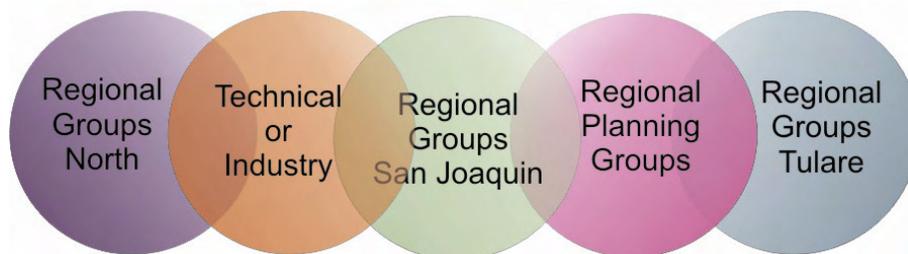
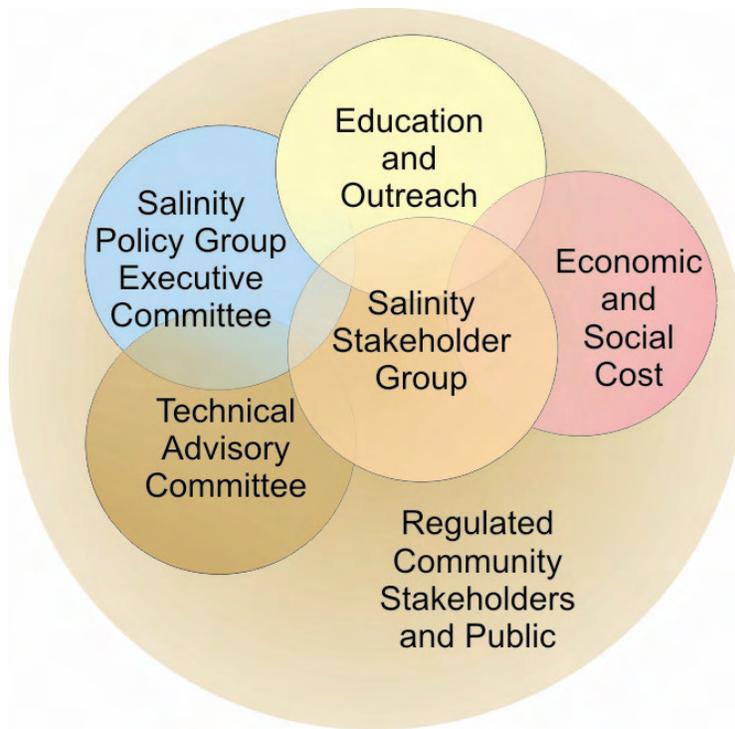


# Salinity Management Strategy Report

June 2008



*Prepared for  
Central Valley Region Water Quality Control Board*

*Prepared by  
Integrated Planning and Management Inc.*



***Toward a Sustainable Central Valley Future for Its Economy, People and Environment***

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Principal Investigator

Dr. Richard Howitt  
University of California, Davis  
Agricultural and Resource Economics  
One Shields Avenue  
Davis, California 95616



**Produced Under Subcontract Number 06000970-02**

Principal Investigator, Report prepared by:

Daniel Cozad  
Integrated Planning and Management Inc.  
360 Lakeside Avenue  
Redlands, California 92373  
[www.intpln.com](http://www.intpln.com)



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### Disclaimer

*This publication is a planning report prepared by independent consultant under contract with the University of California Davis, for the California Regional Water Quality Control Board, Central Valley Region, however no policy or regulation is either expressed or intended.*

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- **California Water Resources Control Board**
- **University of California Davis**
- **California State University Fresno**
- **Chairs and Stakeholders participating in the Salinity Policy Group Executive, Technical, Social and Economic Impact, and Public Education and Outreach Committees**

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# 1 Executive Summary

The mission of the Central Valley Salinity Policy Group is to work closely, in a collaborative manner to create a comprehensive Central Valley Salinity Management Plan. This mission is presented at all meetings and forms the basis for the efforts of the group. This report and its plans and strategies are intended to further the initial efforts of the group in fulfilling its mission.

## 1.1 *The Purpose of the Document*

The purpose of this report is to document the strategies discussed and proposed to provide an overall roadmap developing efforts that lead to solving salinity issues in the Central Valley Region. While these efforts are just beginning and will take a long time to come to fruition many of them need to be started now to be successful. The document collects materials and information prepared with the committees and group participants as they worked during most of 2007 and early 2008. The report attempts to capture this progress and provide summary information that would be useful to current and future participants, the Regional Board and Salinity Policy Group members. Within this document no specific regulatory or policy decisions related to salinity have been made by the Salinity Policy Group or Waterboards.

Changes to the outline of this document were made to include efforts that were undertaken to assist the groups in planning and working on issues important to the group over the contract term. Additionally, some technical information and integration of existing technical studies is omitted from this report as several of these studies are ongoing and will not be completed in time to report their findings in this report.

## 1.2 *Existing Condition*

The Salinity Policy Group was started in November 2006 and with its first meeting on November 20, 2006. Prior to this time no outside organized efforts under the Salinity Policy Group had been undertaken by the Regional Board. Many prior and existing programs include elements of salt management. Various efforts as parts of permits and the existing basin plan contained narrative or numeric limits for salinity. Certain regulated community members and agricultural operations were dealing with salinity related to discharges or management of saline groundwater. In some areas of the Tulare Basin significant control efforts were in operation related to oil production and agricultural operations. The understanding by many of salinity was limited. But for those that had experienced salinity issue they likened it to a



train, you hear the rumble before you see the light. By the time you see the light it is too late. To increase understanding and consistent implementation Regional Board management has prepared guidance for staff to use in addressing salinity in waste discharge requirements. This guidance reveals an important baseline approach as strategies are developed.

### **1.2.1 Ongoing Studies and Reports**

The initial Salinity Overview Study<sup>(1)</sup> produced by the Regional Board provided an excellent background for beginning the Salinity Policy Group and its future studies. Additionally, meetings and committees were convened early in 2007 with efforts underway to prepare several additional studies shown below:

- Salinity Overview Study<sup>(1)</sup> – Regional and State Board
- Economics and Social Cost Study<sup>(2)</sup> – UC Davis
- Salinity PBS Documentary – Water Education Foundation
- Salinity Data Gap Study – CSU Fresno
- Salinity Strategy Planning Report (this report) – UC Davis
- Outreach Workshops and Materials – CSU Fresno

### **1.2.2 Existing Committees**

Three committees in addition to the Executive Committee were formed and chairs were identified. The committees are shown below:

- Executive Committee (formerly the steering committee)
- Technical Committee
- Social and Economic Impact Committee
- Public Education and Outreach Committee

Each committee reviews the studies and other appropriate materials or information in their committee. Additionally the committees each engaged in road-mapping that laid out the ideas about issues, studies, information and actions they wished to pursue. These roadmaps are described below and show in the appendices of this report.

## **1.3 Basin Planning Program**

The Regional Board wants to work with the stakeholders and regulated communities in this manner to facilitate basin planning to address salinity. Overarching intent of the basin planning process is to address salinity in a comprehensive and integrated manner using regulatory and non-regulatory methods to reach long term salt balance in region.



The current approach of the RWQCB is using is a collaborative stakeholder approach that are dependent upon a functioning stakeholder program that will provide funding and oversight of the work. This approach is referred to as “Plan A”. This provides an opportunity for the regulated community to develop the information and the analysis to understand the sources and basins, develop the objectives, and determine implementation actions and schedules. The next section provides key strategies for the development of this effort.

## **1.4 Key Strategies**

Several key strategies were identified during the last year of research and planning for this report and in coordination with the committees. Many strategies were presented and discussed by committee members at different detail levels depending on the committee and interest. Strategies are crafted in many ways, they can be dictated or developed or emerge from understanding and history to address needs<sup>(4)</sup>. Because a primary focus of this effort is the use of a stakeholder public process, this report focuses on broad strategies and does not attempt to provide tactical planning steps in all areas to implement the strategies. For other strategies some tactical steps and plans are provided to ease implementation. Although Regional Board staff have a role in the beginnings of these strategies, tactical implementation of many strategies is will primarily be done by the stakeholders meeting. Primary to each strategy was the overall goal of helping the stakeholder community to:

- Better understand salinity and its regional issues including research and study
- Prepare to assist in the development of collaborative standards, if change is needed
- Begin to participate fully in the development and implementation of the resulting regulations
- Evaluate, select and implement management options including seeding the formation of stakeholder groups

The strategies overlap in these goals and are not mutually exclusive but complementary. Additionally, they are likely to be implemented in phases and to greater or lesser levels over time as needed. Because of the stakeholder driven process, engagement, commitment, funding and continued effort all indicate progress.

### **1.4.1 Communication Needs**

Communication is a critical strategy for any problem that involves large groups, but especially the issue of salinity in the Central Valley. Effective communication about the challenges of salinity, the opportunities for addressing the challenges and the need to implement solutions must be communicated at all levels. A high level communication plan shown in the appendices was prepared to help guide communication. Additionally, a continually updated list of critical meetings and presentations was prepared to assist staff and stakeholders in communicating to these groups.

Under a separate contract, Stakeholder Workshops were conducted in April 2008. Also under this contract a brochure was prepared to help communicate the issues more consistently to opinion leaders and decision makers. Also a PBS video documentary is being completed this year to provide outreach to the general public.

### 1.4.2 Group Formation and Organization Strategies

Several strategies are important to helping stakeholders form one or more groups to represent interests from business, agricultural, and water related agencies in salinity control, regulatory compliance and other issues.

While no groups have yet formed specifically to undertake all efforts needed, several have begun to discuss and consider one or more areas where they can become engaged and helpful to the process.

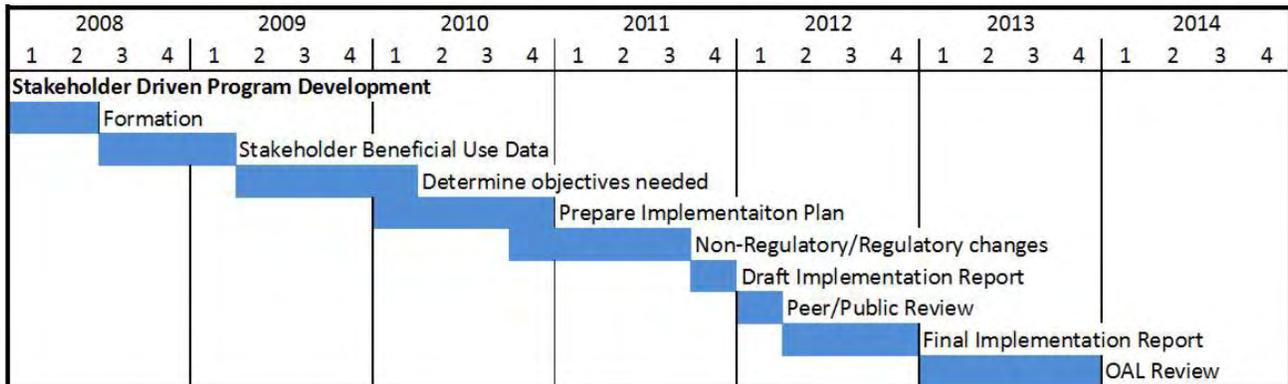


### 1.4.3 Standard Basin Planning Versus Alternative Strategy

Ultimately, the salinity management plan will be implemented through the RWQCB Basin Plan. This will lead to basin plan amendment to revise its two basin plans and the State Board approach to the Bay Delta Plan. The basis of the Salinity Policy Group is the understanding that the standard regulatory approach and basin planning process may not be optimal for establishing a regulatory approach and salinity management plan to controlling salinity. This alternative strategy was developed to assist the stakeholders in understanding the needed actions and outcomes and encouraging their participation. To explain the alternative process two scenarios were developed, described as Plan A and Plan B. Section 6.4 provides additional details on the basin planning alternative and standard strategies.

Plan A assumes the formation of a viable stakeholder group where the RWQCB is involved to assist in the planning, development and implementation of the regulatory plan and any alternatives. Plan B assumes the traditional basin planning process where the RWQCB leads and controls the efforts. More information on this strategy is in Sections 6.4. Under Plan A, Stakeholders define and support the development of the data and analysis that are needed to support the Basin planning regulatory process. Implementation will be scheduled and coordinated with the plans from the participants. The following graph shows a time line of efforts beginning in 2008.

## Plan A Timeline



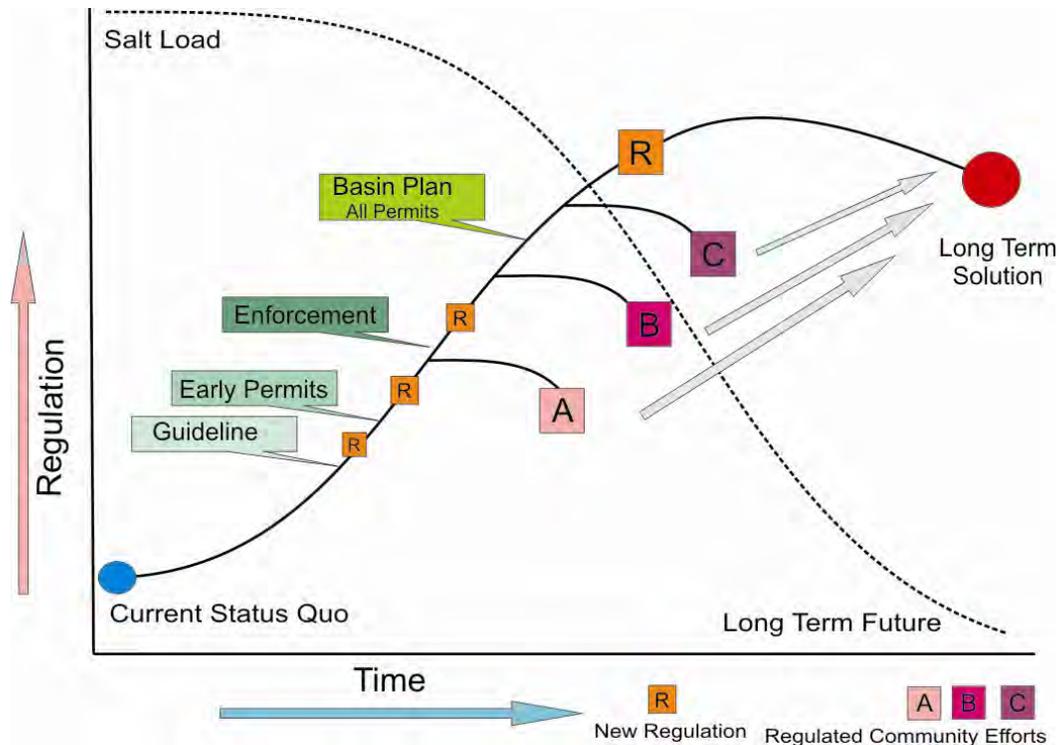
The graphic above shows the timeline for the significant tasks:

- Identification of beneficial uses and basin needs
- Determine objectives that are protective of the uses
- Develop implementation plan with actions and schedules for regulatory and non-regulatory solutions to meeting objectives
- Complete basin planning steps to implement and document the changes

## Plan B Timeline



Plan B efforts are shown in summary in the timeline above. The basin plan studies and amendment process are shown and opportunities for participation are shown. The ability to fully participate will always be open in Plan B, but would limit it during staff development efforts for completion of studies and efforts. This graphic represents staff's estimate of the first two phases of basin planning that might be able to be accomplished if work on them began in early 2008.

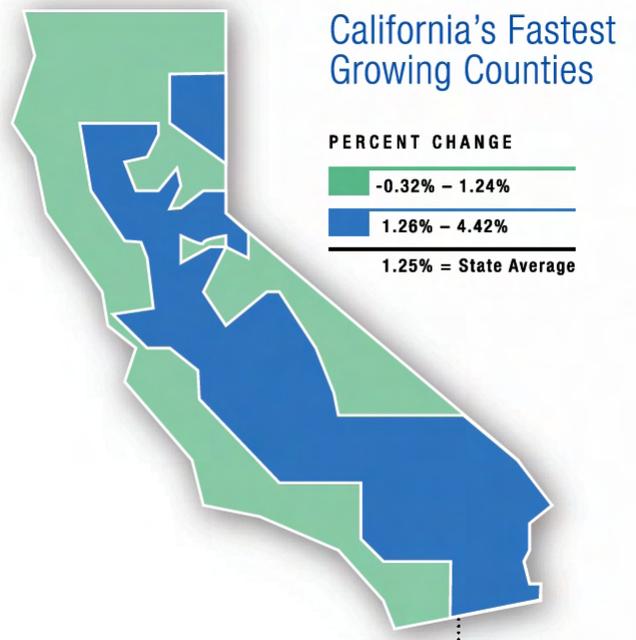


Additionally because there will likely be several rounds or levels of regulatory change and implementation there may also be several opportunities for stakeholders to join the basin planning efforts described in Plan A. Shown graphically these opportunities or off-ramps can lead to additional collaborative efforts and implementation of regulatory requirements which all lead to long term solutions.

### 1.4.4 Long-term Salt Balance Plans Help Growth Build Solutions

Approaching salt from a salt balance approach is valuable because it can be calculated on a basis of years or tens of years. The Economics and Social Cost Study<sup>(2)</sup> estimates that the total salt load from all sources to the Central Valley is 15.5 million tons per year and will rise by about 1 million tons by 2030. Long-term solutions such as brine lines or industries built around salt management, accumulation and product conversion will take a long time to develop. Setting a long-term goal of balancing salt coming in and leaving the region (salt balance or sustainability) is an important beginning because it provides time for study of alternatives that can reduce the long-term costs of management. Early action to begin feasibility and design of long term solutions will also reduce long-term cost. The map to the right

July 1, 2005 to July 1, 2006



shows the most rapidly growing counties in California are all in inland areas. The growth in urban and near-urban rural areas in the Central Valley is substantial.

Summarizing projections for the year 2030 from the Economics and Social Cost Study<sup>(2)</sup> reveals that there are likely to be more than 3 million more residents in the Central Valley, a 37% increase. Additionally, the study shows over 1.1 million new jobs in business and industry by 2030 a workforce of over 5 million people. Real disposable income is projected to grow to \$193.5 billion or 71.4% and output grows by more than \$357 billion to \$775 billion more than doubling by 2030.

One view is that such growth and development can be assisted with an appropriate Salt Management Plan. With the plan in place, this level of growth will help to build the infrastructure needed to manage salt rather than becoming impeded by the lack of salinity infrastructure.

### **1.4.5 Local Alternatives and Distributed Management and Storage**

One strategy of importance was the understanding by the participants that alternatives were needed for local management and storage of salt to increase the potential for efficiencies of removal and or disposal. The goal of long term sustainable salt management would require some near term salinity control options that can be effectively carried out. In many areas these are underway already. The concentration of salts from agriculture, brine injection and other methods have generally resulted in economies of scale and potentially lower cost aggregation and storage of salt. Provided these alternatives are managed correctly they may be able to help the region manage salts until other alternatives become available.

### **1.4.6 Integrate Salinity Solutions with Statewide Efforts**

Some believe that salinity is not the most critical problem facing the State now, but if not managed, it will continue to grow to be a statewide problem. Currently it is an acute or chronic problem for specific discharges and regulated community members depending on their location, source water and discharge location. In other areas, these same factors are not critical and salt increases are mostly untouched by regulation. This situation is likely to change as the RWQCB increases its salinity related regulatory actions and as water needs increase and the transfer and reuse of water increases in all areas.

Salinity issues should be strongly considered in all decisions related to improvement of the Delta. Many different efforts are underway in the Delta, but each should integrate salinity concerns, as appropriate. Additionally, the California Water Plan, bulletin 160-09 is in preparation and should include the impacts and constraints related to salinity in the planning scenarios. This should be done at the statewide and region level of planning.



Funding opportunities and public acceptance are increased by demonstrating how management of salts in the Central Valley is of statewide interest and linked to the current and future critical issues of California. Funding requests should be included in all statewide funding efforts or bonds. Even if in limited levels, consistent funding can make headway in moving toward solutions.

## ***1.5 Efforts and Plan***

Many efforts have been undertaken as part of the Salinity Policy Group. As of March 2008, the Committees have held over 25 meetings since its initiation. These meetings have mainly been informational and provided oversight to the ongoing studies and efforts. While these efforts are productive, several areas were addressed to make the meetings more effective and provide for additional participation.

- External Chairs of the committees allowing more direct stakeholder feedback for the specialized committees
- Executive Committee adjusted to focus on policy issues and to provide oversight of the specialized committee and assist them in accomplishing their efforts
- Roadmap efforts each committee believes are needed to make progress on salinity and develop the roadmaps into work packages
- Plan meetings further in advance and closely coordinate with the committee chairs
- Extend opportunities for Stakeholders to participate and direct efforts especially new efforts.

A request was made to develop a business level work plan for efforts. Wastewater agencies requested the opportunity to review what the group may recommend for their participation. This plan is included as Appendix 13. This plan provides for accomplishment of discrete work elements over approximately one year that would be funded and managed by the stakeholders and coordinated managed by the stakeholders through the committees of the group including the RWQCB.

## ***1.6 Conclusions and Roadmaps***

This report documents many conclusions and provides planning roadmaps for the committees and other critical efforts. The conclusions drawn from this public process help document approach and build agreement. They also help provide a basis and background for future participants and actions.

### ***1.6.1 Report Conclusions***

While many conclusions and observations are made in the report, the following are deemed to be important.

- Significant information is available on the large scale occurrence of salinity on surface waters
- Additional efforts are needed to understand salinity sources, impacts on groundwater and control options to affect the extent and significance of the problem

- Further coordinated planning and data collection is needed to monitor salinity impacts and trends
- Early actions on local or regional storage and management options will help the region cope until long term disposal options can be implemented
- Identifying potential long term solutions as early as possible reduces the long term compliance costs as has been demonstrated in the Santa Ana Watershed
- Inviting and involving as many of the effected parties as possible in identifying the solutions earlier reduces costs and provides greater likelihood of completion
- City and county government must understand the issues of salinity and be involved
- The general public must begin to understand salinity impacts and help control salinity
- An independent organization of stakeholders would be the ideal group for addressing salt impacts and programs needed to address these impacts as part of the basin plan process

### **1.6.2 Roadmaps and Recommended Efforts**

Roadmaps were prepared with all committees to help plan and guide their efforts and actions as well as engage the participants to assist in the process. The roadmaps laid out the ideas, issues, studies, information and actions they described as important to pursue. These roadmaps are presented later in the report and in the appendices, but each committee has significant elements that can be combined into programs funded and accomplished over the next several years.

The elements in the Roadmaps and other basin planning efforts were placed into a 5 year plus time-line. This time-line is described as Plan A. The Plan A is an alternative to traditional basin planning and involves the stakeholders in a significant way in planning, funding, overseeing and implementing the efforts as part of the Regional Boards basin planning process. Plan B is the more traditional basin planning effort involving stakeholders at critical and review periods. Both approaches are more fully described Section 6.

## **2 Report Organization and Scope**

The scope of the planning report and its basic organization are described in the form of mission, goals and objectives in the following sections. Elements of this scope have been adjusted as planned in accordance with the needs of the Regional Board and the Stakeholders. Some differences exist in elements listed in the original scope of work and those produced in this report. One significant difference is the inclusion of a review of technical information and data from other reports. The primary reports are being concluded at the same time or after this report and so are not available to be clearly summarized in this report. The contractual scope of work is shown in Appendix 1.

### ***2.1 Report Organization***

This report is organized into sections and many parts of the plan were supplied to the committees and working groups of the Salinity Policy Committees as works in progress or materials for their efforts. The report provides alternatives that can be considered by both the RWQCB and by the stakeholders in the region.

### ***2.2 Mission of the Strategy Report***

The mission of the strategy report is to provide a roadmap that can be put in place to begin developing the strategies that will lead to solving salinity issues in the Central Valley Region. While these efforts are just beginning and will take a long time to come to fruition many of them need to be started now to be successful.

### ***2.3 Goals and Objectives***

The goal of this document is to provide an overview of current situation, propose strategies and alternatives and provide steps toward an organization and support for salinity management in the Central Valley. This report document has the following specific objectives:

- Provide summary background on current salinity status
- Document recommendations for the committees and roadmaps for future efforts
- Develop alternatives for a more stakeholder driven organization
- Develop and analyze policy alternatives for controlling salinity
- Document current and alternative strategies for salinity management
- Document needs and plan for outreach and communications
- Estimate costs and potential funding sources

These objectives are met by the report in the chapters presented as well as by materials in the appendices of the report.

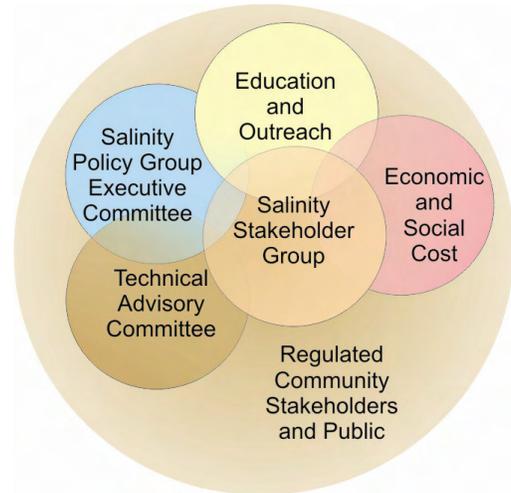
### 3 Current Group Process and Organization with Alternatives

This section presents the established and current group process and organization. The three specialty committees and executive Committee are described finishing with a discussion of different types of organizational structures that could be employed for a stakeholder group.

#### 3.1 Current Group and Committees

Upon formation of the Salinity Policy Group, a steering or executive committee and three other committees were formed. Chairs were identified for the committees; many were stakeholders taking leadership in the committees. The committees are listed below and described in more detail in the following subsections:

- Executive Committee (formerly steering committee)
- Technical Committee
- Social and Economic Impact Committee
- Public Education and Outreach Committee



Roadmaps were prepared with all committees to help plan and guide their efforts and actions as well as engage the participants to assist in the process. The roadmaps laid out the ideas, issues, studies, information and actions they wish to pursue. These roadmaps are presented later in the report and in the appendices, but each committee has significant programs to accomplish over the next several years.

#### 3.2 Executive Committee

The Executive Committee differs from the other committees as it has or should have an oversight and leadership role. This committee should look further forward to get the major efforts accomplished and debate and discuss policy recommendations to achieve that end. Because the executive committee has members of both the Waterboards and regulated community and other stakeholders it has an opportunity to help further understanding and promote action on salinity.

Because the policy group is not a statutory agency or governmental unit it can only coordinate, educate and recommend actions or policies to its members, participants and government. Major goals of the committee have been promoting stakeholder group formation efforts including wastewater efforts, irrigation and drinking water efforts. It also should be focused on the areas with potential umbrella or over arching groups that can address salinity in various areas of the Central Valley. The role of the executive committee will change as funding participants are added to the effort and when a viable outside organizations is effective.

This committee generally meets on a bimonthly to quarterly basis and this appears to be appropriate. Common to all committees the dates of the meeting should be scheduled at least one meeting in advance. The longer range calendar should help attendance. Attendance has been smaller than expected but fairly consistent in number and participants.

The basic meeting process has shifted from the review of existing studies toward next steps and following the roadmap of future work. Eventually this committee may shift toward a new outside stakeholder organization leading much of the new research, study and efforts. The committee may become incorporated into the new efforts or be maintained to provide a coordinating and oversight role depending on the wishes of the Committee and stakeholders.

### ***3.3 Social and Economic Impact Committee***

The Social and Economic Impact Committee has been primarily focused on assisting the team developing the Economics and Social Cost Study<sup>(2)</sup> and the review of work and materials of the team. This committee benefits from consistent leadership from its Stakeholder chair and good staff support by the board. The study, while not completed, has benefitted from the teams interaction with the committee. Additionally, the committee has had updates on other economics and research completed related to salinity. The committee has met monthly or bimonthly as needed to review report issues or related tasks. This schedule is appropriate and will likely continue into the future. As it moves forward the roadmap issues and new work will likely continue this critical committee's efforts. Salinity is as much an economic as a physical resource challenge if not more so. Solutions and their feasibility will be significantly if not primarily economic in nature. The committee's discussions should be channeled into the next phase of economic study to better understand the implications of possible management and control programs. The committee may lack the ability to easily accomplish the work without the assistance of resources and organizational structure.

The accepted mission of the Social and Economic Impact Committee is to provide guidance and direction for the on-going assessment of the social and economic impacts of salinity on the Central Valley and the State of California as an essential component in the development of a comprehensive Central Valley Salinity Management Plan.

### ***3.4 Technical Committee***

The technical committee has likely the greatest challenge of the committees. The review of data, information, technical issues and feasibility for salinity is daunting. This committee has excellent staff support and recently has a great Stakeholder Chair. This will help the committee address the issues and challenges as efficiently as possible. This committee has met bi-monthly or quarterly during its existence and that currently appears to be appropriate given the pace of the efforts underway. In the future it is likely if technical work is being completed this committee may need to meet monthly to accomplish its considerable areas of responsibility.

This committee too will begin to look into future areas of work related to the roadmap and future need as well as the requests from the other committees.

The accepted mission of the Technical Advisory Committee is to provide guidance and direction for the ongoing compilation and management of data needed to develop a comprehensive Central Valley Salinity Management Plan.

The Committee should review and recommend to the Executive Committee economic related issues for each existing study area as well as propose areas of future study and research.

Major areas of work include:

- Salt sources, interaction, and distribution studies and modeling
- Technology and treatment
- Data quality, availability and management

### ***3.5 Public Education and Outreach***

The Public Education and Outreach Committee has been working on broad information and coordination in salinity education, media and outreach. The committee has also had a focus on assisting Water Education Foundation team in developing and producing a PBS level Salinity Documentary to help reach opinion leaders and the general public. This committee has had strong assistance from staff at the Regional Board and State Board. The video, while not completed, has benefitted from the review by the committee members. The committee has met monthly or bimonthly as needed to review the video and progress or related public outreach issues. This schedule is appropriate and will likely continue into the future. As the committee moves forward on the roadmap issues more frequent meeting may be needed, however some of the meetings may be amenable to on-line calls as well.

The accepted mission of the Public Education and Outreach Committee is to obtain broad-based public participation in the creation and implementation of a comprehensive Central Valley Salinity Management Plan.

Major areas of effort will likely include:

- Communication planning and study
- Outreach and education implementation efforts
- Assisting communication and public outreach aspects of the work of other committees

### ***3.6 Alternatives for Stakeholder Organization***

Currently the Salinity Policy Group is an informal ad-hoc organization managed and organized by the Regional Board.

The optimum alternative for planning, managing and overseeing long term salinity efforts is one or more regional stakeholder organizations. Such organizations range from informal ad-hoc groups to Joint Powers Authorities and Special Act Districts and there are many options between these extremes. Generally these groups begin more informally and become more formal as time, need and sophistication progress. A task force or other group could be formed to coordinate and organize efforts including funding. Appendix 2 contains a table which describes types of entities that may be suitable for organizing such a group. The most likely of the options are shown below listed from informal to formal.



- Task Force or similar stakeholder group by agreement - regional entity
- MOU
  - Non-binding agreement
  - Agreement with cost sharing
  - Cooperative Agreement binding parties beyond funding
- Non-profit mutual benefit corporation or 501-C(6)
- Non-profit public benefit corporation or 501-C(3)
- Joint exercise of powers authority or JPA
- Special legislative act district, agency or authority

There are many advantages and tradeoffs between the different types of organizations. These include issues of governance, independence, representation, and flexibility. Some types of groups are more able to accept different members. Other types can accept different sources of funding, but some have restrictions on the ways funds can be spent for items such as lobbying. It is likely that the eventual organization needed may be a combination of more than one of these options.

Frequently the organization moves from one organization of less formality to another with greater formality and powers when the need exists and the will of the participants is obvious.

Recommendations to the group are to utilize strategies that move for simpler and less formal to more formal and structured. Identifying and assisting a nucleus outside to form and fund efforts should be the prime focus at the earliest stage. As an initial group forms, outreach and collaboration can be expanded to bring more groups by area or topic into this effort.

## 4 Development Stages, Geographic Scale and Detail Level

The Central Valley is very large, diverse and complex from a water and salt management standpoint. Developing any strategies will require flexible and collaborative methods to accomplish salinity control. As it develops many of the existing and forming collaborative efforts will become aligned to work on the issue of salinity.

### 4.1 Planning and Development Stages

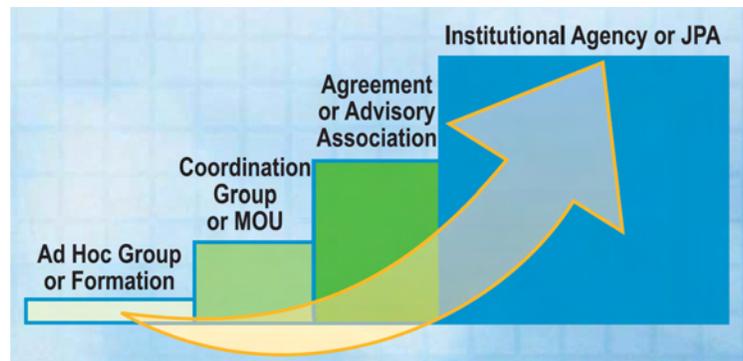
Various stages are common in the progression of groups and organizations. The following can be thought of on a continuum. This discussion borrows experience and information from the Integrated Regional Water Management Planning process that has over the last 5 years addressed regional planning related to water and related resources and land use planning issues.

#### 4.1.1 Conceptual/Preliminary

The vision or concept phase provides the preliminary concepts and passion for generating a group to address the issues of salinity. It begins with gathering people and organizations of like mindedness together to begin acting in concert to their mutual benefit. The preliminary efforts are often intensive and chaotic.

#### 4.1.2 Initial Formation

This phase is preliminary and often less organized and more flexible than any other phase in the process. After the groups are identified and brought together, the majority of effort is in deciding what needs to be done and how to organize the efforts. Formation of the organization is often not the focus of the effort but is always a factor in the ability of the efforts to move forward.



#### 4.1.3 Organized and Productive

A major effort of the early steps in organizing is the development of work effort organization to focus the efforts of the group. Additionally, the ability to be productive hinges on having a focused mission and direction. In this phase the group would be organized for both process and efforts and be accomplishing its mission within the constraints of its resources.

#### 4.1.4 Self Managed and Funded

In the next step beyond organization and accomplishment of tasks studies and efforts, is self management. For a group addressing salinity this requires them taking some control over the scope of efforts and process of their efforts. At this stage the group would be providing internal and external control and direction for its efforts and cooperating with others. Governance is

required in this stage and can take many forms described in Section 3.6 above. The form of organization is less important than its documented function and capabilities. The ability to determine direction, collect funds, direct work, and accomplish tasks is essential.

#### 4.1.5 Responsible Authoritative Partner

This level of organization begins to provide a stable and responsible partner for members and stakeholders. The organization has accomplished working governance, funding and program management. They have a clear mission and direction and are accomplishing tasks and efforts. They are developing a reputation as a responsible and consistent source for participation, feedback and input to policy and other areas within their purview. They have the ability to take on large, difficult or long term programs because of settled and consistent leadership and funding.

#### 4.1.6 Institutional

At the institutional level the organization has become a fixture in its area. This is not necessarily a governmental function. Statewide examples such as the Association of California Water Agencies, California League of Cities, Building Industry Association, California Farm Bureau, Silicon Valley Joint Venture, Santa Ana Watershed Project Authority and many others have a diverse background and purpose but have become counted on as playing their role with consistency and advocating for their causes or mission. These organizations change over time as the needs to accomplish their mission change.

### 4.2 Scale of the Region

At over 60,000 square miles the scale, diversity and complexity of the Central Valley is almost as vast as California itself. The Department of Water Resources Bulletin 118 <sup>(3)</sup> indicates the region has 116 groundwater basins and sub-basins and many more rivers and tributaries. Additionally, this large and complex area is also the source of approximately 51% of California's water supply.

A regional organization that covers the Central Valley is larger than most statewide agencies outside California. There are many land types and uses in the Central Valley. They range from forest, many forms of agriculture, industry, and urban to wetlands and rivers. This diversity combined with the size of the area makes the region harder to bring together. Many communities of interest are active in the Central Valley but they do not fall clearly into well defined areas.



### **4.3 Sub-Regions and Coordination**

The scale of the region appears to require that over time specific planning and management efforts will be needed in the individual regions of this large region. Sub-regions aligned with the three basins defined by the Regional Board, shown at right, may be appropriate as the process matures. The Salinity Policy Group or its follow-on stakeholder organization should ensure an overall umbrella or integrating group is maintained while incorporating sub-regional efforts that can maximize its effectiveness.



## **5 Priorities and Success Criteria by Stage**

Developmental stage success criteria can be based on the stages of development provided in Section 3.1.

### ***5.1 Salinity Policy Group Committees***

The current organization is effective as an ad-hoc committee structure operating under Regional Board support and guidance. The committees have been the focus of efforts and information on salinity. The participants have gained additional information and understanding about salinity related issues in the meeting.

For more active participation by the stakeholders, successful similar efforts have enlisted stakeholder community chairs as has been done with this group. Participation by stakeholder members is fairly consistent at a moderate attendance level. Some groups are always well represented and others still need to be developed further.

To round out the areas of participation and provide more complete discussions the communication plan recommends targeted meetings and outreach focusing on several industries and groups that should be more involved as the as efforts continue including:

- Cities and county government and land use planning divisions
- Water supply providers
- Water quality oriented groups
- Environmental and environmental justice groups

Limited outreach efforts of Regional Board management have been initiated to date. Additional planning and implementation is needed to provide full engagement of these groups. Strategically, identifying their roles and interests in salinity related issues will help prioritize and focus these efforts.

As the Salinity Policy Group evolves it should prioritize discussion of the long term policies and actions that they believe should be taken by the Regional Board and others in the Basin Planning process to achieve effective salinity control. In participating with a motivated regulated community it is often most effective to identify methods to control salinity that are workable to them. The regulatory, policy and standards needed to encourage and implement such methods can be worked out in the planning. In other words, start with workable implementable efforts as the end product in mind. In the absence of a motivated regulated community this model may prove unworkable. Such motivation may be due to unworkable current or future requirements.

### ***5.2 Stakeholder Groups***

The stakeholder organization side of this process is currently in the concept and preliminary stage. Such efforts will likely start with one group then others will join that group or additional independent groups will form. Either approach will work so long as there is not significant competition or conflict between the groups. Success in developing one or more groups focused

on salinity should be considered a significant step forward. Not all areas of the region need to come together at the same time with the same scope to be successful. Efforts in the wastewater community appear to be fruitful.

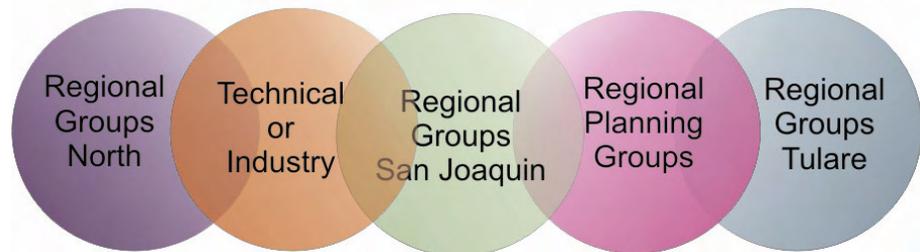
In order to produce such an organized effort four elements must come together at nearly the same time:

1. Proper participants
2. Area of effort or scope of work
3. Funding
4. Motivation

The priority for the Salinity Policy Group has been to bring this critical mix of elements together. The participants are mostly together as part of the formation of the policy group; others may be needed to be successful as described above. The areas of effort or scope of work have been discussed at meetings and can be formed with parts of the roadmaps and efforts in the Plan A Matrix shown in Appendix 3. These efforts can be matched with other work that is more effective when performed cooperatively. Efforts in this category may include monitoring and survey efforts, best practices and control efforts, and related efforts many participants may be required to do as part of complying with permits or other programs.

Funding will likely be from the participants, in early stages. Success criteria in achieving the mission of the Salinity Policy Group, should include grant funding for these activities as early as possible. However, formation and overall efforts cannot be dependent on funding from other organizations, if the group is to be effective. Early formation efforts should have funding provisions included, even if unspecified, to assure the efforts can begin.

Motivation will likely be both internal and external. Internal motivation will be to save money on already required activities, coordinate with those who are doing similar activities and assist with the most cost effective salinity management plan possible. External pressure may come in the form of permit or other regulatory requirements, the need to reduce salinity in discharge or processes for continued compliance, or regulatory relief. The EPA, Waterboards or other regulatory entities have significant roles in external motivation.



## 6 Policy Issues and Approaches

Within this section many policy issues and policy approaches are discussed. The review of these alternatives presented in this report is highly summarized. Most alternatives and issues are currently or should soon be under evaluation as potential solutions to one or more aspects of the salinity challenge.

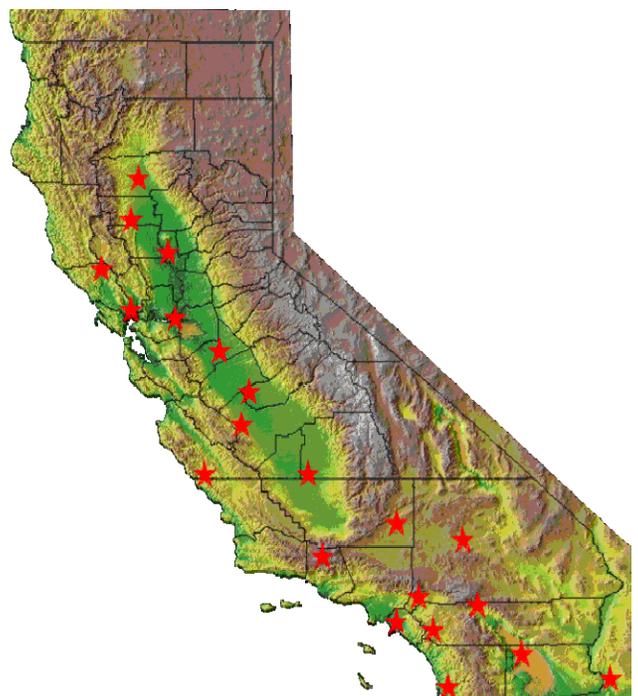
### 6.1 *Incentive or Market vs. Regulatory*

Generally industry and the public favor incentives and flexible market alternatives to regulatory approaches especially difficult for long term problems. The advantage of facultative or incentive based programs is the ability for an effective solution to be developed and implemented in the most cost effective manner. The ability of industry and the regulated community to change is increased and early actions more likely. This option allows individuals to interact with the process in a market, by changing their purchasing and other habits to more sustainable alternatives. The market impacts to the Central Valley region and the state are significant without action to prevent salt accumulation. The costs of increased salinity include premature replacement, increased depreciation in economic terms, of pipes, water heater, and similar residential and industrial equipment. This cost was estimated the Economics and Social Cost Study<sup>(2)</sup> to be approximately \$1500 per household per year for expected increases in the next 30 years. Additionally the Economics and Social Cost Study<sup>(2)</sup> showed about \$511 million dollars per year non-residential impact costs by 2030. In total nearly \$580 Million in cost impacts to the Central Valley could be reduced or eliminated by salt management. Direct Agricultural loss due to reduced productivity and reduced farmable acreage due to salinity by 2030 add losses of \$544 million per year. The total direct impact could exceed \$1.1 billion per year in 2030.

By contrast, the traditional regulatory approach can be very effective in well known or adequately characterized situations. The majority of regulatory programs cause increased costs but are frequently low costs once standard compliance efforts are identified and market pressure can reduce costs. Regional and State Board staff are developing documentation of the regulatory “toolbox” that could be used to help.

### 6.2 *Salinity Policy, Regional or Statewide*

Salinity control has been in basin planning for many years. It is implemented by a variety of programs at the Regional Board and Department of Public Health. The Regional board has various programs which involve salinity control. The State Board is reviewing



state-wide salinity as part of the Recycled Water policy and Department of Public Health provides limits and standards mostly on a state-wide basis.

For the Central Valley, a considerable diversity exists between the basins of this one region. The Tulare Basin has been a focal point for salinity control and programs for some time. The west side of the valley also has well documented salinity issues. The east side of the valley has been less impacted but is beginning to address increases in groundwater salinity in certain areas. The Sacramento basin has not been impacted significantly overall, however in certain areas the dischargers are feeling significant impacts.

Beyond the Delta and Central Valley some regions including, the Santa Ana Region, have included salt management in their basin plans. The State Board has not yet moved to set new statewide policy or standards for salinity. Management of salinity appears to be well suited to regional approaches and basin by basin objectives suited to the maintenance of beneficial uses in the basin and those receiving water from that basin. However several Statewide Plans have been adopted by the State Board. These include:

- The California Ocean Plan,
- The Thermal Plan (“Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California”), and
- The Bay-Delta Plan (“Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary”).

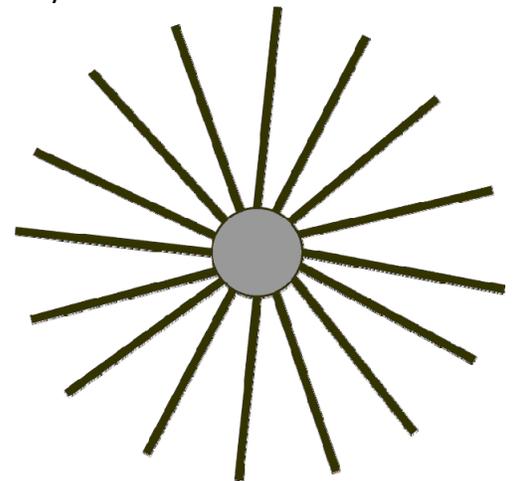
It could be found that salinity falls into the same category as these and warrants a statewide plan. If the State Board or a judge found that the Regional Board has not adequately controlled salinity there could be precedent for undertaking statewide salinity regulations.

Additionally, interregional transfers of water to San Francisco and Southern California are present from waters originating in the Central Valley Region and so interregional management efforts could be appropriate. Groups that will likely implement management efforts may implement them on a regional or large basis; however most would likely occur within the Regional Board’s jurisdiction.

### **6.3 Centralized vs Distributed Systems**

Many different approaches will be needed to begin to address salinity and some discussion has begun in committee meetings about the use and need of centralizing organization and distributing management efforts. This approach differs from the trunk sewer approach traditionally used where a brine line to the ocean or irrigation drain is available.

Due to the size of the region, a useful approach may be to work to identify distributed systems that can be implemented more quickly in the basin areas or in sub-regional areas. The Tulare



Basin has examples where significant brine management activities are undertaken in local and regional areas. These could be expanded or duplicated to provide storage and management until more centralized disposal or reuse opportunities can be implemented.

This type of distributed collection and management arrangement can be thought of a hub and spoke concept, like a wheel. It could allow the collection and consolidation of brine or solid salts in central locations. This has the advantage of short hauling or piping and then the larger amount would allow further processing or potentially resources recovery or industrial use of some kind. Anecdotal discussions with materials companies indicated that 30,000 tons of salt materials are required for processing to be efficient. These prospects could be located near supply business or other facilities minimizing the empty truck back haul required for deliveries.

Additionally, lessons learned in other regions indicate that the installation and use of smaller diameter high density polyethylene piping under pressure can transport clean brine discharges very efficiently compared to domestic or industrial waste in sewer pipes.

This approach is sometimes used in various materials and waste processes to minimize logistics costs. The materials could be processed or stored in various environmentally acceptable states depending on the next lifecycle step.

## ***6.4 Salt Management Basin Plan Amendment Process***

The Regional Board is beginning the process of reviewing the basin plan to identify changes needed to address salinity. Because they understand that regulatory and non-regulatory implementation efforts will be needed to most effectively control salinity in a large and complex basin, they have engaged stakeholders into a program described earlier in this report. As stakeholders provide information and study to understand and control salinity this information will inform changes that may be made in the basin plan. The Regional Board has stated that if these efforts are not forthcoming in a significant way in the next 18 to 24 months they will use the traditional (Plan B) basin planning approach.

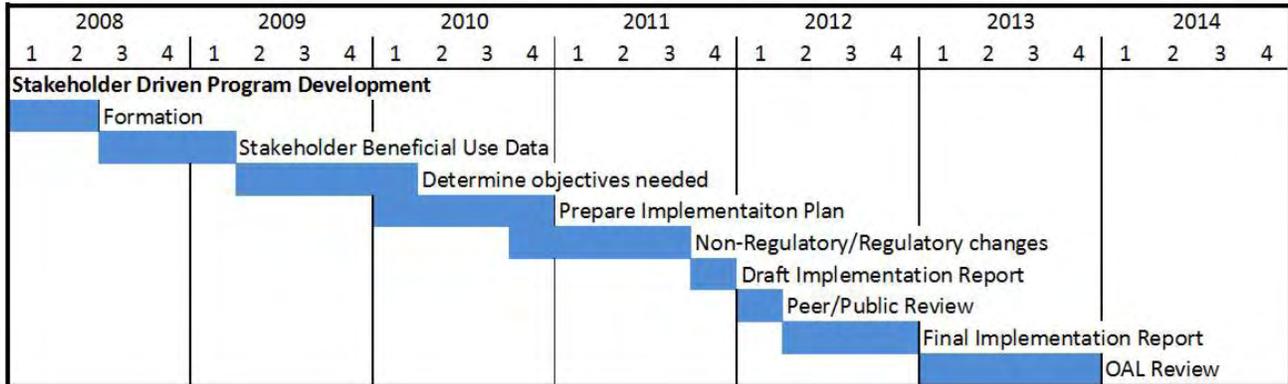
### **6.4.1 Plan A**

The efforts to be completed in the Plan A approach require a coherent organized stakeholder group to provide effort, funding and oversight of the process. The plan will require work in several areas and will require many years to complete. Many of the efforts are shown in Appendix 3 referred to as Plan A. Plan A is so named because it is the preferred plan for the Regional Board to develop the basin plan amendment for salinity and the implementing program and timeline. The major components of Plan A include:

- Stakeholders work collaborative between groups and Regional Board
- Help frame, guide and manage project
- Conduct studies and provide resources and answer critical questions
- Most effort is done before the amendment is drafted
- Known effort and work toward the Basin Planning process (also shown in Plan B)

Plan A assumes the formation of a viable stakeholder group to assist in the planning and implementation of the regulatory plan and any alternatives. Plan B assumes the traditional basin planning process. Under Plan A, stakeholders define and support the development of the data and analysis that are needed to support the Basin planning regulatory process.

### Plan A Timeline

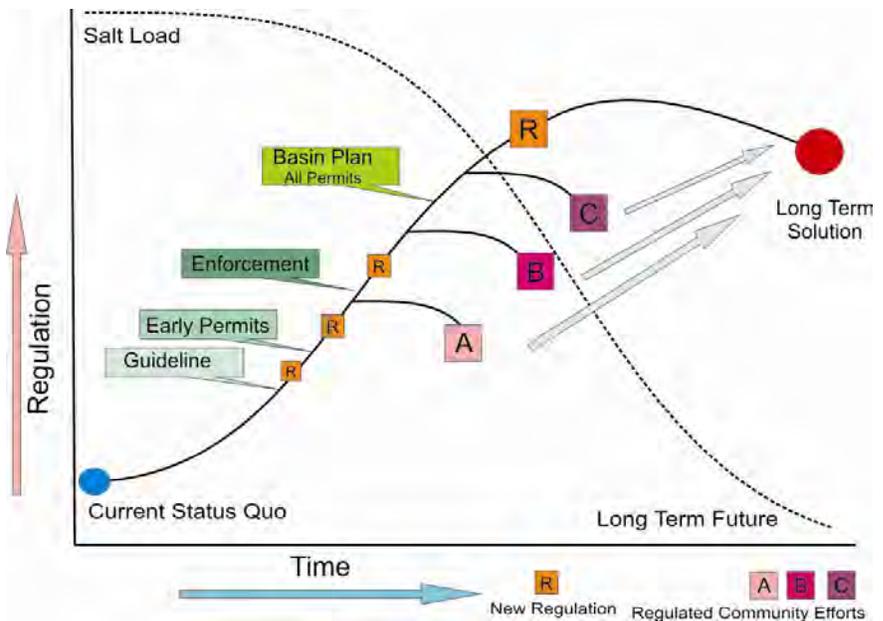


Implementation will be scheduled and coordinated with the plans from the participants. The following graph shows a time line of efforts beginning in 2008.

The graphic on the previous page shows after formation the following tasks:

- Identification of beneficial uses and basin needs
- Determine objectives that are protective of the uses
- Schedule and manage implementation of regulatory and non-regulatory programs
- Complete basin planning steps to implement and document the changes

Additionally because there will likely be several rounds or levels of regulatory change implementation there may also be several opportunities for stakeholders to join the basin planning efforts described in Plan A. Shown graphically these opportunities or off-ramps can lead to additional collaborative efforts and implementation of regulatory requirements which all lead to long term solutions.



## 6.4.2 Plan B

In the event that no stakeholder group is able to become capable of carrying out the efforts needed in a reasonable time frame, the Regional Board is preparing to implement a second plan that uses the more traditional basin planning process, this is Plan B. Plan B is shown in a graphical time line below representing several rounds of plan revision. A graphic representation of the process is also shown in Appendix 4. The major components of Plan B are shown below, while these are also represented in Plan A, the components are expanded and led by the stakeholders.

- Staff uses available data
- Requires significant assumptions
- Staff conducts scoping meetings
- Staff develops amended plan and staff report
- These documents subject to public review & comment
- Public review and document revision
- Public hearing and adoption

These efforts accomplish identify the answers to the following issues:

- What is the nature & extent of salt problem?
- How significant is the problem?
- What are the trends in surface water & groundwater?
- What needs to be done to protect future water quality?
- Drafting of the basin plan amendment and peer review

An expanded description of work under Plan A and Plan B is shown in Appendix 5 but may overestimate the resources and the ability of the Regional Board to address non-mandatory issues.

### Plan B Timeline



While there are several similarities, the areas of technology and implementation research are missing from the Plan B, as are the high level of stakeholder interaction of Plan A. These implementation efforts from Plan A are left to the regulated community after the plan is complete. Plan B continues to have significant stakeholder outreach but it is led by the RWQCB in a “veiled transparency” approach while staff is working. The standard basin planning process is shown in the graphic in Appendix 6 along with the stakeholder led process. This traditional program shows the process to develop the materials for the Administrative Record and other procedural efforts to develop the plan and process it to completion. The major differences are quantity and timing of public and stakeholder leadership and the breadth of the information and evaluation that the Regional Board can accomplish within its resources and jurisdictions. The RWQCB will use the best assumptions possible in developing the process. The public interaction in the standard basin planning process is shown in Appendix 7.

### ***6.5 Economic and Funding Strategies***

Funding and cost distribution can take many forms. Grants, contributed funds from participants, general fund proceeds from state or other governments, foundation or association funding are common sources for studying and implementing programs in water resources.

As an alternative, a regional implementing entity could develop a fee structure used to reduce the impacts from increased salt loading. This alternative concept allows costs to be distributed fairly to all benefiting parties. It also allows the most efficient salt removal options to be funded and implemented and prevents extraordinary costs to certain areas or industry sectors by allowing them to participate in more economical removal methods.

Because of the cost impacts shown in Section 6.1 the costs of any such fee structure would be a significant savings when compared to the status quo. Developing a salinity fee structure to address these direct costs would create significant revenue to begin addressing the problem. As always the ability to levy a fee on those who benefit or cause the impact is the challenge. Many of these are not permitted entities by the Regional Board

## **7 Committee Roadmaps Including Issues, Study and Research**

### **7.1 Committee Roadmaps**

#### **7.1.1 Technical Committee Roadmap**

The Roadmap of efforts developed with the Technical Committee is shown in Appendix 8.

Major areas of work include:

- Salt sources, interaction, and distribution studies and modeling
- Technology and treatment
- Data quality, availability and management

#### **7.1.2 Social and Economic Impact Committee Roadmap**

The Roadmap of efforts developed with the Social and Economic Impact Committee is shown in Appendix 9. As it moves forward the roadmap issues and new work will likely continue this critical committee's efforts. Salinity is as much an economic as a physical resource challenge if not more so. Solutions and their feasibility will be significantly if not primarily economic in nature.

#### **7.1.3 Public Education and Outreach Committee Roadmap**

The Roadmap of efforts developed with the Public Education and Outreach Committee is shown in Appendix 10.

Major areas of effort in the roadmap are:

- Communication planning and study
- Outreach and education implementation efforts
- Assisting communication and public outreach aspects of the work of other committees

#### **7.1.4 Executive Committee Roadmap**

Although a roadmap document was prepared with indications for the Executive Committee and shown in Appendix 11 the entirety of this report is intended to provide background and direction for the committee to consider. The Executive Committee should be developing its roadmap and direction based on the efforts of all members.

Major goals of the committee have been promoting stakeholder group efforts including wastewater efforts, irrigation and drinking water efforts. It also should be focused on the areas with potential umbrella or over arching groups that can address salinity in various areas of the Central Valley.

## **7.2 Long-term Studies, Research and Monitoring**

Several areas of study, research and monitoring are appropriate for a long-term challenge such as salinity in the Central Valley. Because it is a long-term challenge, investments in research and study are likely to prove good investments. Additionally because of the duration of the problem and effort it is important that both baseline and ongoing monitoring take place.

### **7.2.1 Future Studies**

A challenge as broad as salinity in an area as vast as the Central Valley harbors many opportunities for academic as well as applied areas. Carefully directed and focused studies can produce more implementable results sooner. The areas of study listed below should not be interpreted as indicating that there is not already research or study in these areas. They are listed here because each area may be a useful area of focused research, study or analysis. Some of these subjects have prior or ongoing research which may be adapted for the Central Valley.

#### **7.2.1.1 Innovative Salinity Control Methods**

A survey of innovative salinity control methods with a focus on those that may work well in the Central Valley and which could be implemented quickly would be of great use. Utilizing the results of the study could provide ideas and opportunities for more cost effective alternatives. The study report could provide materials, methods and practices that can be implemented as a part of this program.

#### **7.2.1.2 Salt Sources in the Central Valley**

A long-term effort to better understand salt sources in the region is important. This study can pick up where the existing information ends. It could look at the larger sources and trace their interactions and final destination. It could also expand the study to smaller sources which are in large numbers. Knowing the sources of water supply, the concentrations of salt in each source and the destination of the water and salt would be vital to better and more efficient monitoring and management.

#### **7.2.1.3 Salt Balance Model for the Central Valley**

A productive study would be to take salt sources and salt exports and compile this data into a flexible model of salt balance in the region. Each basin of the Central Valley can be done individually and then integrated to show the interactions and the total salt imbalance and trends into the future. This model could help project the effects of salinity control methods proposed in the future.

#### **7.2.1.4 Salt Resource Recovery and Marketing**

Because salt is not just sodium chloride but a range of other elements identifying the salt based components of the brine or other saline sources in the region would be of value. Creating a directory of salt type or compound, location and quantity produced would be valuable

information as an input to any resource recovery effort. A second phase would include identifying the major salt types and compare that to known uses of brine and salt compounds. Working to identify potential markets for the salts that are produced with the least processing necessary will provide potential export mechanisms.

### **7.2.1.5 Business Models and Investment**

Salinity also holds excellent areas of study that would be suitable for business management experts. A study matching potential business models and investment strategies to potential salinity control methods and systems would be productive. Should a bank or funding mechanism (such as the type presented in Section 9) become workable, there would be a need for creative and innovative business models and investment strategies to create viable businesses around salinity.

### **7.2.2 Research**

Technological changes will likely be an important factor in the solutions for salinity. Because of the cost of treatment, energy requirements of current separations mechanisms, and lack of established cost effective export system in the region technological changes may be critical to the solutions. Funding basic and applied research is expensive but it may be possible to partner with State and federal funding sources such as the Department of Energy or Bureau of Reclamation that have had long term interests in energy and water to focus their funding on this area.

Areas of basic and applied technology research where advances and breakthroughs could dramatically change the solutions available include:

- Source control and low salt product replacements
- Chemical and other separation methods
- Concentration methods for brine and salt sources
- Treatment for contaminants for disposal
- Purification and isolation of salt products
- High value salt products production

While the Salinity Policy Group or stakeholders may not be able to make direct investments in these areas they could convene conference and other methods for keeping the investigators and researchers working in this area. The Executive committee described earlier in this report or a successor group should be central to coordinating these efforts; even if the efforts are distributed among various groups and institutions.

### **7.2.3 Monitoring and Modeling**

Basic monitoring of salinity in surface and groundwater is critical to setting appropriate regulatory limits and to managing the resource for maximum beneficial use.

As indicated in the Technical Committee Roadmap there is a need to develop a comprehensive and flexible database approach to store information for salinity management and trend analysis. The State has funded partnerships with other regions to develop such databases and the structures may be available from one or more of those databases. When the Data Gap study is concluded a system should be adopted for managing the salinity data for the region.

Additionally, the Bureau of Reclamation has significant data on salinity that could be reviewed for applicability. The US Geological Survey has prepared a report on tools that they can provide from areas they have worked. This toolbox is shown in Appendix 12.

There is a need to develop a model that would project future salinity concentrations based on the history and trends of salinity. An initial version of this model was prepared as part of the Economics and Social Cost Study<sup>(2)</sup>. The current model is used only to evaluate the no change scenario and primarily for economic purposes. It would be valuable to modify or supplement the model to provide the capability to evaluate future salinity levels and impacts based on salinity management options, future trends and other factors.

## **7.3 *Early Action Opportunities***

### **7.3.1 Near-Term Studies and Actions**

While the previous section discusses long-term efforts many important changes can be accomplished in near-term efforts. For the purposes of this report, near-term will be less than 24 months. Some actions will be extended, continued or repeated, but still qualify.

Some examples of near-term actions that could prove very effective for salinity are described in the following sections. These efforts can be implemented collectively or by individual stakeholder groups, if coordinated through the Salinity Policy Group they will assist participants in understanding and implementing controls in an effective manner. Additionally the Data Gap Study by the California State University, Fresno will likely identify information that is missing and needed to make decisions about the management of salt.

#### **7.3.1.1 Pilot and Demonstration of Innovative Salt Reduction Projects**

A survey and report on planned and operating pilot or demonstration projects that provide innovative salt reduction methods would be useful. Documenting the effectiveness and applicability as well as the location and contacts would provide information for others and stories for earned press on salinity.

#### **7.3.1.2 Salt Storage or Reuse in Urban/Industrial Settings**

Like the pilot projects above a survey and documentation of projects or systems that store and or reuse salt in industries or other non-agricultural setting would be useful. Documenting the effectiveness and applicability as well as the location and contacts would provide information for others and stories for earned press on salinity.

### **7.3.1.3 Salt Storage or Reuse in Agricultural Settings**

Like the project above a survey and documentation of projects or systems that store and or reuse salt in agricultural processes and settings would be useful. Documenting the effectiveness and applicability as well as the location and contacts would provide information for others and stories for earned press on salinity.

### **7.3.1.4 Outreach Education, Public Opinion, Information and Communication**

#### **Outreach Materials and Documents**

Each year or more often outreach materials and documents could be updated and expanded. There will always be a need for materials for outreach to opinion leaders and the general public. Until there are regularly funded programs for education and outreach this would be an effective and useful program toward achieving the Salinity Policy Group mission and coordinated with the Executive Committee. This effort could be combined with in-house efforts of one or more agency or entity to reduce costs and increase effectiveness.

#### **Outreach to Specific Audience with Monitoring**

Like the item above, specific outreach to linguistic groups, industries, trade groups or other discrete audience could be planned and executed. Development of materials, messages, information and references could be effective when delivered to a specific target audience. Monitoring of the effectiveness of the methods and materials is critical to the success of this program.

#### **Expand Video Distribution**

The Public Broadcasting System video was produced with the Water Education Foundation and has limited budget and scope to distribute and promote the video. A project could be completed to expand the distribution of the 20 minute or hour long version of the video. The video will be converted to Spanish as well, but other languages may also be valuable.

#### **Operate the Speaker's Bureau**

A project for a large agency or company would be to provide services to the Salinity Policy Group to operate the proposed speaker's bureau. This would likely be minimal efforts for a group that is already operating one. The efforts would entail standardizing materials and messages for all speakers, creating a matrix of people who are qualified to speak and on which subjects related to salinity, and performing basic training. Close coordination with the Regional Board and other stakeholders would be the key to making this effective.

### **7.3.1.5 GIS Mapping of Salt Sources and Interactions**

An excellent project that would assist the mission of the Salinity Policy Group would be to map all significant sources of salt in the region and begin a matrix of interactions between the sources and the incoming waters and wastewater or drainage. Some areas of the region have this information available and this effort could fill in areas that do not. This project could be done with intern or graduate/undergraduate students as well.

### **7.3.1.6 Grant Application for Additional Efforts**

An excellent short term low cost effort for a stakeholder group or organization to do would be to identify and prepare one or more grant applications to appropriate government entities, foundations and other granting entities. Cooperative or collaborative applications generally have greater opportunity for funding when compared to individual submissions. These partnerships would strengthen the group and its overall mission.

### **7.3.1.7 Controls Best Practice Survey**

A short review of best practices in salinity control for wastewater or one or more industry areas could be easy to research or survey. Focusing on efforts that are demonstrated to be effective, cost efficient, practical to implement and broadly applicable to the area would be beneficial to the mission of the Salinity Policy Group.

### **7.3.2 Proposal in Business Plan Format**

Stakeholders in the Social and Economic Committee requested incorporation of potential near-term actions into a business plan format for stakeholder groups to consider. The tasks above are incorporated into the requested format and included as Appendix 13. To avoid duplication the scope of work attachment to this plan is not included in this report. The proposal does not currently contain budgeted costs or revenue requirements. The budget appendix will be more fully developed with the committee and may be incorporated into the final report if available.

### **7.3.3 Interim Control Measures**

A review of effective interim control measures and efforts should be compiled for business and industry, residential and domestic salt sources. Effective near-term implementable control measures will make some of the easy steps possible.

## **7.4 *Annual Work Plan***

The elements required in an annual work plan are shown below in outline format. Additional details for some items are shown in the Plan A Plan B work descriptions. Many items are currently provided by the Regional Board.

- General and program management
- Program and meeting planning/ coordination
- Government and association outreach
- Web and email communications
- Support for meeting scheduling, agenda preparation and coordination
- Meeting facilitation and coordination
- Study and project management
- Financial and contract management
- Legal and legislative support

## **8 Stakeholder Outreach and Communication**

Many efforts have been made by the Regional Board to educate their board and the regulated community about salinity. The majority of efforts are presentations and information on the impacts of salinity, regulatory actions, program coordination, and basin planning.

### **8.1 High Level Summary Communication Plan**

To help begin to address communications needs related to salinity a high level communication plan was developed. This plan after comment and review by the Public Education and Outreach Committee and Executive Committee was added to the web site and can act as an overview document for further more refined efforts, see Appendix 14.

#### **8.1.1 Opinion Leaders and Decision Makers**

Most elements of the plan and early efforts are intended to engage high level opinion leaders, decision makers and elected officials. For this effort list of critical informational meetings was generated and is maintained for high level public official and related group communication and meetings.

This plan mostly focuses on opinion leaders, elected officials, water related groups, and regulated communities. To date most communication has been directed at this audience and has been focused on increasing their awareness and understanding of salinity. Requests focus on involvement and funding. Currently anecdotal evidence indicates this effort is successful, however, limited implementation does not allow a full analysis of the efforts. Even in the case that significant new involvement and funding is not forthcoming such meetings are a prerequisite to further activities.

#### **8.1.2 General Public**

Communication with the general public is needed in the near future. Additional planning is needed to prepare to engage the general public. Such communication should consider performing some research to understand what is known and what the most effective way is to communicate about salt. A survey and test panel would be helpful if timing and funding can accommodate these needs. Additionally, a media analysis of media markets and channels for distribution would be helpful. A speaker's bureau could be an effective approach to get work communicated to the general public and opinion leader groups. In other regions, Young Professional Groups have been effective in assisting in such efforts. The Central Valley has a number of such groups; a listing with contacts is shown in Appendix 15.

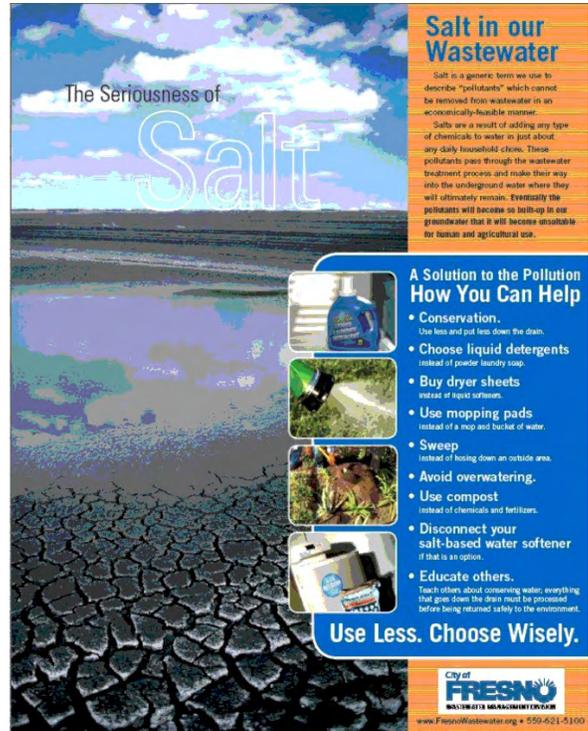
Any general public outreach must consider the various languages native to subpopulations in the Central Valley. About 80 percent of non-English speakers speak Spanish; the next largest group speaks various Asian or Pacific Island languages. The Central Valley has the lowest

percentage of English spoken at home 62.9%. The 2000 census enumerated 56 different languages spoken by children entering school.

The City of Fresno has a public outreach effort that has been successful in educating people on salinity and impacts from common practices. Their poster is shown a right. Other general public are only slightly aware of salinity as an issue and some might confuse salinity and selenium and habitat issues.

### 8.2 Public Information Coordination

Little public outreach on salinity was completed with the general public after the Selenium concentration at Kesterson Reservoir. Recently public outreach has increased. It is expected that outreach will continue to rise as impacts to rates, water supply and other factors impact the public. Coordination of salt related education could be efficient and effective because most of the basic messages are likely to be similar and because of the need to translate into several languages. Opportunities include coordination across the region and subregions as well coordinating messages across different industries and linguistic groups.



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### 8.3 Public Opinion Indicators

General public opinion work has not been completed as a part of efforts to date. Some surveys for non-market costs were sent out. These would be of limited use for communications and results have not been completed. However general observations are that most water leaders in the Central Valley are aware of Salinity, but many believe they do not have a salinity problem, at least not now. Several regulated community members, cities and others are acutely aware of the issue with salinity compliance. These parties are primarily aware because of direct interaction with the Regional Board on salinity standards and permit compliance. More work in this area may be needed to have a comprehensive approach to general public communication.

## **9 Potential Funding Sources and Efforts**

The efforts undertaken by the Salinity Policy Group and the Stakeholders are addressing issues that will have cost or could save the economy of the Central Valley over one billion of annual dollars by 2030 and as many as 30,000 jobs<sup>(2)</sup>. Salinity impacts from Central Valley Waters impact all of California. Direct and indirect impacts have the ability to limit the long term economy of the Central Valley, California, and the Nation. Because of these issues, State and federal granting agencies should be involved in the funding to prevent these impacts. Similar efforts have been successful in participating in grant funding programs at the State and Federal level.

Additionally, the Central Valley has the political capability, to seek legislative action to achieve specific funds to address these issues as part of other statewide issues that receive funding. Local or regional funding options should be pursued in bonds, fees and assessments when the public is knowledgeable enough about the problem to take action.

The Regional Board could also provide that some share of Supplemental Environmental Project (SEP) funding be devoted to salinity issues that can be accomplished within 24 months. A list of such near term projects is included in Section 7.

### **9.1 Market Based Salt Solutions**

#### **9.1.1 Salt Bank or Credit and Fee**

Salt Banking could be an ideal transactional management technique for managing salt within basins. In basins that are hydraulically isolated or linked at a minimal number of points this system can be workable. Additionally, basins do not have to be managed by a single entity that can mandate participation or construction of specific infrastructure.

Connected basins cannot easily utilize a maximum benefit process and isolation to contain salts. Maximum benefit processes in the Central Valley would require a plan that identifies all the projects needed to attain the long-term basin plan objectives and gain agreement of a large number of agencies charged with some area of water, wastewater or groundwater management. The use of a salt banking concept would allow all agencies to continue to operate as they believe is appropriate for their area, but allow the salt credits or debits to help drive and fund management of salts.

##### **9.1.1.1 Operations of the Bank**

If a regional entity is formed, see options in Section 3 the entity could establish a “bank” for the area. The purpose of the bank would be tracking and monetizing or collateralizing the salt and documenting the financial transactions. This could be done in the form of “mitigation” for unpermitted increases in salt, offsets for salt increases in certain areas or by certain projects, or

for increased salts due to imports/transfers of salt laden waters, creating a debt that could be monetized by the bank.

The bank could also be a source of produced credits. Removal of salts from the basin through low salt water recharge, exporting salt from the Valley, and other efforts that improve the basins would create credits. To start the process, existing or future generated assimilative capacity, would also create salt credits in the bank. These credits could be sold to secure the monetized debits of the infrastructure needed to carry out the activities. The banker would also initiate new projects, programs and facilities, if others did not do so to create needed credits. The price could rise and fall with the availability of credits. Because anyone that has a method that removes salt from the basin can produce credits, the market can drive the cost of removal down as new technology makes it possible.

### **9.1.1.2 Other Bank Benefits**

Because some basins have assimilative capacity that can be used by projects, thereby avoiding the cost of removing the salt, this reduced cost can become equity for the bank. Under appropriate regulatory conditions the banker could collect revenue for the use of assimilative capacity and use those funds to pay for the desalting of water in the basin or lower in the watershed. The transaction system effectively disengages the exact input and removal locations of the salt, where possible. The transacted credits or funds could be used to underwrite the cost of new salt removal or other capital projects that would in turn create additional credits that can be sold.

The separation of input and withdrawal allows salt removal to be done at the lowest cost location and salt accumulation where recharge is most needed or costs are prohibitive. Additionally, agencies that wish to front the cost of salt removal facilities can recoup their investment if they remove more salt than required to comply with discharge requirements after use.

The basics of this system are not significantly different in concept from many pollutant trading models. The transaction nature of the bank and the market created will act to “supply” and “demand,” keeping prices reasonable or spurring new projects to increase supply as needed. Within the region, agencies could seek grants and other financing mechanisms to self mitigate or “pre-mitigate” future projects and allow them to eliminate impacts to the groundwater.

This system also would provide the basis for evaluation of source control measures that reduce salt, possibly providing a method for reducing the salt load of domestic and industrial use. Additionally, the program would provide proper incentives for basin management while maximizing management flexibility.

This concept should be reviewed and discussed, specifically looking at the applicability for implementation of such a system in the Central Valley.

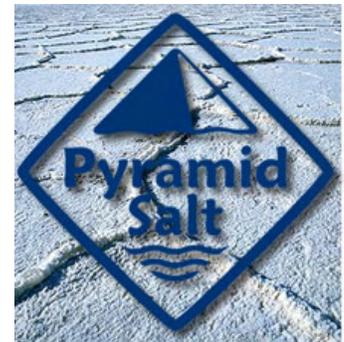
### 9.1.2 Other Market and Non-Market Approaches

Other forms of salt markets could be developed as well. Markets could be created in low salinity surface water or other sources that could be provided for a fee to areas that need to reduce effluent salinity levels. This could be done on a basin approach or an offset or in-lieu fee structure.

A simple salt fee or tax could be established. While not a market based approach the value of the fee or tax on all salt brought into the basin could be set or based on any legal basis, such as:

- Salt assessment based on the removal costs of salt purchased or used
- Salt abatement fee based on salt used and not removed from the system
- Import water surcharge as fee for service for later salt removal
- Surcharge on wastewater total dissolved solids to pay for salt removal and disposal

Resource recovery efforts such as marketing salt for reuse in other industries that export it from the Central Valley could be subsidized with the market based or fee systems. An example of the general tax used to implement such a system is Pyramid Salt Pty Ltd. in Australia. Pyramid Salt Pty Ltd is producing and selling into the market, various salt products and is sourcing new markets. They received a large grant of general fund revenue and assessment funds to install wells and pump highly saline groundwater to produce marketable salt and sell the salt product. This water would have otherwise been drawn into the producing aquifer and damaged the agricultural production of the region. They are also researching to development associated aquaculture systems.



Many more market and non-market based, cap and trade, bank or net reduction options are possible. All require verifiable and auditable data to ensure that the transactions are fair and appropriate.

## **10 Conclusions and Recommendations**

### ***10.1 Summary Report Conclusions***

While many conclusions and observations are made in the report, the following are deemed to be important to achieving the mission of the Salinity Policy group:

- Significant information is available on the large scale impacts of salinity on surface water
- Additional efforts are needed to understand salinity sources and control options and better understand the extent and significance of the problem
- Further coordinated planning and data collection is needed to monitor salinity trends
- Early actions on local or regional storage and management options will help the region cope until long term disposal options can be implemented
- Identifying potential long term solutions as early as possible reduces the long term compliance costs as has been demonstrated in the Santa Ana Watershed
- Inviting and involving as many of the effected parties as possible in identifying the solutions earlier reduces costs and provides greater likelihood of completion
- City and county government must understand the issues of salinity and be involved
- The general public must begin to understand salinity impacts and help control salinity
- An independent organization of stakeholders would be the ideal group for addressing salt impacts and programs needed to address these impacts as part of the basin plan process

### ***10.2 Recommendations***

While many recommendations are made in each section throughout the report, several areas are specifically identified as important to the achievement of the mission of the Salinity Policy Group are shown below:

- Continue to support Stakeholder Group development, as listed in Section 3 and 4
- Pursue Long-term and Near-term study research and monitoring listed in Section 7
- Continue communication and organizing efforts described in Section 8
- Consider and pursue several of the funding alternatives described in Section 9

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## **12 Appendices**

### ***12.1 Appendix 1 Initial Contracted Scope of Work***

#### **Project: Region 5 Salinity Management Planning**

##### **Scope of Work**

The purpose of this scope of work (SOW) is to obtain facilitation/coordination, strategic planning and facilitation support for Central Valley Salinity Management success.

This work is urgently needed to be performed within the next six months and requires a consultant capable of providing in-depth policy, technical and facilitation skills with experience in planning, developing and implementing salinity projects and management programs. This experience is critical to the success of the program. This effort will build on work already completed by the Central Valley Regional Board staff.

##### ***1. Project Management***

Consultant will provide ongoing information on the progress of the tasks and listed below in a monthly report and at meetings requested by the Contract Manager. This status will include cost to date and accomplishments coordinated with invoices presented to the Contract manager.

##### ***2. Strategic Planning and Program Development***

- 2.1. Review existing information, current and recent efforts, board policy and progress to date related to Central Valley Region salinity management
- 2.2. Gain familiarity with Salinity Policy/Working Group organization and governance with up to the equivalent of one week trip or two, two day efforts including meetings with staff and others at an appropriate stage.
- 2.3. Develop an initial Draft Salinity Management Strategy Plan
  - 2.3.1. Up to four in person meetings with staff, implementing and effected organizations, Policy/Working Group members, and others to obtain information and feedback for plan. Meetings including travel, expenses including limited materials and room charges if any, limited teleconferences are budgeted to allow for meetings where in person attendance is not required. Flexibility in the methods used to complete this task is key to its success and individual meetings may be used to gather and present information.
  - 2.3.2. Prepare draft plan for review according to the outline reviewed and approved by the Policy/Working Group (Preliminary version in Attachment 1) to be submitted to the Contract Manager

- 2.3.3. Up to four in person meetings with participants and other stakeholders to revise draft plan with Salinity Policy/Working Group discussion and decision. Meetings budget includes provisions above in 2.3.1.
- 2.3.4. Provide Initial Salinity Management Strategy Plan in electronic format for distribution
- 2.4. Provide strategy and program development assistance to staff during Task 2. estimated at 16 hours. Deliverables will be informal reports and memoranda submitted to the Contract Manager.
- 2.5. Notwithstanding the proceeding work description, expected changes in direction and process with staff and the Salinity Policy/Working Group can result in mutually acceptable changes to the task.

### **3. Coordination and Facilitation**

- 3.1. Working with Salinity Policy/Working Group and Region 5 staff develop and implement initial coordination and facilitation efforts. Efforts include: preparation and facilitation assistance at formal and informal meetings; agenda development and preparation; information organization and dissemination. Estimate three in person meetings during this task including travel, expenses including limited materials and room charges if any. Limited teleconferences are budgeted for meetings where in person attendance is not required. Flexibility in the methods used to complete this task are key to its success and individual meetings may be used to gather and present information.
- 3.2. Using existing participant information and available data assist Region 5 staff and Salinity Policy/Working Group with outreach efforts and participate solicit participation from water, environmental and other groups as the process develops. Assist with public communication coordination, with staff.
- 3.3. Participate in policy and strategy meetings and discussions to provide alternative views and experience in implementation in the development salinity management programs. Estimate five in person meetings during this task including travel, expenses including limited materials and room charges if any. Limited teleconferences are budgeted to allow for meetings where in person attendance is not required.
- 3.4. Assist with coalition building and develop a scope of work for future outreach and public information and opinion work for participants and stakeholders.
- 3.5. Develop draft scoping documents for next actions and program efforts based on the approved Salinity Management Strategy Plan. Assist staff in the development of materials, information and distribution supporting the initial outreach efforts during Task 3. is estimated at 16 hours.
- 3.6. Document these efforts in brief informal reports to Contract Manager.
- 3.7. Notwithstanding the proceeding work description, expected changes in direction and process with staff and the Salinity Policy/Working Group can result in mutually acceptable changes to the task.

### **4. Deliverables**

- 4.1. Informal reports and memoranda will be prepared and provided to the Contact Manager as indicated in the tasks above.

4.2. Monthly Reports will be submitted to accompany and document all activities and match/support invoicing.

**5. Schedule**

This work is critical to the success of the program and should be executed in accordance with the schedule described below which is based on a notice to proceed of February 23, 2007.

- 5.1. Tasks 1, 2 and 3 independent and will proceed from March 1, 2007. Task 2 will complete draft document by the last week in May and a final revised document the first week in September. Task 3 will be completed by September 30, 2007. Task 1 Project management will extend to October 31, 2007 to provide closeout of accounting and invoicing. Also some efforts may be placed on hold due to schedule changes of the program.
- 5.2. Contract closeout including final invoice and monthly report will be submitted by October 31, 2007.
- 5.3. Notwithstanding the proceeding schedule, expected changes and delays can result in mutual acceptable changes to the schedule.

## 12.2 Appendix 2 - Possible Organizational Structures

### Title and Description

### Pros

### Cons

#### Special Committee or Task Force Established by an Existing Entity

This is a common method organize special or ad-hoc efforts of an entity. The committee structure in some organizations may work, or a task force named by County Supervisors, a specific organization set forth by the highest level governments in the group.

Highly varied and specialized in nature. This type can be customized and brought together quickly. It can also be dissolved quickly, if support falters. The chartering or sponsoring organization can quickly and usually efficiently institute such a task force. Additionally other parties can be brought into the efforts by an advisory or blue ribbon committee of experts or community leaders. These efforts have been successful and some over many years.

If the convening group is not benevolent others may not participate. Governance can be complicated by the less standard structure. The entity can not itself hold property or often sign contracts, except by and through its parent organizations. Control of the group typically oscillates with interest and can take on different missions over time. Funding maybe more difficult depending on who receives or holds the funds.

#### Unincorporated or MOU Based Group

This is one of the most flexible forms or assembling parties of varying types and purposed to work together. This group can also be formed as an alliance or coalition. Usually best if a single purpose or limited duration mission.

Fairly easy to assemble and document because participation and funding are totally voluntary. Governance is by unanimous consent or acclamation and essentially anyone can stop any effort. No legal standing to sue or be sued and liability falls to all groups participating.

Because it is not an entity, it can not easily transact business, funding or hire staff etc. The governance or lack there of can be a problem if underlying trust is not established or controversial issues are encountered. The MOU may be as difficult to establish as a more binding agreement or charter.

#### California Mutual Benefit Non-Profit Corporation or Association

This association is similar to a trade association or industry group in areas of interest to its members without commercial for profit or political activities IRS section 501-C6. Examples are some Chambers of Commerce, Economic Partnerships and industry associations.

Settled customizable governance and board requirements established in law, this form is familiar to both business and government agencies and cities. If all cities and organizations were members it would have most of the capacity of a public benefit corporation.

Contributions to this association are generally business expenses, but not personally deductible like charitable contributions. Purposes are generally to benefitit its members.

#### California Public Benefit Non-profit Corporation or Foundation

This foundation allows tax exempt efforts in the areas of charity, religious literary, scientific, and education IRS section 501-C3 tax exempt. Examples are the Silicon Valley Joint Venture, many non-profit environmental and charitable organizations.

Effective governance as required in the Bylaws and articles. Tax Exempt contributions can be made and other foundations, significant capacity to assist and educate the general public or specific communities.

Generally does not have significant government members and some grants are not available to such entities. This type must maintain efforts according to it Bylaws and does not frequently develop infrastructure.

#### California for Profit Corporation

Standard California Corporation with the rights and responsibilities of any Corporation under the code.

Simple well understood governance, voting and other procedures. Able to maintain focus on board priorities. Members/stockholders can actively vote with their contributions on issues. Has the opportunity to build funding and equity for the corporation and for the stockholders within its business purposes. The corporate strucure provides audit and other assurances and the board oversight of the operations could provide streamlined efforts and comfort for other business and corporate members.

Some Public Agencies and non-profit foundations may not be comfortable with the Corporate structure. Grants to for profit corporations may be more difficult.

#### Chartered Organization

This entity is a special act district or corporation that is chartered for a specific purpose such as the Corporation for Public Broadcasting, Federal Home Loan Mortgage Corporation, Amtrak, as well as Redevelopment Districts, Special Districts and Conservancies. The chartering entity must have the authority to charter and empower the entity. This could be federal or California legislature, The governor, board of supervisors or other group.

The broad powers and ability to incorporate government, corporate and public entites and advisor members are robust. The governance structure is variable, but can be selected from Corporate to Governmental or potentially a hybrid. Significant benefits can come from these unions of interests and powers and may be useful for a green economic zone.

There are some disadvantages to this type of entity. It requires an act of a legislative body capable of creating it, the higher or more powerful the chartering entity, the more difficult to get it established. Political interests at the higher level may dominate the entity. Some will dislike another layer of government being created and or fear regulatory standing. Any change must be approved by the chartering entitiy.

#### Joint Powers Authority

A JPA is the Joint exercise of Powers that are held in common by municipal or other government entities in California

Allows the coordinated powers of government to be exercised and managed by an entity. Governance is variable and can be customized. Powers can include borrowing, collecting fees.

No membership option for non-government organizations, except as advisory. Some object to additional or shadow government type entities. Member are usually appointed

# 12.3 Appendix 3 PLAN A Matrix

## Plan A - Salinity Control Process with Organized Stakeholder Leadership

Activity	2008				2009				2010				2011				2012			
Salt Sources	Expanded Source/Discharge								Consolidated Ag-Urban Balance											
Salt Storage	Scope	Initial Storage Options				Phase 2 Options				Feasibility Study and Options										
Salt Export	Scope	Expanded Discharge Export				Feasibility Study and Options								Proposed Plan EIR						
<b>Water/Salt</b>	Scope																			
Source Changes	Scope	Opportunities/Constraints Study																		
Process Changes	Industry/Residential Study				Best Practice Recommendations				Coming Opportunities											
Other Controls	Scope	Industry/Residential Study				Best Practice Recommendations				Coming Opportunities										
<b>Organizing</b>	XXXXX																			
Stakeholders	Scope	Informaiton		Formaiton		Funding		Expansion												
Governance	Scope	Initial drafts		Finalize Initial Group																
Entity	Scope	Create Organization		Expand Group and organization																
Funding	Scope	Initial programs		Combined Efforts		Continous funding														
<b>Technology</b>	Scope																			
Source Control	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
Separation	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
Concentration	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
Treatment	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
Purification	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
Product development	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
Market/Economics	Scope	Phase 1 Study				Phase 2 study				Feasibility Study and Options										
<b>Outreach/Ed</b>	Scope and Planning																			
Communication	DRAFT	Year 1		Year 2		Year 3														
Education	Scope	Preliminary		Phase 1		Phase 2														
Outreach	DRAFT	Year 1		Year 2		Year 3														
Market Research	Scope	Phase 1		Phase 2																
<b>Basin Plan Policy</b>	Needs Analysis				Cooperative Data Development				Draft Changes				Approve changes							
TMDL/Permits	Develop changes				Implement Permits				Revise existing permits				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
Irrigated Land	Develop changes				Prepare modifications				Implement modifications				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
Conjunctive Use	Scope	Develop Plan		Prepare Draft Program		Implement Program		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			
Prohibitions/Enforcement	Notice	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Year	2008	2008	2008	2008	2009	2009	2009	2009	2010	2010	2010	2010	2011	2011	2011	2011	2012	2012	2012	2012

XXXX = Efforts Continue

# 12.4 Appendix 4 Plan B Matrix

## PLAN B - Salinity Control Process with Internal Regional Board Resources

Activity	2008				2009				2010				2011				2012			
Salt Sources			Information Reports for Data				Updated Salt Source Information													
Salt Storage/Export			Informaiton Reports				Monitoring Reports													
Source Information			Use Attainability Study/Limits				Proposed Salt Balance													
Control Methods			Industry/Residential Study				Best Practice Requirements				Monitoring									
Stakeholders			Coordination		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	Review		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
Administrative Record	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
Technology			Source Control Studies*				Disposal studies*				Implementation Study*									
Communication			DRAFT		Year 1*				Year 2*				Year 3*							
Outreach			DRAFT		Year 1*				Year 2*				Year 3*							
Basin Plan Policy		Needs Analysis		Public Scoping		Info Requests		Prioritize Changes		Draft Changes		Public Hearings		Implement Changes						
Limitations			Propose Interim		Implement interim				Revise interim				Revise Final							
TMDL/Permits			Develop changes		Prepare Permits				Revise existing permits				New Permits				XXXX			
Irrigated Lands			Develop changes		Prepare modifications				Implement modifications				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		
Conjunctive Use			Scope		Develop Plan				Prepare Draft Program				Implement Program				XXXX	XXXX	XXXX	XXXX
Prohibitions/Enforcement								Notice	Implement	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		
Permit Limits Antideg					Plan permit changes				Implement interim restrictions				Implement Changes							
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Year	2008	2008	2008	2008	2009	2009	2009	2009	2010	2010	2010	2010	2011	2011	2011	2011	2012	2012	2012	2012

\* Dependent on Funding

XXXX = Efforts Continue

## ***12.5 Appendix 5 Explanation and Work Descriptions for Plan A and B***

### ***Two Alternative Plans, Plan A and B***

#### ***Plan A***

Plan A utilizes and involves a regulated community/industry group of stakeholders coming together to take ownership and direct the efforts of salinity studies and management for the Central Valley. This would result in a more rigorous process and better scientific data could lead to more workable standards or if appropriate, longer final implementation schedules.

#### ***Plan A Advantages and Opportunities***

The advantages of Plan A are numerous to the Water Board, the stakeholders and general public. The opportunity exists under Plan A to plan and implement efforts that:

- Develop all the information needed
- Prepare appropriate analysis
- Determine the most workable regulatory process for implementation
- Efficiently implement changes needed to control salt.

The economies of scale and efficiencies of doing the studies regionally could greatly reduce the cost of developing the process. Additionally, the stakeholders become more educated about the rationale and need for the changes and are directly involved in implementing the changes when complete.

Program costs are always a major issue for any commercial or public entity. The upfront costs over the first 3-4 years for Plan A are likely to be higher for those that sponsor the studies and other efforts. The long term compliance costs are likely to be lower with Plan A and could be more evenly allocated across all business and residents rather than more directly impacting the regulated community.

The Regional Board may need to invest less budget and staff time to develop the Basin Plan and with a lower likelihood of significant lawsuit or defense costs from stakeholders.

#### ***Plan B***

In the event that no stakeholder group is able to become capable of carrying out the efforts needed in a reasonable time frame, the Regional Board is preparing to implement a second plan that uses the more traditional basin planning process, this is Plan B. The major components of Plan B are shown below, while these are also represented in Plan A, the components are expanded and led by the stakeholders.

- Staff uses available data
- Requires significant assumptions
- Staff conducts scoping meetings

- Staff develops amended plan and staff report
- These documents subject to public review & comment
- Public review and document revision
- Public hearing and adoption

These efforts accomplish identify the answers to the following issues:

- What is the nature & extent of salt problem?
- How significant is the problem?
- What are the trends in surface water & groundwater?
- What needs to be done to protect future water quality?
- Drafting of the basin plan amendment and peer review

While there are several similarities, the areas of technology and implementation research are missing from the Plan B, as are the high level of stakeholder interaction of Plan A. These implementation efforts from Plan A are left to the regulated community after the plan is complete. Plan B continues to have significant stakeholder outreach but it is led by the RWQCB in a “veiled transparency” approach while staff is working. This traditional program shows the process to develop the materials for the Administrative Record and other procedural efforts to develop the plan and process it to completion. The major differences are quantity and timing of public and stakeholder leadership and the breadth of the information and evaluation that the Regional Board can accomplish within its resources and jurisdictions. The RWQCB will use the best assumptions possible in developing the process.

### ***Plan B, Issues and Considerations***

Under Plan B the initial costs to the stakeholders and regulated community is significantly lower unless you are required to provide a Section 13267 Informational Report. Such data reports can have significant funding and staffing requirements. As the basin plan and control regulations are developed and implemented the costs could rise quickly. If there is review or litigation in the regulatory process or challenges there will be cost related to those efforts. Additionally, the complete cost of responding to Information Requests and whatever is ultimately required for compliance with new objectives or permit requirements will likely be higher than the cost of participation. Additionally, when limits on permits are enforced the cost to the economy of the region may be severe in the case of Plan B.

Under both Plan A and Plan B the efforts can be modified as the process continues. If regulatory requirements become too difficult to achieve the regulated community may avail themselves of the ability to work with the board and stakeholders to achieve mutually beneficial results within the requirements and authorities of the board and within their jurisdiction.

## ***Scope of Work for Efforts Undertaken in Plan A and Committee Roadmaps***

### ***Salt Sources Storage and Export***

- Improve knowledge of salt sources
  - Database and research on salt sources/uses load and draft salt balance
  - Expand existing knowledge to document the salt
  - GIS Mapping of salt sources and interactions within the Basins of the CV
  - Expanded Salt Balance for the three basins of the CV
  - Models of water salinity
- Initial storage Options Study, follow up study if needed and Feasibility Studies, EIR
  - Locations and methods for storage
- Salt Export Alternatives study, may be done with storage studies
- Discharge, export, resource conversion opportunities and economics
  - Feasibility and Environmental Impacts
  - Funding and financing

### ***Water/Salt Interaction***

- Sources water change opportunity and constraints study
  - Studies of the beneficial uses of surface or groundwater sources and salt levels
  - Guideline/example Anti-degradation analysis
  - Studies of ambient water quality changes in groundwater and surface water
- Process changes and
  - Reconnaissance and feasibility studies on salt management treatment or reduction strategies
  - Description and metrics for best practices for salinity reduction in urban settings or in ag settings.
  - Industrial-Residential Salinity Study and Best Practices recommendations
  - Future Technology/Research Opportunities

### ***Organization***

- Stakeholder information and expanded communications
- Develop organization or governance for stakeholder group
- Assist in accomplishing facilitation and organization
- Participate in funding early efforts
- Grant Application for additional efforts

### ***Technology and Economics***

- Phase 1 Salt Source Control Study, Phase 2 and Feasibility Studies
  - Pilot and demonstration innovative Salt reduction projects
- Early implementation efforts to store/reuse salt in urban/industrial
- Best practices survey for new salt related technologies
- Separation and Concentration
- Salinity Treatment/Purification to reduce non-salt contaminants

- Waste to Product resource recovery options
  - Viable economic products
  - Pilot scale purification and testing
  - Marketing and business planning
- Salt management in Ag setting
  - Review of alternatives and options, feasibility and economic options
  - Review of existing systems and economics
- Economics of salinity control or reductions
- Salt Bank opportunity analysis

### ***Outreach and Education***

- Comprehensive Outreach/research and public information and communication planning
- Multi-year Communication Plan
- Conduct baseline market research and message testing
- Specific message and audience outreach and performance testing
- Expand Video distribution, copies, languages and etc
- Expand Brochure and newsletter materials development and distribution
- Engage Educational institutions (CREEK and others) in salinity education K-12
- Engage Community College and 4 year College and Institutions in training, research and management support for salinity
- Develop funding plan and outreach partners to expand salt outreach and public education

### ***Basin Planning and Regulation***

- Begin developing data supporting the basin planning process.
- Review of Regulatory Authority for salinity control (toolbox)
- Review of salinity effects on water rights and supply issues
- Review of Best practical treatment or control technology for Salinity

### ***Efforts Undertaken in Plan B***

Reduced efforts are required of the stakeholders under Plan B. The Regional Board requirements include expanding or reallocating staffing and budget for efforts undertaken as part of the Basin Plan. A summary of this process is shown in Appendix 4 of the Salinity Management Strategy Report as a Matrix. Plan B could be implemented in multiple rounds that would each build on the developments of the previous efforts. These could be geographically or by constituent or by some other method of priority. Potentially the timetable for this could look like the following:

- 6 months - Review salinity areas likely needing change. Hold meetings with stakeholders. Identify issues to be addressed and get Board approval.
- 2 years - conduct staff research and prepare draft report
- 3 months - peer review and initial public review
- 3 months - prepare final draft staff report

- 2 months - Board hearing
- 3 months - compile administrative record
- 1 year - State Board and OAL review.

Additional detail is provided on many of these steps below and elements of these efforts also occur in Plan A.

### ***Scoping and Research***

Considerable effort for the Board will be involved in this step. Significant work was completed in May 2006 for the Salinity Overview Document. Data and issues beyond 2005 would be gathered and needs analysis performed in preparation the following areas could be included as Information Requests from regulated entities:

- Salinity sources and variability in surface and groundwater
- Salt discharge modeling to estimate future loads with population or industry growth
- Monitoring reports of production and salinity discharge
- Sampling and monitoring of influent water and salt increment added prior to discharge
- Use attainability analysis for systems and linked basins
- Background for salt balance calculations
- Control technologies and practices and effectiveness

The Regional Board staff would also provide review and analysis of the data supplied and available to the board to determine appropriate limits where data is available. From this analysis the objectives for salinity control needed to protect the beneficial uses would be determined.

### ***Draft Amendment and Staff Report***

Based on the beneficial uses and plan objectives the Regional Board would review strategies and tools available to the board to determine the appropriate implementation changes for the regulation and prohibitions to control salt sufficiently to protect beneficial uses. Additionally, an implementation schedule and process for implementation and enforcement would be determined. The Draft Amendments to the Basin Plan along with a Staff Report explaining the rationale and need for the amendment are drafted.

### ***Peer Review***

The results of the data and analysis and along with other studies will be provided for scientific peer review.

### ***Respond to comments and Revise report***

The Board would review comments from the peer review panel, respond to the comments and reissue the amendment and staff report.

### ***Public Staff Report and Draft Resolution***

When the changes are completed in above the documents are made available to the public. Comments are received at a public hearing.

### ***Respond to Agency and Public Comments Revise Documents***

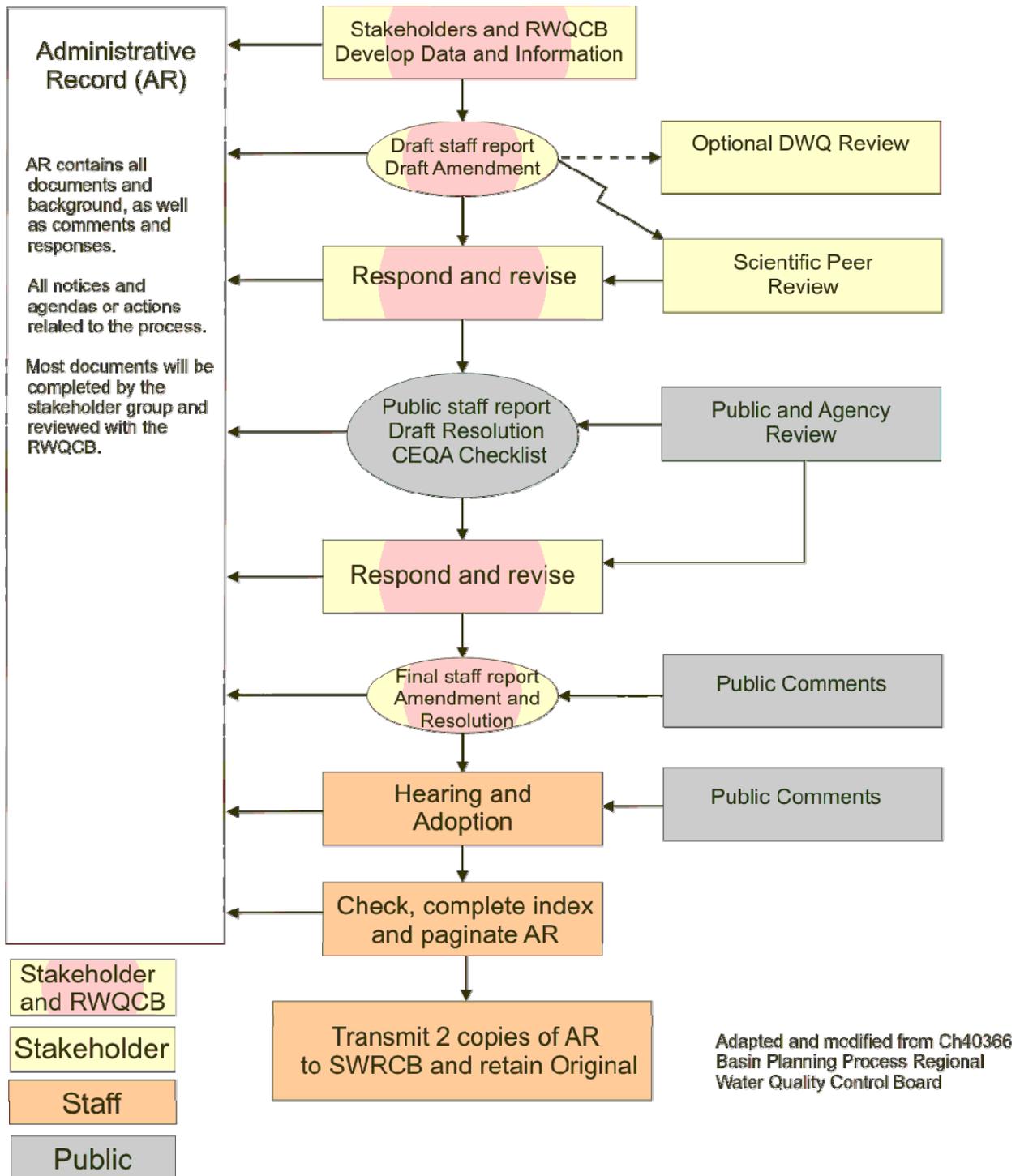
The Board would review comments from agencies and the public as well as provided at a public hearing. They would respond to the comments and revise and publish the amendment, staff report and resolution for adoption.

### ***Hearing and Adoption***

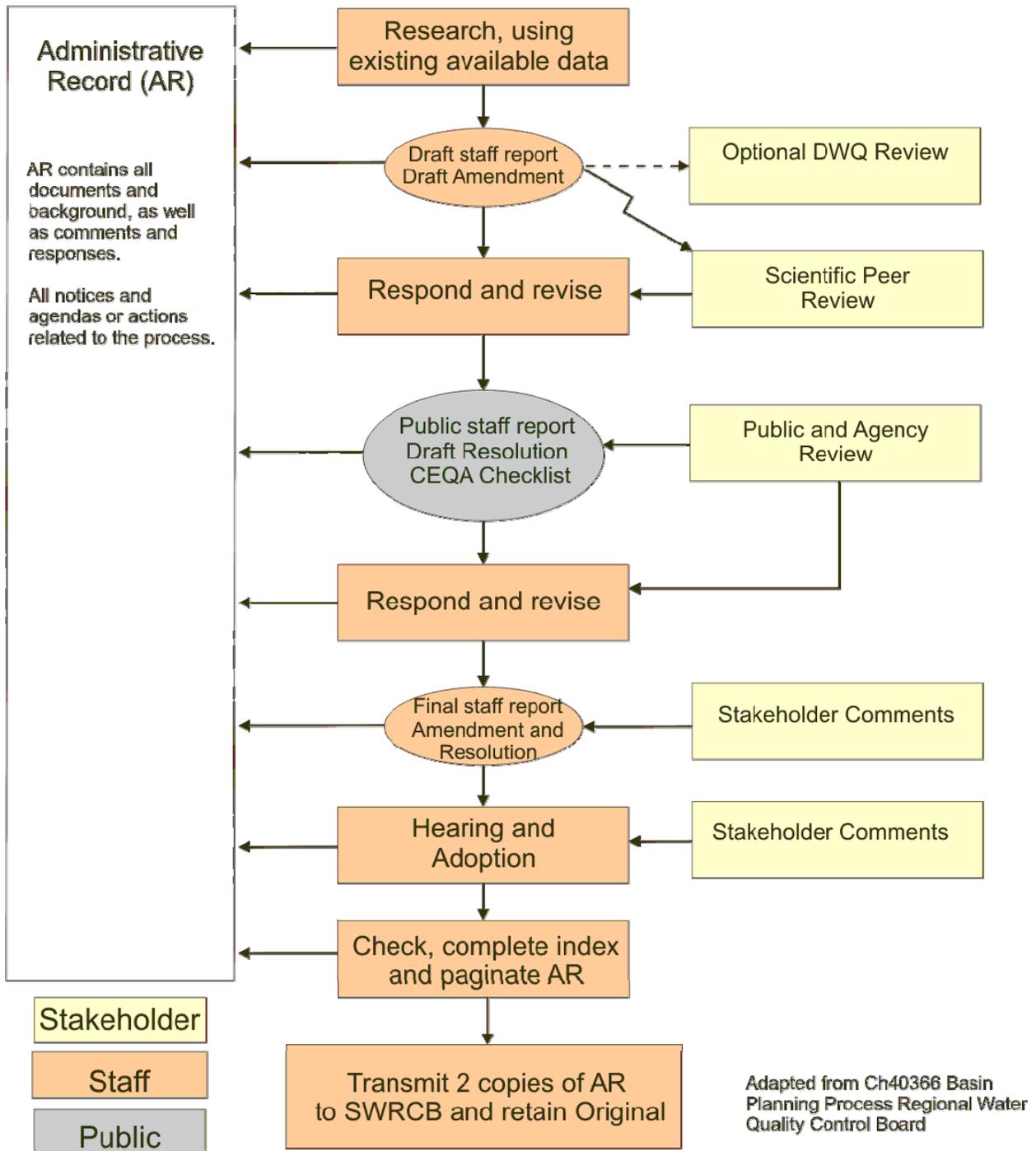
The board would schedule and hold a hearing to adopt the Resolution and approve related documents. Further efforts are completed by the State Board and Office of Administrative Law. Considerable further detail is available in the Administrative Procedures Manual, this summary is to illustrate that most research and efforts are performed in the early research steps of this process.

12.6 Appendix 6 Standard (Traditional) Basin Planning Process

## Stakeholder Led Basin Planning Process “Plan A”

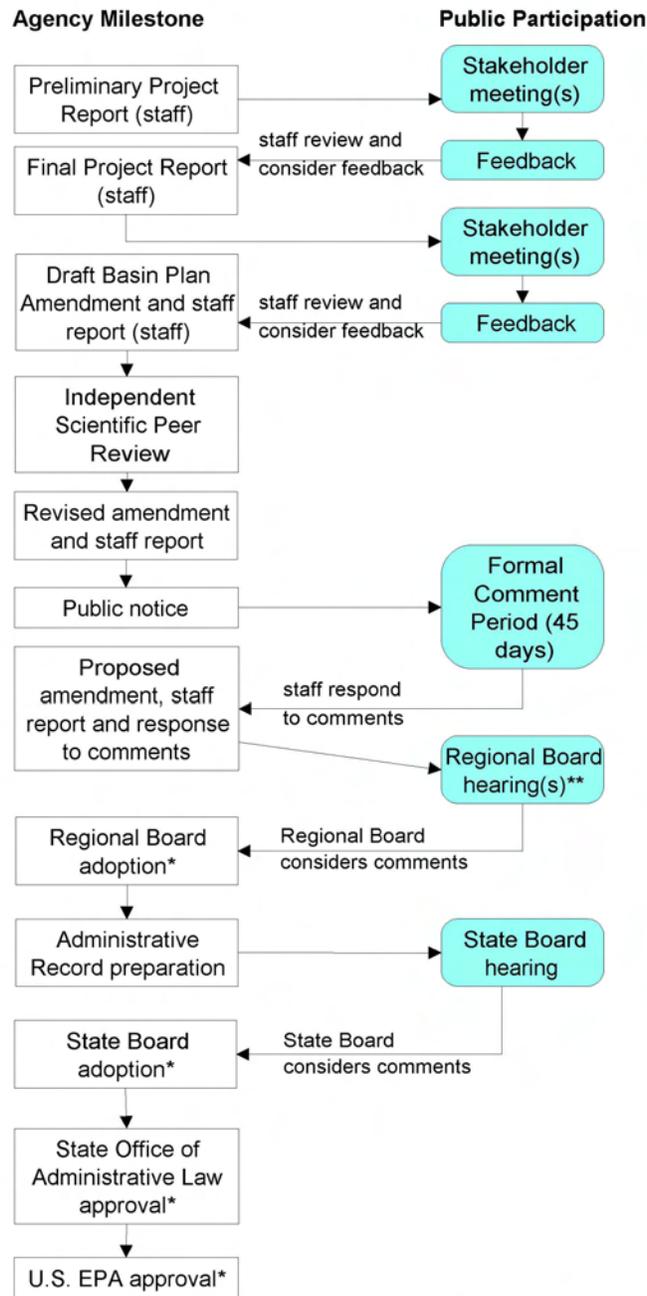


# Traditional Basin Planning Process “Plan B”



## 12.7 Appendix 7 Public Participation in the Basin Planning Process

### Public Participation and The Basin Planning Process



\* If the Regional Board, State Board, Office of Administrative Law, or U.S. EPA decide not to adopt /approve the Amendment, revision may be necessary and steps in the process may be repeated

\*\*Frequently, the Regional Board will hold two hearings: one informational and the second to take action.

## ***12.8 Appendix 8 Technical Committee Roadmap***

### **Technical Committee Roadmap and Studies - Version 7**

#### **Roadmap for Technical Advisory Committee Work**

The roadmap was intended to outline effort for discussion and future work for the group. These areas obviously overlap into the other committee areas. The Committee as a process will review and recommend to the Executive Committee for concurrence or information on each existing study area as well as propose areas of future study and research in the following areas:

1. Salt Sources, Interaction, and Distribution Studies and Modeling
  - a. Review current data and information available in each basin, including CSU Fresno efforts and propose any further studies to begin the new basin planning process. Phase 2 would collect or gather the data is needed to for the basin planning process and later to propose and evaluate potential short term and long term solutions
  - b. Identify historic locations of salt in the valley and identify existing and potential salt sinks, storage and disposal options and the benefits and costs of each as management option including capital and operational costs. Phase 2 would evaluate the likelihood these salts sources and sinks change do to events like climate change or discretionary actions like water management decisions.
  - c. Study and prepare a report showing where use attainability analyses are needed, and how these analyses should be performed and funded. Phase 2 of study would provide analysis data collection and analysis on high priority areas.
  - d. Study to determine the salinity impact of various changes to Central Valley Water Supplies including peripheral canal or alternate conveyance around the delta, proposed management changes and reduced pumping in the delta, San Joaquin River restoration, and other efforts related to climate change, etc.
  - e. Formulate a study to determine what the impacts are to all the basins of salt accumulation if a CV salt plan is not developed? Is this just a Tulare Lake Basin & Westside SJV problem? Where are there no salinity impacts? This study could include development of better understanding of water qualities and quantities available to support beneficial uses required for agriculture and urban uses.
  - f. Propose a model and data collection to determine the feasibility and impacts of changing a standard or enforcing different levels for salinity in the basin

- g. Consider a study to evaluate gaps in understanding of sources, uses and discharge of salts in the valley in residences, businesses, environment and etc?

## 2. Technology and Treatment

- a. Study and report on current effective source reduction technologies and practices that can be implemented and what alternative solutions can be implemented in this CV to convey or control salt or reduce accumulation?
  - b. Survey report on what treatment options are available for reducing/concentrating/separating salt from water at the source and in wastewater? Phase 2 of the study would identify further information and propose the most cost effective methods for different parts of the CV and different industries and processes.
  - c. Propose a basis for salt balance in the Central Valley; demonstrate how it will be determined, if it is a useful goal and if the CV benefits from a Watermaster like, Saltmaster?
  - d. What impact will drainage service on the Westside as proposed in the SLUDFRE ROD or concepts for collaboration or some hybrid of the two have on CV salt management?
  - e. What are the effects of Bio fuels and other new energy processes on or salt sources that may be in or coming to the valley?
  - f. Study or studies on advanced treatment and control alternatives for common brine sources and types in the CV including likely quantity and location.
3. All future studies and work efforts undertaken in related to CV salt issue should use a common database and contain GIS location information so that the data can be efficiently reused or verified for other uses. The design or selection of this database may be informed by the Board and the Committee, but may also depend on the parties funding the study.

The Technical Committee will also review technical aspects of the work of other committees.

- Continue to identify sources of salt and impacts and economically efficient source reduction, Economics
- Salt sinks, storage and disposal options, economics
- Costs and benefits of long-term salt management and who should pay

## ***12.9 Appendix 9 Social and Economic Impact Committee Roadmap***

### **Social and Economic Impact Committee Roadmap Version 5**

#### **Roadmap for Social and Economic Impact Committee Work**

The Roadmap is intended to outline work and ideas that need to be agendized, discussed, and accomplished by the group for future efforts. These areas obviously overlap into the technical and steering (policy) committee areas.

1. Committee process review and recommend efforts and funding needs to the Steering Committee for concurrence and support.
2. Areas of discussion, research, study, planning, development or other efforts
  - a. Continue to identify and refine the cost of increasing salinity on both a macro and a micro scale.
  - b. Continue to identify sources of salt (facilitate brainstorming on sources)
    - i. Grain/corn for ethanol and other imports
    - ii. Agricultural chemicals nutrients
    - iii. Water softeners
    - iv. Other anthropogenic sources of importance
    - v. Characterize natural sources
    - vi. Identify economically efficient source reduction
  - c. Identify Salt Sinks, Storage and Disposal options (facilitate brainstorming on options)
    - i. Current salt Sinks and impacts
    - ii. Universe of conceivable options, not just the feasible, identify best for study
    - iii. Future salt storage and disposal options
    - iv. Identify economically efficient salt sink, storage or disposal options

- d. Characterize the reduction in salt to the valley from an isolated delta facility (What does isolated Delta Facility mean? Does this refer to a peripheral canal-like concept?)
  - i. Reduction in salt
  - ii. Cost of facility/efficiency compared to removal/treatment
- e. Long term cost of Salt Management
  - i. How do we identify and quantify the long term cost of management?
  - ii. How do we identify and quantify the long term benefit of doing it?
- f. Long Term, who should pay and how; from the Economic and Social perspective
  - i. Facilitated brainstorming on who pays, how they pay, what is fair and why
  - ii. How should the funds be managed, centralized or decentralized?
  - iii. How should the effort be coordinated and organized?
  - iv. Identify roles and actions
- g. How do we get water providers involved?
  - i. Who, why, and when
  - ii. Carrot or Stick or Both
- h. Recommendations from other committees related to Economics and Social impacts

## ***12.10 Appendix 10 Public Education and Outreach Roadmap***

### **Public Education and Outreach Committee Roadmap and Studies - Version 7**

#### **Roadmap for Public Education and Outreach Committee Work**

The roadmap was intended to outline effort for discussion and future work for the group. These areas obviously overlap into the other committee areas. The Committee as a process will review and recommend to the Executive Committee for concurrence or information on each existing study area as well as propose areas of future study and research in the following areas:

#### **1. Communication Planning and Study**

- a. Prepare a communication plan that develops simple messages in summary and in detail for review and implementation below based on the appropriate audiences
  - i. Research, understand and document the audiences and communication targets that need to be reached with the represented behavior changes, other than active participation, that are desired. The groups include:
    1. Dischargers
    2. Water suppliers
    3. Municipalities and counties
    4. Agriculture
    5. Industry
    6. Local/regional leaders
    7. Legislative leaders
    8. Manufacturers/distributors of significant salt containing products or sources
    9. Others
    10. The general public
  - ii. Insure the plan identifies and addresses underrepresented groups related to salinity including:
    1. Environmental groups
    2. Water suppliers
    3. Water Quality groups
    4. Tribal groups
    5. Community groups
    6. Habitat and land conservation groups
    7. Disadvantaged Communities
    8. Environmental Justice representatives

- 9. Native Speakers of other languages
- 10. Others

- iii. Develop messages and critical information to communicate and determine how to test the message and materials with stakeholders and groups for completeness and understandability.

- b. Complete the communication and outreach plan with committee review, support and funding.

## 2. Outreach and Education Implementation Efforts

- a. Form an outreach group or speakers bureau
  - i. Competent messengers list (speakers) with specialty areas
  - ii. Consistent message communication from communication plan
  - iii. Training for speakers, look for ambassadors and external groups to help
  - iv. Materials, brochure, PowerPoint and other materials for speakers
- b. Develop a public policy level brochure and other needed materials based on existing information and sources(ongoing)
- c. Develop a general use and public brochure or information pages in various languages or tailored for different groups as budget allows.
- d. Develop newsletter and mini article that can be added to bill stuffers or other media
- e. Develop materials for Educators and curriculum opportunities, targets and lessons as time and budget allow.
- f. Plan and conduct a half day workshop or facilitated meeting (ongoing)
  - i. Public focus to draw others into the efforts
  - ii. Content to focus on known understandings and study results
  - iii. Complete in first half of 2008
- g. Consider a full day conference for fall 2008 or later
  - i. When should it be held
  - ii. What content focus, academic, public or combination
  - iii. Identify potential co-sponsors
  - iv. Where should it be held
  - v. What is the funding source

- h. Prepare support materials for local areas with near term salinity impacts or regulation
  - i. For new regulatory or legislative initiatives
  - ii. Supporting system for local actions taken to control salt
  - iii. Assistance on outreach to other communities and groups including languages and communities.
  - iv. Other issues identified or requests
- i. Prepare story ideas for earned press to gain public awareness
- j. Develop scenarios for each target audience or community including messages and stories
- k. Consider identification and support for low salt products

The Public Education and Outreach Committee will also review communication and public outreach aspects of the work of other committees and consider recommendations from other committees related to education and outreach needs.

## ***12.11 Appendix 11 Executive Committee Roadmap***

### **Executive Committee Meeting Roadmap October 2007 to June 2008**

#### **General Recommendations**

1. Continue to meet at least quarterly and as needed for coordination
2. Focus of the meetings toward executive oversight and strategy/policy discussions
3. Oversight of the other committees, i.e. have them report their accomplishments, progress, needs, and plans, i.e. roadmap changes. If not a committee approval orientation at least a review and evaluate.
4. Shift time and emphasis from existing and ongoing studies and efforts toward action and what needs to be done next to eventually solve these problems.
5. Increase committee efforts toward the external stakeholder process. Communicate and coordinate with the stakeholder efforts, support their efforts.
6. Committee focuses on longer range goals in the process. The roadmap below shows a process that looks from fall 2007 to summer 2008. Schedule meetings further in advance and provide materials to receive feedback further in advance for review.
7. Pursue opportunities for salinity workshops in April or May

#### **Next Meetings Goals and Priorities**

The longer range view of the Executive Committee differs from the other roadmaps in that the plans. It should look further forward to get the major efforts accomplished.

Major goals should include new promoting stakeholder group efforts, wastewater efforts may be first and help generate an umbrella or over arching group for the several organization that will address salinity in various areas of the Central Valley.

Meeting on a bimonthly to quarterly basis appears to be appropriate and dates should be scheduled at least one meeting in advance.

The basic meeting process should shift from the review of existing studies toward next steps and follow the Roadmap of future work, eventually shifting toward the new (outside organization) leading much of the new research, study and efforts.

#### **Next meeting (November)**

1. Review the Committee structure and reporting to the Executive Committee
2. Present and explain the long-range plan (roadmap) of the Executive Committee through June 2008

3. Review in summary the status of current directed efforts and studies
4. Review in summary efforts of each committee
5. Collect and consolidate recommendations and directives to the Technical, Social and Economic Impact Committee, Public Education and Outreach committees.
6. Present decisions and information needed to support those decisions
7. Discuss and prioritize the efforts for the group (document and communicate after the meeting)
8. Review Roadmap issues toward next steps and meetings
9. Work with committee members between meetings to get review materials and documents that can be distributed by email web etc.

#### **Following Meeting January/February?**

1. Introduce Stakeholder Group Member and the scope of efforts of other groups (delay if not formed)
2. Review in summary efforts of each
3. Collect and consolidate recommendations and directives to the Technical, Social and Economic Impact, Public Education and Outreach committees.
4. Review roadmap/work plan toward next steps and process
5. Review the decisions and information to be used to support those decisions
6. Review the status of regional stakeholder efforts and the scope of these efforts
7. Discuss and prioritize the efforts for the group (document and communicate after the meeting)

#### **Following Meeting March**

1. Presentation of the Stakeholder Group efforts, and relationships (delay if not ready)
2. Demonstrate the coordination and integration with the stakeholder group
3. Review in summary efforts of each committee
4. Collect and consolidate recommendations and directives to the Technical, Social and Economic Impact, Public Education and Outreach committees.

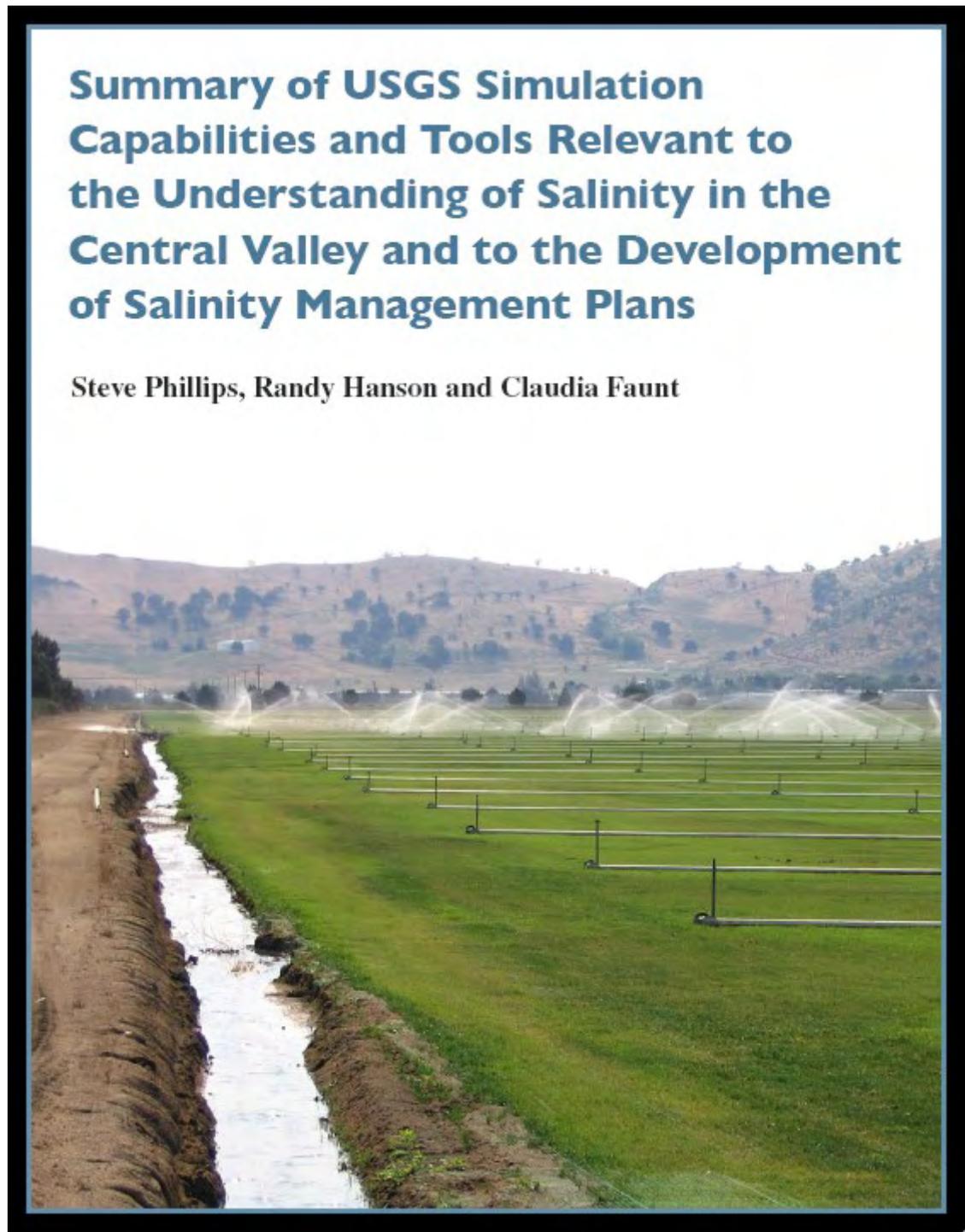
5. Discuss the coordination and integration with the other State and Federal agencies
6. Finalize recommended near term future work from the Executive and other committees
7. Discuss and review plan for facilitated meetings or Salinity Summit in April
8. Identify project and efforts priorities and funding/resource targets
9. Collect and consolidate recommendations and directives to the Technical, Social and Economic Impact, Public Education and Outreach committees.

**Following Meeting May**

1. Presentation of the Stakeholder Group efforts, and relationships (delay if not ready)
2. Demonstrate the coordination and integration with the stakeholder group
3. Review in summary efforts of each committee
4. Collect and consolidate recommendations and directives to the Technical, Social and Economic Impact, Public Education and Outreach committees.
5. Review the results of the Salinity Summit meetings in April
6. Finalize recommended near term future work from the Executive and other committees
7. Identify project and efforts priorities and funding/resource targets
8. Collect and consolidate recommendations and directives to the Technical, Social and Economic Impact, Public Education and Outreach committees.

## ***12.12 Appendix 12 USGS Proposal for Technical Studies***

Large electronic document contained in printed reports is provided in PDF format at [www.intpln.com/docs/USGSTools.pdf](http://www.intpln.com/docs/USGSTools.pdf)



## ***12.13 Appendix 13 Business Plan Format Stakeholder Programs***

### **Cooperative Salinity Monitoring and Analysis Program (CSMAP)**

**Program Proposal (roughly follows a Business Plan Format)**

**This document is provided as a draft review and comment. The purpose of this plan is a model of that which could be used to begin the formation of a group to cooperative monitor, study and provide information toward the requirements of the Regional Board basin planning process. This effort would be coordinated with other requirements including efforts required for production of reports, monitoring, or other requirements of the Regional Board.**

#### **Summary**

The executive summary is the introduction to your business plan and the most vital section. Although it comes first, you generally write it last because it summarizes the entire plan. Effective summaries generally cover:

- The company's origins.
- The product or service and its uniqueness or competitive advantage.
- The company's goals.
- The market potential for the product or service.
- A three- to five-year summary of key financial forecasts, especially sales and profit/loss. For new businesses, do some market research and make realistic assumptions about how your business can compete.
- The management team and its track record.
- The financing required to grow the business.
- The exit strategy.

#### **The CSMAP and Goals**

**In summary the CSMAP is a stakeholder led and funded effort to cooperatively provide salinity data to the Central Valley Regional Water Quality Control Board (CVRWQCB) or Board, comply with CVRWQCB requirements and create efficiencies and economies of scale for the dischargers and other regulated entities.**

The model for this effort is the Nitrogen TDS Taskforce in Southern California. The model has proved efficient and robust enough to provide low risk and adequate certainty of completion and achieving its primary goals. The effort would provide both regulatory compliance with report preparation and study requirements and cooperative study architecture and management for areas required or beneficial to jointly study.

Initial goals would be to form an initial team and more fully scope the efforts to be included, finalizing a budget and soliciting funds for the effort. Year 1 efforts would begin upon completion of these efforts and would perform the first year of the scope of work. Each year

following would scope and adjust the studies accomplished in accordance with program participants and CVRWQCB requirements. The primary objective year to year would be to deliver economy to the regulated community and build the data needed to assist the Board with appropriate basin planning and salinity management.

### **CS MAP Governance and Management**

A Committee or Task Force should be formed by a limited agreement of the parties that will participate to govern and oversee management of the programs. All Funding parties shall be represented on the task force or committee and will vote and fund the program in accordance with the terms of the agreement. Agreement and funding will be subject to the approval of the governing bodies of the participants. The Board should be represented on the committee or task force as an advisory or ex-officio member.

A goal will be to utilize existing management and consultants already familiar with the needs and efforts of the organization. The program should be organized with a strategic partner under the CVWQA or similar existing group as an umbrella. The Task Force or Committee would be independent of the umbrella group and would be created in a manner that does not create a burden for the partner organization.

CVWQA has experience in working with wastewater agencies and with the Board and has capability to undertake limited role in this effort. The existing coordinating consultant for the regional board may be retained as long as needed to facilitate the efforts of the Task Force.

### **Scope of Efforts and Products**

The initial efforts would be the combined monitoring and reporting required in various permits from the Board and the studies needed to comply with the Regional Salinity Program requirement of certain recent permits.

Each permitted facility that is required to produce any report on sources, monitoring, control, or management practices for salinity will be likely to be willing to participate. The marketing would identify the extent of the coverage for the cooperative monitoring to be added to the overall efforts.

Additionally, after the first effort is defined, additional efforts and work can be identified and budgeted for future fiscal years. This should ideally be budgeted during the period that agencies are preparing their budgets for the following year. Additional efforts would be identified in cooperation with the Task Force or Committee and the Board. They could include additional studies or planning for the region on impacts or opportunities for salinity control best practices, cooperative salinity reduction efforts or regional outreach.

### **Program Members and Market**

This effort has the opportunity to begin relatively small with select Municipal Wastewater agencies (5-10 participants) and open to the larger regulated community. Beyond municipal wastewater agencies other regulated community members would have a similar interest and

include large regulated dischargers in all industries that could involve salt. (Additional information on potential members is from the taskforce/committee).

### **Threats and Competition**

Few threats or significant competition exist for this program. However some significant accomplishments must be completed to ensure success.

1. Program must attain critical mass to begin, need 3-5 agencies or groups to fund the effort and participate in the task force
2. A coordinating group must accept the role or one be created or found to keep focus
3. The Board must approve the proposal and agree to cooperate in the effort.
4. The costs of the program must be reasonable and result in savings to the participants.
5. The program should assist the participants and Board in planning and control of salt.

No other cooperative programs are directly competing with this program. The major competition is inaction and individual efforts. There are similar programs in Drinking Water or Irrigated Lands, these have overlapping members with this effort but also significantly different constituencies as well.

### **Outreach**

Connection to all potential participants is important. Utilizing the CASA and CVWQA as targets will be the initial efforts. Should this be less effective than needed contact information will be requested from the regional board. Outreach and marketing materials will be prepared in the initial phase of the program and distributed to likely participants.

With the limited start of the program, limited marketing is needed. The effort will not continue to the second phase unless adequate participation is developed. Future outreach and marketing will be provided as part of first year activities with a goal of doubling the number of participating entities in the second year. No significant limits exist for participation. Distance and the ability to meet or discuss consensus can be done in multiple locations or by telephone conference call or via internet/email.

### **Scope and Efforts**

The scope of work and efforts undertaken by the program would be based on the direction of the Taskforce or Committee and the Board. The joint nature of the work allows cooperation among the members and with the Board staff.

Early efforts would be preparing a draft and final scope for efforts to be accomplished, preparing needed agreements or MOU to conduct the efforts, coordinating with the Board, and outreach to bring as many entities as with to participate.

Scope of work for the first year would include Cooperative Salinity Monitoring and Significant Source Report, Salinity Control Best Practice Study, Outreach planning and early

implementation, and program administration/coordination. Appendix A includes a more detailed scope of work and potential other activities to be undertaken in the coming years.

### **Financial and Budget Estimate**

The revenue and expenses for this type of effort can be matched to scope. A small amount of the cost related to group management will be in addition to the normal cost of the efforts and will be significantly less than the savings of the effort.

The minimum revenue needed for the first year would be \$150,000. This would begin all actions and cover 6-9 months of work. The full year budget is estimated at \$300,000 to \$600,000 depending on the number of entities participating and the area covered by the agencies. This could be as low as \$30,000 per entity with 5 entities or less with more participants. Entities required to participate by the Board may have a minimum participation level to set by the Board. The budget can be adjusted based on the scope of efforts and the number of participants. The larger the program and number of participants the lower the cost to each participant and the greater the savings to each entity.

Appendix B includes more detailed costs and revenue based on the scope in Appendix A and any other potential other activities to be undertaken by the taskforce or committee.

This plan also shows future year projections that are realistic and attainable based on a successful program and participant and board satisfaction.

Appendix A and B are not included in this report due to duplication with the report text and the state of completeness with committee review. The Budget and Revenue section may be included in the final report if completed.

### **Other Programs**

Other efforts have been contemplated including the formation of a simple 501-C6 for the administration of contributed funds and contracting work scoped by the Executive Committee and approved by the board members. This effort is likely to be a salinity coalition.

## Appendix 14 High Level Communication Plan

# Communication Plan High Level/Broad Issues for Central Valley Salinity

## 1. Who do we want to communicate to? The Audiences

The audiences are varied and each has considerable nuances that would be the subject of additional research and efforts where possible. However, the most basic set of Audience Members include:

- A) CVRWQCB to an among Board Members
- B) CVRWQCB Management and Staff
- C) State Board Members and Staff
- D) Stakeholders, participants and potential participants
  - 1) Dischargers/industry/districts/cities
  - 2) Suppliers/irrigators/users (this needs to be an area of focus)
  - 3) Environmental/EJ/DAC/Farm labor
  - 4) Broader business/economic development
  - 5) Land use planners and developers
  - 6) Associations of above i.e. ACWA, CASA, BIA, etc
- E) Legislators/local political and community leaders
  - 1) Policy oriented
  - 2) Funding oriented
  - 3) Constituent oriented
  - 4) Federal Officials
- F) The Public
  - 1) Regulated
  - 2) As payers of the bill
  - 3) As the owners of the Future of their communities

## 2. What is to be communicated? The Messages

The goal of this part of the overall communications plan seeks to communicate the Salinity Policy Group's purpose; goals, efforts, status, and needs for maintain a heading toward salinity solutions. There are many subparts to that basic message.

- A) Importance/Purpose
  - 1) Salinity is an important statewide water quality and supply issue.
  - 2) The economy and growth in the Central Valley will become limited by salt in the future; millions of tons of salt accumulate in the Central Valley each year.

- 3) If the regulatory community does not act to reduce the loads they are at risk of lawsuit from environmental and other groups to force regulation and then regulatory compliance.

B) Efforts

- 1) A Salinity Policy Group has formed and meets to help determine how to solve the problem.

C) Needs

- 1) Water supply agencies need to be involved in the Stakeholder group that is forming to take the lead in the studies and efforts towards solutions. The plan and solutions will take over 20 years to implement.
- 2) Stakeholder and regulated community can lead the development of these efforts and inform the Regional and State Boards. An informed Board is more likely to use their regulatory authority to reduce future salt loads in a manner that is most cost effective. The alternative of independent development by the board could be more costly and difficult to comply with.
- 3) The group needs State Funding to continue the current efforts and studies until the Stakeholders can direct and support them.
- 4) Funding from the Interregional Unallocated \$100 M should be available for this effort. If it is earmarked from Proposition 84, those earmarks should include \$5M for these efforts over the next 3 years.

### **3. What level, frequency and detail should be communicated?**

#### **Intensity**

Levels of detail and frequency vary with the audience and range from high frequency to on demand, i.e. website access. The level of detail can be at the public, summary, detail or technical levels. Casual definitions are shown below.

- A) High frequency – monthly or more often
- B) Frequent – monthly to quarterly
- C) Moderate – quarterly
- D) Event – based on event or action
- E) On-Demand – Information is available, mostly web based
- F) Public – written at a low level of detail for news outlets, the general public, non-technical audiences. May be multilingual.
- G) Summary - high level for policy makers, elected/appointed officials, community leaders and legislators.
- H) Detailed – Executive summary with full details on fundamental issues or decisions.
- I) Technical – Primary technical for scientific or technical audiences appropriate for full reports and backup information or peer review documents.

#### **4. Who communicates the messages? The Messengers**

Messages are best communicated by the appropriate messenger for the message and audience. Each situation will be different but the following can be effective messengers if prepared and provided the proper materials and messages for the audience.

- A) State Board Members
- B) Regional Board Members
- C) Regional Board Executive Director
- D) Regional Board Staff
- E) Technical/Process Consultants
- F) Regulated Community Leaders and staff
- G) Local/Regional Community or Business Leaders
- H) Stakeholders and Community group members
- I) The Public

#### **5 When is it most effective? Timing**

Different messages will have various timing issues. Like news, it is best with it is novel, or has a hook to current events. Communicating the basis messages and information all the time and then looking for new information from the research or reports to highlight the messages and or current events or crises that can relate or underscore the messages.

# Salinity Communication Matrix

Audiences	Frequency	Detail Range	Importance 1	Messages Efforts 2	Needs 3
CVRWQCB Board Members	High	Summary/Detailed	◆	◆	◆
CVRWQCB Management	High	Summary/Detailed	◆	◆	◆
CVRWQCB Staff	High	Detail/Technical	◆	◆	◆
State Board Members	High	Summary	◆	◆	◆
State Board Staff	High	Summary/Detailed	◆	◆	◆
Other State Agency and Groups	High	Summary/Detailed	◆	◆	◆
Stakeholders, participants	Frequent	Summary	◆	◆	◆
o Dischargers/industry/districts/cities	High	Summary to Technical	◆	◆	◆
o Suppliers/irrigators/users (area of focus)	High	Summary to Technical	◆◆	◆	◆
o Environmental/EJ/DAC/Farm labor	Frequent	Summary to Technical	◆	◆	◆
o Broader business/economic development	Moderate	Summary/Detailed	◆	◆	◆
o Land use planners and developers	Moderate	Summary/Detailed	◆	◆	◆
o Associations CASA/CSDA	High	Summary to Technical	◆	◆	◆
o ACWA and water policy	High	Summary to Technical	◆◆	◆	◆
o BIA and Business	Frequent	Summary to Technical	◆	◆	◆
Future or Likely participants	High	Public to Detail	◆◆	◆	◆
Legislators/local political & community leaders	Moderate	Public	◆	◆	◆
o Policy oriented	Moderate	Public/Summary	◆	◆	◆
o Funding oriented	Event	Public/Summary	◆	◆	◆
o Constituent oriented	Moderate	Public	◆	◆	◆
o Federal Officials	Moderate	Public to Detail	◆	◆	◆
The Public	Event/Demand	Public	◆◆	◆	◆
o Regulated	Moderate	Summary	◆	◆	◆
o As payers of the bill	Event/Demand	Public	◆	◆	◆
o As owners the Community Future	Event/Demand	Public	◆	◆	◆

Additional Detail in Communication Plan Document

High	Public	Very High	◆◆
Frequent	Summary	High	◆
Moderate	Detailed	Med	◆
Event	Technical	Low	◆
On-Demand	Varies		

## ***12.14 Appendix 15 Young Professional Groups in the Central Valley Region***

An interest was taken by the Public Education and Outreach Committee in the use of young professional organizations for salinity outreach as has been done on other topics in other areas. Several different types of YPOs exist and the listing below is for all groups reported in the Central Valley Region more information may be available on their websites or at <http://www.yecommons.org>. The committee may wish to contact them or members may wish to outreach to them individually as well.

**Title listing includes: Name, Location, Activities**

**Creative Fresno Fresno, California Engaging creative professionals to create a better community**

Location: Fresno, California

Website: [www.creativefresno.com](http://www.creativefresno.com)

Primary Activity: Engaging creative professionals to create a better community

Secondary Activity: Social/Networking

Contact Name: Suzanne Bertz-Rosa

Contact Email: [fun@creativefresno.com](mailto:fun@creativefresno.com)

**Fresno's Leading Young Professionals (FLYP) Fresno & Clovis, California Professional Development**

Location: Fresno & Clovis, California

Website: [www.flypinfo.com](http://www.flypinfo.com)

Primary Activity: Professional Development

Contact Name: Nevin Hindiyeh

Contact Email: [flypinfo@hotmail.com](mailto:flypinfo@hotmail.com)

Contact Phone Number: (559) 960-5517

**Central Valley Professional Exchange Modesto, California Community Service**

Year Founded: 2000

Location: Modesto, California

Website: [www.cvpe.org](http://www.cvpe.org)

Primary Activity: Community Service

Secondary Activity: Social/Networking

Number of Members: 100

**Sacramento Young Professionals, Inc. Sacramento, California Social/Networking**

SYP hosts weekly events for the Sacramento professional. Our events help individuals network with other driven professionals in the community through fun social, educational, and recreational events. Members are single, divorced, and married looking for a new way to experience Sacramento and increase both their social and business network.

Year Founded: 2005

Location: Sacramento, California

Website: [www.SYPsactown.com](http://www.SYPsactown.com)

Primary Activity: Social/Networking

Number of Members: 1436

Number of Paid Staff: 2

Contact Name: Johnny Law  
Contact Email: [syp@sypsactown.com](mailto:syp@sypsactown.com)  
Contact Phone Number: (916) 588-0112

**Modesto Jaycees Modesto, California Community Service**

Modesto Jaycees is a local community service club for young adults between 18 and 40, serving our community since 1924. Our motto is "Leadership Training through Community Service" The Jaycees do many great things in Modesto, including the organization of the annual Fourth of July Parade, Picnic in the Park and Fireworks Show, and the Annual Underprivileged Children's Christmas Shopping Tour. A General Membership Meeting is held 6:30pm every 2nd Wednesday of the month at the Elk's Lodge (Season's) 945 McHenry Ave and all visitors are welcome. For more information in regards to joining the Modesto Jaycees please call 209-573-7979 or visit us at [www.jayceesmodesto.org](http://www.jayceesmodesto.org)

Year Founded: 1924  
Location: Modesto, California  
Website: [www.jayceesmodesto.org](http://www.jayceesmodesto.org)  
Primary Activity: Community Service  
Secondary Activity: Professional Development  
Number of Members: 20

**Roseville Connects Roseville, California Community Involvement**

Roseville Connects helps young professionals emerge as community and business leaders by fostering relationships and providing professional development opportunities. We empower young professionals to become involved in community issues and expand their professional horizons. We seek to inspire community leadership in economic development and policy to positively impact the lives of young professionals. And... we have fun doing it!

Year Founded: 2007  
Location: Roseville, California United States  
Website: [www.rosevilleconnects.com](http://www.rosevilleconnects.com)  
Primary Activity: Community Involvement  
Secondary Activity: Social/Networking  
Number of Members: 50



***Toward a Sustainable Central Valley Future for Its Economy, People and Environment***