Lower San Joaquin River Committee

CV SALTS
Central Valley Salinity Alternatives for Long-term Sustainability

Agenda Lower San Joaquin River Committee Meeting

Stanislaus County Agricultural Center
Natural Resources Conservation Service Conference Room (Tuolumne Building)
3800 Cornucopia Way, Modesto, California 95358-9492
Teleconference available (712) 432-0360 Participant Code: 927571#
Friday September 19, 2014 from 11:30 AM – 2:15 PM (Bring lunch)

	Item	Action	Time/Lead
1	**Welcome, Introductions, Agenda Revisions/Approval, Notes, Announcements** a. Introductions Room/Phone b. Review/revise/approve agenda c. Review/revise/approve Notes from August 28, 2014 d. Announcements i. October 2 implementation alternatives workshop to be held in Room G e. Review status of Action Items from June meeting i. Have Daphne change July meeting notes to reflect the changes requested by Michael and Nigel ii. Send out request for comments on Tech Memo. Comments due 9/11/14 iii. Contact D Westcot for permission to send draft comments to LWA iv. Contact EC Admin group to obtain extended time on the October meeting agenda v. J Brownell will work with ESRCD and LWA to extend contract to December 2015		11:30 – 11:35 All
2	**Real Time Management Program – update**	Informational item	11:35 – 11:50 Nigel Quinn, Michael Mosley
3	**Hoffman Model Runs and Results** a. Documentation of results	Informational item	11:50 – 12:00 Jim Brownell
4	**Technical Services Update** LSJRC Work Effort Flow Chart – review modifications and status update & Cheat Sheet	Informational item	12:00 – 12:05 Karen Ashby

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	Item	Action	Time/Lead
	Task 1 – Finalize Ag EC Objectives a. Status update b. List/table of recommended values	Need decision to finalize values for LWA team to use in subsequent analyses	12:05 – 12:25 Karen Ashby
	Tasks 2, 3, and 8 – Draft report a. Discuss comments from LSJRC (due 9/11) b. Final report to LSJRC – October 6	Informational item	12:25 – 12:55 Danielle Moss Mike Trouchon
	Task 4 – Implementation planning a. Draft agenda b. Table 1 – Implementation matrix c. Draft low, medium, and high scenarios	Informational item	12:55 – 1:55 Karen Ashby LWA Team
5	**Review Action Items, Items for Executive Committee and Future Agenda Items**		1:55 – 2:05 All
6	**LSJRC Adjourns**		2:05

LSJR Committee Members		2013 - 2014 Meeting Dates														
Name	Stakeholder Group	9-May	13-Jun	1-Aug	9-Sep	10-Oct	15-Nov	13-Dec	23-Jan	27-Feb	17-Mar	15-Apr	29-May	26-Jun	30-Jul	28-Aug
John Beam	Grassland WD/RCD	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		
Sherman Boone	East Stanislaus RCD	✓														
Jamie Meek	East Stanislaus RCD	✓		✓	✓			✓			✓	✓	✓	✓	✓	✓
Shawn Carmo	Grassland Water District															✓
Jeanne Chilcott	CV-RWQCB	✓	✓			✓										
David Cory	San Joaquin Valley Drainage Authority	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Daniel Cozad	CV-SALTS															
Jose Faria	Calif Department of Water Resources	✓														
Mark Gowdy	State Water Resources Control Board	✓				✓	✓				✓			✓	✓	✓
Karna Harrigfeld	Stockton East Water District		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
John Herrick	South Delta Water Agency			✓					✓			✓				
Jamil Ibrahim	MWH Americas, Inc															
Jobaid Kabir	US Bureau of Reclamation															
Parry Klassen	East San Joaquin Water Quality Coalition	✓				✓										
Roberta Larson	Wastewater Association															
Tess Dunham	Wastewater Association/Ag industry															
Debra Liebersbach	Turlock Irrigation District		✓	✓	✓		✓	✓	✓							
Jim Brownell	CV-RWQCB	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Richard Meyerhoff	CDM Smith															
Brandon Nakagawa	San Joaquin County															
Ric Ortega	Grassland Water District	✓				✓										✓
Nigel Quinn	LBNL - USBR	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Rudy Schnagl	CV-RWQCB															
Mona Shulman	Pacific Coast Producers															
	US Bureau of Reclamation	✓							✓		✓					
Ernest Taylor	Calif Department of Water Resources	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Diana Waller	USDA - NRCS				✓											
Debbie Webster	Central Valley Clean Water Association			✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	
Dennis Westcot	San Joaquin Tributary Authority				✓	✓	✓		✓	✓	✓	✓	✓		✓	
Amanda Carvajal	Merced County Farm Bureau		✓													
Michael Mosley	USBR	✓	✓		✓		✓		✓	✓		✓		✓	✓	✓
Thaddeus Hunt	State Water Resources Control Board															✓
Andy Safford	EKI															
Roberta Howe	Calif Department of Water Resources															
Lisa Beutler	MWH Americas, Inc															
Chester Anderson	ESRCD/WSRCD	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Tom Orvis	Stanislaus Farm Bureau			✓												
Mike Johnson	LSJR Committee Manager	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Karen Ashby	LWA	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Bobby Pierce	West Stanislaus Irrigation District	✓		✓												
Peter Rietkerk	Patterson Irrigation District	✓	✓	✓	✓					✓	✓	✓			✓	
Daron McDaniel	US Rep. Jeff Denham			✓												
Kevin Padway	US Rep. Jeff Denham			✓												
Brooke Bradshaw	US Rep. Jeff Denham			✓												
Tom Grovhoug	LWA			✓			✓	✓	✓	✓	✓	✓		✓	✓	✓
Richie Aranda	Stockton East Water District				✓						✓					
Rachel MacNeal	Calif Dept. Fish & Wildlife				✓											
Danielle Moss	LWA						✓	✓	✓		✓	✓	✓	✓	✓	✓
John Clancy	San Joaquin Tributary Association						✓									
Penny Carlo	Carollo Engineers						✓		✓	✓	✓					✓
Mike Truchon	LWA						✓			✓		✓			✓	✓
Dan Roberts	Twin Oaks Irrigation District									✓	✓	✓			✓	✓
Joel Herr										✓	✓					
John Dickey	Plantierra									✓	✓		✓		✓	✓
Joe McGahan	SJVDA										✓					
Diane Madsen	SJVDA										✓					
Gabriel Delgado											✓					

Lower San Joaquin River Committee

CV SALTS

Central Valley Salinity Alternatives for Long-term Sustainability

Minutes from August 28, 2014 Meeting of the CV-SALTS Lower San Joaquin River Committee

1. **Welcome, Introductions, Agenda Revisions/Approval, Notes, Announcements**
   - Meeting called to order by Co-Chair, David Cory.
   - 08/28 participants are listed on the Attendance Roster.
   - Nigel Quinn moved, and Ernie Taylor seconded, and by general acclamation the 07/30/14 minutes were approved with the following revision:
     – Change wording in item 3, second bulleted paragraph to:
     "Reclamation can support the development or maintenance of a website to be used to post San Joaquin River forecasting data. A web tool (dashboard) from 34 North is scheduled to be ready for beta testing in December; this tool will eventually be used to visualize data on the website. The forecast will be done weekly and published using the tool on a site to be determined. The project needs beta testers from around the basin to test the dashboard during November."
   - The committee reviewed the status of June action items and Announcements/Updates
     – September 19th meeting will be in Tuolumne building in NRCS conference room.
     – October 2nd Implementation Alternatives Workshop will be held in Room G.

Action: Daphne Orzalli will post the revised notes for 7/30 on the CV-SALTS website.

2. **Administrative – Contract Extension**
   - Per Jim Brownell the ESRCD contract needs extension past the current end date of 12/31/14, and an extension for funding approval to the end of 2015 is also needed.
   - After discussion, Jim Brownell moved, and Nigel Quinn seconded, and the committee authorized Jim Brownell to proceed with work on these extensions.

3. **Real Time Management Update**
   - Michael Mosley, Nigel Quinn and Jim Brownell provide a program update.
   - Comments have been received on the Framework. Response to Comments will be turned in by September 8th. Still scheduled to go before the Board in October.

4. **WSRCD – NRCS Proposal for diversion of I-Line**
   - Chester Anderson updated the committee on the WSRCD's Newman Drain Multi Benefit Conservation Project Proposal. Final proposal is due October 2nd.
   - Committee members interested in receiving more information on the project should contact Chester to be added to the email distribution.

5. **Hoffman Model Runs and Results**
   - The committee discussed the Hoffman results, model issues and drought considerations presented by Jim Brownell and John Dickey.

6. Discussions with Stakeholders

- John Dickey summarized the meetings/discussions held with West Stanislaus and Patterson Irrigation Districts regarding crop damage.
- A field trip is scheduled for 9/9. John will provide a summary of that meeting at the September committee meeting.

7. Technical Services Update

- Karen Ashby provided a status update on current tasks. The updated Flow Chart and Cheat Sheet were included in the agenda materials.
  - Mike Trouchon and Daniel Moss walked the committee through the Tasks 2, 3 and 8b Summary – Draft Report.
  - Comments are due from committee members no later than September, 11th.
  - The Final Report is scheduled for distribution to the committee on September 18th.

Action: Mike Johnson will

– Contact Dennis Westcot for permission to forward his comments on to LWA.

– Send a reminder to the committee to submit comments NLT 9/11, and include the Excel spreadsheet for submission of comments.

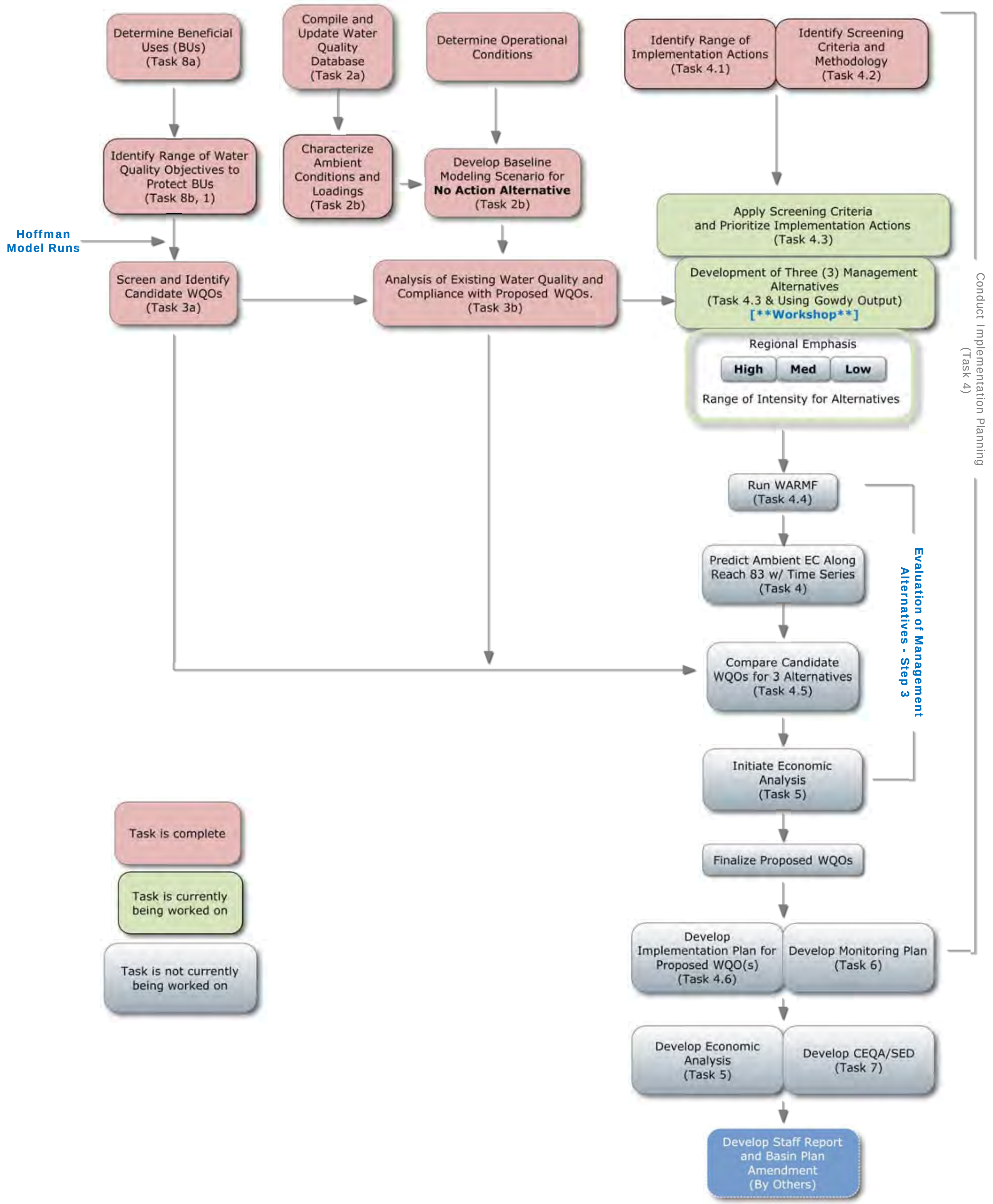
8. Review Action Items: Items for Executive Committee and Future Agenda Items

- Nigel Quinn recommended that the LSJR Committee provide a more detailed briefing to the Executive Committee on the work completed, and in progress.

Action: Mike Johnson will contact Daniel Cozad for a place on the October Executive Committee Admin agenda to provide the LSJR update.

9. LSJR Committee Adjourned

Work Flow for Lower San Joaquin River Tasks: Development of a Basin Plan Amendment for Salt and Boron (Sep 2014)



Technical Tasks for Contractor and LSJRC

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

Central Valley Water Board staff wrote a report titled "Salt Tolerance of Crops in the Lower San Joaquin River Basin (2010)". The Contractor will address the technical comments and provide responses and recommendations. The Contractor will also assess the potential for changes in model outcomes when using the policy recommendations developed by the CV-SALTS Executive Committee as model inputs.

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

Contractor will update existing data compilations with data from 1995 to the present.

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

The Contractor will identify and/or develop the necessary tools for generating the required salt loading analysis, quantify salt loading from those sources and from the various subwatersheds, and describe the timing of salt loading to the river.

Task 3a. Identify Potential Ranges of Water Quality Objectives

Using the results developed under Tasks 1 and 8; the Contractor will evaluate the range of water quality objectives identified for protection of the proposed beneficial uses.

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

The Contractor will evaluate compliance with the proposed water quality objectives for salinity for key reaches within the LSJR.

Task 4. Conduct Implementation Planning

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

Task 5. Economic Analysis

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

Task 6. Long-term Monitoring Program

The Contractor, in conjunction with the LSJRC, will develop the goals of a long-term monitoring and compliance reporting program. The Contractor will prepare a draft long-term monitoring and reporting program to determine compliance with water quality objectives and the effectiveness of the implementation program.

Task 7. Substitute Environmental Documentation

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

Task 8a. Finalize Beneficial Uses Review

The LSJRC developed an evaluation of existing and potential beneficial uses in Reach 83 of the San Joaquin River (Merced River inflow to Vernalis) and proposed draft Basin Plan language to reflect the potential refinement of existing uses.

Task 8b. Finalize Water Quality Criteria Review

Contractor will review and summarize the findings from the Drinking Water: Salinity Effects on MUN-Related Uses of Water, July 2012, the Stock Drinking Watering: Salt and Nutrients: Literature Review for Stock Drinking Water, May 2013, and the Aquatic Life: Task 1 Memorandum, 2013.

CENTRAL VALLEY SALINITY ALTERNATIVES FOR LONG-TERM SUSTAINABILITY

DEVELOPMENT OF A BPA FOR SALT AND BORON IN LSJR

IMPLEMENTATION PLANNING WORKSHOP
OCTOBER 2, 2014
9:00 AM – 12:30 PM

Room #
Address, Modesto

AGENDA

Item	Description	Lead/ Time for Item
Welcome and Introductions	• Welcome & Introductions • Review Agenda and Handouts	9:00–9:05 (Karen Ashby)
Meeting Purpose & Outcomes	• Meeting Purpose o *Collaborate with LSJRC members on the selection of the three implementation planning scenarios which will be modeled by the LWA team* • Meeting Outcomes o *Provide clear understanding of work efforts to date and how they inform this next step* o *Obtain agreement on the three scenarios that will be modeled* o *Identify stakeholder questions, concerns, and comments on Task 4 work effort*	9:05–9:10 (Karen Ashby)
Workplan Approach	• Overall Approach • Key Information and Outcomes to Date	9:10 – 9:20 (Karen Ashby)
Key Handouts: *1) Project Flow Chart/Figure*		
Management Scenarios	• Strategy for Grouping of Implementation Actions o What? - Implementation Actions o Where? When? - Spatial and Temporal Considerations o How Much? - Intensity of an Action • Review Straw Proposals o Low o High o Med • Discussion and Selection of Scenarios to Model	9:20–12:00 (LWA Team)
Key Handouts: *1) Implementation Matrix & Screening Criteria* *2) Key Figures from Final Task 3 Report* *3) Straw proposals for “Low”, “High”, and “Medium” Scenarios*		

Anticipated Results	• Example – Results of Modelling Implementation Planning Scenarios	12:00–12:20 (Danielle Moss)
Key Handouts: *1) Box and Whisker Plots*		
Meeting Wrap-up	• Action Items • Next Steps	12:20–12:30 (Karen Ashby)

Range of Potential Implementation Actions

METHODS AND IMPLEMENTATION ACTIONS[1,2]			
METHODS	IMPLEMENTATION ACTIONS	EXAMPLES	DESCRIPTION OF IMPLEMENTATION ACTIONS
MANAGE SALT DISCHARGES TO LSJR TO MATCH ASSIMILATIVE CAPACITY	**1. Controlled Timing of Salinity Discharges (Real Time Management Program)****		Would take advantage of assimilative capacity in the river to export salt to the Delta and ocean. Requires a coordinated program to manage discharges, diversions, and river and tributary releases to enable timed releases of drainage. Also requires real-time monitoring of flow and EC at selected sites, real-time data QA and a means of information sharing and dissemination. **Since RTM is an "umbrella" concept that includes a number of other implementation actions, this and the other actions are bolded within the table so that it is clear that they are related.**
REDUCE SALT AND BORON LOADING TO THE LSJR (LOAD REDUCTION)	2. Reduce Point Sources of Salts	a. Self Regenerating Water Softener Ban or Restrictions**	Would reduce salt loads from POTWs that have self regenerating water softeners in their service areas
		b. New or Improved (less saline) Surface Water Supply**	Would reduce salt loads from POTWs that can substitute new surface water supplies for existing groundwater supplies
		c. Ind/Food Processing Source Control (and/or Pretreatment)**	Would reduce salt loads from POTWs by requiring industrial control of salts in discharges to sewer system. For specific industries discharging to land, source reductions may potentially benefit the LSJR through reduced salt loadings via groundwater accretion. Includes,but is not limited to, product substitution, process modification, and solids removal.
		d. Desalination of POTW Effluent	Would reduce salt loads to the river from POTWs through installation of desalination facilities. Requires brine handling/disposal.
	3. Reduce Nonpoint Sources of Salts	a. Reduce application of salts contained in fertilizers and soil amendments	Would reduce salt loads through high efficiency irrigation, improved fertilizer management, or other measures aimed at reduced application of chemicals containing salt.
	4. Evaporation Ponds (lined)	**a. Evaporation Ponds**	Would reduce loads by capturing all or portion of drainage flows and diverting to evaporation ponds. Requires brine or salt handling/disposal.
		b. Solar Evaporators	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) for harvesting or disposal of salt.
		c. Salt Energy Ponds	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) and generate energy during the course of the natural evaporation of water.
	5. Water Treatment (drainage or supply)**	a. Satellite or regional treatment facilities	Would reduce salt loads through installation of desalination facilities. Requires brine handling/disposal.
	6. Land Retirement**	a. Retired lands as Reuse Facilities	Would reduce salt loads associated with drainage and also functions to retain salt by accepting recycled water, along with its salt load. Regional reuse could include active alternative land management or use of lands for drainage, treatment and disposal, etc.
		b. Retire lands to non-irrigated uses	Would reduce salt loads by reduction in applied water and associated drainage. Lands could be converted to commercial, industrial purposes, flood control, habitat purposes, etc.
		c. Temporary Land Retirement (Fallowing)	Would reduce salt loads by reduction in applied water and associated drainage. The decision to fallow land would be made at the beginning of a season. Fallowing could be seasonal or could continue for longer durations.
	7. Water Supply Improvement	a. Delta Corridors Plan	Would reduce salt loads into the LSJR by eliminating the recirculation of SJR water back into the Delta Mendota Canal. Irrigation with lower saline DMC water would result in lower concentrations of salinity in the drainage water discharged from the west side of the basin.
		b. Bay Delta Conservation Plan	Would reduce salt loads by importing less saline water into the Delta Mendota Canal for irrigation of land on the west side of the basin, ultimately resulting in lower concentrations of salinity in the drainage water.
	8. Water Conservation	a. Replace Infrastructure (pipelines to replace canals)**	Would conserve water by reducing seepage to reduce diversion of tributary flows. Reduction in salt loading would be depend on whether water conserved would be applied to other land in the basin. If not re-applied, conservation would result in reduction in salt loading. If re-applied, net reduction in loading would be minimal. Incidental benefits of seepage (groundwater recharge and canal-dependent vegetation) will be lost.
		b. Optimize existing irrigation efficiency	Similar to 8(a). Note that irrigation systems are being updated at a rapid pace, primarily because the production benefits of drip and microspray systems on certain crops have proven to be very significant, and the cost of the systems has come down. While the total salt load is the same, salts are precipitated and retained near the root zone, so the total salt load to the aquifer is episodic, occurring during periods of infrequent seasonal flushing.
		c. Agricultural Water Reduction and Reuse**	Would reduce the amount of water used in agricultural activities. Involves waer audits, land retirement, IFDM, and evaporation ponds.
	9. High-efficiency irrigation systems, per se	a. Increase retention of soluble salts	Would reduce loading through reduction in drainage volume. Conventional notions of leaching excess salt through the soil to maintain production change somewhat with drip and microspray irrigation, in which salts may accumulate harmlessly beyond the soil zone accessed by plants to uptake water.
	10. Sequential Reuse & volume Reduction (Salt sensitive crops & solar evap)**	**a. Integrated Farm Drainage Management (IFDM)**	Would reduce the volume discharged; results in an increase in concentration. Relies on eventual salt export to an alternative sink. Reuse occurs on dedicated facilities with attendant costs. Feasibility would be enhanced by a reliable market for the recovered salt products.
		b. Salt accumulation area	Would reduce the volume discharged from the Grasslands Drainage Area (GDA). Grow salt tolernat crops, install tile drains and collection systems, solar evap or treatment of drainage water and disposal at Kettleman Hills landfill or a possible in-basin salt sink.
	11. Active Alternative Land Mgmt (sequential reuse/crop selection etc.)		Would reduce the volume discharged. A blend of 10 and 12b, mainly distinguished by the intentional nature of land management through crop selection and irrigation practices, without creating a dedicated facility.
	12. Drainage Water Recirculation	**a. Tailwater Recovery**	Would reduce loadings through reuse and volume reduction. Where reuse replaces irrigation with imported water, would reduce salt load associated with that supply. This practice relies on ultimate salt disposal for long term sustainability.
		b. Tilewater Recovery - Re-route drainage water	Similar to 12a., but entails recirculation of greater salt concentration from the outset.**(Grasslands Bypass)**
	13. Reduce Impact of Groundwater as a Source of Salinity to LSJR		General category which may include: (a) reduction in shallow groundwater levels to reduce subsurface drainage (and salt) loading into subsurface drain systems (areas where this is hydrogeologically feasible may be fairly limited) and (b) reduction in groundwater as water supply or reduction in salt loadings in groundwater though well-head treatment.
MANAGE SALT LOADS VIA SEQUESTRATION/TRANSPORT/ DISPOSAL	14. Salt Disposal/Out of Basin Transport (Supports Actions #2-6 that create a brine)**	a. Brine Line to Ocean	Alternative means of salt transport and out-of-basin disposal
		b. Truck to WWTP with ocean outfall	Similar to 14a.
		c. Landfill disposal	Alternative means of in-basin or out-of-basin disposal of crystallized salt
		d. Out of Basin Salt Sink	Similar to 14c.
		e. Commercial market for reclaimed salt	Alternative means of out-of-basin disposal of salt.
		f. Direct Well Injection	Alternative means of In-basin disposal of concentrated salts or brines
		g. Brine line to WWTP with ocean outfall	Similar to 14.a
ADAPTIVE WATER SUPPLY MANAGEMENT	**15. SJR water diversions during periods of excess SJR flows**		Would take advantage of excess flows in SJR during wet years or wet seasons to provide irrigators with low salinity water to better manage salts (i.e., following periods of high salinity due to drought or other factors, to better control the leaching process, to alternate with irrigation using higher salinity water , etc.)

[1] While the table focuses on 'salt', the implementation actions described will be similar for boron, and other ions.

[2] The implementation actions represent a range of potential actions for consideration during the development of three alternative management scenarios. Each alternative management scenario will likely be a combination of several implementation actions, and it should be noted that some of the actions listed (i.e. Salinity Real Time Management Program, Active Alternative Land Management, etc.) by definition already involve a combination of actions (many of which are listed above).

Proposed LOW Salinity Management Scenario

METHODS AND IMPLEMENTATION ACTIONS[1,2]			
METHODS	IMPLEMENTATION ACTIONS	EXAMPLES	DESCRIPTION OF IMPLEMENTATION ACTIONS
MANAGE SALT DISCHARGES TO LSJR TO MATCH ASSIMILATIVE CAPACITY	**1. Controlled Timing of Salinity Discharges (Real Time Management Program)****		Would take advantage of assimilative capacity in the river to export salt to the Delta and ocean. Requires a coordinated program to manage discharges, diversions, and river and tributary releases to enable timed releases of drainage. Also requires real-time monitoring of flow and EC at selected sites, real-time data QA and a means of information sharing and dissemination. **Since RTM is an "umbrella" concept that includes a number of other implementation actions, this and the other actions are bolded within the table so that it is clear that they are related.**
REDUCE SALT AND BORON LOADING TO THE LSJR (LOAD REDUCTION)	2. Reduce Point Sources of Salts	a. Self Regenerating Water Softener Ban or Restrictions**	Would reduce salt loads from POTWs that have self regenerating water softeners in their service areas
		b. New or Improved (less saline) Surface Water Supply**	Would reduce salt loads from POTWs that can substitute new surface water supplies for existing groundwater supplies
		c. Ind/Food Processing Source Control (and/or Pretreatment)**	Would reduce salt loads from POTWs by requiring industrial control of salts in discharges to sewer system. For specific industries discharging to land, source reductions may potentially benefit the LSJR through reduced salt loadings via groundwater accretion. Includes,but is not limited to, product substitution, process modification, and solids removal.
		d. Desalination of POTW Effluent	Would reduce salt loads to the river from POTWs through installation of desalination facilities. Requires brine handling/disposal.
	3. Reduce Nonpoint Sources of Salts	a. Reduce application of salts contained in fertilizers and soil amendments	Would reduce salt loads through high efficiency irrigation, improved fertilizer management, or other measures aimed at reduced application of chemicals containing salt.
	4. Evaporation Ponds (lined)	**a. Evaporation Ponds**	Would reduce loads by capturing all or portion of drainage flows and diverting to evaporation ponds. Requires brine or salt handling/disposal.
		b. Solar Evaporators	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) for harvesting or disposal of salt.
		c. Salt Energy Ponds	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) and generate energy during the course of the natural evaporation of water.
	5. Water Treatment (drainage or supply)**	a. Satellite or regional treatment facilities	Would reduce salt loads through installation of desalination facilities. Requires brine handling/disposal.
	6. Land Retirement**	a. Retired lands as Reuse Facilities	Would reduce salt loads associated with drainage and also functions to retain salt by accepting recycled water, along with its salt load. Regional reuse could include active alternative land management or use of lands for drainage, treatment and disposal, etc.
		b. Retire lands to non-irrigated uses	Would reduce salt loads by reduction in applied water and associated drainage. Lands could be converted to commercial, industrial purposes, flood control, habitat purposes, etc.
		c. Temporary Land Retirement (Fallowing)	Would reduce salt loads by reduction in applied water and associated drainage. The decision to fallow land would be made at the beginning of a season. Fallowing could be seasonal or could continue for longer durations.
	7. Water Supply Improvement	a. Delta Corridors Plan	Would reduce salt loads into the LSJR by eliminating the recirculation of SJR water back into the Delta Mendota Canal. Irrigation with lower saline DMC water would result in lower concentrations of salinity in the drainage water discharged from the west side of the basin.
		b. Bay Delta Conservation Plan	Would reduce salt loads by importing less saline water into the Delta Mendota Canal for irrigation of land on the west side of the basin, ultimately resulting in lower concentrations of salinity in the drainage water.
	8. Water Conservation	a. Replace Infrastructure (pipelines to replace canals)**	Would conserve water by reducing seepage to reduce diversion of tributary flows. Reduction in salt loading would be depend on whether water conserved would be applied to other land in the basin. If not re-applied, conservation would result in reduction in salt loading. If re-applied, net reduction in loading would be minimal. Incidental benefits of seepage (groundwater recharge and canal-dependent vegetation) will be lost.
		b. Optimize existing irrigation efficiency	Similar to 8(a). Note that irrigation systems are being updated at a rapid pace, primarily because the production benefits of drip and microspray systems on certain crops have proven to be very significant, and the cost of the systems has come down. While the total salt load is the same, salts are precipitated and retained near the root zone, so the total salt load to the aquifer is episodic, occurring during periods of infrequent seasonal flushing.
		c. Agricultural Water Reduction and Reuse**	Would reduce the amount of water used in agricultural activities. Involves waer audits, land retirement, IFDM, and evaporation ponds.
	9. High-efficiency irrigation systems, per se	a. Increase retention of soluble salts	Would reduce loading through reduction in drainage volume. Conventional notions of leaching excess salt through the soil to maintain production change somewhat with drip and microspray irrigation, in which salts may accumulate harmlessly beyond the soil zone accessed by plants to uptake water.
	10. Sequential Reuse & volume Reduction (Salt sensitive crops & solar evap)**	**a. Integrated Farm Drainage Management (IFDM)**	Would reduce the volume discharged; results in an increase in concentration. Relies on eventual salt export to an alternative sink. Reuse occurs on dedicated facilities with attendant costs. Feasibility would be enhanced by a reliable market for the recovered salt products.
		b. Salt accumulation area	Would reduce the volume discharged from the Grasslands Drainage Area (GDA). Grow salt tolernat crops, install tile drains and collection systems, solar evap or treatment of drainage water and disposal at Kettleman Hills landfill or a possible in-basin salt sink.
	11. Active Alternative Land Mgmt (sequential reuse/crop selection etc.)		Would reduce the volume discharged. A blend of 10 and 12b, mainly distinguished by the intentional nature of land management through crop selection and irrigation practices, without creating a dedicated facility.
	12. Drainage Water Recirculation	**a. Tailwater Recovery**	Would reduce loadings through reuse and volume reduction. Where reuse replaces irrigation with imported water, would reduce salt load associated with that supply. This practice relies on ultimate salt disposal for long term sustainability.
		b. Tilewater Recovery - Re-route drainage water	Similar to 12a., but entails recirculation of greater salt concentration from the outset. **(Grasslands Bypass)**
	13. Reduce Impact of Groundwater as a Source of Salinity to LSJR		General category which may include: (a) reduction in shallow groundwater levels to reduce subsurface drainage (and salt) loading into subsurface drain systems (areas where this is hydrogeologically feasible may be fairly limited) and (b) reduction in groundwater as water supply or reduction in salt loadings in groundwater though well-head treatment.
MANAGE SALT LOADS VIA SEQUESTRATION/TRANSPORT/ DISPOSAL	14. Salt Disposal/Out of Basin Transport (Supports Actions #2-6 that create a brine)**	a. Brine Line to Ocean	Alternative means of salt transport and out-of-basin disposal
		b. Truck to WWTP with ocean outfall	Similar to 14a.
		c. Landfill disposal	Alternative means of in-basin or out-of-basin disposal of crystallized salt
		d. Out of Basin Salt Sink	Similar to 14c.
		e. Commercial market for reclaimed salt	Alternative means of out-of-basin disposal of salt.
		f. Direct Well Injection	Alternative means of In-basin disposal of concentrated salts or brines
		g. Brine line to WWTP with ocean outfall	Similar to 14.a
ADAPTIVE WATER SUPPLY MANAGEMENT	**15. SJR water diversions during periods of excess SJR flows**		Would take advantage of excess flows in SJR during wet years or wet seasons to provide irrigators with low salinity water to better manage salts (i.e., following periods of high salinity due to drought or other factors, to better control the leaching process, to alternate with irrigation using higher salinity water , etc.)

[1] While the table focuses on 'salt', the implementation actions described will be similar for boron, and other ions.

[2] The implementation actions represent a range of potential actions for consideration during the development of three alternative management scenarios. Each alternative management scenario will likely be a combination of several implementation actions, and it should be noted that some of the actions listed (i.e. Salinity Real Time Management Program, Active Alternative Land Management, etc.) by definition already involve a combination of actions (many of which are listed above).

Proposed MEDIUM Salinity Management Scenario

METHODS AND IMPLEMENTATION ACTIONS[1,2]			
METHODS	IMPLEMENTATION ACTIONS	EXAMPLES	DESCRIPTION OF IMPLEMENTATION ACTIONS
MANAGE SALT DISCHARGES TO LSJR TO MATCH ASSIMILATIVE CAPACITY	**1. Controlled Timing of Salinity Discharges (Real Time Management Program)****		Would take advantage of assimilative capacity in the river to export salt to the Delta and ocean. Requires a coordinated program to manage discharges, diversions, and river and tributary releases to enable timed releases of drainage. Also requires real-time monitoring of flow and EC at selected sites, real-time data QA and a means of information sharing and dissemination. **Since RTM is an "umbrella" concept that includes a number of other implementation actions, this and the other actions are bolded within the table so that it is clear that they are related.**
REDUCE SALT AND BORON LOADING TO THE LSJR (LOAD REDUCTION)	2. Reduce Point Sources of Salts	a. Self Regenerating Water Softener Ban or Restrictions**	Would reduce salt loads from POTWs that have self regenerating water softeners in their service areas
		b. New or Improved (less saline) Surface Water Supply**	Would reduce salt loads from POTWs that can substitute new surface water supplies for existing groundwater supplies
		c. Ind/Food Processing Source Control (and/or Pretreatment)**	Would reduce salt loads from POTWs by requiring industrial control of salts in discharges to sewer system. For specific industries discharging to land, source reductions may potentially benefit the LSJR through reduced salt loadings via groundwater accretion. Includes,but is not limited to, product substitution, process modification, and solids removal.
		d. Desalination of POTW Effluent	Would reduce salt loads to the river from POTWs through installation of desalination facilities. Requires brine handling/disposal.
	3. Reduce Nonpoint Sources of Salts	a. Reduce application of salts contained in fertilizers and soil amendments	Would reduce salt loads through high efficiency irrigation, improved fertilizer management, or other measures aimed at reduced application of chemicals containing salt.
	4. Evaporation Ponds (lined)	**a. Evaporation Ponds**	Would reduce loads by capturing all or portion of drainage flows and diverting to evaporation ponds. Requires brine or salt handling/disposal.
		b. Solar Evaporators	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) for harvesting or disposal of salt.
		c. Salt Energy Ponds	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) and generate energy during the course of the natural evaporation of water.
	5. Water Treatment (drainage or supply)**	a. Satellite or regional treatment facilities	Would reduce salt loads through installation of desalination facilities. Requires brine handling/disposal.
	6. Land Retirement**	a. Retired lands as Reuse Facilities	Would reduce salt loads associated with drainage and also functions to retain salt by accepting recycled water, along with its salt load. Regional reuse could include active alternative land management or use of lands for drainage, treatment and disposal, etc.
		b. Retire lands to non-irrigated uses	Would reduce salt loads by reduction in applied water and associated drainage. Lands could be converted to commercial, industrial purposes, flood control, habitat purposes, etc.
		c. Temporary Land Retirement (Fallowing)	Would reduce salt loads by reduction in applied water and associated drainage. The decision to fallow land would be made at the beginning of a season. Fallowing could be seasonal or could continue for longer durations.
	7. Water Supply Improvement	a. Delta Corridors Plan	Would reduce salt loads into the LSJR by eliminating the recirculation of SJR water back into the Delta Mendota Canal. Irrigation with lower saline DMC water would result in lower concentrations of salinity in the drainage water discharged from the west side of the basin.
		b. Bay Delta Conservation Plan	Would reduce salt loads by importing less saline water into the Delta Mendota Canal for irrigation of land on the west side of the basin, ultimately resulting in lower concentrations of salinity in the drainage water.
	8. Water Conservation	a. Replace Infrastructure (pipelines to replace canals)**	Would conserve water by reducing seepage to reduce diversion of tributary flows. Reduction in salt loading would be depend on whether water conserved would be applied to other land in the basin. If not re-applied, conservation would result in reduction in salt loading. If re-applied, net reduction in loading would be minimal. Incidental benefits of seepage (groundwater recharge and canal-dependent vegetation) will be lost.
		b. Optimize existing irrigation efficiency	Similar to 8(a). Note that irrigation systems are being updated at a rapid pace, primarily because the production benefits of drip and microspray systems on certain crops have proven to be very significant, and the cost of the systems has come down. While the total salt load is the same, salts are precipitated and retained near the root zone, so the total salt load to the aquifer is episodic, occurring during periods of infrequent seasonal flushing.
		c. Agricultural Water Reduction and Reuse**	Would reduce the amount of water used in agricultural activities. Involves waer audits, land retirement, IFDM, and evaporation ponds.
	9. High-efficiency irrigation systems, per se	a. Increase retention of soluble salts	Would reduce loading through reduction in drainage volume. Conventional notions of leaching excess salt through the soil to maintain production change somewhat with drip and microspray irrigation, in which salts may accumulate harmlessly beyond the soil zone accessed by plants to uptake water.
	10. Sequential Reuse & volume Reduction (Salt sensitive crops & solar evap)**	**a. Integrated Farm Drainage Management (IFDM)**	Would reduce the volume discharged; results in an increase in concentration. Relies on eventual salt export to an alternative sink. Reuse occurs on dedicated facilities with attendant costs. Feasibility would be enhanced by a reliable market for the recovered salt products.
		b. Salt accumulation area	Would reduce the volume discharged from the Grasslands Drainage Area (GDA). Grow salt tolernat crops, install tile drains and collection systems, solar evap or treatment of drainage water and disposal at Kettleman Hills landfill or a possible in-basin salt sink.
	11. Active Alternative Land Mgmt (sequential reuse/crop selection etc.)		Would reduce the volume discharged. A blend of 10 and 12b, mainly distinguished by the intentional nature of land management through crop selection and irrigation practices, without creating a dedicated facility.
	12. Drainage Water Recirculation	**a. Tailwater Recovery**	Would reduce loadings through reuse and volume reduction. Where reuse replaces irrigation with imported water, would reduce salt load associated with that supply. This practice relies on ultimate salt disposal for long term sustainability.
		b. Tilewater Recovery - Re-route drainage water	Similar to 12a., but entails recirculation of greater salt concentration from the outset. **(Grasslands Bypass)**
	13. Reduce Impact of Groundwater as a Source of Salinity to LSJR		General category which may include: (a) reduction in shallow groundwater levels to reduce subsurface drainage (and salt) loading into subsurface drain systems (areas where this is hydrogeologically feasible may be fairly limited) and (b) reduction in groundwater as water supply or reduction in salt loadings in groundwater though well-head treatment.
MANAGE SALT LOADS VIA SEQUESTRATION/TRANSPORT/ DISPOSAL	14. Salt Disposal/Out of Basin Transport (Supports Actions #2-6 that create a brine)**	a. Brine Line to Ocean	Alternative means of salt transport and out-of-basin disposal
		b. Truck to WWTP with ocean outfall	Similar to 14a.
		c. Landfill disposal	Alternative means of in-basin or out-of-basin disposal of crystallized salt
		d. Out of Basin Salt Sink	Similar to 14c.
		e. Commercial market for reclaimed salt	Alternative means of out-of-basin disposal of salt.
		f. Direct Well Injection	Alternative means of In-basin disposal of concentrated salts or brines
		g. Brine line to WWTP with ocean outfall	Similar to 14.a
ADAPTIVE WATER SUPPLY MANAGEMENT	**15. SJR water diversions during periods of excess SJR flows**		Would take advantage of excess flows in SJR during wet years or wet seasons to provide irrigators with low salinity water to better manage salts (i.e., following periods of high salinity due to drought or other factors, to better control the leaching process, to alternate with irrigation using higher salinity water , etc.)

[1] While the table focuses on 'salt', the implementation actions described will be similar for boron, and other ions.

[2] The implementation actions represent a range of potential actions for consideration during the development of three alternative management scenarios. Each alternative management scenario will likely be a combination of several implementation actions, and it should be noted that some of the actions listed (i.e. Salinity Real Time Management Program, Active Alternative Land Management, etc.) by definition already involve a combination of actions (many of which are listed above).

Proposed HIGH Salinity Management Scenario

METHODS AND IMPLEMENTATION ACTIONS[1,2]			
METHODS	IMPLEMENTATION ACTIONS	EXAMPLES	DESCRIPTION OF IMPLEMENTATION ACTIONS
MANAGE SALT DISCHARGES TO LSJR TO MATCH ASSIMILATIVE CAPACITY	**1. Controlled Timing of Salinity Discharges (Real Time Management Program)****		Would take advantage of assimilative capacity in the river to export salt to the Delta and ocean. Requires a coordinated program to manage discharges, diversions, and river and tributary releases to enable timed releases of drainage. Also requires real-time monitoring of flow and EC at selected sites, real-time data QA and a means of information sharing and dissemination. **Since RTM is an "umbrella" concept that includes a number of other implementation actions, this and the other actions are bolded within the table so that it is clear that they are related.**
REDUCE SALT AND BORON LOADING TO THE LSJR (LOAD REDUCTION)	2. Reduce Point Sources of Salts	a. Self Regenerating Water Softener Ban or Restrictions**	Would reduce salt loads from POTWs that have self regenerating water softeners in their service areas
		b. New or Improved (less saline) Surface Water Supply**	Would reduce salt loads from POTWs that can substitute new surface water supplies for existing groundwater supplies
		c. Ind/Food Processing Source Control (and/or Pretreatment)**	Would reduce salt loads from POTWs by requiring industrial control of salts in discharges to sewer system. For specific industries discharging to land, source reductions may potentially benefit the LSJR through reduced salt loadings via groundwater accretion. Includes,but is not limited to, product substitution, process modification, and solids removal.
		d. Desalination of POTW Effluent	Would reduce salt loads to the river from POTWs through installation of desalination facilities. Requires brine handling/disposal.
	3. Reduce Nonpoint Sources of Salts	a. Reduce application of salts contained in fertilizers and soil amendments	Would reduce salt loads through high efficiency irrigation, improved fertilizer management, or other measures aimed at reduced application of chemicals containing salt.
	4. Evaporation Ponds (lined)	**a. Evaporation Ponds**	Would reduce loads by capturing all or portion of drainage flows and diverting to evaporation ponds. Requires brine or salt handling/disposal.
		b. Solar Evaporators	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) for harvesting or disposal of salt.
		c. Salt Energy Ponds	Alternative means to further evaporate drainage water (from evaporation or recirculation practices) and generate energy during the course of the natural evaporation of water.
	5. Water Treatment (drainage or supply)**	a. Satellite or regional treatment facilities	Would reduce salt loads through installation of desalination facilities. Requires brine handling/disposal.
	6. Land Retirement**	a. Retired lands as Reuse Facilities	Would reduce salt loads associated with drainage and also functions to retain salt by accepting recycled water, along with its salt load. Regional reuse could include active alternative land management or use of lands for drainage, treatment and disposal, etc.
		b. Retire lands to non-irrigated uses	Would reduce salt loads by reduction in applied water and associated drainage. Lands could be converted to commercial, industrial purposes, flood control, habitat purposes, etc.
		c. Temporary Land Retirement (Fallowing)	Would reduce salt loads by reduction in applied water and associated drainage. The decision to fallow land would be made at the beginning of a season. Fallowing could be seasonal or could continue for longer durations.
	7. Water Supply Improvement	a. Delta Corridors Plan	Would reduce salt loads into the LSJR by eliminating the recirculation of SJR water back into the Delta Mendota Canal. Irrigation with lower saline DMC water would result in lower concentrations of salinity in the drainage water discharged from the west side of the basin.
		b. Bay Delta Conservation Plan	Would reduce salt loads by importing less saline water into the Delta Mendota Canal for irrigation of land on the west side of the basin, ultimately resulting in lower concentrations of salinity in the drainage water.
	8. Water Conservation	a. Replace Infrastructure (pipelines to replace canals)**	Would conserve water by reducing seepage to reduce diversion of tributary flows. Reduction in salt loading would be depend on whether water conserved would be applied to other land in the basin. If not re-applied, conservation would result in reduction in salt loading. If re-applied, net reduction in loading would be minimal. Incidental benefits of seepage (groundwater recharge and canal-dependent vegetation) will be lost.
		b. Optimize existing irrigation efficiency	Similar to 8(a). Note that irrigation systems are being updated at a rapid pace, primarily because the production benefits of drip and microspray systems on certain crops have proven to be very significant, and the cost of the systems has come down. While the total salt load is the same, salts are precipitated and retained near the root zone, so the total salt load to the aquifer is episodic, occurring during periods of infrequent seasonal flushing.
		c. Agricultural Water Reduction and Reuse**	Would reduce the amount of water used in agricultural activities. Involves waer audits, land retirement, IFDM, and evaporation ponds.
	9. High-efficiency irrigation systems, per se	a. Increase retention of soluble salts	Would reduce loading through reduction in drainage volume. Conventional notions of leaching excess salt through the soil to maintain production change somewhat with drip and microspray irrigation, in which salts may accumulate harmlessly beyond the soil zone accessed by plants to uptake water.
	10. Sequential Reuse & volume Reduction (Salt sensitive crops & solar evap)**	**a. Integrated Farm Drainage Management (IFDM)**	Would reduce the volume discharged; results in an increase in concentration. Relies on eventual salt export to an alternative sink. Reuse occurs on dedicated facilities with attendant costs. Feasibility would be enhanced by a reliable market for the recovered salt products.
		b. Salt accumulation area	Would reduce the volume discharged from the Grasslands Drainage Area (GDA). Grow salt tolernat crops, install tile drains and collection systems, solar evap or treatment of drainage water and disposal at Kettleman Hills landfill or a possible in-basin salt sink.
	11. Active Alternative Land Mgmt (sequential reuse/crop selection etc.)		Would reduce the volume discharged. A blend of 10 and 12b, mainly distinguished by the intentional nature of land management through crop selection and irrigation practices, without creating a dedicated facility.
	12. Drainage Water Recirculation	**a. Tailwater Recovery**	Would reduce loadings through reuse and volume reduction. Where reuse replaces irrigation with imported water, would reduce salt load associated with that supply. This practice relies on ultimate salt disposal for long term sustainability.
		b. Tilewater Recovery - Re-route drainage water	Similar to 12a., but entails recirculation of greater salt concentration from the outset. **(Grasslands Bypass)**
	13. Reduce Impact of Groundwater as a Source of Salinity to LSJR		General category which may include: (a) reduction in shallow groundwater levels to reduce subsurface drainage (and salt) loading into subsurface drain systems (areas where this is hydrogeologically feasible may be fairly limited) and (b) reduction in groundwater as water supply or reduction in salt loadings in groundwater though well-head treatment.
MANAGE SALT LOADS VIA SEQUESTRATION/TRANSPORT/ DISPOSAL	14. Salt Disposal/Out of Basin Transport (Supports Actions #2-6 that create a brine)**	a. Brine Line to Ocean	Alternative means of salt transport and out-of-basin disposal
		b. Truck to WWTP with ocean outfall	Similar to 14a.
		c. Landfill disposal	Alternative means of in-basin or out-of-basin disposal of crystallized salt
		d. Out of Basin Salt Sink	Similar to 14c.
		e. Commercial market for reclaimed salt	Alternative means of out-of-basin disposal of salt.
		f. Direct Well Injection	Alternative means of In-basin disposal of concentrated salts or brines
		g. Brine line to WWTP with ocean outfall	Similar to 14.a
ADAPTIVE WATER SUPPLY MANAGEMEN T	**15. SJR water diversions during periods of excess SJR flows**		Would take advantage of excess flows in SJR during wet years or wet seasons to provide irrigators with low salinity water to better manage salts (i.e., following periods of high salinity due to drought or other factors, to better control the leaching process, to alternate with irrigation using higher salinity water , etc.)

[1] While the table focuses on 'salt', the implementation actions described will be similar for boron, and other ions.

[2] The implementation actions represent a range of potential actions for consideration during the development of three alternative management scenarios. Each alternative management scenario will likely be a combination of several implementation actions, and it should be noted that some of the actions listed (i.e. Salinity Real Time Management Program, Active Alternative Land Management, etc.) by definition already involve a combination of actions (many of which are listed above).

CV-SALTS Meeting Calendar

2014

1 January

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1				1	2	3	4
2	5	6	7	8	9	10	11
3	12	13	14	15	16	17	18
4	19	20	***21***	22	23	24	25
5	26	27	28	29	30	31	

2 February

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
5							1
6	2	3	4	5	6	7	8
7	9	10	11	12	13	14	15
8	16	17	18	19	20	21	22
9	23	24	25	26	27	28	

3 March

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
9							1
10	2	3	4	5	6	7	8
11	9	10	11	12	13	14	15
12	16	17	18	19	20	21	22
13	23	24	25	26	27	**28**	29
14	30	31					

4 April

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
14			1	2	3	4	5
15	6	7	8	9	10	11	12
16	13	14	15	16	17	18	19
17	20	21	22	23	24	25	26
18	27	28	29	30			

5 May

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
18					1	2	3
19	4	5	6	7	8	9	10
20	11	12	13	14	15	16	17
21	18	19	20	21	22	23	24
22	25	26	27	28	29	**30**	31

6 June

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
23	1	2	3	4	5	6	7
24	8	9	10	11	12	13	14
25	15	16	17	18	19	20	21
26	22	23	24	25	26	27	28
27	29	30					

7 July

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
27			1	2	3	4	5
28	6	7	8	9	10	11	12
29	13	14	15	16	17	18	19
30	20	21	22	23	24	**25**	26
31	27	28	29	30	31		

8 August

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
31						1	2
32	3	4	5	6	7	8	9
33	10	11	12	13	14	15	16
34	17	18	19	20	21	22	23
35	24	25	**26**	27	28	29	30
36	31						

9 September

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
36		1	2	3	4	5	6
37	7	8	9	10	11	12	13
38	14	15	16	17	18	19	20
39	21	22	23	24	25	26	27
40	28	29	30				

10 October

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
40				1	2	3	4
41	5	6	7	8	9	10	11
42	12	13	14	15	16	17	18
43	19	20	21	22	23	24	25
44	26	27	28	29	30	31	

11 November

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
44							1
45	2	3	4	5	6	7	8
46	9	10	11	12	13	14	15
47	16	17	18	19	20	21	22
48	23	24	25	26	27	28	29
49	30						

12 December

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
49		1	2	3	4	5	6
50	7	8	9	10	11	12	13
51	14	15	16	17	18	19	20
52	21	22	23	24	25	26	27
53	28	29	30	31			

Notes

2nd or 3rd Thursdays

Dark Green Exec Comm Policy

RWQCB Update ***Bold Underline***

Light Red conflicts

Lt. Green Hatch Exec Comm Admin

First or Second Friday

Yellow Salty 5

Lower San Jaquin River Committee

TAC Meeting

Dark in July & December for Policy

State Board Presentation 1/21/14

May 15 move to 22nd for CVCWA

Nov 13 vs 20 due to Thanksgiving