



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.

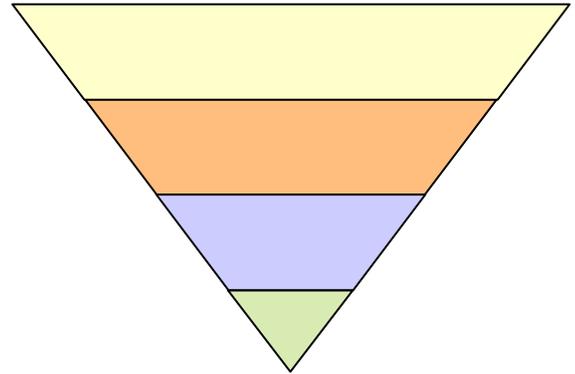
Central program operates to aggregate data, validate and provide integrated analysis.

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



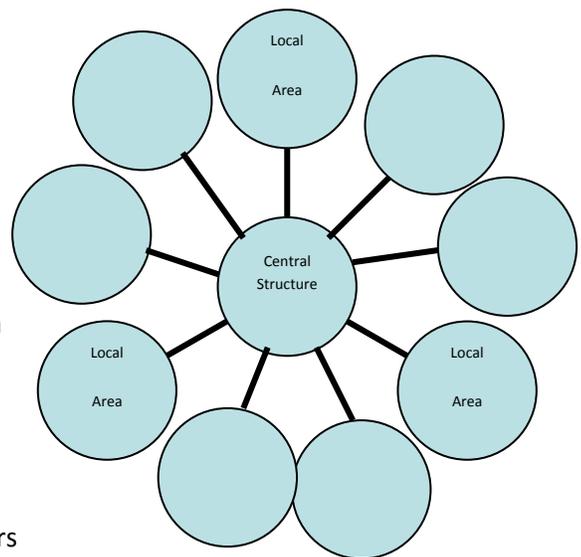
Requirements

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?