# CV-SALTS Annual Report and Consideration of Resolution to Release Remaining CAA Project Funds

CV SALTS

Central Valley Salinity Alternatives for Long-term Sustainability

- Collaborative Basin Planning Effort
- Utilizing Stakeholder Process to Develop Salinity and Nitrate Management Plan

# Central Valley Salt Issues

## More salt enters the region than leaves

- Sacramento Basin has relatively few salt impaired areas but salt exported to the Delta can be picked up and redistributed by SWP and CVP
- San Joaquin River is the SJR Basin's sole outlet. Salt imports exceed export capacity
- Tulare Lake Basin has no reliable outlet

# Central Valley Salt Issues

Salt build-up threatens agricultural productivity →

← Increasing salt concentrations (including $NO_3$) in groundwater threaten drinking water

Water used for dilution is (usually) water lost to other uses →

# Economic Cost

If the Region does not change its approach to salt, by 2030…

- Direct annual costs anticipated to range between **$1 to 1.5 BILLION**
- Total annual income impacts statewide anticipated between **$1.7 to 3 BILLION**

**There is presently no means of distributing these costs equitably or assigning costs to all responsible parties.**

# Diverse Sources

## Regional Sources

- Agricultural
- Urban
- Rural
- Environmental
- Industrial
- Water Providers

## Local Sources

- Municipal Wastewater
- Septic Tanks
- Oil Field Brines
- Confined Animal Facilities
- Food Processors

# Stakeholder Based Solutions

- Stakeholder involvement and ownership
- Better addresses all needs and concerns
- Utilize everyone's efforts & resources more efficiently and effectively
- Basin Plan - based on better data
  - more effective

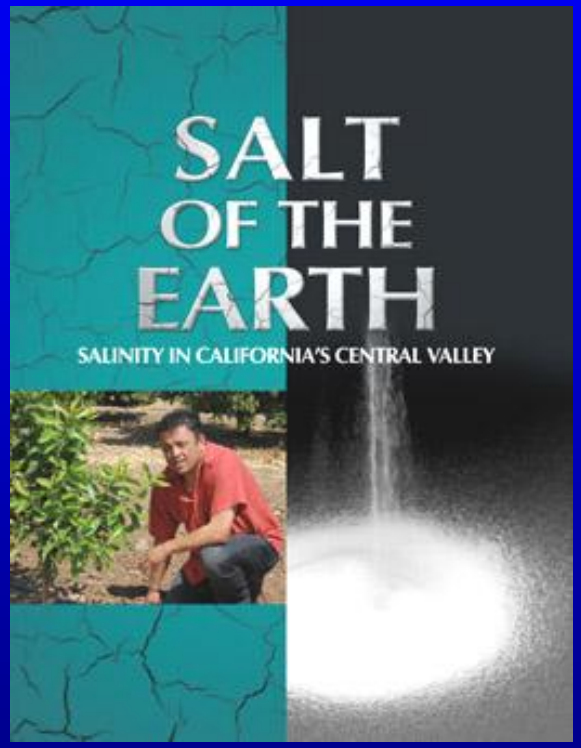
# CV-SALTS Launch

2006: Joint Workshop

- Initial Products
  - Economic study
  - Metadata report
  - Educational Video
  - Strategy

2009: MOA

- State Water Board
- Central Valley Water Board
- Central Valley Salinity Coalition
  - Stakeholder JPA



# Cleanup and Abatement (CAA) Funds Provided Seed Money

- $1.2-million (Res. #2009-0023)
- $3.8-million (Res. #2010-0042)
  - $2.0-million initially
  - $1.8-million after demonstration of progress to/approval by State Board

## Additional Res. #2010-0042 Requirements:

- Annual Report at Public Hearing
  - Expenditures to Date
  - Services Provided
  - Contribution from Stakeholders
  - Accomplishments
  - Timeline to Complete Work

# Expenditures to Date
# Services Provided
# Stakeholder Contributions

Debbie Webster

Executive Officer CVCWA

# Expenditures for Services and Stakeholder Contributions

| | Since July 2008 |
|---|---|
| CAA Resolution #2009-0023 | $752,355 |
| CAA Resolution #2010-0042 | $236,012 |
| Central Valley Salinity Coalition (CVSC) expenditures through October 2012* | $1,098,145 |
| Additional Stakeholder Contributions<br>--Treatment/Feasibility studies; basin planning support; water quality data | $6,826,096 |
| **Total:** | **$8,912,608*** |

*Does not include in-kind service participating on committee(s)

# Services Provided

## CAA Funded Projects Completed

- Updated 2012 Strategic Plan, Framework and Workplan
- GIS Database for Central Valley Beneficial Uses and Objectives
- Continued Outreach
  - Update CV-SALTS website
  - Central Valley Salinity Brochure
- LSJR: workplan, problem statement, background, beneficial use evaluation
- White papers
  - Salinity and nitrate impacts on MUN
  - Salinity impacts on irrigated agriculture

# Services in Progress

**CAA Funded Projects**

- Administrative, Technical & Facilitation Support
  - Technical Project Manager
  - Policy Discussion Facilitation
- Aquatic life salinity criteria review
- Update GIS database and beneficial use maps
- Phase I source and fate conceptual model
- AGR salinity objectives by management zone

# Services in Progress

**CAA Funded Projects**

- SSALTS: evaluation of salt management options
- Case studies to ground truth policy and implementation options
  - MUN in Ag dominated POTW receiving waters
  - MUN in Tulare Lake Bed perched groundwater
  - Lower SJR salinity and boron water quality objectives/implementation
  - Early implementation for DAC safe drinking water

# Stakeholder Current and Future Contributions

| Description* | 2008-2014 |
|---|---|
| CVSC Supported Total (To Date $1,098,145) | $1,575,588 |
| --Program support | $603,433 |
| --Pilot salt source/fate studies | $494,712 |
| --Contributions for projects and support | $477,433 |
| Stakeholder Supported Total (To Date $7,790,717) | $9,467,321 |
| --Treatment Alternative Studies | $4,959,592 |
| --Direct Basin Planning Support | $877,744 |
| --Gathering Water Quality Information | $3,629,985 |
| **Total:** | **$11,042,909** |
| | |

***Details for specific projects in Tables 2 and 4 of the staff report**

# Treatment Alternative

**Tulare Lake Drainage District Spray Fields**

- **120-acres**
- **$4,262,606**

- **Full scale trial project**
- **Enhanced evaporation over ponded water**
- **Close spaced small micron nozzles**

# Examples Basin Planning Support

- Tulare and MUN  Archetype cost share
- Variance BPA with CVCWA
- Direct CV-SALTS Support

# Example Water Quality Info

- City of Vacaville
- USBR Westside SJR
- Dairy Representative Monitoring

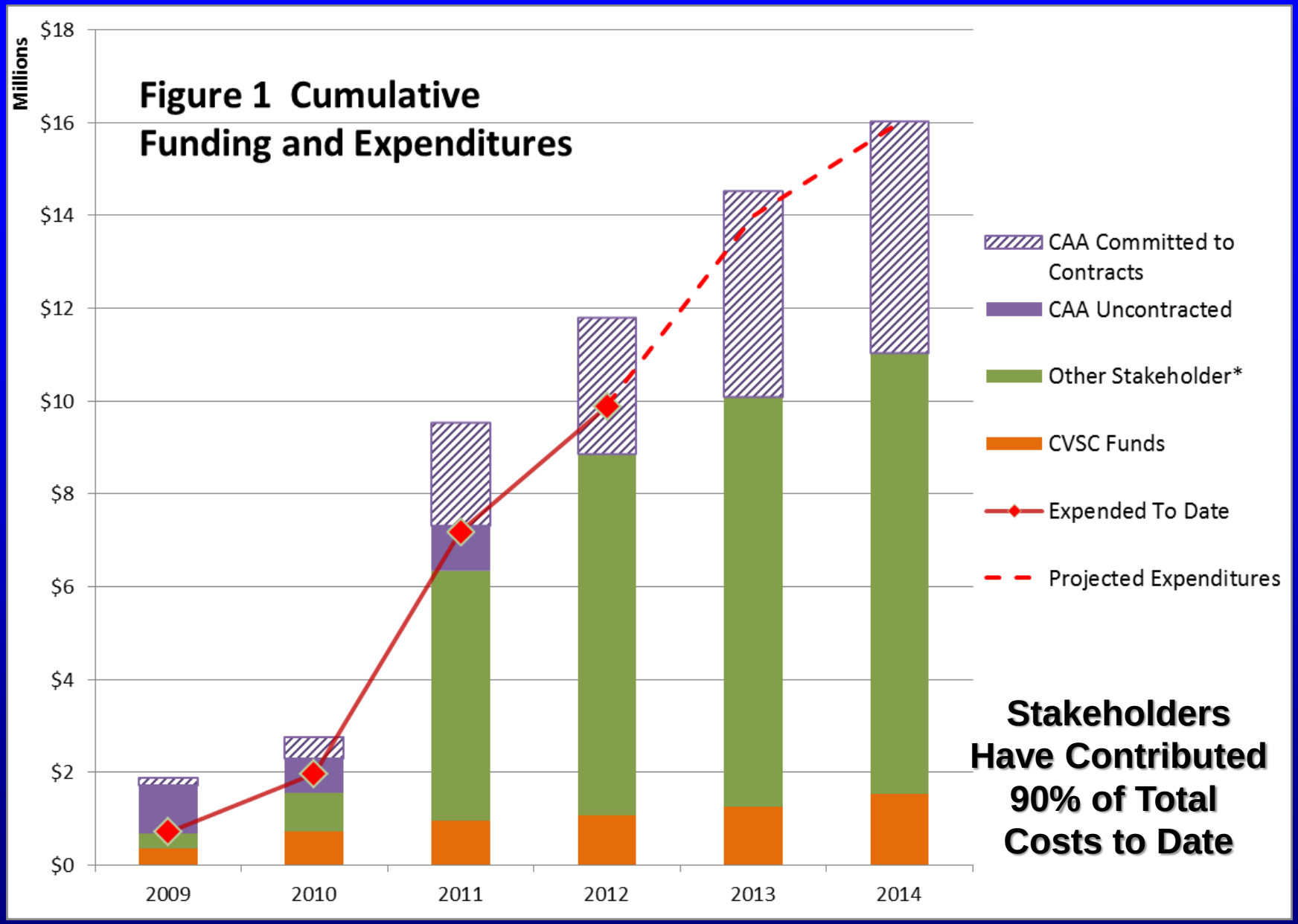


Figure 1 Cumulative Funding and Expenditures
Millions
$18
$16
$14
$12
$10
$8
$6
$4
$2
$0
2009
2010
2011
2012
2013
2014
CAA Committed to Contracts
CAA Uncontracted
Other Stakeholder*
CVSC Funds
Expended To Date
Projected Expenditures
Stakeholders Have Contributed 90% of Total Costs to Date

# Stakeholder In-Kind

- Coordination, oversight and cost share of CAA funded services
- Framework for future salt source studies
- Screening mechanism to create MP “toolbox”
- Co-sponsor/participants in GRA Salinity and Nitrate Conference (June 2012)
- Technical recommendations for use of modeling tools to develop site specific AGR salinity objectives
- Policy discussions/recommendations

# Sampling of Other Activities

## Permit Required (>$7-million)

- Treatment feasibility analyses
- Receiving water studies
- Salinity minimization plans
- Public education/outreach

## Implementation Activities (>$42-million)

- Containment
- Reuse
- Source Reduction
- Cost Share
- Evaluation

# Accomplishments and Studies

David Cory

Chair Central Valley Salinity Coalition

# CV-SALTS Accomplishments 2012

- Updated Strategy, Framework and Workplan
- Initiated technical work to support:
  - Policy discussions
  - Beneficial Use and Water Quality Objective review
  - Implementation planning

Stakeholders Provide Direct Oversight

**CV-SALTS Starting Point**

**Identify Water Bodies** → **Surface Water**, **Ground Water**

↓

**Designate Beneficial Uses** → **MUN**, **AGR**

↓

**Establish Water Quality Objectives** → **Salinity**, **Nitrate**

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**Recycled Water Policy**

↓

**Implementation Requirements** → **Point Sources**, **Non-Point Sources**

↓

**Monitoring and Assessment** → **Discharges**, **Receiving Waters**

CV SALTS

Central Valley Salinity Alternatives for Long-term Sustainability

# Strategy and Framework

**Revise Regulatory Structure**

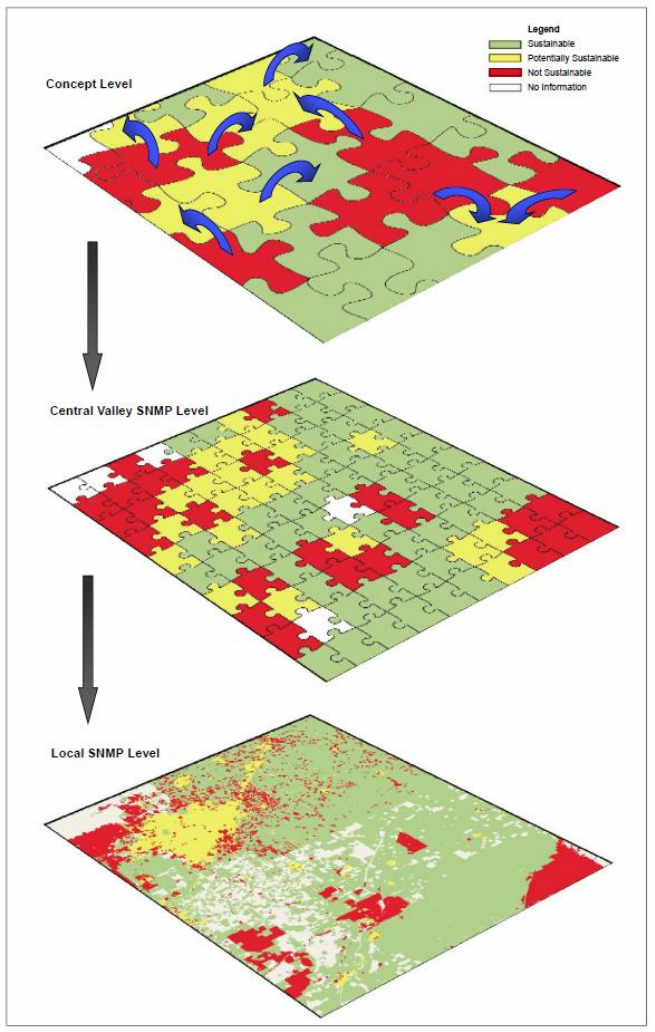
- Beneficial Uses; Water Quality Objectives; Policies

**Develop Policies and Procedures to:**

- Evaluate Compliance
- Provide Regulatory Flexibility

**Provide basis for short and long-term management of salts and nitrate at appropriate geographic scales**

# Conceptual Model (Technical Approach) → Supports




Policy

↕

Central Valley SNMP

(Management Zones)

↕

Area Specific

(SNMPs; archetypes; prototypes)

# Policy Discussions

Fundamental Areas

- Appropriate application and level of protection for MUN and AGR
  - Ag dominated water bodies
  - Groundwater zones

Implementation Areas

  - Including conservation and recycling
  - Utilizing assimilative capacity
  - Consideration of drought conditions
  - Improving impaired areas using offsets

# CONSIDERATIONS FOR SALT & NITRATE MANAGEMENT

| USE | OBJECTIVE | POLICY DISCUSSIONS |
|---|---|---|
| MUN | Salinity | 1) Application of Secondary MCLs as numeric WQOs |
| | | 2) Point-of-Compliance Policy |
| | | 3) Application of MUN use (surface and groundwater) |
| | Nitrate | 1) Affirm WQO = 10 mg/L Nitrate-N |
| | | 2) Establish Zone-of-Influence Evaluation Process |
| | | 3) Alternate Compliance Options: Offsets |
| AGR | Salinity | 1) Translators for Narrative Objective |
| | | 2) Multi-Factor Flowchart for Reasonable Protection |
| | | 3) Ag Zoning Map (dependence and salt-sensitivity) |
| | Nitrate | Agriculture is not the most sensitive use and is unlikely to drive more stringent water quality standards for nitrate. |

**2012/2013 Stakeholder Policy Discussions**

# Archetype Studies
## (Beneficial Uses and Water Quality Objectives)

- Ag Dominated Water Bodies (Sac Valley)
  - Appropriate MUN Beneficial Use application
- Groundwater (Tulare Lake Bed Basin)
  - Appropriate MUN beneficial uses
- Zone Studies (Central Valley wide)
  - Develop management zones and template for narrative regional AGR interpretation
- Lower San Joaquin River
  - Appropriate beneficial uses/water quality objectives surface water

## Ag Dominated Surface Water Bodies

- 4 POTWs in Sac Valley
- 400 square miles
- MUN applied via DW Policy
- Evaluates appropriate MUN application and level of protection

## Groundwater

- Portion unconfined aquifer Tulare Lake Bed
- MUN applied via DW Policy
- Evaluates appropriate MUN application and level of protection

# Prototype Studies
## (Implementation Alternatives)

- Lower San Joaquin River
  - Implementation alternatives for meeting WQOs and salt balance
- Disadvantaged Communities
  - Address nitrate contaminated GW basins
- SSALTS:
  - Salt management implementation alternatives
  - Evaluated at different scales in all three basins

# Schedule, Benefits and Outcomes

Parry Klassen

Chair, CV-SALTS Executive Committee

## Figure 2 Summerized CV-SALTS Worplan Schedule

*Revised 11/1/12*

*Draft SNMP To Regional Board →* | *Final SNMP →* | *BMA →*

| CV-SALTS Program Element | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | + |
|---|---|---|---|---|---|---|---|---|
| **Program Management** | | | | | | | | |
| Funding | | | | | | | | |
| Policy Development and Planning | | | | | | | | |
| Outreach and Scoping ❖ = Meetings | | | ❖ | ❖ | ❖ | | | |
| **Technical Studies** | | | | | | | | |
| Conceptual Model (Initial Phase) | | | | | Final | SNMP | | |
| **Phase II (SNMP)** | | | | | | | | |
| **Final Phase** | | | | | | | | |
| Beneficial Use and Objective GIS Mapping (BUOS I) | | | | | | | | |
| BUOS II--update with additional GIS layers | | | | | | | | |
| Ag Water Quality Zoning Map | | | | | | | | |
| Criteria Evaluations (AGR, MUN, Aquatic Life) | | | | | | | | |
| Other Technical Studies and Documents | | | | | | | | |
| **Archetypes/Case Studies** | | | | | | | | |
| Groundwater MUN (Tulare) | | | | | | | | |
| Surface Water MUN (Sac Valley POTWs) | | | | | | | | |
| **Related/Integrated Efforts** | | | | | | | | |
| Management Practice Development | | | | | | | | |
| Lower San Joaquin River Salt and Boron Objectives | | | | | | | | |
| **Implementation Planning** | | | | | | | | |
| Implementation Prototype Documentation | | | | | | | | |
| **SSALTS** | | | | | | | | |
| Effective Management Practice Evaluation | | | | | | | | |
| SNMP Documentation | | | | | | | | |
| Monitoring & Reporting Plan Development | | | | | | | | |
| Economic Review | | | | | | | | |
| **Documentation for Approval** | | | | | | | | |
| **CEQA Equivalent Documentation** | | | | | | | | |
| **BPA Documentation Process Support** | | | | | | | | |
| **Initial Implementation** | | | | | | | | |
| Management Practice Implementation | | | | | | | | |
| DAC Assistance - Nitrate | | | | | | | | |
| Salt and Nitrate Control Project Implementation | | | | | | | | |
| Archetype Template Implementation | | | | | | | | |
| Local SNMP Implementation | | | | | | | | |
| **Monitoring and Reporting** | | | | | | | | |
| **Phase II SNMP** | | | | | | | | |

# Key Benefits

- Stakeholder Driven
- Policy Recommendations
- Templates (Archetypes/Prototypes)
- A Plan within a Plan

# Outcomes

- Updated Central Valley Basin Plans
- Compliance with Recycled Water Policy
- Concerns Addressed:
  - Salt
  - Nitrate
  - Impacted Areas in the Valley
- Ability to fold in area specific updates

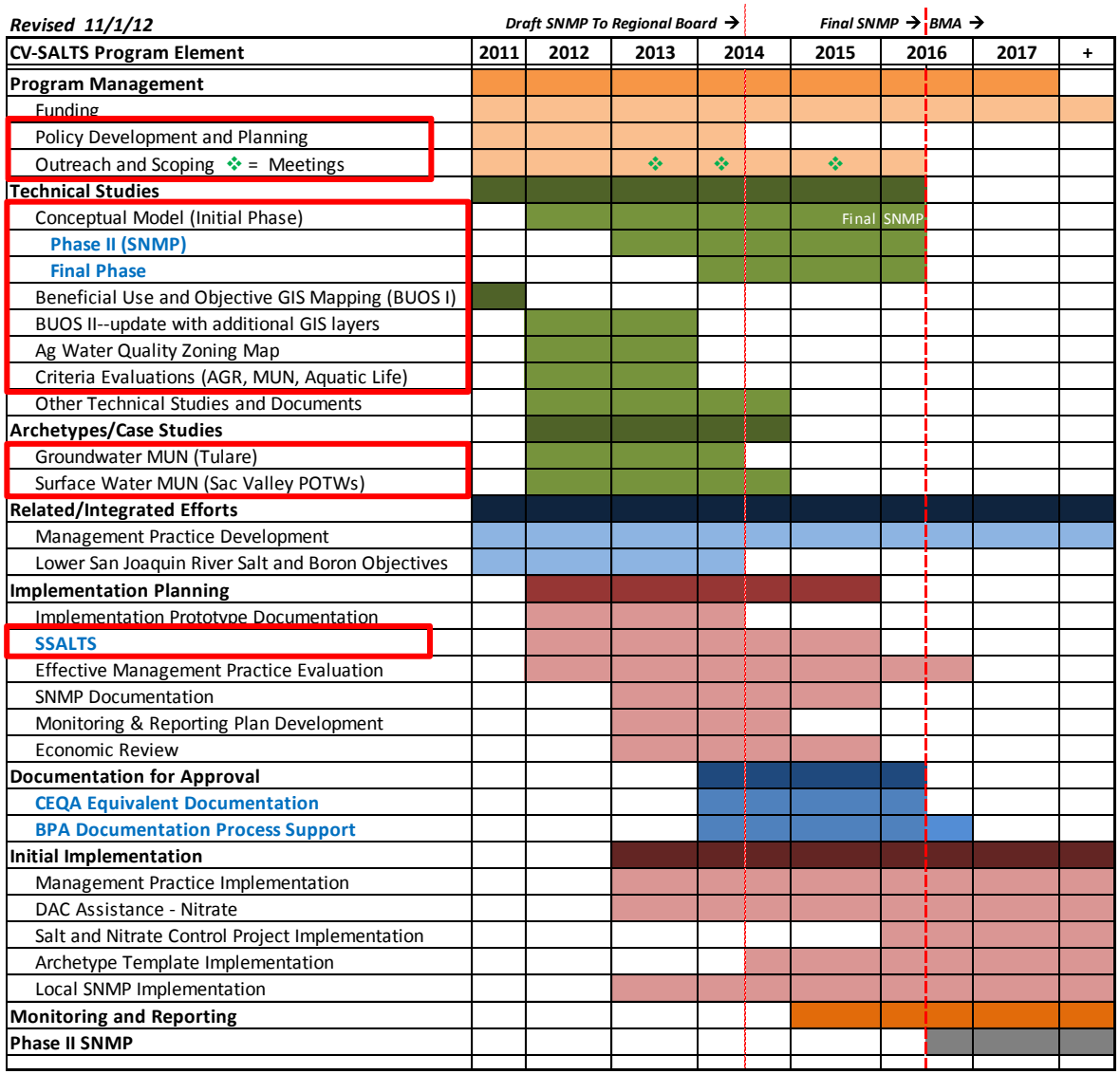
# CV-SALTS is making progress

## Questions?

# Part 2

# Consideration of a Resolution to Release Final $1.8-million of CAA Funding Allocated to the Project

**Figure 2 Summerized CV-SALTS Worplan Schedule**




Tasks to be funded in part with final $1.8 M Request

Work Ongoing in 2013 under existing $2 M Funding

# Tasks Continued and/or Funded in Part with Remaining $1.8M

**From Summerized CV-SALTS Workplan Schedule**

***Revised 11/1/12***

*Draft SNMP To Regional Board →* *Final SNMP →* *BPA →*

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| CEQA Equivalent Documentation | | | | | | | | |
| BPA Documentation Process Support | | | | | | | | |

# Anticipated Contract Obligations Resolution #2010-0042

| Description | To Date | FY12/13 | FY13/14 | Total |
|---|---|---|---|---|
| Original $2-million | $1,311,309 | $688,691 | 0 | $2M |
| Remaining $1.8-million | 0 | $937,000 | $863,000 | $1.8M |
| Annual Total: | $1,311,309 | $1,625,691 | $863,000 | $3.8M |
| Running Total: | $1,311,309 | $2,937,000 | $3,800,000 | $3.8M |
| % of $3.8-mil: | 35% | 77% | 100% | |

# Staff Recommendation

Approve Resolution releasing remaining $1.8-million of CAA funding originally authorized under Resolution #2010-0042, to support the CV-SALTS initiative.

# Extra Slides

## Central Valley

**Area = 60,000 mi²**

**Pop. = 6.5 million**

## Santa Ana

**Area = 2,800 mi²**

**Pop. = 6 million**

**Budget * = $3.3 M**

**Timeline = 9 Years**

** Not including monitoring and non-BPA Costs*