CV-SALTS Leadership Group Annual Workshop

September 24, 2009
Sacramento City Hall
Council Chambers
1:30-3:30 pm
CV-SALTS Leadership Group Workshop Agenda

1. Welcome and introduction
2. CV-SALTS Purpose, Committee Reports and Accomplishments
3. Success Stories on Salinity Management
4. CV-SALTS Work Plan and Funding Needs and Coordinated Programs
5. Leadership Group Feedback Discussion
6. Salinity Leadership Group Action Items
CV-SALTS Leadership Group Workshop Agenda

1. Welcome and introduction
2. CV-SALTS Purpose, Committee Reports and Accomplishments
3. Success Stories on Salinity Management
4. CV-SALTS Work Plan and Funding Needs and Coordinated Programs
5. Leadership Group Feedback Discussion
6. Salinity Leadership Group Action Items
Purpose

- High level (Executive) overview of the program
- Present successes, accomplishments, and future plan efforts
- Inspire participation interest and stakeholder leadership commitments
Meeting Goals

- Ensure common vision is understood with goals, benefits and outcomes
- Coalition Building – Expand commitment to fund and be actively engaged
- Describe current actions and future needs, actions that impact short and long term
- Each organization sees their role and the necessity of participation
- Agreement and participation in the strategic next steps
Leadership Group Annual Workshop

- Advances, accomplishments and success criteria
- Program for 2010 and beyond
  - Recycled Water Policy Salt and Nutrient Management Plan Guidelines
- Lessons from around the world
- Discussion of program goals and needs
Why you are critical

- Leadership Group Role
- Benefits and opportunities of working together
- Committees and representation
CV Salinity Coalition and CV SALTS Initiative
Ensuring Sustainable High Quality Water Supply
For All users of Central Valley Waters

Leadership Steerign Groups

CV Salinity Coalition

CV Salinity Leadership (formerly policy) Group

CV SALTS Executive Committee
Maximum of 30 Members

Leadership Group 6
SWRCB, RWQCB
DWR, BOR, EJ, Env WQ

Committee Chairs
Up to 6

CVSC Board Members
CVSC Chair and up to 18

Other Groups (Future)

Group membership is nonexclusive

Collaborative Stakeholder Planning, Projects, Funding Efforts
Research and Studies
Individual Efforts
Projects
Stakeholder/Discharger Efforts

Working and Review Groups

Regional Board and State Board Members
and Exec. Management

Regional and State Board Staff

Public Education and Outreach
Economic and Social Cost
Technical
Other (future)
Executive Committee

- Leadership Group
- Executive Committee
- Governance clarity, Standing Rules and MOA
- Levels of Participation
- Technical and Outreach Committees
Executive Committee

- Sound science and policy
- Scope work for studies and planning
- Integrates public participation and includes State and federal agencies
CV SALTS Initiative
Ensuring Sustainable High Quality Water Supply
For All users of Central Valley Waters

CV Salinity Policy Group
Steering Committee

Leadership
Steering
Committee

Regional Board and State Board Members and Exec. Management

CV SALTS Executive Committee

Advisory Committees and Work Groups

Public Education and Outreach
Economic and Social Cost
Technical
Other (future)

Working Groups

Regional and State Board Staff
CV Salinity Coalition
Other Groups (Future)

Efforts

Collaborative Stakeholder Planning, Projects, Funding Efforts
Research and Studies
Individual Efforts
Projects
Stakeholder/Discharger Efforts

Outcome

Salt Management Plan (through Basin Plan Amendments) ➞ Implementation of Salt Management Plan Through Regulatory and Non-Regulatory Solutions
Public Ed and Outreach

- Began with strategic planning
- Support for Outreach
- Online Article, ACWA News
- SOTE Emmy and web and distribution to the legislature
- Things you can do; in English and Spanish and more
Technical Committee

- Co-meets with Economic Social
- Salt and Nitrate Sources Pilot
- State Board Training of BP
- Beneficial Use and Objectives
  Study Scoping
- Work Plan Outline
Technical Committee

- Reviewed Coordinated Programs and Efforts
- Developed Work Plan Outline
  - Cost and Schedule Estimates
  - 13 phases and 71 tasks/subtasks
  - $ 22M to $ 42M with local costs
  - Complete in 2013
Salinity Success and Lessons from Around the World

- Israel
- Australia
Israel copes for decades with the water shortage problem
Water Reuse

- Capable of supplying all agricultural requirements
- Over 75% reused effluent (Spain 2nd with 12%)
- Treating to various qualities
- Membranal effluent treatment
- Supply of reused water to industry
Reused effluent in Israel in relation with other countries

- Israel: 75%
- Spain: 12%
- Australia: 9%
- Italy: 8%
- Greece: 5%
- C Europe: <1%
Basin Salinity Management Strategy

Phil Cole, Director, Water Quality and Salinity Management Plan
Australia’s Murray-Darling Basin
Comparing the Murray-Darling Basin to the Central Valley Basin

- 14% of Australia
- >387 square miles
- >2 million people
- >72% Irrigated Agriculture
- >40% Agricultural product value

Two River Systems
- Murray River 2,530 km
- Darling River 2,740 km

- 1.5% of United States
- >60,000 square miles
- >8.3 million people
- >4.073 Million Jobs
- >$ 357M Output value
Murray-Darling Basin: Background - 1

- Located in the Southeast of Australia

- Covers 1,061,469 square km (409,823 sq miles), 14% of Australia’s total area but 70% of Australia’s irrigated agriculture – the Central Valley covers about 155,400 sq km (60,000 sq miles)

- East-west, the Basin extends 1,365 km (848 miles) – the Central Valley extends North-South about 640 km (400 miles)
• River salinity levels are having serious impacts on floodplain wetlands of national and international importance.

• The current impact costs of dry land salinity in eight tributary valleys of the Basin are estimated to be AU$247 million per year.

• The impact costs of salinity to consumptive users of River Murray water total AU$47 million per year.
Murray Darling Basin Annual Rainfall

Australian Bureau of Meteorology

- 458.08 (av 1997-2006)
- 514.61 (av 1950-1999)
- 445.35 (av 1900-1949)

11-year running averages shown by black curve
Climate

- Murray-Darling Basin - a variable climate with annual rainfall from about 4 inches to greater than 40 inches per year

- Central Valley – somewhat Mediterranean with annual rainfall in excess of 50 inches on parts of the western slopes of the Sierras to less than 8 inches in southwestern parts of the Valley
Murray-Darling Basin: Background - 5

• The Basin Salinity Audit showed that massive salt mobilization would:
  – Cancel out the reduction in River Murray salinity,
  – Endanger use of tributaries for irrigation,
  – Affect about 3.4 million ha (8.4 million acres), and
  – Have serious impacts on floodplain wetlands
Different Expressions of Salinity

Urban

Dryland

Dryland

Irrigation
Murray-Darling Basin: Characteristics of Problem - 1

1. Basin is nation’s food-bowl and major contributor to Australia's important and burgeoning food export markets
2. Basin is home to unique and environmentally significant natural features
3. Over 2 million people directly depend on the natural resources of the Basin for their livelihood and their future prosperity
4. Under current trends, future Basin-wide salinity impacts will be so large that it will not be feasible to contain or reduce them in all at risk areas
6. The high cost of salinity prevention and rehabilitation will prohibit protection or restoration of natural resource values in all parts of the Basin.

7. Careful choices will need to be made between three approaches to salinity management:
   - To attempt to reverse it
   - To limit its rate of spread and impacts, or
   - To let it take its course

8. A 'business as usual' approach is not acceptable
Murray-Darling Basin: Strategy Objectives - 1

The Strategy has a Basin-wide focus and will:

- Control land degradation and maintain water quality of the Murray and Darling Rivers for all beneficial uses - agricultural, environmental, urban, industrial and recreational.

- Control the rise in salt loads in all tributary rivers of the Basin thereby protecting water resources and aquatic ecosystems at agreed levels.

- Maximize net benefits from salinity control across the Basin.
Salinity objectives will be achieved by the application of targets for the shared water resources:

- Less than 800 EC for 95 per cent of the time at designated locations
Basin Salinity Management Strategy

- Integrating planning
- Working towards targets
- Activities at valley scale
- Enhancing capacity
- Protecting assets
- Improving farming practices
- Improving vegetation management
- Investing in salt interception work
- Ensuring accountability
Basin Salinity Management Strategy

Objectives

• Maintain water quality of shared water resources
  – less than 800EC for 95% time, Morgan

• Control rise in salt loads in rivers
  – end-of-valley targets (basins)

• Control land degradation and protect important terrestrial ecosystems
  – within-valley targets

• Maximise net benefits from salinity control
Basin Salinity Management Strategy

- Capacity to implement
- Identifying values & assets
- Setting salinity targets
- Managing in-valley trade-offs
- Salinity & catchment plans
- Re-designing farming systems
- Vegetation management
- Salt Interception Schemes
- Accountability
Basin Salinity Management Strategy

- Capacity to implement
- Identifying values & assets
- Setting salinity targets
- Managing in-valley trade-offs
- Salinity & catchment plans
- Re-designing farming systems
- Vegetation management
- Salt Interception Schemes
- Accountability

2009 to 2020
Program Funding
AU$ 10 Billion
(US$ 8.75B)
Projects in the Strategy

1 Waikerie
2 Woolpunda
3 Noora
4 Bookpurnong
5 Rufus River
6 Curlwaa
8 Buronga
11 Mallee Cliffs

7 Lake Hawthorn
9 Psyche Bend
10 Mildura-Merbein
12 Barr Creek
13 Pyramid Creek
The Effect of Salinity Management in the Murray-Darling Basin

Daily Salinity Levels - July 2006 to June 2007

"Without Intervention" Salinity levels (No Salt Interception Schemes and Dilution Flows)

Effect of Salinity Management*

* Salinity effect ranges between 220 EC (20th percentile) and 303 EC (80th percentile) for this period.
Program Accountability

- Governance
- Reporting
- Modeling
- Registers
- Documentation/metadatabase
- Irrigation practices
- Dryland farming practices
- Accountability through modelling, zoning, predictions
Basin Salinity Management Strategy

Current Status

- Water Act 2007 gives Australian Govt greater responsibilities
- The Water Quality & Salinity Management Plan must:
  - identify the key causes of water quality degradation
  - include water quality and salinity objectives and targets for the Basin water resources
  - include principles and framework to monitor effectiveness
  - review targets every five years
- Salinity Management Plan is in development and production now

Managing Salinity = Managing Trade-offs

**Salt Debits**
- irrigation drainage
- land degradation

**Salt Credits**
- Salt Interception
- improved irrigation and farming practices
- improved river operations
South Australian Government Increases Water Theft Crimes from Murray-Darling Basin
(Australian Broadcasting Co., 31 Aug 2009)

Fines to increase –

• From AU$70,000 up to AU$2.2 million (US$ 1.75M) for corporations

• From AU$35,000 up to AU$700,000 (US$ 612K) for individuals
Managing real time water quality

Floodplain salt mobilisation following floods

Extreme low flow (limited dilution capacity but little floodplain salt mobilisation)

Benchmark Period

Threshold salinity
Evolution & Future

Improvements in
- Management
- Coordination
- Measurable salinity outcomes

Coordination & investments/actions to ‘hold the line’

Pre-1988 management of basin salinity

Salinity & Drainage Strategy (S&DS), implemented in 1988


Basin Plan (Water Quality and Salinity Management Plan). The next step
Basin Salinity Management Strategy
Current Status

- *Water Act 2007* gives Australian Govt greater responsibilities
- The Water Quality & Salinity Management Plan must
  - identify the key causes of water quality degradation in the Basin
  - include water quality and salinity objectives and targets for the Basin water resources
  - include principles and framework to monitor effectiveness
  - review targets every five years
- *Salinity Management Plan is in development and production now*
Plan for 2010 and Beyond

- Overall workplan outline, schedule and cost
  - Workplan is evolving document
- Specific near term future work
Plan for 2010 and Beyond

**Management/Administration**
1) Program Management

**Technical**
2) Identify Salt Constituents and Data Requirements
3) Develop and Populate Regional Database and Process Data
4) Monitoring or Other Methods to Fill Data Gaps
5) Develop Conceptual Models and Decision Assistance Tools
6) Implementation Planning /Analysis Policy and Decision Making
7) Identify Management Goals
8) Identify Beneficial Uses and Achievable Protective levels
9) Identify Water Quality Goals and Objectives
10) Regulatory and Non-Regulatory Implementation Planning

**Document Preparation**
11) CEQA Documentation
12) Draft Basin Plan Amendment
13) Long-term Monitoring and Compliance Reporting

Slide 22
Major Technical Study Areas

- Three major efforts for Salinity and Nitrate
  - Beneficial Use and Objective Study tasks
  - Collaborative Surface and Groundwater Data Collection/Analysis
  - Limit Implementation Planning & Analysis
Central Valley Salinity Coalition

• Non-Profit coalition of users of Central Valley Water
  ♦ Water and wastewater
  ♦ Agricultural and irrigation
  ♦ Industry
  ♦ Others

• Serve as the administration/funding arm of CV SALTS

• Developing and funding studies, planning and implementation efforts
Coalition Status and Efforts

- Board Comprised of Nominees from Significant Contributors
- New Members so far in 2009 = 8
- Completed founding funding $185K
- Contribution Target $450K 2009
CVSC Members

New Members
- Discovery Bay CSD
- Iron House Sanitary District
- City of Tracy
- City of Stockton
- Sacramento Regional C. Sanitation Dist.

In Approval
- California Rice Commission 10/5
- City of Modesto 10/13
- Stockton East Water District
- City of Vacaville

Founding Members
- California League of Food Processors
- The Wine Institute
- California Association of Sanitation Agencies
- Central Valley Clean Water Agencies
- City of Fresno
- San Joaquin Valley Drainage Authority
- Western United Dairymen
Coalition Status and Efforts

- Next round funding progress $450K-$1.5M
- Funding salt sources study and looking to match State Board CAA funding ($1.2M)
- Tiered contribution based on entity size
- All Leadership Group members who can should participate in the Coalition
- Long range budget is large; more members critical for both financial viability and diversity of perspectives.
Coordination Program and Matrix

- Embarked on a critical effort in 2009 to reduce duplication and increase efficiency for stakeholders and staff
- Improve outcome for CV-SALTS and Basin Plan
### Coordination Matrix

<table>
<thead>
<tr>
<th>Region</th>
<th>Addressed Monitoring</th>
<th>Date Completion</th>
<th>DEADLINE</th>
<th>Milestones</th>
</tr>
</thead>
</table>
### Coordination Matrix

<table>
<thead>
<tr>
<th>Program Project or Effort</th>
<th>Salt Sources Pilots Study</th>
<th>SJ River Upstream Objectives TMDL</th>
<th>Update of Bay-Delta Plan addressing South Delta Salinity Objectives &amp; San Joaquin River Flows</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Critical/Significant</th>
<th>11/09</th>
<th>Significant</th>
<th>Ancillary/Related</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJR Related</td>
<td>2.1 Workshops</td>
<td>MAA and TMDL Data/Modeling/Salt</td>
<td>2.3 Seasonal salinity = Ortega and DWR part real effort with managers discharges</td>
<td></td>
</tr>
</tbody>
</table>
Coordination Matrix

Program, Project or Effort

• Salinity Real Time Management
• Delta Mendota Canal Recirculation Feasibility Study
• San Joaquin River Restoration Program
• Lower San Joaquin River salinity objectives and implementation program
• NPDES Permits
Coordination Matrix

<table>
<thead>
<tr>
<th>Agency/Group</th>
<th>CVSC</th>
<th>SWRCB</th>
<th>CVRWQCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study whether laws require a specific water flow through the SJRRP</td>
<td>Study whether laws require a specific water flow through the SJRRP</td>
<td>Study whether laws require a specific water flow through the SJRRP</td>
<td>Study whether laws require a specific water flow through the SJRRP</td>
</tr>
</tbody>
</table>

- **CVSC**: Central Valley Office of the State Water Resources Control Board
- **SWRCB**: San Francisco Bay Area Regional Water Quality Control Board
- **CVRWQCB**: California Water Resources Control Board for the Sacramento-San Joaquin River Basin

**Objectives:**
- Achieving Restoration Flows
- Providing Flow, Water Quality, and Development

**Initial Phase:**
- Phase 1: Study and develop the design for the SJRRP
- Phase 2: Implement specific water flows through the SJRRP
- Phase 3: Evaluate the effectiveness of the SJRRP

**Restoration Flows:**
- Restoration of the San Joaquin River to a healthy ecosystem
- Restoration of the Delta
- Restoration of the SJRRP

**CVRWQCB:**
- California Water Resources Control Board for the Sacramento-San Joaquin River Basin
- Provides flow, Water Quality, and Development
- Focuses on evaluating the effectiveness of the SJRRP

**Restoration Goal:**
- Restoration of the San Joaquin River to a healthy ecosystem
- Restoration of the Delta
- Restoration of the SJRRP

**VWI:**
- **VWI:** Validation and Verification Units
- **VWI:** Verification and Validation Units

**CasY:**
- **CasY:** California Surface and Atmosphere Y-axis
- **CasY:** California Surface and Atmosphere Y-axis

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**Slide 33**
Coordination Matrix

Agency/Group

• U.S. Bureau of Reclamation
• San Joaquin River Group
• Department of Water Resources
• University of California (multiple)
• Stakeholders
• Permittees
### Coordination Matrix

<table>
<thead>
<tr>
<th>Purpose Objective</th>
<th>Data or Deliverables</th>
<th>Requirement Driver</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1</td>
<td>Deliverable A</td>
<td>Driver 1</td>
<td>2023</td>
</tr>
<tr>
<td>Objective 2</td>
<td>Deliverable B</td>
<td>Driver 2</td>
<td>2024</td>
</tr>
<tr>
<td>Objective 3</td>
<td>Deliverable C</td>
<td>Driver 3</td>
<td>2025</td>
</tr>
</tbody>
</table>

**Objectives:**
- Reduce concentration of pollutants below the standards set by the Environmental Protection Agency.
- Enhance water quality in the reservoirs.
- Improve overall hydrology in the region.

**Deliverables:**
- Development of a regulatory framework.
- Implementation of monitoring programs.
- Report on water quality improvements.

**Drivers:**
- Federal Objectives
- State Objectives
- Local Objectives

**Timeline:**
- 2023: Initiate projects for pollution reduction.
- 2024: Implement water quality enhancements.
- 2025: Oversee hydrology improvement initiatives.

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**Notes:**
- The matrix is used to coordinate efforts across different stakeholders.
- Key drivers and objectives are aligned with specific deliverables and timelines.

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**References:**
- Federal and State Agencies.
- Local and Regional Partners.
- Collaborative projects with external organizations.
Coordination Matrix

Requirement Driver

- CV-SALTS
- MAA
- TMDL
- Court Order
- CEQA
Purpose/Objective

- Characterize salt sources
- Coordinate reservoir discharges for downstream salinity limits
- Basin planning
- Compliance with CEQA
- Setting permit limits
Group Feedback Discussion

- How to expand the agencies and industry actively engaged?
- How to increase contributed resources to CV-Salts efforts through CVSC?
- What is missing and needed?
- What should be the criteria for progress assessment for 2010?
To address the Significant Progress Goals proposed on November 18, 2008 the following proposed timeline for the tasks with changes is proposed.

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Month</th>
<th>Product or Activity</th>
<th>Document or Event</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>Stakeholder Meeting Schedules/Location</td>
<td>Ongoing location to change</td>
<td>Complete</td>
</tr>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>Agenda/Materials Creation</td>
<td>Ongoing</td>
<td>Complete</td>
</tr>
<tr>
<td>Mar-09</td>
<td>4</td>
<td>Email Distribution of Announcements</td>
<td>Transfer of email list except info</td>
<td>Complete</td>
</tr>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>Web site and Communications</td>
<td><a href="http://www.cvsalinity.org">www.cvsalinity.org</a></td>
<td>Complete</td>
</tr>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>CVSC obtains address/accounts for fund Mgt.</td>
<td>Members invoiced/deposited</td>
<td>Complete</td>
</tr>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>Public Coalition Membership List</td>
<td>Listed on website</td>
<td>Complete</td>
</tr>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>Stakeholder Committee Chairs</td>
<td>Committee Chairs Elected</td>
<td>Complete</td>
</tr>
<tr>
<td>Feb-09</td>
<td>3</td>
<td>Workplan Strategy/Outline developed</td>
<td>Executive Approval</td>
<td>Complete</td>
</tr>
<tr>
<td>Apr-09</td>
<td>5</td>
<td>Salinity Sources Study Awarded</td>
<td>Notice on website</td>
<td>29-May</td>
</tr>
<tr>
<td>May-09</td>
<td>6</td>
<td>Comprehensive Schedule Task Years 1-5</td>
<td>CVSC and Executive Presentation</td>
<td>Complete</td>
</tr>
<tr>
<td>Mar-09</td>
<td>4</td>
<td>Workplan Strategy implementation begins</td>
<td>Work Plan Development</td>
<td>Ongoing</td>
</tr>
<tr>
<td>May-09</td>
<td>6</td>
<td>Comprehensive Budget and schedule, work plan resources, funding and financing plan</td>
<td>CVSC and Executive Presentation</td>
<td>Complete</td>
</tr>
<tr>
<td>Aug-09</td>
<td>9</td>
<td>Leadership Group Meeting Prep</td>
<td>Agenda drafted/Save Date</td>
<td>August</td>
</tr>
<tr>
<td>Sep-09</td>
<td>10</td>
<td>Leadership Group Meeting</td>
<td>Event</td>
<td>September</td>
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<tr>
<td>Mar-09</td>
<td>4</td>
<td>Governance MOU Draft</td>
<td>CVSC Approval</td>
<td>SWRCB</td>
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<tr>
<td>Apr-09</td>
<td>5</td>
<td>Workplan development elements</td>
<td>Development</td>
<td>October</td>
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<tr>
<td>Jun-09</td>
<td>7</td>
<td>Management Team Development</td>
<td>Planning Ongoing</td>
<td>Preliminary</td>
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<tr>
<td>Jul-09</td>
<td>8</td>
<td>Management Implementation</td>
<td>CVSC Approval</td>
<td>November</td>
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<tr>
<td>Aug-09</td>
<td>9</td>
<td>Workplan Elements Contracting</td>
<td>Solicit Coordinate with CAA $</td>
<td>November</td>
</tr>
<tr>
<td>Oct-09</td>
<td>11</td>
<td>Workplan Elements Contracting</td>
<td>Award (pending funding)</td>
<td>December</td>
</tr>
<tr>
<td>Dec-09</td>
<td>13</td>
<td>Revise Progress Demonstration Criteria</td>
<td>Draft Proposal presented</td>
<td>December</td>
</tr>
<tr>
<td>Nov-09</td>
<td>12</td>
<td>Salinity Source Survey Pilot completed</td>
<td>Draft report Presented</td>
<td>Jan 2010</td>
</tr>
<tr>
<td>Jun-09</td>
<td>7</td>
<td>Public Scoping Meeting</td>
<td>Separate Calendar</td>
<td>Mar -2010</td>
</tr>
</tbody>
</table>
Group Feedback Discussion

1. How to expand the agencies and industry actively engaged?
2. What is missing and needed?
3. What should be the criteria for progress assessment for 2010?
4. How to increase contributed resources to CV-Salts efforts through CVSC?
Salinity Leadership Group
Action Items

1. Approve name change from Policy to Leadership Group
2. Approve Workplan Outline and request continued development and fundraising through membership requests and grants
3. Endorse one-stop salt and nitrate venue and coordination process
4. Everyone commits to expand membership and complete a Salinity Management Plan and Basin Plan Amendment by winter 2013