Merced-Mariposa county line and upstream of the River Road Bridge. The Merced River subarea includes a 13- square-mile “island” of land (located between the East Valley Floor and the Tuolumne River Subareas) that is hydrologically connected to the Merced River by the Highline Canal.

6. Tuolumne River
This 294 square mile subarea is comprised of the Tuolumne River watershed downstream of the Stanislaus-Tuolumne county line, including the drainage of Turlock Lake, and upstream of the Shiloh Road Bridge.

7. Stanislaus River
This 157 square mile subarea is comprised of the Stanislaus River watershed downstream of the Stanislaus-Calaveras county line and upstream of Caswell State Park.
EXISTING AND POTENTIAL BENEFICIAL USES IN REACH 83 OF THE SAN JOAQUIN RIVER (MECED RIVER INFLOW TO VERNALIS) - DRAFT

PRESENT BASIN PLAN DESIGNATIONS

The beneficial uses are defined in Chapter II of the Sacramento River and San Joaquin River Water Quality Control Plan (Basin Plan). Chapter II of the Basin Plan states that “Beneficial uses are critical to water quality management in California”. State law defines beneficial uses of California's waters that may be protected against quality degradation to include (and not be limited to) "...domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050(f)).” In addition, Porter Cologne Section 13241 requires that “past, present, and probable future beneficial uses of water” be considered in establishing water quality objectives. The basin Plan also emphasizes that “Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning.”

The Basin Plan describes several points that need to be considered in setting and protecting beneficial uses. These include:

1. “All water quality problems can be stated in terms of whether there is water of sufficient quantity or quality to protect or enhance beneficial uses.”

2. “Beneficial uses do not include all of the reasonable uses of water. For example, disposal of wastewaters is not included as a beneficial use. This is not to say that disposal of wastewaters is a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of other beneficial uses. Similarly, the use of water for the dilution of salts is not a beneficial use although it may, in some cases, be a reasonable and desirable use of water.” The finding and pronouncement that management of salt is an important consideration in the use of water is significant as it defines the policy of the Board to not exclude the management of salt within existing water supplies provided it is not done to the detriment of other beneficial uses.

3. “The protection and enhancement of beneficial uses require that certain quality and quantity objectives be met for surface and ground waters.”

4. “Fish, plants, and other wildlife, as well as humans, use water beneficially. Beneficial use designation (and water quality objectives, see Chapter III) must be reviewed at least once during each three-year period for the purpose of modification as appropriate (40 CFR 131.20).”

Chapter II of the Basin Plan defines 21 categories of uses that could be applied to surface water in the Central Valley, including the San Joaquin River. The 21 categories are described below in Table A along with a standard definition that has been used in statewide basin plan designations. Some of the 21 categories of use could be applied to
the Lower San Joaquin River but have not been designated in the Basin Plan. Also, designated uses in the Basin Plan may no longer exist or the potential exist for their use. A review needs to be conducted to determine whether any of the presently designated uses need to be changed or eliminated and whether new designations need to be applied. This section will review the past, present and future beneficial use designations. This is a required step prior to recommending appropriate salt and boron water quality objectives.

**BASIN PLAN DESIGNATIONS THAT APPLY TO SURFACE WATERS**

Existing and potential beneficial uses which currently apply to surface waters of the Sacramento River and San Joaquin River Basins are presented in Table II-1 of the Basin Plan. Although this is not part of the present study on beneficial use designations for the Lower San Joaquin River, the Basin Plan states that “The beneficial uses of any specifically identified water body generally apply to its tributary streams. In some cases a beneficial use may not be applicable to the entire body of water. In these cases the Regional Water Board's judgment will be applied. It should be noted that it is impractical to list every surface water body in the Region. For unidentified water bodies, the beneficial uses will be evaluated on a case-by-case basis.”

Surface water bodies within the Sacramento River and San Joaquin River Basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which was, by reference, made part of the Basin Plan. State Water Board Resolution No. 88-63 states that “All surface waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of surface waters where:

a. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by the Regional Board to supply a public water system; or

b. There is contamination, either by natural processes or by human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices; or

c. The water is in systems designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or

d. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or
e. *The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.*

Although exception (e) is directed at groundwater, the intent is that there needs to be a sustainable yield of the stream in order for the Regional Water Board to find that the stream is reasonably expected to supply a public water system. It is doubtful that an ephemeral stream would be capable of supplying a sustainable yield sufficient to supply a public water system thus not meeting this reasonable test criterion.

Under State Water Board Resolution No. 88-63, the Regional Water Board was also given the authority to amend use designations as it saw fit. The policy stated that “Any body of water which has a current specific designation previously assigned to it by a Regional Water Board in Water Quality Control Plans (Basin Plan) may retain that designation at the Regional Water Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Water Board, is presently or potentially suitable for MUN, the Regional Water Board shall include MUN in the beneficial use designation.” State Water Board Resolution No. 88-63 also states that “the Regional Water Boards shall also assure that the beneficial uses of municipal and domestic supply are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency.”

In order to comply with State Water Board Resolution No. 88-63 at the least cost, the Regional Water Board blanket designated MUN to all water bodies without any evaluation or assessment. Thus all the water bodies in the San Joaquin River Basin have an MUN designation regardless of whether it is feasible or reasonable. This blanket designation leaves the entire Region with an MUN designation in all water bodies in spite of the statement in the Basin Plan that states that “In making any exemptions to the beneficial use designation of MUN, the Regional Water Board will apply the exception listed in Resolution 99-63.”

Beneficial uses that are designated for the Lower San Joaquin River in Table II-1 of the Basin Plan are outlined in Table B of this report. Beneficial uses designated by the Regional Water Board in the Basin Plan for the Lower San Joaquin River from the Mendota Dam to Vernalis include a potential domestic supply (MUN) use; agriculture irrigation and stock watering (AGR); industrial process supply (PROC); contact (REC-1) and non-contact (REC-2) recreation; warm freshwater habitat (WARM); warm and cold-water species migration (MIGR); warm-water spawning (SPWN); and wildlife habitat (WILD). The potential for cold-water spawning upstream of the Merced River inflow (SPWN) is also designated.

This Basin Plan Amendment review is focused on only Reach 83 of the Lower San Joaquin River as described in the Basin Plan as the San Joaquin River from the Mouth of the Merced River to Vernalis. The remainder of this review of beneficial uses will concentrate on Reach 83.

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Review of Designated Beneficial Uses
For Reach 83 of the San Joaquin River

Page 3
APPROACH TO BENEFICIAL USE EVALUATION

When looking at salinity (EC) and boron (B) in the water supply, the evaluation of beneficial uses must look beyond just uses associated with salinity and boron and take a broader look at all beneficial uses in Reach 83 of the Lower San Joaquin River. The review should conclude with one of three options for conclusion. The options are to propose no changes to the existing beneficial use designations in Table II-1 of the Basin Plan, propose modifying existing beneficial use designations including proposing adoption of new beneficial use designations or definitions; or propose clarifying the level of beneficial use that is being achieved with the present designation.

When considering beneficial uses designations for surface waters, aquatic life uses are normally the most sensitive uses. However with salinity and boron, irrigation and municipal and domestic water supplies are often the most sensitive uses. Recent listings for Reach 83 of the San Joaquin River under Section 303(d) of the Clean Water Act for salinity and boron have been associated with the irrigation and municipal and domestic water supplies uses and not aquatic life uses.

Irrigation has normally been considered the most sensitive beneficial use for salt and boron in the Lower San Joaquin River. The establishment of water quality objectives for salinity at Vernalis for protection of Southern Delta agriculture is an example of this. As part of the process of establishing these objectives at Vernalis, the State Water Board directed the Regional Water Board to evaluate whether salinity objectives are needed upstream for protection of both in-basin uses and Southern Delta agriculture. In addition, water from the Reach 83 of the Lower San Joaquin River finds its way to the pumping facilities at the headwaters of the Delta Mendota Canal and the California Aqueduct. Water diverted by these pumping facilities is transported through the Delta Mendota Canal and the California Aqueduct for irrigation use elsewhere.

Under the Sources of Drinking Water Policy (State Water Board Resolution 88-63) described above, the Reach 83 of the Lower San Joaquin River continues to be designated for the potential beneficial use of municipal and domestic supply. As described above, In addition, water from the Reach 83 of the Lower San Joaquin River flows into the Sacramento – San Joaquin Delta which provides drinking water to over 22 million people in California (CalFed, 2005).

In this review, three options will be reviewed.

Option 1 - No Change - The no change option would reflect that the current designations are appropriate and protective of current or future uses of water in Reach 83 of the Lower San Joaquin River.

Option 2 - Modify Existing Uses: The original beneficial use designations shown in Table B of this review (Table II-1 of the Basin Plan) were defined in 1972 during the initial development of the Basin Plan. Little or no evaluation of changes in beneficial use along the Lower San Joaquin River has been conducted since that time. Newer uses may
be made of this river reach or older beneficial uses may have been suspended due changing economic and cultural practices in the river basin and downstream.

There may be the need to define new beneficial use designations to reflect the changing demographics and land use in the watersheds, including those downstream, which are dependent upon Reach 83 of the Lower San Joaquin River. Beneficial uses that are described in the Basin Plan definitions but are not presently designated may need to be included as well as consideration needs to be made for whether new or redefined definitions or descriptions of beneficial uses need to be made.

Option 3 – Clarify the Intensity of Present Use Designations: The original beneficial use designations shown in Table B of this review (Table II-1 of the Basin Plan) were defined in 1972 during the initial development of the Basin Plan. These designations were established based on the limited data available at that time and were considered adequate in light of the requirement in §303(c) of the Clean Water Act that the water quality standards in the Basin Plan (beneficial uses designations are part of the federal water quality standards) be reevaluated every 3 years (triennial review) and that the California Water Code §13240 required a periodic review of the basin plan, including the beneficial uses designations. Unfortunately little or no re-evaluation of changes to beneficial use designations along Reach 83 of the Lower San Joaquin River has been conducted since the original 1972 designations. This option requires a reassessment of the present beneficial use designations as to whether the intensity or level of beneficial use may have changed since 1972.

REVIEW OF PRESENTLY LISTED BENEFICIAL USES

The San Joaquin River on the valley floor as defined in Table II-1 in the Basin Plan includes four separate reaches extending from Friant Dam to Vernalis (see Table B). The Lower San Joaquin River as defined in the Basin Plan includes three of these four reaches and extends from the Mendota Dam to Vernalis. The project area for establishment of water quality objectives for salinity and boron includes only Reach 83 which is the most downstream reach from the Mouth of the Merced River inflow to below the Stanislaus River inflow (Vernalis). The review of beneficial uses conducted here will concentrate only on Reach 83 of the Lower San Joaquin River which is described in Table II-1 of the Basin Plan as the reach from the Mouth of the Merced River inflow to Vernalis (Airport Way Bridge).

Municipal and Domestic Supply (MUN): Municipal and domestic use is designated as a potential beneficial use for Reach 83 of the Lower San Joaquin River (Mouth of the Merced River inflow to Vernalis). The potential designation has been in existence since the original Basin Plan was adopted in 1975. Surveys of actual use were conducted in 1950, 1975 and again in 1985 and it showed that no such uses or diversions were being made of the River for either municipal or domestic use. The State Water Board in the report from the Technical Committee for WQ Order 85-1 did a complete review of beneficial use on the San Joaquin River from the Salt Slough inflow (upstream of the
Merced River Mouth) to Vernalis and noted that no municipal or domestic supply uses were being made nor did any appear to exist and that such a use was unlikely, therefore the Regional Water Board should consider removing this use designation from the Basin Plan. Due to financial constraints and the need to deal with the higher priority selenium issue, the change to the designation was never considered by the Regional Water Board.

In 1988, the State Water Board under Resolution 88-63 reconsidered the designation of MUN for all waters of the state. It was decided under Resolution 88-63 that all waters of the state should be designated as either existing or potential MUN beneficial use unless they met one of the exemption criteria. None of the exemption criteria apply to Reach 83 of the Lower San Joaquin River.

This review and supported by the previous State Water Board report from the Technical Committee for WQ Order 85-1 shows that it is unlikely that the MUN beneficial use would move from the present designation of “potential beneficial use” to an existing or probable use in the near future. The potential beneficial use has been listed for almost 40 years and no entity or plan has been developed or is in the works for a municipal or domestic use of Reach 83. The development of a municipal or domestic use would be unlikely under present conditions as this reach of the river is fully appropriated at the present time and it is unlikely that any new use would be permitted in the future without the transfer of water rights from another entity. A transfer of water rights is unlikely as many are pre-1914 rights that cannot be transferred. In addition there are no existing water right permits for municipal or domestic use and no pending or anticipated applications for such a use or transfer of water.

The Lower San Joaquin River from Friant Dam to Vernalis is highly regulated and Reach 83 from the Merced River inflow to Vernalis is made up primarily of operational releases for irrigation use and aquatic life protection. In addition, flow in this reach is made up of groundwater accretions from poor quality groundwater and agricultural return flows of varying quality. As a result, river flow and quality in Reach 83 from the Merced River inflow to Vernalis are highly variable thus has little or no potential as a municipal or domestic supply. There is the expectation of new or increased flow requirements in Reach 83 due to the State Water Board reevaluation of the flow requirements for protection of aquatic life and salmon migration into and through the Delta. This flow however is being designated for aquatic life protection and thus would not be available for diversion for other uses, including municipal and domestic supply.

There is also an expectation that increased flows will occur in Reach 83 as a result of the San Joaquin River Restoration Program which is a program to re-water the San Joaquin River from below Friant Dam to the Merced River inflow. These flows however would not be available for re-diversion for other uses as they are designated in the settlement agreement for aquatic life protection above the Merced River inflow and are available for re-diversion downstream of the Merced River inflow only for recapture of water for the federal Friant project. It is also unlikely that any of the water in Reach 83 of the Lower San Joaquin River, even if water rights were obtained, would be available for diversion for municipal or domestic uses as the California Department of Public Health’s Drinking
Water Division have stated in correspondence with the Regional Water Board and the Stanislaus County Health Department that they will not permit a municipal or domestic use of the Lower San Joaquin River in Reach 83 (Merced River inflow to Vernalis) under any conditions. This department regulates all municipal and domestic (public water systems) water supply systems. Stanislaus County encompasses almost 95% of the Lower San Joaquin River in Reach 83.

Although there is no existing public water supply system use of water in Reach 83 of the Lower San Joaquin River and none is anticipated in the foreseeable future, there will continue to be incidental use of the river water for drinking water purposes. Short term or incidental use by campers, fisherman and other river users as part of contact recreational activities can be expected to continue in spite of deliberate drinking of river water being discouraged by the county and State health officials.

This review shows that as seen in 1975 and again in 1985, there is little likelihood that municipal or domestic uses are present or likely to occur in the future as envisioned by State Water Board Resolution 88-63. It should be made clear to the users of the Basin Plan, that consistent with the State Water Board Resolution 88-63, Reach 83 of the San Joaquin River will remain with a designation of “potential” beneficial use but the only actual uses are likely to be the continued incidental uses that occur during recreational and short-term activities in and near the river. It is recommended that Table II-1 of the Basin Plan be modified to reflect the incidental use that occurs and is likely to continue to be the highest intensity of use in the foreseeable future.

**Agricultural Use (AGR):** Agricultural use both for irrigation and stock watering is designated in Table II-1 of the Basin Plan as an existing use in Reach 83 of the Lower San Joaquin River (Merced River inflow to Vernalis). A review of potential agricultural diversions and use was conducted along Reach 83 of the Lower San Joaquin River by the Regional Water Board (James et al., 1989). During this review a total of 46 points of diversion for irrigation were identified in Reach 83. Based on a review of water right applications, permits and statements, these diversion points are capable of irrigating slightly over 50,000 acres.

There are four major diverters in Reach 83 of the Lower San Joaquin River. The largest diversion for irrigation is the West Stanislaus Irrigation District which irrigates approximately 21,666 acres, followed by Patterson Irrigation District which irrigates approximately 13,555 acres, Twin Oaks Irrigation Company which irrigates approximately 6,380 acres and the El Solyo Water District which irrigates approximately 3,780 acres. These four diverters deliver water to over 90% of the land potentially irrigated from water diverted from Reach 83 of the Lower San Joaquin River. This level of use shows that the AGR beneficial use is a major use in Reach 83 of the Lower San Joaquin River and will continue to be in the foreseeable future.

The AGR beneficial uses continues to be the dominant use made of the river and therefore there is no recommendation for a change from the present “existing” beneficial use designation.
**Industrial Process Supply (PROC):** Industrial Process Supply (PROC) is designated as an existing (E) beneficial use of the San Joaquin River for the entire Lower San Joaquin River from Friant Dam to Vernalis, including Reach 83 from the Merced River inflow to Vernalis. Surveys of Reach 83 in 1950, 1975 and again in 1985 showed that no such uses or diversions were being made of the River for industrial process supply although none of these surveys confirmed whether incidental use is being made as part of the agricultural harvest and processing.

There were originally two tallow plants along the river but these went out of business prior to the development of the original Basin Plan in 1975. One of these former plants was upstream of Merced River inflow in the area previously dewatered during development of the Friant Dam under the Central Valley Project.

Even though the beneficial use has been listed as “existing” for almost 40 years, the sites of these former tallow plants have either been removed or are abandoned with no entity or plan in the works to restore these sites for such a use. In addition there are no known plans to develop new sites along the river and there are no water right permits or applications pending for industrial process supply use.

In addition, the San Joaquin River from the Merced River inflow to Vernalis is highly regulated and made up primarily of operational releases for irrigation use, groundwater accretions from poor quality groundwater and agricultural return flows of varying quality. The variability in flow and water quality makes Reach 83 highly variable thus not a potential constant industrial supply source. Although it is not recommended to remove the present “Existing” use designation, users of the Basin Plan should be made aware that the likelihood of a consistent use of river water for Industrial Process supply is unlikely and will remain, at best, an incidental use as part of the agricultural harvest and processing that is associated with diversions for other agricultural uses and not a direct diversion for PROC use.

**Industrial Service Supply (IND):** There are no known or planned industrial service supply uses foreseen for Reach 83 of the Lower San Joaquin River therefore none is recommended for designation as a beneficial use.

**Industrial Power Supply (POW):** There are no known or planned power uses foreseen for Reach 83 of the Lower San Joaquin River and unlikely that any will be developed in the foreseeable future due to the variable flow and quality, especially sediment quality. Therefore it is not recommended for inclusion as a “potential” or “existing” beneficial use.

**Water Contact (REC-1) and Non-Contact Recreation (REC-2):** Reach 83 of the San Joaquin River is a major recreational site for local uses, including both contact and non-contact-type uses. Contact uses of the river include recreational activities where body contact with water is likely. Major uses on Reach 83 include but are not limited to, swimming, wading, diving, boating, rafting, canoeing, and fishing. Each of these may
involve ingestion of water whether planned or un-planned. Because of the high temperatures in the summer time, Reach 83 of the San Joaquin River is a magnet-type recreational area because of the presence of the water and the large shady riparian growth along the river’s edge.

Reach 83 of the San Joaquin River also is a major area of indirect contact with the water, including many recreational activities that take place in and near the water where there is generally no body contact with water, nor any likelihood of ingestion of water. These include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities. These activities will continue due to presence of the San Joaquin River in an area of elevated temperatures.

Both REC-1 and REC-2 uses are present and will remain strong within Reach 83 the Lower San Joaquin River. Therefore there is no recommended change to the present “existing” beneficial use designation.

**Warm and Cold Freshwater Habitat (WARM and COLD):** Reach 83 of the San Joaquin River supports a warm water ecosystem. The quality of the water supply must support, preserve and enhance aquatic habitats, vegetation, fish, or wildlife, including invertebrates. Normally a WARM water habitat implies resident species and does not include the short-term migration of anadromous species. This is support by footnote (2) to Table II-1 of the Basin Plan. Numerous reports support the presence of resident warm water species, including those that are introduced species such as striped bass. Reach 83 of the San Joaquin River is presently designated as a WARM water habitat. This designation should not be changed.

The WARM characteristic of the Reach 83 of the San Joaquin River however does not support cold water ecosystems (COLD) as the substrate does not support optimum habitat and environment for egg development (pre-spawning), spawning, juvenile development and rearing and migration of smolts or young. Several of the tributaries to Reach 83 support COLD uses which are markedly different from those that support WARM-water species. At present Reach 83 is not designated as a COLD water habitat. It is recommended to continue to not list this reach as a COLD water habitat.

**Migration of Aquatic Organisms (MIGR):** In California, the migratory fish species are principally steelhead and rainbow trout (*Oncorhynchus mykiss gairdneri*), white sturgeon (*Acipenser transmontanus*), American Shad (*Alosa sapidissima*), and Chinook salmon. All of these species potentially could use Reach 83 of the San Joaquin River as the tributaries provide habitat for both cold and warm water anadromous species. It is recommended that both the cold and warm-water migration be maintained for Reach 83 of the San Joaquin River.

Another species known to migrate to spawning sites is Striped Bass (*Morone saxatilis*). Striped bass however generally reside in estuaries and in sea water during a portion of their adult phase and migrate in the spring to large rivers to spawn. Striped bass have
been identified in the San Joaquin River, including in Reach 83, however, it is unlikely that their presence was due to migration for spawning purposes. More likely they were attracted for feeding purposes on other species.

Successful spawning of striped bass is dependent on the interaction of three factors: temperature, flow and salinity. Striped bass generally prefer to spawn in large rivers that have optimum spawning flows. Sufficient flow is required to maintain eggs and larvae suspended but not too high that eggs are washed into quiet waters. It is also possible that the higher salinity levels in Reach 83 of the San Joaquin River could impede striped bass spawning but additional research would be needed to confirm this. Because of the narrow tolerance of striped bass to these three factors, there are only two principal spawning areas and these are in the Delta. They are the Sacramento River from Isleton to Butte City and the San Joaquin River and its sloughs from Venice Island to Antioch (Moyle, 1976).

Modifying flows or lowering salinity levels to enhance striped bass spawning would need further study beyond the scope of this project and would likely meet with strong resistance. Striped bass are a non-native predator that impacts salmon and other California native anadromous fish. The National Marine Fisheries Service of the National Oceanographic and Atmospheric Administration (NOAA) has recently asked the California Department of Fish and Game to begin a program of limiting the impact of this predator on native anadromous fish and this includes suppression in Reach 83 of the San Joaquin River. Therefore the Water Quality Control Plan should not be singling this species out as an indicator of whether MIGR-WARM and SPWN-WARM protection are needed and should follow the lead of the NOAA and focus on native species over introduced species.

Warm Water Migration (MIGR-WARM) designation in Table II-1 of the Basin Plan has a footnote (3) attached to it. The footnote reads: (3) Striped bass, sturgeon and shad. It should be considered to remove striped bass from this footnote as they are now noted as a non-native predator on other native California anadromous fish.

Cold Water Migration (MIGR-COLD) designation in Table II-1 of the Basin Plan has a footnote (4) attached to it. The footnote reads: (4) Salmon and steelhead. This footnote does apply to Reach 83 (Merced River Inflow to Vernalis) and reflects current information that shows both steelhead and salmon use Reach 83 of the Lower San Joaquin River on their migration routes to the tributaries of the Lower San Joaquin River.

The footnote however may not be correct for those reaches upstream of the Merced River inflow. Table II-1 of the Basin Plan shows the three reaches of the San Joaquin River upstream of the Merced River confluence (Friant Dam to Mendota Pool, Mendota Dam to Sack Dam and Sack Dam to Mouth of Merced River) as critical habitat for steelhead and this is inconsistent with finding of the National Marine Fisheries Service of the National Oceanographic and Atmospheric Administration (NOAA, 2005). NOAA has concluded that the upstream boundary for critical habitat in the SJR is the Merced River confluence.
Showing steelhead in footnote (4) of Table II-1 of the Basin Plan may assert that CV steelhead are present and that habitat in the San Joaquin River from Friant Dam to Merced River confluence is critical habitat. This is incorrect. With respect to Critical Habitat, there is no critical habitat designated in counties south of Merced County (Federal Register / Vol. 70, No. 170 / Friday, September 2, 2005 / Rules and Regulations, page 52513, Response to Comment 87).


Although not part of the present project, the Regional Board may want to consider modifying this footnote to more correctly describe the habitat findings of NOAA that steelhead are only found in the San Joaquin River from the Mouth of the Merced River to Vernalis and that salmon applies for all of the reaches of the San Joaquin River from Friant Dam to Vernalis.

**Warm-Water Spawning, Reproduction and/or Early Development (SPWN-WARM):** Reach 83 of the Lower San Joaquin River is an environment favorable to spawning of a variety of warm-water species. Warm water habitat, suitable water temperatures and substrate makes this reach of the river generally suitable for spawning of many warm-water species that are present in the river reach. Therefore warm water SPWN beneficial use is an existing use and the designation in Table II-1 in the Basin Plan should not be modified.

Warm-Water Spawning (SPWN-WARM) designation in Table II-1 of the Basin Plan has a footnote attached to it. The footnote reads: *(3) Striped bass, sturgeon and shad.* Consideration should be given to remove striped bass from this footnote.

Striped bass generally reside in estuaries and in sea water during a portion of their adult phase and migrate in the spring to large rivers to spawn. Striped bass have been identified in the San Joaquin River, including in Reach 83, however, it is unlikely that their presence was due to migration for spawning purposes and more likely they were attracted for feeding purposes on other species.

Successful spawning of striped bass is dependent on the interaction of three factors: temperature, flow and salinity. Striped bass generally prefer to spawn in large rivers that have optimum spawning flows. Sufficient flow is required to maintain eggs and larvae suspended but not too high that eggs are washed into quiet waters. Because of the narrow tolerance of striped bass to these three factors, there are only two principal spawning areas and these are in the Delta. These are the Sacramento River from Isleton to Butte City and the San Joaquin River and its sloughs from Venice Island to Antioch (Moyle, 1976).

In addition, striped bass are a non-native predator that impacts salmon and other anadromous fish. The National Marine Fisheries Service of NOAA has recently asked
the Department of Fish and Game to begin a program of limiting the impact of this predator on native anadromous fish and therefore the Water Quality Control Plan should not be singling this species out as an indicator of where SPWN-WARM protection needed.

Cold-Water Spawning, Reproduction and/or Early Development (SPWN-COLD): Cold-water spawning is not presently designated as a beneficial use for Reach 83 of the Lower San Joaquin River in Table II-1 in the Basin Plan. This is the result of the river being on the Valley floor and lacking substrate and conditions, including water temperatures, which would be suitable for cold-water spawning. It is also unlikely that these conditions would change in the foreseeable future as climate change models presently show that the San Joaquin River and the San Joaquin River Basin will be considerably warmer in the future. No change to the present non-designation is recommended.

Wildlife Habitat (WILD): The large variation in river flow in the Lower San Joaquin River has resulted in a large river flood plain that is constricted between flood control levees. This area however has become a magnet for wildlife as the river has a continuous flow during most years. The riparian corridor has become fairly mature in vegetation and provides considerable habitat for terrestrial, avian and other terrestrial organisms, including invertebrates. The changes in flow regime being considered by the State Water Board will continue to enhance and support this riparian corridor.

WILD is presently a designated beneficial use for Reach 83 of the Lower San Joaquin River in Table II-1 in the Basin Plan. This use is not expected to change in the foreseeable future and it is not recommended to modify or change this beneficial use designation.

An increasing wildlife use of Reach 83 of the Lower San Joaquin River will be future development of the San Joaquin River National Wildlife Refuge on what was the Faith Ranch. The U.S. Fish and Wildlife Service purchased a conservation easement on most of the Faith Ranch in 1997. At that time the Faith Ranch was owned by Robert Gallo. The place of use designation for the RJ Gallo statement of water use (S014002) now shows that part of the San Joaquin River National Wildlife Refuge is included in the place of use.

Because of the expanding use of water on the San Joaquin River National Wildlife Refuge and the need to protect critical riparian habitat, it is recommended that a new beneficial use of BIOL be designated for Reach 83 of the Lower San Joaquin River in Table II-1 in the Basin Plan. The present beneficial use definition for Preservation of Biological Habitats of Special Significance (BIOL) serves and describes the uses that need to be protected. The present definition of “Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection” serves this need.
Commercial and Sport Fishing (COMM): The definition in the Basin Plan for this beneficial use is “Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes”. Sport and recreational fishing is widespread along Reach 83 of the Lower San Joaquin River. This use has been present for several decades and as urbanization of the areas to the east and west of the river continue, this use can be expected to increase as well. The quality of this use may vary or be limited by flow variations, including low flow conditions but it will not preclude the attainment of this use. Based on this observation, the sport and recreational beneficial (COMM) use should be added to Table II-1 in the Basin Plan as an existing use for Reach 83 of the San Joaquin River.

Navigation (NAV): The present definition in the basin plan for the NAV beneficial use states that it is intended for “Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels”. Due to the nature of the San Joaquin River, including depth, changes in flow and shifting bottom material, the use of the river in Reach 83 for any type of shipping, travel or transportation will be severely limited. The continued use of the river for recreational boating, including fishing will continue but will always be limited in size and depth of draw of the water craft used. These latter types of use are covered under the REC-1 and REC-2 beneficial use designations in Table II-1 of the Basin Plan. It is unlikely that larger commercial or transportation-type vessels will be utilizing Reach 83 of the Lower San Joaquin River in the foreseeable future. The NAV beneficial use is not presently designated in Table II-1 of the Basin Plan and it is not recommended to modify the present non-listing.

RECOMMENDATIONS

Beneficial Use Designations Recommended to be Changed in Table II-1 of the Basin Plan For Reach 83 of the San Joaquin River

The recommended changes to Reach 83 of the San Joaquin River (Merced River inflow to Vernalis) in Table II-1 of the Sacramento River and San Joaquin River Water Quality Control Plan (Basin Plan) are shown in yellow highlights in Table C in this report. The following is a summary discussion of those recommended changes

Change in Footnote (3) to Table II-1

Designation Needing a Change: Warm Water Migration (MIGR-WARM) and Warm Water Spawning (SPWN-WARM) have a footnote (3) attached to each. The footnote reads: (3) Striped bass, sturgeon and shad. It is recommended that we remove Striped bass from this footnote.
Reason for the Recommendation: Striped bass are a non-native predator that impact salmon and other native anadromous fish. The National Marine Fisheries Service of NOAA has recently asked the Department of Fish and Game to begin a program of limiting the impact of this predator on native anadromous fish in the Southern Delta and Lower San Joaquin River. Therefore the Water Quality Control Plan should not be singling this species out as an indicator of MIGR-WARM and SPWN-WARM protection needed.

Add Footnote (11) to Table II-1

Designation Needing a Change: The potential designation for Municipal and Domestic Supply needs to be clarified that any use in the foreseeable future will only be incidental use associated with recreational activities by fisherman, campers and other day-use activities.

Reason for the Recommendation: To date no such uses or diversions were being made of the River for either municipal or domestic use. The development of a municipal or domestic use would be unlikely under present or future conditions as this reach of the river is fully appropriated at the present time and it is unlikely that any new use would be permitted in the future without the transfer of water rights from another entity. A transfer of water rights is unlikely as many are pre-1914 rights that cannot be transferred. In addition there are no existing water right permits for municipal or domestic use and no pending or anticipated applications for such a use or transfer of water.

Even if water rights were obtained and it is unlikely that they would be available for diversion for municipal or domestic uses as the California Department of Public Health’s Drinking Water Division have stated in correspondence with the Regional Water Board and the Stanislaus County Health Department that they will not permit a municipal or domestic use of the Lower San Joaquin River in Reach 83 (Merced River inflow to Vernalis) under any conditions. This department regulates all municipal and domestic (public water systems) water supply systems.

Although there is no existing public water supply system use of water in Reach 83 of the Lower San Joaquin River and none is anticipated in the foreseeable future, there will continue to be incidental use of the river water for drinking water purposes. Short term or incidental use by campers, fisherman and other river users as part of contact recreational activities can be expected to continue in spite of deliberate drinking of river water being discouraged by the county and State health officials.
Add Footnote (12) to Table II-1 and Change the Existing Designation to an Existing but Limited Beneficial Use Designation

**Designation Needing a Change:** The existing designation for Industrial Process Supply needs to be clarified that there is likely to be “Limited” use in the foreseeable future will only be incidental use associated with field agricultural harvesting and processing operations associated with diversions for other agricultural activities.

**Reason for the Recommendation:** To date no uses or diversions were being made of the River for Industrial Process Supply. Even though the beneficial use has been listed as “existing” for almost 40 years, there are not existing sites and no entity or plan in the works to restore the former sites for such a use. In addition there are no known plans to develop new sites along the river and there are no water right permits or applications pending for industrial process supply use.

In addition, the San Joaquin River from the Merced River inflow to Vernalis is highly regulated and made up primarily of operational releases for irrigation use, groundwater accretions from poor quality groundwater and agricultural return flows of varying quality. The variability in flow and water quality makes Reach 83 a poor source for industrial process supply. Although it is not recommended to remove the present “Existing” use designation, users of the Basin Plan should be made aware that the likelihood of a consistent use of river water for Industrial Process supply is unlikely and will remain, at best, an incidental use as part of the agricultural field harvest and equipment washing operations that are likely associated with diversions for other agricultural uses and not a direct diversion for PROC use.

Add a Beneficial Use for Sport Fishing (COMM) to Table II-1

**Designation Needing a Change:** Based on this observation that sport fishing is widespread along the San Joaquin River and will expand in the future, the sport and recreational beneficial (COMM) use should be added to Table II-1 in the Basin Plan as an existing use for Reach 83 of the San Joaquin River.

**Reason for the Recommendation:** Sport and recreational fishing is widespread along Reach 83 of the Lower San Joaquin River. This use has been present for several decades and as urbanization of the areas to the east and west of the river continue, this use can be expected to increase as well. The quality of this use may vary or be limited by flow variations, including low flow conditions but it will not preclude the attainment of this use.
Add a Beneficial Use for Wildlife Refuges (BIOL) to Table II-1

**Designation Needing a Change:** Because of the expanding use of water on the San Joaquin River National Wildlife Refuge and the need to protect critical riparian habitat, it is recommended that a new beneficial use of BIOL be designated for Reach 83 of the Lower San Joaquin River in Table II-1 in the Basin Plan. The present beneficial use definition for **Preservation of Biological Habitats of Special Significance (BIOL)** serves and describes the uses that need to be protected. The present definition of “*Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection*” serves this need.

**Reason for the Recommendation:** An increasing wildlife use of Reach 83 of the Lower San Joaquin River will be future development of the San Joaquin River National Wildlife Refuge on what was the Faith Ranch. The U.S. Fish and Wildlife Service purchased a conservation easement on most of the Faith Ranch in 1997. At that time the Faith Ranch was owned by Robert Gallo. The place of use designation for the RJ Gallo statement of water use (S014002) now shows that part of the San Joaquin River National Wildlife Refuge is included in the place of use.
TABLE A. BENEFICIAL USE DEFINITIONS DESCRIBED IN THE BASIN PLAN
(The beneficial uses, and abbreviations, listed below are standard basin plan designations.)

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

Industrial Process Supply (PRO) - Uses of water for industrial activities that depend primarily on water quality.

Ground Water Recharge (GWR) - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH) - Uses of water for natural or artificial maintenance of surface water quantity or quality.

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Commercial and Sport Fishing (COMM) - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA) - Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Estuarine Habitat (EST) - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats of Special Significance (BIOL) - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Rare, Threatened, or Endangered Species (RARE) - Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

Migration of Aquatic Organisms (MIGR) – Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL) - Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.
### TABLE II-1
SAN JOAQUIN RIVER BENEFICIAL USES DESIGNATED IN THE BASIN PLAN

<table>
<thead>
<tr>
<th>REACH NUMBER</th>
<th>HYDRO UNIT NUMBER</th>
<th>AGR</th>
<th>PROC</th>
<th>IND</th>
<th>POW</th>
<th>REC-1</th>
<th>REC-2</th>
<th>WARM</th>
<th>COLD</th>
<th>MIGR</th>
<th>SPWN</th>
<th>WILD</th>
<th>NAV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friant Dam to Mendota Pool</td>
<td>545</td>
<td>E</td>
<td>E</td>
<td>E</td>
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<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
</tr>
<tr>
<td>Mendota Dam to Sack Dam</td>
<td>545.1</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
</tr>
<tr>
<td>Sack Dam to Mouth of Merced River</td>
<td>535.7</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
</tr>
<tr>
<td>Mouth of Merced River to Vernalis</td>
<td>539/541</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
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<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
</tbody>
</table>

(1) Shown for streams and rivers only with the implication that certain flows are required for this beneficial use.

(2) Resident, does not include anadromous. Any segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives.

(3) Striped bass, sturgeon, and shad.

(4) Salmon and steelhead.

NOTE: Surface water with the beneficial uses of Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), and Preservation of Rare and Endangered Species (RARE) have not been identified in this plan. Surface waters of the Sacramento and San Joaquin River Basins falling within these beneficial use categories will be identified in the future as part of the continuous planning process to be conducted by the State Water Resources Control Board.
### TABLE C

#### TABLE II-1 SAN JOAQUIN RIVER BENEFICIAL USES DESIGNATED IN THE BASIN PLAN

<table>
<thead>
<tr>
<th>REACH NUMBER</th>
<th>SAN JOAQUIN RIVER REACH</th>
<th>MUN</th>
<th>AGR</th>
<th>PROC</th>
<th>IND</th>
<th>POW</th>
<th>REC-1</th>
<th>REC-2</th>
<th>COMM</th>
<th>WARM</th>
<th>COLD</th>
<th>MIGR</th>
<th>SPWN</th>
<th>WILD</th>
<th>BIOC</th>
<th>NAV</th>
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<td>69</td>
<td>Friant Dam to Mendota Pool</td>
<td>545</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
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<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Mendota Dam to Sack Dam</td>
<td>545.1</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Sack Dam to Mouth of Merced River</td>
<td>535.7</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>P</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Mouth of Merced River to Vernalis</td>
<td>535.841</td>
<td>P</td>
<td>E</td>
<td>E</td>
<td>L</td>
<td>E</td>
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</tbody>
</table>

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**Data in this Table is taken from Table II-1 in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin.**

**NOTE:**

Surface water with the beneficial uses of Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), and Preservation of Rare and Endangered Species (RARE) have not been identified in this plan. Surface waters of the Sacramento and San Joaquin River Basins falling within these beneficial use categories will be identified in the future as part of the continuous planning process to be conducted by the State Water Resources Control Board.

**LEGEND:**

- E = EXISTING BENEFICIAL USE
- P = POTENTIAL BENEFICIAL USE
- L = EXISTING LIMITED BENEFICIAL USE

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(1) Shown for streams and rivers only, with the implication that certain flows are required for this beneficial use.

(2) Resident, does not include anadromous. Any segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives.

(3) Striped bass, sturgeon, and shad.

(4) Salmon and steelhead.

(11) Municipal and Domestic Supply is limited to incidental use during recreational activities by fishermen, campers and other day-use activities.

(12) Not likely to be a use in the future other than incidental use during agricultural field research associated with research for other agricultural uses.

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Review of Designated Beneficial Uses

For Reach 83 of the San Joaquin River

Page 20