

CV-SALTS Executive Committee Meeting

November 18, 2010 9:00 AM to 3:00 PM

Sacramento Regional Sanitation District Offices
10060 Goethe Rd, Sacramento 95827

Teleconference (218) 339-4600 Code: 927571#

REVISED 11-12-10

Meeting Objectives:

1. Develop the common understanding and expectations of the CV-SALTS program moving forward.
2. Develop a structural and procedural framework that is sustainable and viable over the long term.

AGENDA

Welcome and Introductions Chair

- a) Review/Approve [September 16, 2010 meeting actions](#) – 2 min
- b) Circulate the Committee [Membership Roster](#) sign-in sheet
- c) Approve Tribal Letter ([draft letter](#)) - 3 min
- d) California Water Plan Advisory Committee Appointment - 5 min
- e) Approve BUOS Phase 1 Completion and GIS data availability – Drainage Authority - 5 min

CV-SALTS Program Review and Planning

- 2) Proposed governance, voting and quorum requirements - [Updated Standing Rules](#) - 15 min
- 3) Basin Plan Identified Issues
 - a) Introduction from participants on their issues with salt and stake in CV-SALTS -10 min
 - b) Review [Basin Plan identified issues](#) from members and language references - 3 hours
Members and groups to identify what are the deficiencies and additions to be addressed
- Lunch on your own**
- 4) Discuss contracted support Scope of Work for the CV-SALTS program meeting facilitation, policy development and technical project management – 20 min
- 5) [Technical Objective Recommendations](#) and [Questions](#) from the Knowledge Gained Committee - 20 min
- 6) 3a/3b Task Force Status Report provide direction on needs and schedule – 10 min
 - i) [Policy Framework Document](#) (updated) and overall structure and actions
- 7) Future Items for Discussion
 - a) Discuss Management Practice Subcommittee reactivation request from Regional Board
 - b) Develop the contents of the CV Salinity and Nitrate Plan
 - c) Expected Future Roles of the State and Regional Boards, stakeholders, CVSC
 - d) Review [BPA outline](#) for discussion
 - e) Discuss meeting Logistics, Notes and Agenda's
- 8) Next Steps
- 9) Next meetings dates, objectives and agendas

CV-SALTS Executive Committee Meeting Actions

September 16, 2010 Meeting

Attendance roster is posted at the CV-SALTS website.

1. a) Notes approved upon motion by Tim Johnson and Second by Nigel Quinn Approved by Acclamation
2. Review of original vision, purpose and mission were presented
3. a) Review - Members and participants reviewed the vision and mission of CV-SALTS and the objective and organization. Discussion resulted in the development of a revised Vision and Components of a Central Valley Salinity and Nitrate Plan. See below. The proposed document was discussed, revised and approved by acclamation upon motion by Member David Cory and Second by Member Jeff Willet.
b) All Members were directed to take several actions related to the review of the existing basin plans. See below.
4. Review of Structure - Members discussed the structure of the Executive Committee and determined that additional definition was needed related to constituted quorum, membership list, voting requirements and documentation of governance. Preliminary language will be provided for review.
5. Review of CV-SALTS Program – Members discussed the program and indicated the basic structure was appropriate but committees and subcommittees as well as regional committees should be evaluated and changes proposed if needed at the next meeting.
6. No actions were taken on item 6
7. The next meeting will be October 28, 2010 at the Regional Board Offices

Document developed in the meeting on Common Vision and Next Steps follows on Page 2

CV-SALTS Common Vision

Collaboratively develop an achievable Central Valley Salinity and Nitrate Plan to be used to amend Central Valley Basin Plans and to:

- sustain the Valley's lifestyle,
- support regional economic growth,
- retain a world-class agricultural economy,
- maintain a reliable, high-quality urban water supply; and
- protect and enhance our local environment.

CV Salinity and Nitrate Plan Components

- Evaluate existing and develop new data to provide scientifically sound basis for a basin plan amendment including assessing:
 - Beneficial Uses
 - Water Quality Objectives
 - Implementation Plan and its economic impacts
- Develop achievable objectives based on the best available data and science that protect beneficial uses
- Develop basin plan amendment language
- Evaluate existing water management options and policies to inform future statewide water policy decisions
- Develop salinity management actions both interim and long-term
- Create an adaptable plan for inclusion of new information and science

Next Steps and October Meeting Agenda

- Executive Committee to members to review existing basin plans
- Gather identified issues from members and language references
- Executive Committee members and groups to identify what are the deficiencies and additions (areas to pay attention to) in the basin plan or how it is implemented by the RWQCB
- Review BPA outline for discussion
- Propose governance, membership, voting and quorum requirements
- Discuss and adjust overall structure and Standing, Regional and Subcommittees actions
- Future
 - Develop the Contents of the CV Salinity and Nitrate Plan
 - Scope efforts to be done by consultant team for CVSNP and review of the existing basin plan

CV-SALTS Committee Rosters

Executive Committee Membership		Aug.	Sept
Nomination Category	Name and Organization		
Salinity Leadership	1 Pamela Creedon/Jeanne Chilcott Regional WQCB		✓
	2 Darrin Polhemus, State Water Resources Control Board	✓	✓
	3 Jose Faria/Ernie Taylor Department of Water Resources	✓	✓
	4 Lee Mao/Lisa Holm, US Bureau of Reclamation		✓
	5 TBD - Environmental Justice	✓	
	6 TBD - Environmental, Water Quality		
Comm. Co-chairs	1 Mona Shulman, Chair Executive Committee	✓	✓
	2 Linda Dorn, Vice Chair Executive Committee	✓	✓
	3 Dave Melilli, Public Education & Outreach Comm.		✓
	4 Joe DiGiorgio, Public Education & Outreach Comm.	✓	✓
	5 Nigel Quinn, Technical Advisory Committee	✓	✓
	6 David Cory, Economic and Social Cost Committee	✓	✓
CV Salinity Coalition	1 Bobbi Larson, CASA	✓	✓
	2 Debbie Webster, CVCWA	✓	✓
	3 Dave Cory, San Joaquin River Drainage Authority	✓	✓
	4 Steve Hogg, City of Fresno		
	5 Trudi Hughes, California League of Food Processors	✓	✓
	6 Tim Schmelzer/Chris Savage, Wine Institute	✓	✓
	7 Steve Bailey, City of Tracy		
	8 Jeff Willett, City of Stockton		✓
	9 Linda Dorn, Sacramento Regional CSD	✓	✓
	10 Dennis Westcot, San Joaquin River Group		✓
	11 Nick Pinhey, City of Modesto		
	12 Tim Johnson, California Rice Commission		✓
	13 Phil Govea, City of Manteca		
	14 Parry Klassen, East San Joaquin Water Quality Coalition	✓	✓
	15 Mike Nordstrom/Doug Davis Tulare Lake Drainage/Storage	✓	✓
	16 Karna Harrigfeld, Stockton East Water District	✓	✓
	17 Renee Pinel, Western Plant Health Association	✓	✓
	18 Travis Peterson, City of Vacaville		✓

Participants Identified:

Geoff Anderson, DWR
 Bruce Houdesheldt, NCWA/Sac Valley WQC
 Dan Odenweller, RWQCB
 Danny Merkely, California Farm Bureau
 Emily Alejandrino/Jim Martin, CVRWQCB
 Emily Robidart Rooney, Ag Council
 Gail Cismowski, CVRWQCB
 Jenny Crouse, Ironhouse Sanitary District
 Erick Althorp SSJWQC
 Mark Dorman, Rainsoft Water PWQA
 Mark Felton, Culligan Water and PWQA
 Mark Gowdy, SWRCB, Water Rights
 Rick Staggs, City of Fresno
 Robert Chrobak and Stuart Childs Kennedy/Jenks
 Travis Peterson, CVCWA
 Stan Dean, SRCD

Jeanne Chilcott, CVRWQCB
 Andy Malone, Wildermuth Env.
 Chad Dibble, CDFG
 David Miller, GEI Consultants
 Gary Carlton, Kennedy Jenks
 Jamil Ibrahim, MWH Global
 Jay Simi, CVRWQCB
 Jodi Pontureri, SWRCB
 Joe LeClaire, Wildermuth Env.
 Ken Landau, RWQCB
 Larry Rodriguez, Kern County WA
 Mark Larsen, Kaweah Delta WCD
 Rita Schmitt-Sudman, WEF
 Rob Beggs, Brown and Caldwell
 Roberta Firoved
 Ron Crites, Brown and Caldwell
 Rudy Schnagl, CVRWQCB



(INSERT DATE & ADDRESS)

Esteemed Tribal Chair,

**INVITATION TO PARTICIPATE IN THE DEVELOPMENT OF A
COMPREHENSIVE SALINITY AND NITRATE MANAGEMENT PLAN FOR THE
CENTRAL VALLEY OF CALIFORNIA**

In 2006, the Central Valley Regional Water Quality Control Board and the State Water Resources Control Board launched a task force to investigate salinity management alternatives that would address the Central Valley region's growing salinity problems, including those associated with nitrate impacts on drinking water supplies. The task force established several topical committees and an Executive Committee to direct the investigations. The project is anticipated to benefit all users of Central Valley water in the state, and the Executive Committee invites your tribe to participate in this collaborative effort.

The counties that will be addressed directly in this effort are those that fall entirely or at least partially within the Central Valley of California: Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Joaquin, San Luis Obispo, Shasta, Sierra, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Ventura, Yolo and Yuba. Counties outside the region that utilize water originating in the Central Valley or Delta will also benefit from improved salinity management in the Central Valley region.

The Executive Committee is currently re-evaluating its overall strategy and workplan to complete this comprehensive effort, with a public update scheduled in February 2011. As such, this is an opportune time to join the effort and insure that the concerns of your tribe are included in the process.

If you would like to receive an agenda for the annual meeting when the information becomes available; or if you would like to participate in the development of the workplan and/or future aspects of the comprehensive salt management plan, please contact the Central Valley Salinity Coalition (CVSC) at Info@cvsalinity.org. The CVSC is a non-profit stakeholder-run organization set up to fund and manage communications for the CV-SALTS Initiative. More

information on the CVSC and the CV-SALTS Initiative is on-line at www.cvsalinity.org .

We would like to thank you in advance for your interest in CV-SALTS and in maintaining water quality within the Central Valley region.

Mona Shulman
Executive Committee Chair

David Cory
CVSC President

CV SALTS - Standing Rules for Committees and CV Salinity Coalition

Approved 2-18-09

draft changes proposed by 11/1/10

CV-SALTS Salinity Leadership Group (formerly Salinity Policy Group)

Purpose

The Salinity Leadership group, was created to provide a high level of leadership to set the overarching vision for the broad multiyear effort to accomplish salinity and nutrient management in the Central Valley. The group brings broad and diverse representation to oversight of the efforts.

This group will meet approximately once per year to provide broad direction and support for the overall mission. The mission of the Central Valley Salinity Leadership Group is to work closely, in a collaborative manner to create a comprehensive Central Valley Salinity Management Plan.

Membership

The Salinity Leadership Group shall be made up of one principal member from each organization that is significantly concerned with water supply and quality in the Central Valley. Member representation is solicited from the following categories:

- State Agencies
- Federal Agencies
- Local Government
- Water and Irrigation Districts
- Industry
- Public Interest and Academic
- Out of Region Groups
- Associations

Non-voting alternates may be included to ensure participation provided that only one representative votes on any issue. Members may be added by the Executive Committee as they are identified and ratified by the Group at its next meeting. Attachment A shows the current membership of the Salinity Leadership. Membership is expected to change from meeting to meeting due to changes in organization leaders and other circumstances. The Leadership Group may appoint up to 6 members of the Executive Committee. Leadership Group Co-Chairs are appointed one from the State Water Resources Control Board and one from the Regional Water Quality Control Board. The Terms of office for the Co-chairs and appointed Executive Committee members shall be two (2) years. Successors may serve the remaining portion of a term and be eligible for appointment to another term.

Executive Committee

Purpose

The Salinity Leadership Group established an Executive Committee that shall oversee the activities of

the other committees in coordination with the Central Valley Salinity Coalition to achieve the mission of the group. This committee is the primary governance committee for the CV-SALTS initiative and functions in close coordination with the Central Valley Salinity Coalition.

Membership The Executive Committee shall be composed of the following:

- One Co-chair of the Salinity Leadership Group
- Six appointees of the Salinity Leadership Group who shall represent the following:
 - The State Water Resources Control Board
 - The Central Valley Regional Water Quality Control Board
 - The Department of Water Resources (or another State agency)
 - The Bureau of Reclamation (or other federal agency)
 - A representative from the environmental community, with a focus on environmental justice or aquatic ecosystems
 - A member representing environmental water quality or public policy groups.
- The Co-chairs of all Standing Committees, up to a total of 6 members.
- Board Members of the Central Valley Salinity Coalition, up to a total of 18.

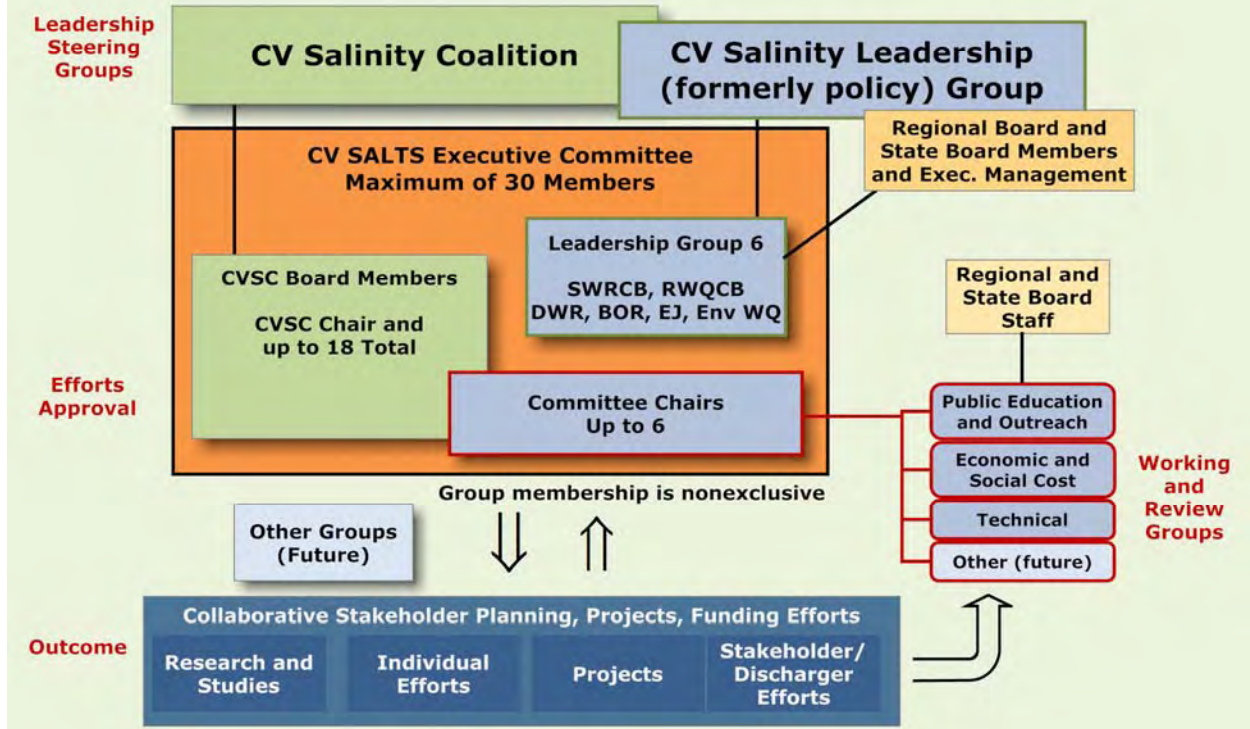
The total number of members of the Executive Committee is limited to 30. Nominations to the committee shall be approved by vote of the committee.

Within these limitations and to the extent practical, the Executive Committee should be constituted so as to reflect the diversity of public agency, industry, business, hydrologic basins, water users and dischargers, as well State, federal and environmental and public policy groups. These memberships will not be exclusive; a member of the Leadership Group may also be a member of the Salinity Coalition Board of Directors or Chair of another Committee, and may represent more than one industry, area or agency. The membership and Co-chairs shall be documented in a manner similar to the format shown in Attachment B.

A Graphic showing the Executive Committee and other Committees with the Salinity Leadership Group is shown below:

CV Salinity Coalition and CV SALTS Initiative

Ensuring Sustainable High Quality Water Supply For All users of Central Valley Waters



Powers and Reporting

The Executive Committee shall act as the ongoing governing board of the CV SALTS Initiative and shall assume such other responsibilities required to accomplish the mission, delegated to it by the Salinity Leadership Group or requested by the Central Valley Salinity Coalition. The Chair of the Executive Committee or any person designated by the Chair, shall report to the Salinity Leadership Group, at each regular meeting of the Salinity Leadership Group. Actions of the Executive Committee shall be by majority of the members in attendance voting in favor of a proposed action. Any action lacking majority approval may be referred to one or more committees for additional review and recommendations.

Term of Office

The term of office of persons appointed to the Executive Committee shall be two (2) years and shall commence on January 1 or the first meeting of the calendar year of the year appointed and shall terminate on December 31 two (2) years later. Modifications to these standing rules may be made by a majority vote of the Executive Committee following 30 days notice to all the members.

Meetings

Meetings of the Executive Committee shall be held as needed, at such time and place as determined by the Chair as necessary to accomplish work needed by the Salinity Leadership Group, the standing committees and the Central Valley Salinity Coalition. Special meetings of the Executive Committee may

be called by the Chair or upon request of three members of the executive committee with as much notice to members provided as possible.

Decision Making, Voting and Quorum

General Decisions

It is expected that much of the work of the Committee will be based upon general consensus of the Committee as tested by the Chair. The value of obtaining general consensus is that minority opinions or issues have the maximum opportunity to be evaluated and incorporated. On issues of controversy or which are irreconcilable for general consensus will be decided by an affirmative vote of a majority of members representing a quorum of the membership of the Committee at regular meeting at which the item has been agendaized. Matters which are agreed to by general consensus or acclamation are not subject to quorum requirements, but are subject to review if requested by any member.

Voting

Issues which are put to a vote must have a maker of the motion and a second to be voted upon. The motion can then be discussed and debated subject to reasonable limits provided by the chair. Eligible voting members are named in Appendix B of this document and may be update in the Executive Committee Roster from time to time. Appendix B lists the primary voting member and the alternate member who may vote in the absence of or by designation of the primary member. Votes may be cast by those present in the room, by phone or other reasonable method acceptable to the chair. When the question is called for vote by the chair, if a majority (50% plus 1) of votes are cast in favor of the motion it is passed and the records of the meeting will show it approved. Commonly a voice vote will be used but the Chair can determine the method of voting based on the need and expected closeness of the vote. Any eligible voting member may request a roll call vote which will be called by the vice-chair or designee.

Quorum

A quorum is present when a majority (50% plus 1) of the current eligible voting members of the committee are present in the room, by phone or other technical accommodation including proxy which is acceptable to the chair. Matters may be considered when less than a quorum is present, however only consensus decisions will be make.

Minutes

The minutes of the Executive Committee meetings shall be kept by the Vice-chair or other member designated by the Chair. Actions of the Executive Committee shall be reported to the Salinity Leadership Group by the Chair.

Standing Committees

Public Education and Stakeholder Outreach Committee

The Committee shall develop and make recommendations to the Executive Committee regarding internal and external communications to promote understanding of the need for and importance of

Attachment B

<u>Executive Committee Membership</u>	
<u>Nomination Category</u>	<u>Name and Organization Primary/Alternate</u>
<u>Salinity Leadership</u>	<u>Pamela Creedon/Jeanne Chilcott Regional Water Quality Control Board</u>
	<u>Darrin Polhemus/_____, State Water Resources Control Board</u>
	<u>Jose Faria/Ernie Taylor Department of Water Resources</u>
	<u>Lee Mao/Lisa Holm, US Bureau of Reclamation</u>
	<u>TBD - Environmental Justice</u>
	<u>TBD - Environmental, Water Quality</u>
<u>Comm. Co-chairs</u>	<u>Mona Shulman, Chair Executive Committee</u>
	<u>Linda Dorn, Vice Chair Executive Committee</u>
	<u>Dave Melilli, Public Education & Outreach Comm.</u>
	<u>Joe DiGiorgio, Public Education & Outreach Comm.</u>
	<u>Nigel Quinn, Technical Advisory Committee</u>
	<u>David Cory, Economic and Social Cost Committee</u>
<u>CV Salinity Coalition</u>	<u>Bobbi Larson, CASA</u>
	<u>Debbie Webster, CVCWA</u>
	<u>Dave Cory, San Joaquin River Drainage Authority</u>
	<u>Steve Hogg, City of Fresno</u>
	<u>Trudi Hughes, California League of Food Processors</u>
	<u>Tim Schmelzer/Chris Savage, Wine Institute</u>
	<u>Steve Bailey, City of Tracy</u>
	<u>Jeff Willett, City of Stockton</u>
	<u>Linda Dorn, Sacramento Regional CSD</u>
	<u>Dennis Westcot, San Joaquin River Group</u>
	<u>Nick Pinhey, City of Modesto</u>
	<u>Tim Johnson, California Rice Commission</u>
	<u>Phil Govea, City of Manteca</u>
	<u>Parry Klassen, East San Joaquin Water Quality Coalition</u>
	<u>Mike Nordstrom/Doug Davis Tulare Lake Drainage/Storage Districts</u>
<u>Karna Harrigfeld, Stockton East Water District</u>	
<u>Renee Pinel, Western Plant Health Association</u>	
<u>Travis Peterson, City of Vacaville</u>	

1
2
3
4
5
6

Summary and Overview
Basin Plan Issues for CV-SALTS
Version 2 11/12/10

7 **Table of Contents**

8

9 US Bureau of Reclamation	2-7
10 Production Agriculture and Agriculture Processors	8-11
11 Pacific Water Quality Coalition	12
12 Clean Water Action	13
13 Central Valley Clean Water Agencies	14-39
14 Stockton East Water District	40
15 Central Valley Regional Water Quality Control Board	41-55

16

17 **Introduction**

18

19 CV-SALTS participants and groups were requested to identify Issues in the current basin plans that that require review or areas of the basin
20 plans that should addressed in the CV-SALTS process. This information would be used to identify the areas of focus for CV-SALTS work and
21 the scope of the Basin Plan Amendments needed which would direct the scientific and policy work needed to support the amendments.

22

23 **For Review, Text pages have line numbers they can be referenced by PAGE __ and LINE __. Comments Submitted in Tables can be**
24 **identified by COMMENT NUMBER __ on PAGE __.**

1 **US Bureau of Reclamation**

2
3 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

4
5 Name/affiliation: USBR – Lisa Holm

6
7 Representing: Regulation of CVP

8
9 These comments relate to (check all that apply):s

10 Tulare Lake BP **Sac/SJR BP** Delta Plan

11
12
13 **ISSUE (1 line description):**

14
15 Investigate appliance salinity objective variance during periods when natural flow is not available to agricultural beneficial use the objective is
16 protecting.

17
18
19 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

20 Agricultural supply is typically the beneficial use most sensitive to salt degradation. In the Delta Plan, there are four salinity objectives
21 established in the Southern Delta (including Vernalis on the San Joaquin River). In the 1999 WQCP Environmental Impact Report for the
22 Delta Plan, the State Water Resources Control Board recognized that there are conditions under which there was no natural flow available
23 to supply South Delta agricultural users and that the objective could therefore be expected to be violated under those conditions. The Basin
24 Plan carries over these objectives and has established a TMDL control program which does not recognize the natural flow limitations,
25 resulting in access to stored water that would otherwise not be available.

26
27 **BASIN PLAN PAGE(S):** **III-6.02 and Table III-5, page 3 of 6**

28
29 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

30
31 Assess the unimpaired flow records and pre-development flow patterns to determine under what circumstances flow does not exist for LSJR
32 and South Delta riparian diverters. Use information to develop a variance policy.

1 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

2
3 Name/affiliation: USBR – Lisa Holm

4
5 Representing: Regulation of CVP

6
7 These comments relate to (check all that apply):s

8 Tulare Lake BP **Sac/SJR BP** Delta Plan

9
10
11 **ISSUE (1 line description):**

12
13 Determine priority between environmental flow and quality (beneficial use protection) and agricultural beneficial use when water supply to
14 meet objectives is limited, or when control of one directly impacts another.

15
16 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

17 The State Water Resources Control Board and the Regional Water Resources Control Board regulate all beneficial uses on an equal
18 priority. Unfortunately, the San Joaquin Basin hydrology is not capable of meeting all beneficial uses on an equal priority during an extended
19 drought.

20
21 **BASIN PLAN PAGE(S):** **III-6.02 and Table III-5, page 3 of 6**

22
23 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

24
25 The SWRCB and RWQCB should convene a process to determine the state’s beneficial use priorities under planning-drought scenarios and
26 under extreme drought conditions. Lower priorities can then be relaxed during drought conditions through the use of variances (or water
27 right permits can be conditioned to prevent diversion when available flow is needed for higher priority beneficial uses).

1 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

2
3 Name/affiliation: USBR – Lisa Holm

4
5 Representing: Regulation of CVP

6
7 These comments relate to (check all that apply):s

8 Tulare Lake BP **Sac/SJR BP** Delta Plan

9
10
11 **ISSUE (1 line description):**

12
13 Recognize that water rights and contract agreements in the San Joaquin Basin have evolved in consideration of salinity management and
14 that at times when salinity is high, most riparian right holders hold other water supply contracts to supplement high salinity water with low
15 salinity water.

16
17 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

18 Before the RWQCB regulates the LSJR for riparian diverters, the RWQCB should demonstrate that either this is the only source of water
19 available to those diverters (and they have not been mitigated through past water right protests), should ensure the accuracy of its
20 quantification of riparian diverters, and should demonstrate the economic and environmental impact of protecting this particular beneficial
21 use.

22
23 **BASIN PLAN PAGE(S):** **III-6.02 and Table III-5, page 3 of 6**

24
25 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

26
27 Water rights analysis and water contracts analysis for riparian diverters and water rights holders on the Lower San Joaquin River (including
28 records of use). Economic and environmental analysis of protecting AGR in the LSJR as though LSJR is only water source. Application of
29 anti-degradation since 1978 and perhaps a UAA.
30
31
32

1 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

2
3 Name/affiliation: USBR – Lisa Holm

4
5 Representing: Regulation of CVP

6
7 These comments relate to (check all that apply):s

8 Tulare Lake BP **Sac/SJR BP** Delta Plan

9
10
11 **ISSUE (1 line description):**

12
13 Update basin plan to include drought considerations.

14
15
16 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

17 Basin Plans fail to consider how the system should operate under drought conditions. (Priorities for beneficial uses).

18
19 **BASIN PLAN PAGE(S):** **III-6.02 and Table III-5, page 3 of 6**

20
21 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

22
23 SWRCB/RWQCB policy on regulation under drought conditions (currently this is a case by case consideration of requests to relax standards, which may occur more and more often with changing hydrology and increased regulation), which includes:

- 24
25
 - 26 • Definition of drought (assumptions for regulation, definition of droughts more extreme than assumed in regulatory development)
 - 27 • Priority of beneficial uses during drought (analysis of beneficial use needs and risks during prolonged drought)
 - 28 • Analysis of role of storage reservoirs in beneficial use protection (including limitations).
 - 29 • Development of appropriate variances
 - 30 • Process for determining when drought variances should be triggered.
- 31
32
33

1 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

2
3 Name/affiliation: USBR – Lisa Holm

4
5 Representing: Regulation of CVP

6
7 These comments relate to (check all that apply):s

8 Tulare Lake BP **Sac/SJR BP** Delta Plan

9
10
11 **ISSUE (1 line description):**

12
13 The water quality objective at the Jones Pumping Plant (source to Westside agriculture and wetlands) is 1000 uS/cm EC year round in the
14 Delta Plan (MUN only), while the water quality objective at Vernalis is 700 uS/cm EC from April through August in the Basin Plan (AGR), and
15 there is no treatment facility between the two locations. This seems to be an example of a lower standard upstream and a higher standard
16 downstream.

17
18 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

19 The Delta Mendota Canal essentially recycles Delta water for use and return into the Lower San Joaquin River. The DMC is currently
20 regulated under the Delta Plan to pump water no higher than 1000 uS/cm EC to protect MUN, and currently regulated under the Basin Plan
21 to discharge water into the LSJR no higher than 700 uS/cm EC during the summer agricultural season to protect AGR. This is partly due to
22 the desire of the State of California to maximize its water supply from the Delta (by regulating in the Delta Plan no lower than 1000 uS/cm
23 EC). The Basin Plan does not recognize the Delta Plan regulation upstream of the Basin Plan’s regulation. This seems to be a significant
24 artifact resulting from how the Basin Plan draws its geographic boundary.

25
26 **BASIN PLAN PAGE(S):** **III-6.02 and Table III-5, page 3 of 6**

27
28 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

29
30 The Basin Plan should recognize how Delta Plan objectives directly impact the quality and quantity of water delivered into the San Joaquin
31 Basin from the Delta. Solutions to water quality and quantity issues should be developed holistically.

1 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

2
3 Name/affiliation: USBR – Lisa Holm

4
5 Representing: Regulation of CVP

6
7 These comments relate to (check all that apply):s

8 Tulare Lake BP **Sac/SJR BP** Delta Plan

9
10
11 **ISSUE (1 line description):**

12
13 All constituent control programs in an area with a real time management component should be coordinated during the development process,
14 and include an honest assessment of the existing flow demands/constraints in the area.

15
16
17 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

18 The Basin Plan contemplates real time management components to salinity and dissolved oxygen regulation in the lower SJR and South
19 Delta. Fishery protection is moving more and more towards real time management for quantity (i.e. pulse flows for specific purposes) and
20 quality. Yet, it is likely that these real time components will not easily fit together and may lead to more problems if they are each
21 implemented in a vacuum.

22
23 **BASIN PLAN PAGE(S):** **III-6.02 and Table III-5, page 3 of 6**

24
25 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

26
27 The SWRCB and RWQCB should consider developing a real time management team that could work with stakeholders to develop real time
28 management programs that work for all contemplated flow and quality issues. A real time management program for all flow and quality
29 issues is conceivably an easier way to regulate flow and quality than through ongoing piecemeal regulation by beneficial use and water
30 quality constituent.

1 **CV-Salts Basin Plan Issues List**

2 **Combined Issue List for Production Agriculture and Food Processors**

3

4 Regional Board imposition of limitations in permits, conditional waivers and other implementation mechanisms for salinity and nutrients is
5 controlled by the Sacramento-San Joaquin River Basin Plan and the Tulare Lake Basin Plan, depending on the discharge location. To allow
6 for more effective management of salinity and nutrients, the Basin Plans need to be amended. Further, the Basin Plans need to be
7 amended to recognize that agriculture, and others, should be required to control salinity and nutrients only to the maximum extent
8 practicable. In other words, if there are feasible controls (e.g., management practices) available but such controls are unreasonable and
9 place an undue economic burden on agriculture, then the controls are not practicable and should not be imposed.

10

11 Likewise, the Basin Plans should not impose conditions pertaining to salinity and nutrients where discharges from agricultural operations
12 will not cause or contribute to exceedances of applicable water quality objectives. To ensure proper management and to focus resources
13 on appropriate surface and groundwater basins that are affected by salinity and nutrients, we have collectively identified the following
14 Basin Plan issues that should be addressed in the CV-Salts process.

15

16 **Beneficial Uses Chapter**

17

18 **Issue 1: Implementation of Exceptions Identified in the Basin Plan**

19

20 The Sacramento-San Joaquin River Basin Plan does not specifically identify groundwater basins and their applicable beneficial uses. Instead,
21 the Sacramento-San Joaquin River Basin Plan provides for a blanket designation for MUN, AGR, IND and PRO. It then identifies exceptions
22 for MUN that are the criteria in Resolution No. 88-63, and also provides for other criteria for exceptions from the AGR designation.
23 However, the Basin Plan does not clearly indicate whether the Basin Plan must be amended to apply the exceptions listed in the Basin Plan
24 as they apply to groundwater basins. Based on the language in the Basin Plan, it appears that the exceptions would be applied to
25 groundwaters without requiring a Basin Plan amendment. If this is true, the Basin Plan should be amended to clearly indicate that for
26 groundwater basins that meet the Basin Plan criteria, such groundwater basins are not designated with the MUN or AGR beneficial use, as
27 applicable. If on the other hand the Regional Board determines that the Basin Plan must be amended to de-designate waterbodies that
28 meet the exceptions, then the Basin Plan should be amended to de-designate any groundwater basin that meets the specified exception
29 criteria to avoid improper designations.

1 Basin Plan Page: SSJRBP at II-3.00

2

3 Further, the designation of beneficial uses to groundwater is not required by or subject to water quality standards provisions contained in
4 the federal Clean Water Act. Thus, there are no formal requirements associated with the “de-designation” of groundwater basins. At most,
5 the Regional Board will need to support any such action based on substantial evidence in the record that groundwater basins meeting the
6 criteria can not reasonably support the beneficial uses identified.

7

8 Absent clarification or amendment, agriculture will be forced to protect groundwater beneficial uses that are unreasonable. When
9 reasonable beneficial uses are applied, agriculture and food processing industries can better prioritize their water quality protection efforts.

10

11 **Issue 2: Definition of “best economically achievable treatment practices”**

12

13 One criterion for exceptions to the MUN and AGR beneficial uses as applied to groundwater in the Sacramento-San Joaquin River Basin Plan
14 as well as the Tulare Lake Basin Plan identifies waters with contamination that cannot reasonably be treated using either best management
15 practices or “best economically achievable treatment practices.” In addition to clarifying that the criterion applies directly to groundwater
16 basins (as discussed in Issue 1 above), the Basin Plan should be amended to define what is meant by “best economically achievable
17 treatment practices.” In determining what is economically achievable, the standard should take into consideration the long-term
18 sustainability of a management practice or treatment practice. The standard should also include a determination of what is reasonable and
19 practicable in the long-term.

20

21 Basin Plan page: SSJRBP at II-3.00; TLBP at II-3

22

23 **Water Quality Objectives Chapter**

24

25 **Issue 3: Inclusion of Appropriate Averaging Periods As Part of Applicable Objectives**

26

27 The narrative chemical objectives and incorporation of drinking water standards objectives for both surface and groundwaters need to be
28 modified to include appropriate averaging periods as part of the objective. Without the inclusion of the appropriate averaging period as
29 part of the WQO, Regional Board staff may interpret WQOs as instantaneous limits. It is inappropriate to apply instantaneous salinity and
30 nutrient WQOs because the impact to the applicable beneficial uses occur over longer-term exposure periods.

31

1 Basin Plan pages: SSJRBP at III-3.00, III-9.00 – III-10.00; TLBP at III-3, III-7

2

3 **Implementation Chapter**

4

5 **Issue 4: Policy for Interpreting Water Quality Objectives/Application of Water Quality Objectives**

6

7 When interpreting narrative water quality objectives for surface or groundwater, both Basin Plans must be amended to clarify that
8 appropriate averaging periods are a necessary part of any criterion applied to interpret narrative objectives. In other words, if criteria used
9 for interpreting narrative objectives include appropriate averaging periods, the averaging periods are a necessary part of the criteria, and
10 thus the WQO as well.

11

12 Basin Plan pages: SSJRBP at IV-16.00 – IV – 18.00; TLBP at IV-21 – IV-23

13

14 **Issue 5: Policy for Interpreting Water Quality Objectives/Application of Water Quality Objectives**

15

16 Both Basin Plans recognize that the Regional Board may designate mixing zones in surface water within which water quality objectives do
17 not apply. However, there are no similar or relevant provisions for determining compliance with water quality objectives in groundwater.
18 Instead, the Regional Board tends to determine compliance with groundwater objectives by measuring the quality of effluent without
19 consideration of attenuation or treatment provided by the soil profile, or without considering whether local soil conditions prevent
20 discharge to local groundwater basins. To determine whether a discharge will affect groundwater quality in setting permit limits or
21 conditions, the Regional Board must consider available scientific information that indicates whether and to what degree discharges will
22 affect groundwater quality. Both Basin Plans need to be amended to allow for such considerations in setting permit limits and/or permit
23 conditions. Without these changes, one-size-fits-all permit conditions will be adopted without the consideration of local conditions.

24

25 Basin Plan pages: SSJRBP at IV-17.00; TLBP at IV-21

26

27 **Issue 6: Implementation Program for Irrigated Agriculture**

28

29 Both Basin Plans should be updated to reflect that it is the Regional Board’s intent to control discharges from irrigated agricultural
30 operations that may affect compliance with water quality objectives through the implementation of the Long-Term Irrigated Lands

1 Regulatory Program. Where there are conflicting Basin Plan policies, such policies should be updated to ensure consistency with the Long-
2 Term Irrigated Lands Regulatory Program, once it is adopted and in effect.

3
4 **Issue 7: Incorporation of Best Available Science**

5
6 The Tulare Lake Basin Plan includes guidelines for the disposal of stillage waste. The guidelines are based in large part on a 1980 study
7 conducted by Metcalf and Eddy. More recently, the Wine Institute of California conducted a study and developed appropriate guidelines
8 for stillage waste and non-stillage waste. The Tulare Lake Basin Plan needs to be amended to reflect the new information provided for in
9 the Wine Institute’s study.

10
11 As a general matter, when relevant scientific evidence is available, including peer-reviewed research results and site-specific sampling
12 results and interpretation by qualified professionals, these should be admissible in permit and other regulatory proceedings, and should
13 supercede outdated or less definitive or applicable guidelines or criteria.

14
15 Basin Plan pages: TLBP at IV-15

16
17 **Issue 8: Implementation of the State’s Antidegradaton Policy**

18
19 To better implement the state’s antidegradaton policy, both Basin Plans should be amended to better define what constitutes best
20 practicable treatment or control (“BPTC”) for control of salinity and nutrients when there is high quality water. The State Water Board has
21 opined that what constitutes BPTC for a particular discharge depends on the circumstances of that discharge and several factors. Further,
22 what constitutes BPTC is guided by the reasonableness standard. (State Board Order No. WQ 86-8, at p. 29.) The State Board has also held
23 that, “[o]ne factor to be considered in determining best practicable treatment or control would be the water quality achieved by other
24 similarly situated dischargers and the methods used to achieve that water quality. Information concerning alternatives and costs of
25 alternatives is relevant to determining compliance with Resolution 68-16.” (*In the Matter of the Petition of San Luis Obispo Gold and*
26 *Country Club*, State Board Order No. WQ 2000-07, at pp. 10-11.) Based on the State Water Board’s findings, the Basin Plans should be
27 amended to clarify that BPTC must be reasonable, be compared to other similarly situated dischargers, and include consideration of costs
28 and the cost of alternatives.

29
30 Basin Plan pages: SSJRB at 15.00 – 16.00; TLBP at IV-20 – IV-21.

31

1 **Issue 9: Reasonable Timelines for Meeting WQOs**

2

3 The Basin Plans should be amended to recognize that it may take many years for certain surface waters and groundwaters to meet salinity
4 and nutrient WQOs, if at all. Without the inclusion of reasonable timelines in the Basin Plans, the Regional Board may continue to adopt
5 unrealistic compliance dates in permits and waivers.

6

7

8

1 **CV-Salts – Basin Plan Issues – Summary Page**

2 **On behalf of the Pacific Water Quality Association**

3 **By: Mark Felton**

4

5 The Water Conditioning Industry is an engaged stakeholder in the Salinity issues facing California’s Central Valley. We believe the CV-Salts
6 initiative to be a constructive and collaborative way for all stakeholders to work towards salinity solutions. We have long recognized that
7 ion-exchange water softeners contribute to the salinity to wastewater, and the industry has taken significant actions to mitigate salinity
8 contributions.

9

10 The industry has worked diligently to minimize salinity contributions: 1) Conversion from Time-Clock Regeneration to Demand-Initiated
11 Regeneration, 2) Progressive salt dosage softener control efficiencies, 3) Duplex-alternating twin systems, 4) Brine reclamation, and
12 Proportionate brining, just to name a few. The water softener of today is over 60% more salt efficient than a generation ago. New
13 technologies in the future will continue to produce salinity-minimization advances.

14

15 The positive environmental factors of energy savings and carbon-footprint reduction connected with soft water and the prevention of hard
16 water scale is significant. Well-intended efforts of salinity minimization can negatively impact other environmental issues. We need to be
17 careful not to look at environmental factors in a vacuum. Water, energy, air, salinity, carbon footprint...they are sometimes related to each
18 other, and sometimes they can even be environmental competitors to each other.

19

20 The concept of fairness should be a fundamental principal of salinity management. The Water Conditioning Industry believes all
21 stakeholders should be responsible in a proportionate way to their respective salinity contribution. No contributor of salinity should be
22 significantly treated better or worse than other contributors.

23

24 Our industry believes that the current severe regulation of residential water softeners by State and local entities, up to and including
25 municipal banning and forced removal of legally purchased equipment from citizen’s personal property, is unfair and unreasonable
26 compared to management of other sources of salinity in the Central Valley.

27

1 All stakeholders should be held proportionately responsible for their salinity contributions, and regulatory agencies should avoid a
2 disproportionate burden borne by any one salinity source. The Water Conditioning Industry looks forward to working collaboratively with
3 other engaged stakeholders to achieve significant, fair and practical salinity management solutions.

4

1 **Jennifer Clary**

2 **Clean Water Action**

3
4 We wanted to take the opportunity presented by your call for Basin Plan issues and opportunities to reiterate issues and priorities that we have stated
5 previously in other documents and forums. The most comprehensive document prepared on this subject are the comments we submitted on the Irrigated
6 Lands Regulatory Program Draft Environmental Impact Report, Economic analysis, and staff report. We attached a copy for your review.

7
8 In a nutshell, this is what we expect to see in any basin plan amendments for salt and nitrates:

- 9
10 1. Groundwater quality and contamination by salts and nitrates must remain a priority, and the health and economic impacts of nitrate contamination
11 recognized.
12 2. The Plans must have a goal of attaining safe drinking water, with a timeline, workplan and funding identified for achieving that end.
13 3. Basin plans must protect drinking water as a beneficial use by requiring source protection for water supplies, including groundwater, that include
14 protection nonpoint pollution sources.
15 4. MUN designations should not be removed due to contamination of water supplies.

16
17 Referenced [Irrigated Lands Comments](#) are detailed and are 60 pages in length. For completeness they are posted on the CV-SALTS website at the link
18 above.
19
20

1 **Central Valley Clean Water Association**

2 **CVCWA’s Basin Plan Sections to Re-evaluate as part of CV-SALTS**

3

4 Several Documents were provided this table identifies the elements of the template in table format with Priority. Table formatting has been changed to
5 allow compilation with other comments.
6

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
1	S-SJ / TL	1.1	<p>“Groundwater is defined as subsurface water that occurs beneath the ground surface in fully saturated zones within soils and other geologic formations. ...A ground water basin is defines ads a hydrologic until containing one large aquifer or several connected and interrelated aquifers (Todd Groundwater Hydrology, 1980).</p> <p>“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.”</p>	1	Because the definition of groundwater is so broad, many waters unsuitable for drinking are being assigned the MUN beneficial use.

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
2	S-SJ / TL	II.2 / II-2	Tributary Rule: "Beneficial uses of any specifically identified water body generally apply to its tributary stream."	1	Uses are being applied where they do not and/or are not likely to occur, which has resulted in stricter effluent limits to protect a use that occurs downstream. In the Vacaville Order, the State Water Board determined that a Basin Plan Amendment is needed to refine beneficial uses established via the tributary statement or the Sources of Drinking Water Policy, which creates a long, expensive process. The Basin Plan should be revised to refine beneficial uses established via the Tributary Statement or Sources of Drinking Water Policy.
3	S-SJ / TL	IV-16.00 / IV-21	8. Policy for Application of Water Quality Objectives ..."Water quality objectives apply to all waters within a surface water or ground water resource for which beneficial uses have been designated, rather than at an intake, wellhead or other point of consumption." The next section talks of mixing zones for NPDES and stormwater permits.	1	The quoted section may be where "first encountered groundwater" application is problematic. Many times, first encountered groundwater is not suitable for MUN and is otherwise prohibited from use by DPH. "Mixing zones" for groundwater should be an option to provide that water quality is looked at more holistically. Guidelines for site specific studies should be included.
4	S-SJ / TL	II.3 / II-2	"Unless otherwise designated by the RWB, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO)." This quote comes from S-SJ Basin Plan. The Tulare Lake Basin Plan also includes REC-1, REC-2, and WILD for groundwater and the language differs.	2	There is groundwater that falls within the Sources of Drinking Water Resolution that is not suitable for Drinking Water due to DPH regulations (including both standard levels and separation requirements). CV-SALTS should evaluate how to appropriately handle these situations.

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
5	S-SJ / TL	II.3 / II-3	Criteria for exceptions are: TDS >3000 mg/L, EC >5000 µmhos/cm (MUN only); Contamination that cannot be treated by BMP or best economically achievable treatment practices; water supply cannot sustain average 200 gpd; geothermal energy	2	The TDS and EC levels are inconsistent with secondary drinking water standards. There needs to be approaches for water that falls between water that fall under the SWB's Policy and secondary drinking water standards. Additionally, guidelines for best economically achievable treatment practices should be discussed.
6	S-SJ / TL	III.2.00 / III-2	The objectives contained in this plan, and any State or Federally promulgated objectives applicable to the basins covered by the plan, are intended to govern the levels of constituents and characteristics in the main water mass unless otherwise designated. They may not apply at or in the immediate vicinity of effluent discharges, but at the edge of the mixing zone if areas of dilution or criteria for diffusion or dispersion are defined in the waste discharge specifications. (Note that Tulare Lake BP has slightly different language which conveys the same idea).	1	Although the Basin Plan describes mixing zones and it appears the language was intended to apply to both surface and groundwater, there are no specific provisions or means for obtaining a mixing zone in groundwater.
7	S-SJ / TL	III.3.00b / III-3	At a minimum, water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449.	2	Title 22 footnotes not referenced here. The SWB in its Lodi order indicated that the descriptive text could not be used when applying these tables. Consider clarifying that the limits can be applied as a range.

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
8	S-SJ / TL	III.9.00 / III.7 IV.17	<p>Water Quality Objectives (for Groundwater for S-SJ Basin Plan): "These objectives do not require improvement over naturally occurring background concentrations."</p> <p>Policy for Application of Water Quality Objectives. Maintenance of the existing high quality of water means maintenance of "background" water quality conditions, i.e., the water quality found upstream or upgradient of the discharge, unaffected by other discharges.</p>	2	<p>(1) Guidance on how to determine "naturally occurring background concentrations" would be useful. The language in the Policy for Application of Water Quality Objectives would suggest that "naturally occurring" should not consider any anthropological impacts. However, "naturally occurring" groundwater (particularly when considering first encountered groundwater) should be able to consider degradation that has occurred as a result of past regional activities.</p> <p>(2) This language should also apply to surface waters.</p>

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
9	S-SJ	IV-15.00	<p><i>Regional Water Board Resolution No. 96-147, San Joaquin River Agricultural Subsurface Drainage Policy --</i></p> <p>Of the two major options for disposal of salts produced by agricultural irrigation, export out of the basin has less potential for environmental impacts and, therefore, is the favored option. The San Joaquin River may continue to be used to remove salts from the basin so long as water quality objectives are met. The valley-wide drain to carry the salts generated by agricultural irrigation out of the valley remains the best technical solution to the water quality problems of the San Joaquin River and Tulare Lake Basin. The Regional Water Board, at this time, feels that a valley-wide drain will be the only feasible, long-range solution for achieving a salt balance in the Central Valley. The Regional Water Board favors the construction of a valley-wide drain under the following conditions:</p> <ul style="list-style-type: none"> • All toxicants would be reduced to a level which would not harm beneficial uses of receiving waters. • The discharge would be governed by specific discharge and receiving water limits in an NPDES permit. • Long-term, continuous biological monitoring would be required 	2	CV-SALTS should address the question of whether a valley-wide drain (or several smaller ones) is viable or how the SJ River could be used to drain salts. Regional projects should be identified which provide maximum benefits for minimal costs.
10	S-SJ / TL	IV-17.00 / IV-22	To evaluate compliance with the narrative water quality objectives, the Regional Water Board considers, on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., State Water Board, California Department of Health Services, California Office of Environmental	1	This portion of the basin plan has been extremely problematic as the RWB has misapplied many criteria including that for salts. Before using these types of criteria, RWB should assure that it is appropriate for use considering local conditions and how the criteria was derived and what it was intended to protect against. The Basin Plan should include specific process for interpreting and applying narrative objectives.

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
			<p>Health Hazard Assessment, California Department of Toxic Substances Control, University of California Cooperative Extension, California Department of Fish and Game, USEPA, U.S. Food and Drug Administration, National Academy of Sciences, U.S. Fish and Wildlife Service, Food and Agricultural Organization of the United Nations). In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective. For example, compliance with the narrative objective for taste and odor may be evaluated by comparing concentrations of pollutants in water with numerical taste and odor thresholds that have been published by other agencies. This technique provides relevant numerical limits for constituents and parameters which lack numerical water quality objectives. To assist dischargers and other interested parties, the Regional Water Board staff has compiled many of these numerical water quality criteria from other appropriate agencies and organizations in the Central Valley Regional Water Board's staff report, A Compilation of Water Quality Goals. This staff report is updated regularly to reflect changes in these numerical criteria.</p>		
11	S-SJ	IV-32.00	<p>Control program for Salt and Boron Discharges into the Lower San Joaquin River (LSJR) The goal of the salt and boron control program is to achieve compliance with salt and boron water quality objectives without restricting the ability of dischargers to export salt out of the San Joaquin River basin.</p>	2	<p>Should this goal be expanded to other areas? How can CV-SALTS promote the maximum export of salts while protecting beneficial uses?</p>

No	BP	Page	Basin Plan Language or Summary	Priority	Issue
12	TL	II-7	Table II-2 Ground Water Beneficial Use Exceptions (Footnotes). This section provides exceptions from the MUN supplies within a distance and/or depth from a facility.	1	Title 22 includes separation requirements from domestic wells from POTWs. Exceptions from MUN from POTWS within a distance from a facility may be appropriate and should be considered.
13	TL	III-4	WQO for Surface Water --- Salinity: Waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use of the water resources. "The only reliable way to determine the true or absolute salinity of a natural water is to make a complete chemical analysis. However, this method is time-consuming and cannot yield the precision necessary for accurate work" {Standard Methods for the Examination of Water and Wastewater, 18th Edition}. Conductivity is one of the recommended methods to determine salinity.	2	Electrical conductivity does not differentiate between organic and inorganic ions. Although other methods may be more time consuming, in the right circumstance, they may be necessary to determine the specific ion passing through treatment facilities and impacting receiving surface waters or groundwaters to be able to better utilize resources for best practical control. For some facilities, determining limits by pounds of salt instead of an effluent EC limit may be more appropriate. Providing credit to municipalities for beneficial ions used for agricultural purpose (Ca, Mg, K) should also be considered.
14	TL	III-8	WQO for Groundwater --- Salinity: All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources. No proven means exist at present that will allow ongoing human activity in the Basin and maintain ground water salinity at current levels throughout the Basin. Accordingly, the water quality objectives for ground water salinity control the rate of increase. The maximum average annual increase in salinity measured as electrical conductivity shall not exceed the values specified in Table III-4 for each hydrographic unit shown on Figure III-1. The average annual increase in electrical conductivity will be determined from monitoring data by calculation of a cumulative average annual increase over a 5- year period. (Table III-4 has maximum annual average increases in EC ranging from 1 to 6 µmhos/cm)	3	CV-SALTS should evaluate if the maximum average annual increase range of 1 to 6 µmhos/cm is practicable, given what is detectable when talking in the 100-900 µmhos/cm. More importantly, CV-SALTS should identify through adaptive management, short and longer term strategies to address salt.

	BP	Page	Basin Plan Language or Summary	Priority	Issue
15	TL	IV-9 & 10	Effluent Limits: As a minimum, dischargers to surface waters, including stream channels, shall comply with the following effluent limits: <ul style="list-style-type: none"> • The maximum electrical conductivity (EC) of a discharge shall not exceed the quality of the source water plus 500 micromhos per centimeter or 1,000 micromhos per centimeter, whichever is more stringent. When the water is from more than one source, the EC shall be a weighted average of all sources. 	1	This 500 over source has been problematic for some POTWs and the source of the limit is unclear. Also, as stated, there are two limits that are confusing, one refers to the 500 + source and the other (next bullet) "Discharges not to exceed and EC of 1,000 micromhos per centimeter, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L." Which one is it? Consider allowance or credit for the organic portion of EC in the discharge, as allowed for food processors (TL IV-14). Give municipalities credit for beneficial ions used for agricultural purpose (Ca, Mg, K) when used for these applications. For some facilities (especially those practicing water conservation), determining limits by pounds of salt instead of an effluent EC limit may be more appropriate.
		IV-10	<ul style="list-style-type: none"> • Discharges shall not exceed an EC of 1,000 micromhos per centimeter, a chloride content of 175 mg/l, or a boron content of 1.0 mg/l. 		
		IV-11	Discharges to Land - domestic wastewater facilities: Additional effluent limits follow: <ul style="list-style-type: none"> • The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC shall not exceed the EC of the source water plus 500 micromhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources. 		

	BP	Page	Basin Plan Language or Summary	Priority	Issue
16	TL	IV-11	Discharges to areas that may recharge to good quality ground waters shall not exceed an EC of 1,000 micromhos per centimeter, a chloride content of 175 mg/l, or a boron content of 1.0 mg/l.	2	Similar to discharges to surface water. What defines "good quality groundwaters"? Background?
17	TL	IV-11	Reclaimed water provides a substitute source of water and provides nutrients that nourish crops. When properly managed, reclamation consumes nitrates and effluent that would normally percolate to local ground waters underlying a community and can free up potable water for growth or other uses. Extensive reclamation is a practical necessity simply to maintain present levels of development and activity in the Basin. Wastewater reclamation shall be maximized by controlling or limiting salt pickup and evaporation during use, treatment, or disposal. Integration of final disposal into existing surface distribution systems appears to be advantageous. Wherever feasible, eventual wastewater reclamation will be requested.	1	EC limitations should be on a case by case basis, in accordance to the beneficial use of water and should take into account the type of crops produced in the area, maximizing use of recycled water.
18	TL	IV-25	Dilution Neither surface nor ground waters shall be used to dilute wastes for the primary purpose of meeting waste discharge requirements, where reasonable methods for treating the wastes exist. Blending of wastewater with surface or ground water to promote beneficial reuse of wastewater in water short areas may be allowed where the Regional Water Board determines such reuse is consistent with other regulatory policies set forth or referenced herein.	2	Allowing dilution to promote beneficial use should be allowed in in all areas, not only areas of water shortage. Water banking using good quality water can serve dual purpose, to recharge groundwater and to help minimize salt impacts through blending.

1
2

CVCWA Suggested Additions to Basin Plans as Part of CV-SALTS

No	Priority	Item	Description of need for addition
1	1	Water Quality Standards Variance Policy	<p>A water quality standards variance policy is needed now for point and non-point sources who cannot reasonably meet effluent limits derived from existing water quality objectives for salinity, but yet are being required to come into compliance with those limits in short time frames. A water quality standards variance is a form of temporary regulatory relief that has been identified and described by USEPA in regulations and guidance. A variance that can be used to address the existing situation, i.e. where near term compliance with a standard or an effluent limit derived from that standard is not feasible and long term regulatory changes are being considered. The intent behind the use of variances is to grant temporary rather than permanent changes to standards and/or uses and to allow NPDES permits to be written without violating Section 402(a)(1) of the Clean Water Act. In granting a variance, the State must follow established variance policies, including public review and USEPA approval. Variances are to be reviewed on a triennial basis along with the rest of the state’s water quality standards to demonstrate that the provisions are still necessary and that reasonable progress is being made to attain the standard in question. Use of a variance policy would be a reasonable and approvable approach to address existing salinity permitting problems during the ongoing reassessment and possible modification of Bay-Delta salinity standards and during the ongoing development of a long term salinity management program under CV-SALTS. According to the USEPA Office of General Counsel, any of the factors recognized in the regulation for justifying modification of a designated use in 40 CFR 131.10(g) may be used to support a variance and satisfy the rationale for not complying with a standard. The specific factors listed in 40 CFR 131.10(g) are summarized as follows:</p> <ol style="list-style-type: none"> 1. naturally occurring pollutant concentrations prevent attainment 2. natural, ephemeral, intermittent or low-flow conditions or water levels prevent attainment 3. human-caused conditions or sources of pollution prevent attainment and cannot be remedied or would cause more environmental damage to correct 4. hydrologic modifications prevent attainment and it is not feasible to restore the water body to its original condition

No	Priority	Item	Description of need for addition
			<p>5. physical conditions related to natural features of the water body (lack of proper substrate, cover, flow, depth, pools, riffles, etc) that are unrelated to water quality preclude attainment</p> <p>6. controls more stringent than technology-based requirements would result in substantial and widespread economic and social impacts.</p>
2	1	Offset policy/program	<p>An offset policy is needed to allow credit for point sources to participate in salinity control projects not directly associated with their discharge. Offsets can be a win-win solution for a point source community. Offsets allow point sources to participate in regional projects that have greater water quality benefits at reduced costs. Without an offset policy, point sources will be required to meet salinity objectives at their discharge, which often have much higher costs with significantly less environmental benefit.</p>
3	1	Interrelation between recycled water and salts - maximum benefit	<p>California has recognized the need to increase the use of recycled water to offset groundwater pumping and surface water diversions. State and Regional Policies also encourage the use of recycled water policies, although actual permitting or Basin Plan provisions can discourage its use. Recycled water may have higher salt (including nutrient) levels than local or imported water sources. The California Water Code states that recycled water projects should not be disallowed just because salt levels exceed objectives. The State Water Board in its Recycled Water Policy does not limit salts (other than to best management practices for recycled water) and requires that salts be addressed regionally through salt and nutrient management plans. The Basin Plan amendments need to recognize the tenants of State Law and Policy and encourage the use of recycled water. Specifically, the Basin Plan Amendment should not restrict or discourage recycled water use.</p>
4	1	MUN designation of groundwater in the vicinity of POTWs	<p>Title 22 contains separation requirements from domestic well sources and POTWs. Without recognition of these requirements, MUN uses have been applied directly at/under a POTW facility where its use for MUN is barred by Title 22. Basin Plan language should be added that removes the designation of MUN from groundwaters in the vicinity of POTWs.</p>
5	1	Compliance Schedule Provisions	<p>Compliance schedules are used for point source discharges to provide time to complete projects to comply with a new or revised water quality objective. Depending on the final objectives and the feasibility to comply with them, the Basin Plan may to provide point source</p>

No	Priority	Item	Description of need for addition
			discharges (including land dischargers) adequate time to comply with the objective. Additional consideration may be needed to allow point sources to comply with existing objectives.
6	1	Mixing zone criteria for groundwater	Although the Basin Plan contains general statements that water quality criteria are to be met in the waterbody as a whole and the statement applies to groundwater and surface water, the Basin Plan only contains specific language for mixing zones in surface water. A description in the Basin Plan of how to account for mixing and soil treatment is a needed tool to enable implementation of this Basin Plan principle.
7	2	Real time management for existing facilities	Real time management allows the movement of salts when capacity is available in a waterbody and provides a watershed approach and management flexibility in protecting beneficial uses.
8	1	Averaging Periods	Averaging periods can be a useful compliance tool. Averaging periods can include longer averaging periods, seasonal limits, climatic or hydraulically based limits (i.e. based on rainfall, etc. Averaging periods should be included as part of the water quality criteria.
9		Reasonable protection	The discussion on what constitutes reasonable protection of beneficial uses needs to be a priority for CV-SALTS to provide the basis of what parameters are used to determine objectives and what management tools will be needed.

1
2

1 **Non-Priority / Placeholder Basin Plan Text to Review Towards the End of CV-SALTS**

2

No.	BP	Page	Description	CV-SALTS Review
1	S-SJ	I.1-2	Planning areas per the Basin Plan	Are these the correct Basin Planning Areas for CV-SALTS? Do they need to be redefined, broken up, etc.?
2	S-SJ / TL	II.1 / II-1	Concept that beneficial uses do not include all reasonable uses of water, including dilution for salt; although, AGR includes irrigation and leaching of salts.	With salts, any use, including MUN, AGR, IND, etc. add salts. Should similar considerations already included in AGR for salts be recognized for other us? Should this type of consideration be carried into the definition of “naturally occurring background”?
3	S-SJ	III.7.00	Table III-3 contains EC levels for the Sacramento River, several portions of the Feather River; the San Joaquin River (Friant to Mendota), portions of the American River, Folsom and Goose Lakes.	Review if an update is warranted.
4	S-SJ	III.12 (Table III-5)	This table contains Water Quality objectives at sampling locations for Chloride and EC (+ other non-salt objectives), which are taken from the SWB's Water Quality Control Plan for Salinity."	Determine if an update is needed.

No.	BP	Page	Description	CV-SALTS Review
5	S-SJ	IV-2.00	<p>Salt management is becoming increasingly important in the San Joaquin Valley for urban and agricultural interests. If current practices for discharging waters containing elevated levels of salt continue unabated, the San Joaquin Valley can have a large portion of its ground water severely degraded within a few decades. Therefore, the Regional Water Board will pursue strategies that will achieve the availability of a valleywide drain for the discharge of agricultural wastewaters and drain waters degraded by elevated levels of salt and in which nutrient and toxic material concentrations meet applicable standards. Following is a brief description of the water quality impacts associated with basin discharge activities along with some general control considerations. This section then goes on to describe Ag, Siviculture, Municipalities and Industries, Stormwater, Waste Disposal, Contaminated sites and other discharge activities.</p>	<p>This section will likely need revising as part of CV-SALTS</p>

No.	BP	Page	Description	CV-SALTS Review
6	S-SJ / TL	/ IV-8	<p>Municipal and industrial point source discharges to surface waters are generally controlled through National Pollutant Discharge Elimination System (NPDES) permits. Although the NPDES program was established by the Clean Water Act, the permits are prepared and enforced by the Regional Water Boards per California's authority for the Act. The number of cases of ground water pollution attributable to industrial or municipal sources has increased steadily. For example, the Region's inventory of underground storage tanks indicates the number of leaking tanks is high. Ground water contamination from other industrial sources generally occurs from practices of disposing of fluids or other materials used in production processes. Waste compounds have been discharged directly to unlined sumps, pits, or depressions and spread on soils. In some cases, these disposal practices went on many years before they were discovered or discontinued. Leaking municipal or industrial sewer lines also contribute to ground water pollution. The promulgation of EPA sludge regulations under section 503 of the Clean Water Act and the adoption of water quality objectives for toxic pollutants pursuant to section 303(c)(2)(B) will require that NPDES permits, upon renewal, be updated to reflect these new regulations. Once effluent limitations sufficient to comply with sludge requirements and water quality objectives for toxic pollutants have been placed into NPDES permits, POTWs subject to pretreatment program requirements will be required to update their local limits consistent with EPA pretreatment program regulations and guidance. (Note text from S-SJ, TL differs)</p>	<p>Are there areas that require updating?</p>
7	S-SJ	IV-10.00	<p>Delta Plan, Water Right Decision 1485, and Water Quality Control Plan for Salinity are described. Referenced back to Table III-5 of Chapter III.</p>	<p>No action is needed unless the plan is revised.</p>

No.	BP	Page	Description	CV-SALTS Review
8	S-SJ	IV-15.00	<p><i>Regional Water Board Resolution No. 96-147, San Joaquin River Agricultural Subsurface Drainage Policy</i> -- Of the two major options for disposal of salts produced by agricultural irrigation, export out of the basin has less potential for environmental impacts and, therefore, is the favored option. The San Joaquin River may continue to be used to remove salts from the basin so long as water quality objectives are met. The valley-wide drain to carry the salts generated by agricultural irrigation out of the valley remains the best technical solution to the water quality problems of the San Joaquin River and Tulare Lake Basin. The Regional Water Board, at this time, feels that a valley-wide drain will be the only feasible, long-range solution for achieving a salt balance in the Central Valley. The Regional Water Board favors the construction of a valley-wide drain under the following conditions:</p> <ul style="list-style-type: none"> • All toxicants would be reduced to a level which would not harm beneficial uses of receiving waters. • The discharge would be governed by specific discharge and receiving water limits in an NPDES permit. • Long-term, continuous biological monitoring would be required 	CV-SALTS should address the question of whether a valley-wide drain (or several smaller ones) is viable.
9	S-SJ / TL	IV-22.00 / IV-26	Waivers	Should be reviewed for salt impacts during the CV-SALTS process.
10	S-SJ	IV-26.01	RWB Guidelines	Should be reviewed for salt impacts during the CV-SALTS process.

No.	BP	Page	Description	CV-SALTS Review
11	S-SJ	IV- 27.00- 30.00	Recommendations for implementation to the SWB and other Agencies: (1) The State Water Board should consider the continued use of its water rights authority to prohibit water transfers if the transfer contributes to low flows and related salinity water quality impairment in the Lower San Joaquin River. (2) The State Water Board should consider the continued conditioning of water rights on the attainment of existing and new water quality objectives for salinity in the Lower San Joaquin River, when these objectives cannot be met through discharge controls alone.	Should be reviewed for salt-specific recommendations during the CV-SALTS process.
12	S-SJ	IV- 30.001- 31.00	Because of the need to manage salt and other pollutants in the River, the Regional Water Board began developing a Regional Drainage Water Disposal Plan for the Basin. The development began in FY 87/88 when Basin Plan amendments were considered by the Water Board in FY 88/89. The amendment development process included review of beneficial uses, establishment of water quality objectives, and preparation of a regulatory plan, including a full implementation plan. The regulatory plan emphasized achieving objectives through reductions in drainage volumes and pollutant loads through best management practices and other on-farm methods.	Should be reviewed during CV-SALTS

No.	BP	Page	Description	CV-SALTS Review
13			<p>The 88/89 amendment emphasized toxic elements in subsurface drainage discharges. The Regional Water Board however still recognizes salt management as the most serious long-term issue on the San Joaquin River. Salinity impairment in the Lower San Joaquin River remains a persistent problem as salinity water quality objectives continue to be exceeded. The Regional Water Board adopted the following control program for salt and boron in the Lower San Joaquin River to address salt and boron impairment and to bring the river into compliance with water quality objectives. Additionally, the Regional Water Board will continue as an active participant in the San Joaquin River Management Program implementation phase, as authorized by AB 3048, to promote salinity management schemes including time discharge releases, real time monitoring and source control.</p>	
14	S-SJ	IV-32.00-32.07	<p>This section contains salt estimates, including water supply, dilution flow allocations etc. Point sources are a low priority in this effort and therefore have a very long compliance schedule.</p>	<p>Although this language is not as easy to follow, it does provide a lot of flexibility, which may be a model approach for other areas.</p>
15	S-SJ	IV-36.04	<p>Nitrate Pollution of Ground Water in the Sacramento and San Joaquin River Basins.</p> <p>Since 1980, over 200 municipal supply wells have been closed in the Central Valley because of nitrate levels exceeding the State's 45 mg/l drinking water standard. Proposals have been submitted to assess the extent of the problem and explore possible regulatory responses, but without success. The increasing population growth in the Valley is expected to accelerate the problem's occurrence in the years ahead.</p>	<p>Will likely need updating and a program proposed as part of CV-SALTS</p>

No.	BP	Page	Description	CV-SALTS Review
16			The Regional Water Board considers nitrate pollution to be a critical issue for beneficial use protection in the Central Valley Region. Staff will continue efforts to obtain study funds. Since nitrate pollution of ground water is not restricted to the Central Valley Region, the Regional Water Board recommends the State Water Board take the lead in developing programs for controlling ground water contamination resulting from the use of nitrogen fertilizer on irrigated crops.	
17	S-SJ / TL	IV-37.00, IV-26	Diaries & Nutrient and Pesticide Discharges from Nurseries	Need to assess if salts need to be added in these descriptions
18	S-SJ	IV-38.00 to 39.00	Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Funding	Need to add CV-SALTS values. Must do an economic evaluation under the water code and include others required to comply.
19	S-SJ	V-1.00	Surveillance and Monitoring	Add a section on how monitoring will be conducted and success evaluated.
20	TL	I-2	Because of the closed nature of the Tulare Lake Basin, there is little subsurface outflow. Thus, salts accumulate within the Basin due to importation and evaporative use of the water. The paramount water quality problem in the Basin is the accumulation of salts. This problem is compounded by the overdraft of ground water for municipal, agricultural, and industrial purposes, and the use of water from deeper formations and outside the basin which further concentrates salts within remaining ground water.	Review and update as needed.

No.	BP	Page	Description	CV-SALTS Review
21	TL	I-3	Adequate disposal of collected agricultural drainage water from subsurface drains is essential to sustain agriculture in some areas and provide water quality protection. The preferred and long deferred permanent solution of exporting drainage water to San Francisco Bay may not be feasible. In the interim, evaporation ponds are being used for disposal of these saline waters. However, the ponds have created an impact on wildlife that must be mitigated for this interim disposal option to remain viable.	Update with CV-SALTS
22	TL	I-3	Salinity increases in ground water can ultimately eliminate the beneficial use of the resource. This loss will not be immediate, but control of the increase is a major part of this plan. Salt loads reaching the ground water body must be reduced. Storage of salt in the soil through increased irrigation efficiency is being done, but is only a temporary solution. Current fertilization and soil amendment practices should be reviewed. Methods to control the leachate from newly developed lands should be studied.	Incorporate into CV-SALTS
23	TL	III-4	WQO for Surface Water --- Salinity: Waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use of the water resources. "The only reliable way to determine the true or absolute salinity of a natural water is to make a complete chemical analysis. However, this method is time-consuming and cannot yield the precision necessary for accurate work" {Standard Methods for the Examination of Water and Wastewater, 18th Edition}. Conductivity is one of the recommended methods to determine salinity.	
24	TL	III-5 (Table III-2)	Max EC Levels	Appears Surface Water Driven. May need updating as part of CV-SALTS

No.	BP	Page	Description	CV-SALTS Review
25	TL	III-8	<p>WQO for Groundwater --- Salinity:</p> <p>All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources. No proven means exist at present that will allow ongoing human activity in the Basin and maintain ground water salinity at current levels throughout the Basin. Accordingly, the water quality objectives for ground water salinity control the rate of increase. The maximum average annual increase in salinity measured as electrical conductivity shall not exceed the values specified in Table III-4 for each hydrographic unit shown on Figure III-1. The average annual increase in electrical conductivity will be determined from monitoring data by calculation of a cumulative average annual increase over a 5- year period. (Table III-4 has maximum annual average increases in EC ranging from 1 to 6 umhos/cm)</p>	Update as required by CV-SALTS
26	TL	IV-1	<p>The greatest long-term problem facing the entire Tulare Lake Basin is the increase of salinity in ground water. Even though an increase in the salinity of ground water in a closed basin is a natural phenomenon, salinity increases in the Basin have been accelerated by man's activity, with the major impact coming from intensive use of soil and water resources by irrigated agriculture. Salinity increases in ground water could ultimately eliminate the beneficial uses of this resource. Controlled ground water degradation by salinity is the most feasible and practical short-term management alternative for the Tulare Lake Basin.</p>	Update as required by CV-SALTS
27	TL	IV-2 & 3	<p>(Too big to copy) - provides background on irrigated agriculture, focusing in on salts. Solutions looking at salt disposal drain (long term) and evaporation ponds (interim) which impact wildlife.</p>	Update as required by CV-SALTS

No.	BP	Page	Description	CV-SALTS Review
28	TL	IV-5	<p>Degradation of ground water in the Tulare Lake Basin by salts is unavoidable without a plan for removing salts from the Basin. A valleywide drain to carry salts out of the valley remains the best technical solution to the water quality problems of the Tulare Lake Basin. The drain would carry wastewater generated by municipal, industrial, and agricultural activities, high in salt and unfit for reuse. The only other solution is to manage the rate of degradation by minimizing the salt loads to the ground water body. Some of the salt load to the ground water resource is primarily the result of natural processes within the Basin. This includes salt loads leached from the soils by precipitation, valley floor runoff, and native surface waters. Salts that are not indigenous to the Basin water resources result from man's activity. Salts come from imported water, soil leached by irrigation, animal wastes, fertilizers and other soil amendments, municipal use, industrial wastewaters, and oil field wastewaters. These salt sources, all contributors to salinity increases, should be managed to the extent practicable to reduce the rate of ground water degradation. The Regional Water Board supports construction of a valleywide drain to remove salt-laden wastewater from the Basin under the following conditions:</p> <ul style="list-style-type: none"> • All toxicants would be reduced to a level which would not harm beneficial uses of receiving water. • The discharge would be governed by specific discharge and receiving water limits in an NPDES permit. • Long-term continuous biological monitoring would be required. 	Update as required by CV-SALTS

No.	BP	Page	Description	CV-SALTS Review
29			<p>The Regional Water Board also encourages proactive management of waste streams to control and manage salts that remain in the Basin. Application or disposal of consolidated treated effluents should be to the west, toward the drainage trough of the valley. If feasible, salts in waste streams should be processed for reuse to reduce the need to import salt. Salt import should be reduced by assuring that imported water is of the highest quality possible. Water conveyance systems used to import water into the Basin should not be used to transport inferior quality water.</p>	
30	TL	IV-8	<p>The Regional Water Board will consider adoption of a ban on new septic tank systems and elimination of existing systems in areas where the systems contaminate underlying ground water or where a substantial percentage of existing systems fail annually. In making this determination, the Regional Water Board must consider the factors listed in Section 13281 of the California Water Code. (See the “Prohibitions” section of this chapter for a listing of communities with septic tank system moratoria.) The Regional Water Board will also review alternatives to protect water quality standards and beneficial uses; and prevent nuisance, pollution and contamination. Alternatives may include any combination of individual disposal systems, community collection and disposal systems with subsurface disposal, and conventional treatment systems. A problem may develop in some agricultural areas of the Basin owing to saturation of the soil when irrigation water along the valley trough is restricted from percolating through the soil profile. As the areal extent of this condition expands, individual waste disposal systems in areas where community sewers are not an option may create surfacing waste and a public health problem.</p>	<p>Will need to evaluate if this is a management tool needed in CV-SALTS areas. If regionalization of wastewater treatment is an option, the impact on an existing POTW should be evaluated.</p>

No.	BP	Page	Description	CV-SALTS Review
31	TL	IV-9.00	The Regional Water Board recommends construction of facilities for septic tank pumpings at municipal sewage treatment plants where the waste will not interfere with treatment or cause nuisances.	Need to assess impact to POTWs for requirements for taking salts.
32	TL	IV-11	Discharges to Land: The excellent quality of ground waters along the easterly edge of the Basin should be protected by encouraging the application or disposal of consolidated treated effluents to the west, toward the drainage trough of the valley.	Is this still the case or does this need to be amended as part of CV-SALTS?
33	TL	IV-11	In the Poso Creek Subarea, discharges shall not exceed 1,000 micromhos/cm EC, 200 mg/l chlorides, and 1.0 mg/l boron. The Poso Creek subarea consists of about 35,000 acres of land between State Highways 99 and 65 about six miles north of Bakersfield, and is defined more specifically in Regional Water Board Resolution No. 71- 122, which is incorporated by reference into this plan.	Update if needed.
34	TL	IV-11	In the White Wolf Subarea, for areas overlying Class I irrigation water, discharges shall not exceed 1,000 μ mhos/cm EC, 175 mg/l chlorides; 60 percent sodium, and 1.0 mg/l boron. For areas overlying Class II or poorer irrigation water, discharges shall not exceed 2,000 μ mhos/cm EC, 350 mg/l chlorides, 75 percent sodium, and 2 mg/l boron. In areas where ground water would be Class I except for the concentration of a specific constituent, only that constituent will be allowed to exceed the specified limits for Class I water. In no case shall any constituent be greater than those limits specified for areas overlying Class II irrigation water. The White Wolf subarea consists of 64,000 acres within the valley floor, at the southern tip of the Tulare Lake Basin, about 20 miles south of Bakersfield. The subarea is bounded on the west by the San Emigdio Mountains, on the south and east by the Tehachapi Mountains, and on the north by the White Wolf Fault	Update if needed.

No.	BP	Page	Description	CV-SALTS Review																								
35	TL	IV-11	<p>Criteria for mineral quality of irrigation water is described below:</p> <table border="1" data-bbox="520 289 1400 586"> <thead> <tr> <th data-bbox="520 289 674 321">Constituent</th> <th data-bbox="674 289 926 321">-- Class I</th> <th data-bbox="926 289 1178 321">-- Class II</th> <th data-bbox="1178 289 1400 321">-- Class III</th> </tr> </thead> <tbody> <tr> <td data-bbox="520 329 674 362">TDS (mg/l)</td> <td data-bbox="674 329 926 362"><700</td> <td data-bbox="926 329 1178 362">700 - 2,000</td> <td data-bbox="1178 329 1400 362">>2,000</td> </tr> <tr> <td data-bbox="520 370 674 402">EC (µmhos/cm)</td> <td data-bbox="674 370 926 402"><1,000</td> <td data-bbox="926 370 1178 402">1,000 - 3,000</td> <td data-bbox="1178 370 1400 402">>3,000</td> </tr> <tr> <td data-bbox="520 410 674 443">Chlorides (mg/l)</td> <td data-bbox="674 410 926 443"><175</td> <td data-bbox="926 410 1178 443">175 - 350</td> <td data-bbox="1178 410 1400 443">>350</td> </tr> <tr> <td data-bbox="520 451 674 508">Sodium (percent base constituents)</td> <td data-bbox="674 451 926 508"><60</td> <td data-bbox="926 451 1178 508">60 - 75</td> <td data-bbox="1178 451 1400 508">>75</td> </tr> <tr> <td data-bbox="520 516 674 548">Boron (mg/l)</td> <td data-bbox="674 516 926 548"><0.5</td> <td data-bbox="926 516 1178 548">0.5 - 2</td> <td data-bbox="1178 516 1400 548">>2</td> </tr> </tbody> </table>	Constituent	-- Class I	-- Class II	-- Class III	TDS (mg/l)	<700	700 - 2,000	>2,000	EC (µmhos/cm)	<1,000	1,000 - 3,000	>3,000	Chlorides (mg/l)	<175	175 - 350	>350	Sodium (percent base constituents)	<60	60 - 75	>75	Boron (mg/l)	<0.5	0.5 - 2	>2	Update if needed.
Constituent	-- Class I	-- Class II	-- Class III																									
TDS (mg/l)	<700	700 - 2,000	>2,000																									
EC (µmhos/cm)	<1,000	1,000 - 3,000	>3,000																									
Chlorides (mg/l)	<175	175 - 350	>350																									
Sodium (percent base constituents)	<60	60 - 75	>75																									
Boron (mg/l)	<0.5	0.5 - 2	>2																									
36	TL	IV-11	Discharges to areas that may recharge to good quality ground waters shall not exceed an EC of 1,000 micromhos per centimeter, a chloride content of 175 mg/l, or a boron content of 1.0 mg/l.	Update if needed.																								
37	TL	IV-13	<p>Industrial Wastewater: 5. Limit the increase in EC of a point source discharge to surface water or land to a maximum of 500 µmhos/cm. A lower limit may be required to assure compliance with water quality objectives. An exception to this EC limit may be permitted for industrial sources when the discharger technically demonstrates that allowing a greater net incremental increase in EC will result in lower mass emissions of salt and in conservation of water, provided that beneficial uses are protected. An exception may also be permitted for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions shall be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.</p>	Update if needed.																								

No.	BP	Page	Description	CV-SALTS Review
38	TL	IV-14	<p>Policies regarding the disposal of oil field wastewater are:</p> <ul style="list-style-type: none"> • Maximum salinity limits for wastewaters in unlined sumps overlying ground water with existing and future probable beneficial uses are 1,000 µmhos/cm EC, 200 mg/l chlorides, and 1 mg/l boron, except in the White Wolf subarea where more or less restrictive limits apply. The limits for the White Wolf Subarea are discussed in the “Discharges to Land” subsection of the “Municipal and Domestic Wastewater” section. • Discharges of oil field wastewater that exceed the above maximum salinity limits may be permitted to unlined sumps, stream channels, or surface waters if the discharger successfully demonstrates to the Regional Water Board in a public hearing that the proposed discharge will not substantially affect water quality nor cause a violation of water quality objectives. 	Update if needed.
39	TL	IV-20	<p>No proven means exist at present that will allow ongoing human activity in the Basin and maintain ground water salinity at current levels throughout the Basin. Consistent with the above, the Regional Water Board has determined that controlled ground water degradation by salinity is the most feasible and practical short-term management alternative for the Tulare Lake Basin. The water quality objectives for ground water salinity control the rate of increase and maintain beneficial uses as long as possible. A valleywide drain to carry salts out of the valley remains the best technical solution to the water quality problems of the Tulare Lake Basin.</p>	Update if needed.
40	TL	IV-29	<p>This basin plan update serves as the Triennial Review. The following issues are identified for study during this triennial review period:</p>	Update if needed.

No.	BP	Page	Description	CV-SALTS Review
			I. Salinity in the Lower Kings River: This issue was identified during the 1987 Triennial Review. Since that time, two studies were conducted on the Lower Kings River. The result of these studies was proposed modifications to the implementation and the monitoring and surveillance portions of this plan. However, due to drought conditions, neither investigation was conclusive. Additional study will be necessary to adequately define the salinity problems and develop policy decisions.	
41	TL	IV-30	IV. Ground Water Contamination: There are several areas within the Tulare Lake Basin where the ground water is adversely impacted by salts and chemicals to the extent that the ground water no longer supports all its beneficial uses. In some cases, the cause of the impact is identified and clean-up operations are proceeding. In most cases, the presence of the salts and chemicals are due to nonpoint source impacts and the source is not clear. Investigations should be done to identify potential sources of these contaminants and practices should be developed to reduce these impacts.	Update if needed.
42	TL	IV-30	V. Ground Water Quality Objectives for Salinity: The Basin Plan contains water quality objectives for salinity increases in ground water. These objectives have never been studied to determine their adequacy in promoting the Board's goal of minimizing the rate of salinity increase in the Tulare Lake Basin. A study should be conducted to confirm the adequacy of the listed objectives.	Update if needed.

1
2

1 **Stockton East Water District**

2

3 Stockton East Water District (Stockton East) has participated in countless Regional and State Water Board efforts related to
4 salinity in the San Joaquin River. Stockton East's interest in San Joaquin River salinity stems from its 1983 contract with the
5 United States Bureau of Reclamation (Bureau) for 75,000 acre-feet of water from the Stanislaus River, stored in New Melones
6 Reservoir. Until this year, SEWD has not seen consistent deliveries under this contract due to the Bureau's releases of New
7 Melones water for environmental purposes, including releases to satisfy the salinity objective at Vernalis. Even in light of the
8 State Water Board's finding that the Stanislaus River basin contributes only a de minimus amount to the salinity problem in the
9 San Joaquin River, the Bureau has released **in excess of 650,000 acre feet for water quality purposes from New Melones** to
10 dilute the highly saline water in the San Joaquin River over the past 15 years.

11

12 Stockton East realizes that the salinity problem is not easy to solve. Water deliveries to the Westside of the San Joaquin Valley,
13 both for agriculture and to the wildlife refuges, that have created the salinity problem in the San Joaquin River have continued,
14 while CVP water deliveries to the Eastside of the valley, namely Stockton East, have not materialized due to the need to dilute
15 the salty discharge that drains from these Westside lands. While this disproportionate impact to valley irrigators is primarily due
16 to the Bureau's own decisions, these decisions have been, and continue to be driven by the Regional Board and State Water
17 Board's inaction in developing and implementing meaningful salinity reduction programs.

18

19 As such, Stockton East is keenly interested controlling salts in the Central Valley and in specific, the adoption of salinity
20 objectives and an implementation plan upstream of Vernalis that will finally place the burden of solving the problem on those
21 creating the pollution in the lower San Joaquin River.

22

23 [Stockton East Basin Plan Issues](#) will be posted at the link when available.

24

1 **Central Valley Regional Water Quality Control Board**

2
3 **Summary Salinity Concerns—Central Valley Water Board Staff (11/5/10)**

4
5 The Water Board has recognized that maintaining beneficial uses sensitive to salt and nitrate (primarily agricultural and drinking water
6 supply) is not sustainable in basins where a salt balance is not attained. The Basin Plans recognize imbalance in salt loading in both the San
7 Joaquin River and Tulare Lake Basins, and need for long-term solution (ie. a drain). To date, development of a means to contain and move
8 salt out of the basins has proven unpalatable due to cost and/or political climate. The result is somewhat controlled (Tulare Lake Basin) or
9 uncontrolled (Sac-SJR Basin) degradation of surface and ground water resources.

10
11 While it is recognized that increasing population and industry within the Central Valley will lead to increasing water need and consumptive
12 use, without a policy to address the resulting increased salt loads, the Board must rely on existing designated beneficial uses, associated
13 water quality objectives, and the anti-degradation policy to regulate dischargers on a case by case basis as non-compliance is identified.
14 Site specific activities address small portions of the worst cases at great cost (RO, treatment), but are reactive and cannot address the
15 magnitude of the issue as is demonstrated by the increasing numbers of closed public supply wells and increasing number of dischargers
16 unable to comply with effluent limits.

17
18 Until the Basin Plans are changed to outline interim steps to provide a framework or identify the infrastructure to move toward ultimate
19 salt balance while providing economic and environmental sustainability, the Water Board must continue to regulate on a case by case basis.
20
21

1 **BENEFICIAL USE CHAPTER (CHAPTER II)**

2
3 Name/affiliation CVRWQCB Staff

4
5 Representing: Water Quality Regulation (state)

6
7 These comments relate to (check all that apply):
8 Tulare Lake BP Sac/SJR BP Delta Plan

9
10
11 **ISSUE (1 line description):** (expand space as needed)

12
13 Appropriate Beneficial Use Designation

14
15 **EXISTING CONDITION AND IMPACTS OF ISSUE**—may include cost, water availability, water quality, health or environmental concerns
16 (expand space as needed):

17 Beneficial use protection is the cornerstone of water quality regulation. Water quality criteria are scientifically determined to protect the use
18 and then water quality objectives are adopted through a public process taking into account economics. Implementation measures insure
19 that the objectives are met.

20
21 Due to the complexity of the Central Valley, many of the beneficial uses of water bodies have not been directly determined. For surface
22 water, the beneficial uses are assumed to be those of the first water body with such designations to which the water body in question is
23 tributary. In addition, the Sources of Drinking Water Policy (Resolution No. 88-63) assigns municipal and domestic supply to all waters of
24 the state with limited exceptions. For groundwater, unless specifically designated otherwise, the Basin Plan assigns MUN, AGR, IND &
25 PROD beneficial use.

26
27 Two of the beneficial uses most closely associated with limitations from salt and/or nitrate are agricultural supply (AGR) and municipal and
28 domestic supply (MUN). Neither of these broad uses have been qualified (limited) in any of the plans (except for Mud and Salt Sloughs in
29 the San Joaquin River Basin), therefore, they are assumed to provide for the most sensitive of uses. Site Specific Objectives have been
30 prescribed for New Alamo Creek to protect MUN use in Solano County near Vacaville. The Basin Plans designate that MUN use does not
31 exist in some surface waters, such as the Yolo Bypass and Colusa Basin Drain. Similarly, the MUN use has been removed from
32 groundwater in the vicinity of the Kettleman disposal facility in Kings County.

33
34 In addition, water quality in large surface streams can vary over the length of the stream. While Table II-2 of the Sac/SJR Basin Plan assigns
35 uses for big rivers like the Sacramento and San Joaquin by reach, most use designations (including designations for all unnamed water

1 bodies) apply to the entire water body. The Basin Plans provide only limited tools for staff to determine if a use designation is inappropriate
2 in a water body and should be disregarded (i.e. the exemptions listed in Res. 88-63). However, even if it has been determined that a use
3 may not be appropriate, staff does not have the legal authority to administratively “de-designate” or ignore application of a use to a water
4 body. Changes to a use designation can only be done through a Basin Plan Amendment.
5

6 In many cases, the Board has limited data or information to determine that appropriate uses of a water body. Without adequate or reliable
7 data, staff must presume no exemptions exist and must provide protection for the most sensitive beneficial use within a given water body
8 currently identified within the Basin Plan(s). With reliable data, it might be determined that a Basin Plan amendment should be initiated to
9 set more appropriate beneficial uses and/or water quality objectives, rather than pursue implementation of existing Basin Plan.
10

11 **BASIN PLAN PAGE(S):** _____
12

13
14 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE:**

15 (expand space as needed)
16

17 • **A scientifically justified recommendation for designating the beneficial uses of ag drains.**
18

19 Previous work on the Inland Surface Water Plan included a methodology for classifying types of natural, modified and constructed
20 channels used by agriculture. Follow-up work by the State Board convened Agricultural Water Task Force recommended possible
21 beneficial uses and associated water quality objectives for the various categories of agricultural water bodies. This work should inform
22 any future ag drain use designation.
23

24 • **A review of surface and ground water designated MUN to determine appropriateness of designation and potential categories of
25 MUN use.**
26

27 • **Reach refinements for selected surface water bodies**
28

29 The information gained by gathering the information needed to make reach refinements may not justify the cost, so the first stage of this
30 effort should be to poll the CV-SALTS stakeholders to find out if and where this is a priority before pursuing it.
31
32

1 **WATER QUALITY OBJECTIVE CHAPTER (CHAPTER III)**

2
3 Name/affiliation: CVRWQCB--staff

4
5 Representing: Water quality regulation

6
7 These comments relate to (check all that apply):s

8 Tulare Lake BP **Sac/SJR BP** Delta Plan

9
10
11 **ISSUE (1 line description):**

12
13 Determining appropriate salinity objective(s) to protect beneficial uses (AGR and MUN)

14
15 **EXISTING CONDITION AND IMPACTS OF ISSUE—**

16 The Basin Plan only specifies numeric salinity objectives for a few surface water bodies in the Sacramento and San Joaquin River Basins.
17 For groundwater and all other surface water bodies in the basins, staff must rely on narrative objectives in determining numeric limits for salt
18 as follows:

19
20 Agriculture Supply (AGR): Agricultural supply is typically the beneficial use most sensitive to salt degradation. The Basin Plan does not
21 specify numeric salinity objectives to protect agricultural supply. Without specific numeric objectives or an adopted policy to determine
22 appropriate objectives, the Board typically utilizes a conservative approach in applying the narrative objective to ensure protection of salt-
23 sensitive crops. Staff generally uses the 700 uS/cm recommended by Ayers and Westcot for protection of AGR beneficial use as a
24 threshold unless site specific objectives have been adopted for the receiving water. If the salinity of the waste discharge or waterbody is
25 below the 700 uS/cm threshold, it is assumed that AGR use is fully protected in regards to salt, and no further study is required. If the
26 salinity exceeds the threshold, site specific studies are required to assist the staff interpret the narrative objective at that location.

27
28 Municipal and Domestic Supply (MUN): Unless otherwise designated, the statewide drinking water policy assigns MUN to all water bodies
29 within the two basins with limited exceptions. The Basin Plan specifies in the chemical constituents objective that, for MUN beneficial uses,
30 water quality is not to exceed the maximum contaminant levels (MCLs) contained in Title 22 of the California Code of Regulations. Title 22
31 contains three MCLs for salt: Recommended, Upper, and Short Term. Respectively these are 500, 1,000, and 1,500 mg/l for TDS, and 900,
32 1,600, and 2,200 uS/cm for EC. However, Title 22 does not make it clear which of the MCLs to apply. The State Board's Lodi Decision
33 concluded that it is inappropriate to use the Short Term MCL for MUN protection. The Board normally uses the most restrictive level absent
34 site specific information.

1 Regardless of beneficial use designation, some areas of the basin have naturally elevated salinity in both the water bodies and the soil
2 profiles. In addition, some dischargers have source water that has EC levels near or higher than recommended levels, with concentrations
3 increasing after consumptive use. In those cases, the effluent limits set to meet 700 uS/cm or recommended MCLs are impossible for
4 dischargers to meet without finding a lower salinity water supply or installing a reverse osmosis treatment system. Both of these alternatives
5 are very costly, and alternate water supplies are not always feasible.
6

7 Since specific numeric objectives to protect AGR or MUN are not formally adopted within the basin plan, challenges from the regulated
8 community or other stakeholders are common. The Regional Board has proposed different alternatives in their permits in attempting to
9 address this issue, but most, if not all, have been petitioned to and/or remanded by the State Board. Until specific objectives or policy to
10 determine appropriate objectives have been adopted into the Basin Plan, adjustments from the 700 uS/cm or the recommended MCL must
11 be made on a case by case basis, with the discharger providing information to support a site-specific receiving water limit.
12

13 **BASIN PLAN PAGE(S): III-6.02 and Table III-5, page 3 of 6**

14 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE**

15
16
17 For AGR:

18
19 One potential approach to resolving this issue is to assess different areas in the Central Valley in order to develop salinity objectives for AGR
20 protection that are more appropriate for different sub-regions. Before any assessment, an appropriate study methodology that is both
21 technically and legally defensible must be developed. Such a methodology could include but not be limited to:

- 22 1.) Evaluating and comparing several models and selecting one(s) that could be used to develop salinity objectives for AGR protection;
- 23 2.) Developing criteria for selecting appropriate inputs for the model(s); and
- 24 3.) Review of water supply salinity levels that are protective of regional production agriculture.
- 25 4.) Gathering representative information from throughout the Central Valley to feed the model.
- 26 5.) Considering application of the anti-degradation policy.

27
28 For MUN:

29
30 A review is needed to determine the appropriate use of the three MCL's for source water protection. The process should include a review of
31 salinity standards established for drinking water sources in other states and countries as well as the research on impacts of salinity to
32 identify protection thresholds would be needed in order to propose a technically sound MUN source water objective.
33

34 Another approach might be to adopt the path taken in the Tulare Lake Basin Plan, which is to permit a specified salinity increase for
35 consumptive use (e.g. for POTWs - 500 uS/cm), but only up to a certain limit (e.g. 1,000 uS/cm). But in order to do this, the upper limit
36 established would need to be based on a technical study as discussed above.
37

1 **IMPLEMENTATION CHAPTER (CHAPTER IV)**

2
3 Name/affiliation __CVRWQCB Staff_____

4
5 Representing: __Water Quality Regulation (state)_____

6
7 These comments relate to (check all that apply):
8 Tulare Lake BP Sac/SJR BP Delta Plan

9
10
11 **ISSUE (1 line description):** (expand space as needed)

12
13 Lack of Policy to Address Acknowledged Salt Build-up

14
15 **ISSUE DESCRIPTION AND IMPACTS:** (expand space as needed. Impacts might include costs, water availability, health or other concerns)

16
17 The Basin Plan recognizes imbalance in salt loading, especially in the SJR Basin and need for long-term solution (ie. a drain). However, the
18 Plan does not outline interim steps to provide a framework or identify the infrastructure to move toward ultimate salt balance. To date,
19 development of a means to contain and move salt out of valley has proven unpalatable due to cost and/or political climate. Without some
20 interim framework in place, salt loading is leading to uncontrolled degradation in both surface and ground water. Site specific activities
21 address small portions of the worst cases at great cost (RO, treatment), but are reactive and can not address the magnitude of the issue as is
22 demonstrated by the increasing numbers of closed public supply wells and increasing number of dischargers unable to comply with effluent
23 limits.

24
25 AGR is typically the beneficial use most sensitive to salt degradation. Irrigation moves salt. Maintaining AGR use sustainability is therefore
26 impossible in basins where a salt balance is unattainable. This conflict is acknowledged in the Tulare Lake Basin Plan but the Sac/SJR
27 Basin Plan is silent on the concept of controlled degradation.

28
29 Neither basin plan clarifies how long beneficial use protection should last. Put in other words, the Board must rely on best professional
30 judgment on whether to set goals, objectives or limits that protect the resource for 5 years, 20 years, 100 years, or forever. Salt is
31 conservative, so limits stringent enough to protect groundwater use through 2100 could be justified even though compliance costs could be
32 astronomical in some cases; but without a policy directing the analysis, limits that slow but don't stop degradation over a much shorter period
33 can be equally defensible. The issue is fairness as well as feasibility.

34

1 While it is recognized that increasing population and industry within the Central Valley will lead to increasing water need and consumptive
2 use, without a policy to address the resulting increased salt loads, the Board must rely on designated beneficial uses, associated water
3 quality objectives, and the anti-degradation policy (see associated comment papers) to regulate dischargers on a case by case basis as
4 non-compliance is identified.

5
6 **BASIN PLAN PAGE(S):** Implementation Chapter 4

7
8 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE:**

9
10 **Specific information that should be gathered, developed and evaluated as part of this effort includes but is not limited to:**

- 11
- 12 a. Existing salinity and nitrate policies in western states (Colorado, Nevada, Arizona, California: Santa Ana and Tulare Lake
13 Basins) and Australia for:
 - 14 1. Scope
 - 15 2. Lead and participants
 - 16 3. Organizational structure
 - 17 4. Resulting framework
 - 18 5. Timeline
 - 19 6. Cost and funding source(s)
 - 20 7. Project measures of success
 - 21 8. Results: what worked, what didn't, how has it been adapted
 - 22
 - 23 b. Overall status of salinity and nitrate within each major basin (Tulare Lake, Sacramento and San Joaquin)
 - 24 1. Identify users currently impacted by salinity and/or nitrate.
 - 25 1. Dischargers regulated with "special" salinity management requirements (e.g. effluent limits)
 - 26 2. Compliance with salinity requirements is viewed as a problem (violations or Discharger complaints)
 - 27 2. Identify status and trends of salinity in surface and ground water
 - 28 1. Begin date: 1968
 - 29 2. Identify salinity constituents of concern involved in the trend
 - 30 3. Compare status and trends with beneficial uses and associated water quality objectives
 - 31 1. Determine assimilative capacity
 - 32 a. For both anti-degradation and to meet appropriate water quality objectives
 - 33 4. Identify areas of good water quality; areas exceeding objectives; and areas anticipated to exceed objectives within
34 set time frames
 - 35
 - 36 c. Availability and adequacy of current information/data for item "C" and where additional information/data is needed or desired

- 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8
 - 9
 - 10
 - 11
 - 12
 - 13
 - 14
 - 15
 - 16
 - 17
 - 18
 - 19
 - 20
 - 21
 - 22
 - 23
 - 24
 - 25
 - 26
 - 27
 - 28
 - 29
 - 30
 - 31
 - 32
 - 33
 - 34
 - 35
 - 36
1. Identify potential partners desiring additional or supplemental information/data & collect desired information/data as resources allow
 2. Identify appropriate monitoring network to evaluate change
- d. Priority areas within each major basin
 1. Conduct targeted study similar to above, scaled to management needs within the sub-area and Project resources
 - e. Implementable projects (regulatory and non-regulatory) that could address problems identified above. These could include, but are not limited to:
 1. New Regional/State Board policies
 2. Conditional prohibitions of discharges for specific discharger types or geographic areas
 3. New or revised beneficial uses for specific water bodies or water body types
 4. Numeric objectives for specific uses
 5. Identification and implementation of BPTC by discharge type
 6. Non-mandated individual discharger efforts
 7. Coordinated efforts
 - f. Determine whether existing, some combination or new policy is appropriate for regional area
 1. Basin Plans sections that may benefit from revision based information developed in previous tasks.
 2. Water management policies that may benefit from revision based on information developed in previous tasks.
 - g. Recommendation for Basin Plan amendments that includes
 1. Compiling all relevant data
 2. Screening out bad data
 3. Identifying new data that is needed
 4. Collecting the new data
 5. Evaluating data
 6. Public review
 7. Identifying and evaluating alternatives
 8. Modeling
 9. Developing cost estimates
 10. Conducting anti-degradation analyses for the Project as a whole and each sub-project
 11. Identifying and evaluating environmental impacts of the Project as a whole and each sub-project (either through a programmatic environmental document or a series of project-specific environmental documents)
 12. Drafting a report with a proposed Basin Plan amendment and all the above information
 13. Public review

- 1 14. Responding to public comments
- 2 15. Proceed to Regional Board workshops and hearings

3
4 **The following process that could be utilized focuses on continuing the CV-SALTS effort to develop salinity and nitrate plan and**
5 **associated basin plan amendments**

- 6
7 1. Clearly define what this project is expected to accomplish.
 - 8 • Identify current sections within the Basin Plans (from the perspective of both staff and stakeholders) that could be improved by a
 - 9 salinity and nitrate policy and associated Basin Plan Amendments
 - 10 • Make a decision as to whether the project will
 - 11 1. Continue to focus on a single, all-encompassing amendment
 - 12 2. Develop a project scoped to optimize use of available resources or
 - 13 3. Develop an amendment in the short term to establish the framework for proceeding with a sustained salinity control effort, but
 - 14 does not have any substantive updates to the beneficial uses or numerical water quality objectives.
- 15
16 2. Identify responsibilities of key parties and retain a technical project lead and facilitator.
 - 17 a. Evaluate the capabilities of the committees, staff and consultants in completing the various work elements.
- 18
19 3. Identify project resources and priorities, define a preliminary goal that is achievable, and establish a preliminary list of activities that
- 20 can be completed within the time and resources allocated. The goal will have to take into consideration the demands of the
- 21 Recycled Water Policy and other mandates. Phased work should be identified if needed with contracted work in Phase I limited to
- 22 tasks that will support the completion of the primary goals.
- 23
24 4. Review the information needs of the project elements selected--needs will range from raw water quality data to information on
- 25 efficacy and costs of treatment and disposal options. With the list of needs in mind, initiate a review of available data (note that a
- 26 data-gap analysis has been conducted), historical salinity studies and research, ongoing salinity control efforts being conducted at
- 27 facility, municipal, or regional levels, salinity control efforts conducted outside of the Central Valley, including salinity management
- 28 plans that have elements that could be incorporated into our Basin Plans. Feed the information developed through this effort into the
- 29 various project elements that can use it.
- 30
31 5. After compiling the available information, identify critical information needs and initiate development of additional data and
- 32 information, as needed. This will have to include an analysis of the latest salinity treatment and control options and their costs (to
- 33 follow through on work started by the BMP committee.) As appropriate, 13267 requests could be used to require information
- 34 development.
- 35

1
2
3
4
5
6
7
8
9
10
11
12
13
14

6. In light of the resources and priorities-setting process discussed above, reevaluate the scope and timeline for the work focused on beneficial uses and water quality objectives. Continue contract work on these elements of the project, as appropriate.
7. Initiate discussion of the implementation process concurrent with data development. The discussion should range from actions expected from individual water softener owners up to the regional/basin scale, stakeholder activities and regulatory incentives and/or penalties. Since irrigation water supplies is such a large part of the equation, DWR, USBR and the water districts must be part of the process to determine what they are doing and/or could do to manage salt. The gathered information will be critical for the development of an implementation plan.
8. Review of environmental impacts and costs of alternatives once the project is better defined, although the cost of this work has to be factored in to overall planning efforts.
9. Development and operation of a long-term monitoring effort once priorities of project defined.

1 **OTHER:**

2
3 State Anti-degradation Policy (Res. No. 68-16)

4
5 Name/affiliation CVRWQCB Staff

6
7 Representing: Water quality regulation (state level)

8 These comments relate to (check all that apply):

9 Tulare Lake BP Sac/SJR BP Delta Plan

10
11
12 **ISSUE (1 line description):** (expand space as needed)

13
14 Anti-degradation vs. reasonable consumptive use

15
16 **ISSUE DESCRIPTION AND IMPACTS:** (expand space as needed. Impacts might include costs, water availability, health or other concerns)

17
18 The policy states (in part):

- 19 1. *“Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become*
20 *effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent*
21 *with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water*
22 *and will not result in water quality less than that prescribed in the policies.*
- 23
- 24 2. *Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or*
25 *proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the*
26 *best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the*
27 *highest water quality consistent with maximum benefit to the people of the State will be maintained.”*

28
29 The overall intent of the anti-degradation policy is to prevent water quality from being unreasonably impacted (degraded) from controllable
30 discharges. Given the narrow limits of interpretation allowed in the anti-deg policy, the Board is extremely limited in implementation of the
31 policy. In some situations tradeoffs between water quality and water quantity might be desirable but most would violate the policy, as the
32 policy assumes that water quality does not (and the implication is that it should not) vary within a recognized reach, including within a single
33 ground water aquifer. With salt in particular, the policy does not directly account for changes in water quality due to consumptive use, so
34 economic feasibility (practicable treatment) and the “benefit to the people of the State” must be reviewed for each individual case.
35

1 Finding 2 mentions Best Practicable Treatment or Control. While almost always expensive, it is at least theoretically possible to treat and/or
2 control salt in almost all situations. Reverse osmosis has long been recognized as an effective way to remove salt from water, and if that
3 option is unpalatable, the Board can always prohibit the discharge entirely. The policy, as currently implemented in the Sac-SJR Basin Plan
4 does not offer much middle ground.
5

6 The Tulare Lake Basin Plan does provide for controlled degradation and consolidation of salt while an out of basin solution is developed and
7 the Santa Ana Region used the “maximum benefit” provision at the end of finding 2 to justify their approach, which allowed degradation to
8 occur in certain portions of the region for a limited time. The Santa Ana justification required the region to also pursue a salt management
9 implementation path aimed at restoring quality to some degraded portions of their aquifers.
10

11 Until a policy clarifying implementation of the anti-degradation policy with regards to salt is adopted into the basin plan, the Board must
12 continue reviewing water quality impacts on a case by case basis.
13

14
15 **BASIN PLAN PAGE(S):** _____
16

17 **DATA/INFORMATION AVAILABLE OR NEEDED TO RESOLVE THE ISSUE:**

18 (expand space as needed)
19

20 Addressing the anti-degradation concerns may be a two -prong approach: Statewide policy; and Basin Plan policy. The State Water
21 Resources Control Board is currently reviewing the statewide anti-degradation policy to determine if changes are warranted to improve use
22 and interpretation. It is anticipated that the statewide review will consider consumptive use, but the timeline for review has not been
23 established.
24

25 A more “immediate” resolution would be to review the potential for adopting a policy to address consumptive use through controlled
26 degradation while pursuing salt balance as a Basin Plan Amendment (see implementation policy comment paper).
27

28 Any such approach would at a minimum need to gather information identified in the Implementation Policy as well as:
29

- 30 • Engage USEPA Region 9 and USEPA headquarters in any discussion
- 31
- 32 • Review recent State and Regional Board actions where anti-degradation analyses were performed (the analysis is required at some
33 level for every basin plan amendment, and may also be required for other actions).
34
- 35 • Review the material presented by Wildermuth to CV-SALTS to identify elements needed to justify a “maximum benefit” categorization
36 for specific cases where degradation may be difficult or impossible to avoid.
37

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

1) An interim strategy of controlled degradation for the Sac and SJR Basins while infrastructure is planned, negotiated and built to implement a salt balance in the basins

The TLBP can be used as a model if the monitoring called for in the TLBP is implemented and the effectiveness of the strategy can be verified.

2) A definition of “sustainable”

This definition should be developed in conjunction with the state and federal agencies whose policies are implemented through the basin plans

3) A three-dimensional survey of groundwater quality, taking into account anticipated variations due to climate and pumping trends; and policy recommendations to ensure maximum benefit to the people of California is maintained.

A good deal of work has been done by USGS, DWR and others to characterize some Central Valley groundwater, and more work is planned by DWR for the next and future Water Plan updates.

Questions for the Executive Committee from the Knowledge Gained Subcommittee, 11/09/10

Until it is clearer what the subcommittee is tasked to do, it will be difficult for the subcommittee to do its work effectively or to come up with something that is clear and focused and that we know is going to fulfill CVSALTS needs. Therefore, a few of us have prepared some directed questions to help the Executive Committee give us the needed direction. The memorandum attached to the November 18 agenda should also highlight possible discussion points per the direction of the Subcommittee's work.

Essentially: What is the ultimate product desired from the subcommittee?

1. CVSALTS funded a pilot salinity and nitrate sources study that was narrowly focused. The Knowledge Gained subcommittee has discussed the need to expand the scope in order to develop more broadly useful data. Does the Executive Committee prefer to limit the subcommittee's work to a review of the sources study as is, or to expand the subcommittee's work to a broader context of review of up to three pilot salinity/nitrate studies?
2. Should the subcommittee limit its technical review to questions that the sources study answered, or should it review the study in a broader informational context (to inform planning and water supply/quality management in addition to mass loading).
3. Should the subcommittee review the three known studies to inform future direction of salinity and nitrate data gathering?
4. Should the subcommittee review the three known studies to inform a methodology for prioritizing areas to (regulate/plan/manage)?
5. Should the subcommittee review the three known studies to inform identification of management strategies or identification of problem types (in addition to source types)?
6. The subcommittee believes that the analysis of sources should be done in the context of the beneficial uses being protected (an analysis of river water quality should be done in the context of the desired water quality outcome). Does the executive committee agree? And if so, would the executive committee advise the subcommittee on whether/how it should evaluate for existing/future antidegradation, beneficial uses, water quality objectives and control practices? Should some of this work be phased? Or can it be flexible enough to adapt to changes in these endpoints?
7. Should salinity and nitrate studies determine assimilative capacity in groundwater or surface water? Is there some guidance the subcommittee should employ in assessing whether the studies have done this?



CV-SALTS Executive Subcommittee

3a-3b Committee Recommended Questions and Statements

Version 3 - 11-12-10

1. *To be discussed* by the Executive Committee as a whole.
 - a. A broad policy for the entire Central Valley
 - b. How do we get a structure suitable to move forward?
 - c. *How should CV-SALTS allow for consumptive use?*
 - d. *Would a strict antidegradation application be implementable?*
 - e. *Are consistency and fairness appropriate objectives and how would they be determined?*
 - f. *How do we organize regional efforts?*
 - g. *How do regions pass upward policy issue and how does the Executive Committee make decisions to pass downward?*
 - h. *Should the Policy and Framework (3a-3b) subgroup continue work on these issues?*
 - i. *Will this approach solve salt and nitrate issues in an economically viable manner?*
2. The Subcommittee recommends a regional approach; the Lower San Joaquin represents one region and potentially a model. The Subcommittee discussed:
 - a. Region is accountable and has some autonomy
 - b. Region shall be incentivized in some manner to participate
 - c. Regions work closely via framework in planning
 - d. Regional work closely via framework in implementation
 - e. Regions prioritized by readiness, issue identification and impact to Salt and Nitrates
3. CV-SALTS shall provide framework and BPA - the umbrella (see **Regional /Distributed Strategy**)
 - a. Framework will direct and provide bounds for actions and efforts
 - b. Framework will indicate how regions work and how they interact with CV-SALTS
 - c. BPA plan shall integrate all regions and address areas that do not have a region
4. Policy Issues and Questions
 - a. Funding central (CV-SALTS) or fund regions or a hybrid/combination?
 - b. Basis for funding decisions, need, match or other criteria?
 - c. What if a high priority area does not participate?
 - d. How can progress be assessed and documented?
 - e. Will participation be required, what are the consequences for not participating?
 - f. How will it mesh with other regional Board Programs? (see **Policy Document, Joe K**)
5. Technical Issues Questions
 - a. What would be needed of regions? (see **Knowledge Gained Excerpts**)
 - b. How would it be integrated to produce the BPA or BPA's?
 - c. Other Technical Issues

Regional or Distributed Salinity Strategy

Utilize a regional or geographic distribution to separate tasks into manageable integratable components.

Concept: Regional Distributed Salinity Management

Use alternative organizations and management methods systems to encourage strong local leadership, control, funding and implementation. The concept uses parallel data collection analysis and planning, with standardization and assessment at regional/local levels to provide the data and preparation where the data resides or is obtainable in shorter timeframes. Strong data standards and integration processes to provide needed data.



1. Some Regions will volunteer, seeing the inherent benefits some regions will decide it is in their best interest to come forward to manage there region.
2. Preliminary assessment to triage – sets priority for regional that do not volunteer
3. Preliminary guideline goal absent any other data for the area and overall goal for areas of lower priority Answers what you would if you had to limit salinity in 1 month/year?

Local Lead, local community leads efforts, funds their efforts and provides information and coordination with central processes and decisions. Each area determines the amount of data to support its case for less restrictive limits. More expensive in areas where the problem is greater. More important areas will likely have more data and resources. Funding match to locals when possible (grants and state funding). Baseline funding to central group as % of local efforts (20%)?

Regional Lead, team from region leads efforts and coordinates on a level appropriate to the geographic area, more limited interaction and direction with funding from state and most protective regulatory limits. Centralized functions only operate where locals do not lead/participate.

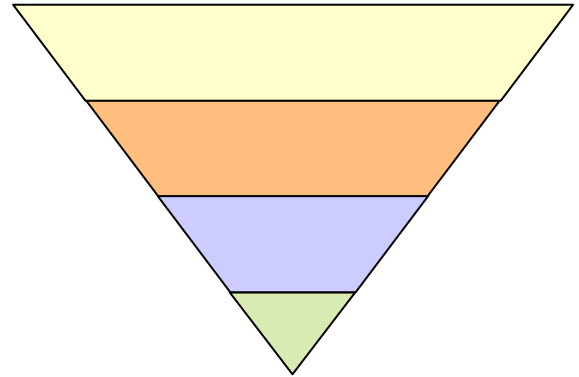
Central program operates to aggregate data, validate and provide integrated analysis.

Analogies

1. Large data acquisition and processing systems
2. Voting or filing taxes
3. Complex or intensive computing needs
4. Franchise or independent territory model
5. State/County model
6. Integrated Regional Water Management

Benefits

1. Robust and scaleable solution
2. Implementable in the timeline proposed
3. Maximize the use of electronic methods and
4. Local control of data and process
5. Local control of funding and methods
6. Local territories can raise revenue
7. Sustainable where local resources are adequate



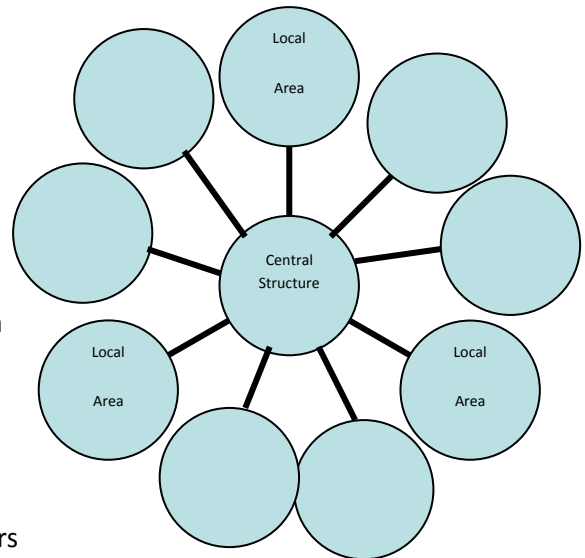
Requirements

1. Simple concept and approach
2. Clear purpose and process
3. Clear requirements and schedule
4. Aligned incentives and disincentives – maximum freedom and independence in local mode, command and control in central control
5. Strong central structure with very low control - if standards and schedule are met
6. Certain regulatory enforcement or requirements
7. Clear boundaries for territories
8. Ability to collect funds in territories that do not chose to lead

Why is this Approach/Strategy needed?

Drivers

1. Large geographic size of the Central Valley – difficult to have a physical center
2. Scale of the data collection and aggregation needed for salinity across the region – Likely one of the largest data acquisition efforts in regulatory history
3. Large variability the salinity issue in the Central Valley
4. Schedule and timeline needed to address and regulate salt in the next 5-7 years to avoid adverse regulatory burden
5. Intense sub-regional community and distrust of outsiders
6. Need for local control
7. Need to align the incentives for participation with the self-interest of the participants



Straw Proposal - CV-SALTS Policy Statement and Regulatory Framework

The following straw proposal suggests a policy statement and regulatory framework for Central Valley Water Board consideration. The intent of the policy statement and regulatory framework is to define the Water Board's expectations of the CV-SALTS effort and clarify how various salinity related regulatory efforts will be addressed in both the short and long-term. This document is for discussion purposes only and does not represent a recommended approach of the CV-SALTS coalition or the Central Valley Water Board.

CV-SALTS Policy Statement

Proposed concepts to be included in a policy statement:

- CV-SALTS is a programmatic approach to developing the policies and science to create sustainable salt and nitrate management in the Central Valley.
- Both regulatory and nonregulatory management options will be evaluated and a primary goal of the effort is to update the Water Quality Control Plans for both surface waters and groundwaters of the Region.
- The primary focus will be on the policies and regulations that the Central Valley Water Board can establish to facilitate cost effective salinity management while protecting beneficial uses of surface and ground waters.
- Water supply demands and management can significantly impact the ability to effectively manage salts, therefore, the CV-SALTS effort will be closely coordinated with water supply management and planning efforts.
- There are many parties that have a stake in how salt is managed in the Central Valley. It is critical that all interests be heard and that the public participation process be accessible and transparent to all stakeholders. Sustained engagement by interested parties will be vital to the successful implementation of any salinity management program adopted by the Central Valley Water Board.
- The long-term viability of portions of the Central Valley is dependent on finding cost effective and feasible methods for exporting excess salts out of the valley. However, near term efforts must focus on minimizing salt discharges and reducing the levels of other discharge contaminants in order to reduce the costs, technical feasibility, and environmental impacts of any long-term solutions.
- It is important for the Central Valley Water Board to protect existing and potential future uses of ground and surface waters. However, site specific data and scientific studies have not often been available to confirm that uses designated through general policies can be reasonably achieved. The Central Valley Water Board supports efforts to develop site specific information regarding the existence or attainment of beneficial uses.

Regulatory Framework for Salt Management

The Central Valley Water Board recognizes that there are many regulatory efforts that must continue to move forward as the broader salinity management plan is developed. To support the Central Valley Water Board's Policy, the following approach will be used to address near and long-term regulatory issues related to salinity:

- The committees and work groups of the CV-SALTS initiative will be the primary forums for coordination of data collection, scientific studies, and policy development. Those committees and work groups are expected to develop and implement work plans to meet their objectives. The Executive Committee will periodically report to the Central Valley Water Board on progress in accomplishing work plan tasks.
- The Central Valley Water Board intends to consider adoption of a comprehensive salinity management plan based on the work of the CV-SALTS participants. The components of that plan are expected to include: (1) reviewing beneficial use designations and providing documentation for any recommended changes, modifications or additions; (2) development of documentation needed to establish numerical salinity and nitrate water quality objectives for waters of the region and (3) development of the implementation program that will be used to achieve compliance with the water quality objectives. This program will contain both regulatory and nonregulatory efforts, and will include provisions to achieve compliance if the nonregulatory efforts are not implemented.
- Although the comprehensive salinity management plan will define how salt discharges will be handled over the long-term, many discharges are confronted with challenges to meet regulatory requirements in the near term. Also, there are a number of regulatory processes that have been initiated that need not be delayed until the comprehensive plan is adopted. The Central Valley Water Board will continue to work with interested parties on these near-term issues, however, the Board expects such efforts to be coordinated with the CV-SALTS initiative. Such coordination may include collaboration with CV-SALTS on scientific studies or policy development or may focus on information exchange. Near-term salinity issues that are expected to be addressed by the Central Valley Water Board in coordination with CV-SALTS include: salt issues that must be addressed in pending or adopted permits; basin planning efforts needed to address site-specific issues in which the feasibility of meeting permit requirements is in question; basin planning efforts that have been ongoing; the development of salinity management or monitoring plans that are applicable to a broad area. Examples of such near term efforts include:
 - o Development of salinity and nutrient management plans for groundwaters as called for in the Recycled Water Policy.
 - o Development of salinity objectives for the lower San Joaquin River. CV-SALTS currently has a work group focused on this effort.

- Implementation of the salinity control program for the San Joaquin River Basin. This includes a Management Agency Agreement with the U.S. Bureau of Reclamation and TMDL load limits that apply to both point and nonpoint source dischargers or the implementation of a real time management program.
- Interim salt policy for waste water treatment. CVCWA and the Central Valley Water Board are working on this policy.
- Salt minimization plans and site specific objectives studies. Recently adopted NPDES permits and WDRs for discharge to land include a requirement to submit salt minimization plans. Some NPDES permits also include provisions for SSO studies. The permittees are working on these plans and studies with Board staff input.
- Promotion of best management practices for salinity control. This includes establishment of a standard process for evaluation of proposed practices followed by the process of reviewing and promoting the use of effective practices.
- Dairy nutrient management plans and salt minimization plans. The dairy industry/ individual dairies prepare the plans for submittal to the Board. The plans apply to over 1,400 dairies and 500,000 acres of crop land.
- Dairy ground water monitoring. Dairies are required to conduct ground water monitoring (salts/nitrates) and are investigating the feasibility of representative monitoring with the Central Valley Water Board.
- Irrigated lands salinity management plans. Several coalition groups are required to develop salinity management plans for specific watersheds. Those coalitions have indicated they will coordinate their efforts with CV-SALTS.
- Irrigated lands monitoring plans. Coalition groups are conducting surface water monitoring that includes salinity and nutrient monitoring at numerous sites. Coalition groups have developed those plans with oversight/approval of the Central Valley Water Board.
- Grasslands Bypass Project – WDRs and MRP order. Although focused on selenium, many of the selenium controls have resulted in salt load reductions. An established stakeholder group provides input on the monitoring efforts.
- Site specific objectives/ use attainability analysis. Historically, interested parties have provided funding to the Board for site-specific Basin Plan Amendments, although no assurance of a specific policy outcome has been given. The Central Valley Water Board will consider, on a case by case basis, any such requests to address site-specific salinity issues. Pursuing such an Amendment will be based on availability of funding for Board staff and consideration of the ability of the discharger to comply with their permit in absence of a Basin Plan Amendment.

Excerpts from the Knowledge Gained Committee

A preliminary Technical Region Based Approach to Salt and Nitrate Management

Technical Approach for Regions

This draft work was ongoing with the Knowledge Gained committee chaired by Lisa Holm. The committee has a number of discussions related to similar topics. The concepts extracted below are draft but have value for discussion. The concepts were not developed further because CV-SALTS had not determined if it was to take a regional approach or structure and objectives of such a strategy.

For detailed review of regions expected information from a region would include the following areas. The required levels of information: Black text all regions, red text more impacted regions.

1. Physical Description of Region. *Region should identify itself by physical boundaries and participating stakeholders. (GIS shapefile format)*
 - 1.1 Existing Institutional and legal frameworks for addressing salt/nitrates (planning, funding, implementing)
2. Water Budget. *Region should develop one or more water budget examples that characterize the water use of that region, at a scale that is appropriate to salinity and nitrate management. For more complex regions, numerical models should be used to develop water, salt, and nitrate budgets.*
 - 2.1 Define appropriate physical scale: *These may be traditional watershed boundaries, or they may need to adapt to human manipulation of watershed. Either way, they must maintain integrity between unit boundaries and throughout the region. (Or for a minimum level can it be the entire region?)*
 - 2.2 Define appropriate temporal scale: *Region should determine on which temporal scale salinity/nitrate issues are most appropriately addressed, and the water budget should be developed to support this scale. If there are no existing issues (existing water quality objectives or local water quality operational guidelines), then region's should consider as a default a monthly temporal scale for surface water and an annual/decadal? Scale for groundwater.*
 - 2.2.1 Residence time consideration – since some water quality solutions come through changing the timing of discharge or of water supply management.
 - 2.2.2 Exceptions to the steady state assumption and other factors needed to understand the water balance

- 2.3 Define representative budget scenario(s). *Region should account for sources, qualities and uses of source waters and should identify waters leaving region. The water budget should consider all sources of water, as well as the current priorities and constraints of their use and properties. For example, if a region's water supply is entirely surface water in wet years, but entirely ground water in dry years, a region should develop water budgets for both of those hydrologic conditions. If water use decisions are dependent on other constraints that can vary significantly, those should be considered when defining representative scenarios.*
- 2.3.1 Surface water (source and receiving) – *If there are major surface waters flowing through, but not entirely used as a supply, should there be some way to just pass through that water/salt and focus on incremental effect on the water body?*
- 2.3.1.1 Identify drivers of surface water supply management
 - 2.3.1.2 Identify existing surface water models
 - 2.3.1.3 Identify evapo-transpiration rates throughout region
- 2.3.2 Groundwater (source and receiving)
- 2.3.2.1 Identify drivers and constraints of ground water supply management
 - 2.3.2.2 Identify existing groundwater models
- 2.3.3 Recycled water
- 2.3.4 Constraints (i.e. hydrology, regulatory demands, habitat considerations, flood control, water supply variability, drought planning, future development, water rights)
- 2.3.5 Current state of development and future state of development
3. Land Cover. *Region should provide descriptions of land cover in region.*
- 3.1 *At current development level and at estimated build out (or through end of existing general plan coverage)*
 - 3.2 Identify associated water sources
 - 3.3 CUs where different from standard CVSALTS assumptions
 - 3.4 Salt and nitrate Loading rates where different from standard CVSALTS assumptions, including documentation of replacement values
 - 3.5 Identify any salinity/nitrate best management practices currently supported by region
 - 3.6 Identify the largest drivers of land cover decisions in region

4. Salt Budget. *Region should develop salt budgets that correspond to each representative water budget developed*
- 4.1 Identify Salt Sources. *Region should identify all salt sources. Default values by land cover are provided by CVSALTS. Salt source categories are water supply, land cover, and atmospheric deposition. Salt sources should be described in terms of concentration, loading rate (per acre, per region), and acres of associated land cover.*
 - 4.1.1 *Prioritize Salt sources: Salt sources should be ranked by largest to smallest sources, with a focus on the largest sources relative to each major receiving water body. Differentiate between anthropogenic (controllable) and non-anthropogenic sources.*
- 4.2 Identify Salt Sinks. *Region should identify all salt sinks: surface water, groundwater, land disposal, off-site shipping.*
- 4.3 Inventory in soils, both as a source of nitrate to groundwater and interim storage
- 4.4 Concentration processes and locations. *Region should identify activities that are currently concentrating salts a) within the region generally and b) in localized hot spots.*
- 4.5 *Identify where residence time and/or proximity is a factor in surface water balances of salt.*
- 4.6 Identify all site-specific salinity water quality objectives in the region.
 - 4.6.1 *Identify all existing control programs adopted in region and status of implementation.*
 - 4.6.2 *Are existing control programs in place to regulate throughout the watershed (including all of the region's neighboring regions)?*
- 4.7 Identify any existing problem areas, hotspots and compliance issues for surface and groundwaters within the region (at any scale).
- 4.8 Identify any current salinity management plans, projects or activities being implemented in the region.
 - 4.8.1 *Identify current implementation of appropriate best management practices.*
 - 4.8.2 *Scale, technology, economics, other drivers/benefits for each project.*
- 4.9 Identify current plans, regulations, or projects designed to maintain or reduce salt that is transported to neighboring regions.
- 4.10 Identify current salinity monitoring locations.
- 4.11 *Identify current salinity monitoring gaps and funding/schedule to fill.*

- 4.12 Identify performance measures and triggers. *Based on nitrate budget, region must identify performance monitoring locations (can include water quality, land cover, planning or other activities) as well as “triggers” that would require reassessment of the region’s status within the long term Central Valley salinity and nitrate management plan.*
5. Nitrate Budget- *region should develop nitrate budgets that correspond to each representative water budget developed.*
 - 5.1 Identify Nitrate sources. *Region should identify all nitrate sources, including nitrate pre-cursors. Default values by land cover are provided by CVSALTS. Nitrate source categories are water supply, land cover (fertilizer application), and atmospheric deposition(?). Nitrate and nitrate pre-cursor sources should be described in terms of concentration, loading rate (per acre, per region), and acres of associated land cover. Transformation of pre-cursors into nitrates should be identified by facilitating activity. Nitrate and nitrate pre-cursor sources should be ranked by largest to smallest sources, with a focus on the largest sources relative to each major receiving water body.*
 - 5.1.1 *Prioritize Nitrate sources: Nitrate and nitrate pre-cursor sources should be ranked by largest to smallest sources, with a focus on the largest sources relative to each major receiving water body. Differentiate between anthropogenic (controllable) and non-anthropogenic sources.*
 - 5.2 Identify Nitrate Sinks. *Region should identify all nitrate sinks: surface water, groundwater, land disposal, off-site shipping.*
 - 5.3 Nitrogen losses
 - 5.4 Inventory of nitrate in soils that can enter groundwater
 - 5.5 Identify all site-specific nitrate and dissolved oxygen water quality objectives in the region.
 - 5.5.1 *Identify all existing control programs adopted in region and status of implementation.*
 - 5.5.2 *Are existing control programs in place to regulate throughout the watershed (including all of the region’s neighboring regions)?*
 - 5.6 Identify any existing problem areas, hotspots and compliance issues for surface and groundwaters within the region (at any scale).
 - 5.7 Identify any current nitrate or nutrient management plans, projects or activities being implemented in the region.
 - 5.7.1 *Identify current implementation of appropriate best management practices.*
 - 5.7.2 *Scale, technology, economics, other drivers/benefits for each project.*

5.8 Identify current plans, regulations, or projects designed to maintain or reduce nitrate that is transported to neighboring regions.

5.9 Identify current nitrate monitoring locations.

5.10 Identify current nitrate monitoring gaps and funding/schedule to fill.

5.11 Identify performance measures and triggers. *Based on nitrate budget, region must identify performance monitoring locations (can include water quality, land cover, planning or other activities) as well as “triggers” that would require reassessment of the region’s status within the long term Central Valley salinity and nitrate management plan.*

6. Salinity/Nitrate Management Strategy

7. Economic Analysis and Cost Benefit

Process, Monitoring, and Reporting

8. Triennial/**Annual** monitoring reporting requirement – *Region is required to report any changes in the reported information (items 1 -5). These changes can include:*

8.1 New projects/land covers that have the potential to increase salt/nitrate

8.2 BMP implementation status and impacts on salt and nitrate

8.3 Other region-specific suggested or required documentation to confirm status or update information

9. Management Alternatives and Management Strategies

10. Proposed Implementation Plan and funding

Funding Options and Estimated Cost and Schedule

Several options were discussed and presented in the Knowledge Gained Committee meetings but were determined to be policy issues, some included:

- Matching grants to regions with guidelines, expected outcomes
- Developing a gross scale of data and using uniform assumptions to set defaults, regions can improve
- Funding studies like the pilot for all regions

Cost and Duration Implications for Rest of the Central Valley

What can we say we learned about the cost and time needed for the “pilot level” scope of work for the rest of the Central Valley. The pilot implementation study covered about 10% area coverage, cost approximately \$500K and took about 8 months. The Pilot areas were selected because they had considerable data and complexity. The other areas of the region may not be as complex (reduced cost) or have as much data (higher or lower cost). That said, the assumptions will need more documentation.

Study	Area Covered	Population	Cost	Duration
3 Pilot Areas	9% of CV	13% of CV	\$500,000	8 - 12 months
Rest of CV by Population		87%	\$3,846,154	16 -32 months
Rest of CV by Area	91%		\$5,555,556	20 -32 months
Average Cost from above			\$4,700,855	18 -24 months

Level of Detail are Critical to the Scope of Information for Regions

- What level is needed for conceptual understanding and triage and prioritization?
- What would CV-SALTS need to develop a conservative “default” management plan for the region and determine the regions have done the appropriate level for their management?
- What level of efforts would be required to revise and approve a basin plan amendment?