CV-SALTS Executive Committee Meeting

Thursday, April 7, 2022 8:30 AM – 12:30 PM

https://us06web.zoom.us/j/85766234293?pwd=WlpyK2NvNThFTkdRWmJwN1FkRGR2dz09

Meeting ID: 857 6623 4293 **Passcode:** 024078

Dial-in: 253 215 8782

Posted 03-29-2022 – Revised 04-06-22

8:30 **Special Focus Session**

Data Management System Communications Tool - Mike Cornelius, Maria Pascoal (30 mins)

- Working Demonstration

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1) **Welcome and Introductions – Chair** – (10 mins)
   a) Committee Roll Call and Membership Roster
   b) Review and Approve March 17, 2022 Meeting Notes

2) **Basin Plan Amendments – Implementation Update** – Patrick Pulupa, Anne Walters (20 mins)
   - Program Implementation
     - Management Zone progress and deadlines
     - Enforcement Activities MZ and P&O

3) **Management Zones – Status Update** – (20 mins)
   - SAFER Funding of Co-Contaminant Impacts by MZs : VWC, Kaweah, Kings, and Tule – Daniel Cozad
   - Management Zone Progress and Outreach – Sarah Woolf , Chowchilla Management Zone
     - Nitrate Zone Program Progress
     - Outreach and Implementation Status
       - Management Zone Program Summary

4) **Prioritization & Optimization Study** – (2 hr, 15 minutes)
   - Overview and Discussion Facilitation – Daniel Cozad
   - Data Collection Small Group – Update – Tom/Richard
   - Analytical Tool/Model Identification and Evaluation Criteria – Tom Grovhoug and Ken Miller
   - Data Management Systems – Richard Meyerhoff and Mike Cornelius
     - Preliminary Draft Data Management Plan – Status Update
     - Communications Demo

5) **SAMP (Sampling & Monitoring Program)** – Daniel Cozad (5 mins)
   - Status Update

6) **PEOC Status Update** – Daniel Cozad (10 mins)
   - **LINK** to Outreach Matrix - Outreach Tracking
   - Quarterly Email Update

7) **Review Meeting Schedule/Location** – (5 mins.)
   - PEOC Meeting: **May 17, 2022, 3:00 - 4:00 PM – Zoom**
   - Policy Meeting: **May 19, 2022, Tentatively 9:00 – 3:00 - Zoom (Final times TBD)**

CV-SALTS meetings are held in compliance with the Bagley-Keene Open Meeting Act set forth in Government Code sections 11120-11132 (§ 11121(d). The public is entitled to have access to the records of the body which are posted at http://www.cvsalinity.org.

One or more Central Valley Regional Water Quality Control Board members may attend.

CV-SALTS Committee Rosters

Executive Committee Membership			CV-SALTS Executive Committee Meetings -2020-2022												
Voters	Category/Stakeholder Group	Name	14-Jan	11-Feb	11-Mar	8-Apr	13-May	10-Jun	19-Aug	16-Sep	21-Oct	18-Nov	13-Jan	10-Feb	17-Mar	7-Apr
1	Central Valley Water Board	Patrick Pulupa	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	
Alt	Central Valley Water Board	Anne Walters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	State Water Resources Control Bd.	Darrin Polhemus														
3	Department of Water Resources	Barrett Kaasa		✓	✓											
Alt	Department of Water Resources	Jesus Mercado					✓	✓	✓	✓	✓	✓	✓	✓	✓	
4	US Bureau of Reclamation	Grace Windler		✓					✓	✓	✓	✓	✓	✓	✓	
5	Environmental Justice															
6	Environmental Water Quality	TBD														
CV Salinity Coalition																
1	So. San Joaquin WQC	Nicole Bell	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		
2	City of Stockton	Deedee Antypas	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		
3	California Cotton Growers	Chris McGlothlin			✓			✓	✓				✓	✓		
4	City of Fresno	Rosa Lau-Staggs		✓							✓					
5	CA Leaque of Food Processors	Trudi Hughes											✓			
Alt	CA Leaque of Food Processors	Rob Neenan	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓		
6	NCWA/SVWQC	Bruce Houdesheldt		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
7	City of Tracy	Stephanie Hiestand	✓	✓	✓		✓	✓			✓	✓	✓	✓	✓	
Alt	City of Tracy	Aloke Vaid														
8	Sacramento Regional CSD	Chris Hunley	✓						✓		✓	✓	✓	✓		
Alt	Sacramento Regional CSD	Sam Safi	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	
9	San Joaquin Tributaries Authority	Jonathan Marz		✓	✓	✓	✓	✓	✓	✓	✓				✓	
Alt	San Joaquin Tributaries Authority	Valerie Kincaid														
10	Valley Water Management	Melissa Thorme	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Alt	Valley Water Management	Jason Meadors	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	
11	California Rice Commission	Tim Johnson	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
12	City of Davis	Josie Tellers	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓		
13	Tulare Lake Drainage District	Mike Nordstrom	✓	✓	✓			✓								
14	Western Plant Health Assoc.	Renee Pinel														
15	City of Vacaville	Mindy Boele	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		
Alt	City of Vacaville	Justen Cole														
16	Dairy Cares	J.P. Cativiela	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓	
Alt	Dairy Cares															
17	Westlands Water District	Zac Just	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Alt	Westlands Water District	Kori Peterson		✓		✓								✓	✓	
18	East San Joaquin WQ Coalition	Parry Klassen	✓		✓	✓		✓	✓	✓	✓		✓	✓	✓	
Comm. Chairs/Co-chairs																
1	Chair Executive Committee	Debbie Webster CVCWA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	Vice Chair Executive Committee	Mike Wackman SJ Co/Delta V	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
3	Technical Advisory Committee															
	Technical Advisory Committee	Nigel Quinn, LBL	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		
4	Public Education and Outreach	Nicole Bell														
5	Economic and Social Cost Committee	David Cory, SJVDA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

CV-SALTS Committee Rosters

Participant Names			CV-SALTS Executive Committee Meetings -2020-2022												
Last	**First**	**Organization**	14-Jan	11-Feb	11-Mar	8-Apr	13-May	10-Jun	19-Aug	16-Sep	21-Oct	18-Nov	13-Jan	10-Feb	17-Mar	7-Apr
Aguilar	Marisol								✓							
Agus	Eva	East Bay MUD										✓				
Atume	Ngodoo	CWA			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Au-Yeung	Cindy	CVRWQCB	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	
Bean	Jessica	SWRCB														
Beckstead	Christina	Madera Farm Bureau						✓	✓						✓	
Bejarano	Antonio	WWD		✓	✓	✓	✓			✓		✓				
Belt	David									✓						
Bradford	Mark														✓	
Brown	Laura											✓				
Cady	Mark	CDFA	✓		✓	✓	✓				✓		✓	✓		
Campbell	Morgan														✓	
Carlo	Penny															
Claiborne	Mike	Leadership Counsel	✓	✓												
Cremers	Noelle	Wine Institute		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
Cruikshank	M.								✓							
Dailey	Hannah	CVRWQCB														
Dalgish	Barb	LSCE										✓	✓	✓	✓	
Dickey	John	Plantierra													✓	
Dransoff	Zack	CRC	✓	✓	✓	✓	✓									
Dunham	Tess	Kahn, Soares & Conway	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Dunn	Debra	Kings River Cons District	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		
Fuller	Dustin	TLDD				✓	✓	✓		✓	✓	✓				
Fuller	Jennifer	CVRWQCB				✓	✓		✓	✓	✓	✓	✓	✓	✓	
Fulton	Ryan											✓				
Gallock	Charlotte	KRWQC		✓		✓			✓	✓		✓	✓	✓	✓	
Gardiner	Charles	Catalyst Communications	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	
Gore	Bob	Gualco Group/CIPA	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	
Gosling	Doug															
Grovhoug	Tom	LWA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Guttierrez	Christine	GEI Consultants	✓													
Guzman	Jenalyn	OPP/SWRCB													✓	
Hearn	Stephanie	GEI			✓	✓	✓	✓	✓				✓	✓		
Horne	Randy	Valley Water Mgmt.	✓													
Kadara	Denise	CVRWQCB											✓	✓		
Khang	True	CVRWQCB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Kretsinger Grabert	Vicki	LSCE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

ADDITIONAL PARTICIPANTS:

CV-SALTS Committee Rosters

Participant Names			CV-SALTS Executive Committee Meetings -2020-2022												
Last	**First**	**Organization**	14-Jan	11-Feb	11-Mar	8-Apr	13-May	10-Jun	19-Aug	16-Sep	21-Oct	18-Nov	13-Jan	10-Feb	17-Mar	7-Apr
Laputz	Adam	CVRWQCB				✓	✓			✓			✓	✓	✓	
Larson	Bobbi	Somach Simmons & Dunn	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
LeClaire	Joe	LeClaire & Associates	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Liu	Yuan	CCWD				✓	✓		✓					✓		
Longley	Karl	CVRWQCB	✓	✓	✓							✓	✓	✓	✓	
Loving	Jennifer	City of Fresno										✓		✓		
McReynolds	Scott	CVRWQCB				✓										
Mendes	Justin	Tulare Lake Basin WSD	✓	✓	✓			✓	✓				✓	✓	✓	
Meyerhoff	Richard	GEI Consultants	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Miller	Kenneth	Formation Environmental													✓	
Osorio	Bryan	CWC							✓		✓	✓	✓	✓		
Petersen	Chris	GEI Consultants											✓	✓		
Petersen	Chris	SLDMWA					✓		✓							
Pope	Aaron	Catalyst Communications			✓		✓								✓	
Prescott	Darrin	Grenian				✓		✓		✓			✓	✓	✓	
Razor	Matthew								✓							
Robinson	Kathryn	CRLA						✓								
Robinson	Kristi	Chowchilla MZ								✓	✓	✓	✓	✓		
Rutherford	Sara	KBWQA	✓		✓			✓	✓	✓	✓		✓	✓		
Schuil	Charlotte											✓	✓	✓	✓	
Seyfried	Scott	SWRCB			✓											
Soto	Sammy	CVRWQCB								✓	✓				✓	
Staggs	Rick	City of Fresno	✓	✓								✓			✓	
Takeda	Jackie	GEI Consultants	✓								✓					
Taylor	Hope											✓				
Tillman	Stephanie	LANDIQ		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Tran	Mikayla	Sustainable Conservation													✓	
Trouchon	Mike	LWA								✓	✓	✓	✓	✓	✓	
Warren	Eric	CVRWQCB		✓			✓									
Wehr	Ellen	Grassland Water Dist					✓									
Witty	J.								✓			✓	✓	✓		
Zimmerman	Christine	IOPA		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	

ADDITIONAL PARTICIPANTS:

CV-SALTS Executive Committee Meeting - Summary Action Notes

For March 17, 2022 – 9:00 AM to 12:45 PM

Attendees are listed on the Membership Roster

DISCUSSION ITEMS

1) Welcome and Introductions
   a) Executive Committee Chair, Debbie Webster, brought the meeting to order, and roll call was completed.
   b) Bob Gore moved, and Sam Safi seconded, and by general acclamation the February 10, 2022, Meeting Action Notes were approved.

2) Basin Plan Amendments – Implementation Update
   - Patrick Pulupa and Anne Walters provided an update on the status of implementation activities in the Salt and Nitrate Control Programs.
     - USEPA approval has been received, finalizing the one-year basin plan amendment.
     - Enforcement Activities MZ and P&O – Non-respondents to the Nitrate Notices to Comply are a priority issue for the enforcement team. There are currently 110-120 facilities in the Priority 1 area that have not responded. Regional Board staff in the Rancho Cordova office is being realigned for this effort. The P&O non-respondents will be prioritized on a case-by-case basis. A brief discussion of on-going enforcement activities is planned for the April Regional Board meeting.
     - Management Zone progress and deadlines – The Regional Board comment letters for the PMZPs were sent out in late February. Copies of the letters have been posted on the Management Zone Development page of the CV-SALTS website.

3) Management Zones – Status Update
   - Daniel Cozad provided a status update on the SAFER Funding of Co-Contaminants testing. The final signed agreement for Valley Water Collaborative should be received in the next couple of weeks. Kaweah Water Foundation, Kings Water Alliance and Tule Management Zone are in the process of developing SAFER agreements for those areas.
   - Parry Klassen provided and overview of general Management Zone activities, and specifics on current activities in the Valley Water Collaborative. Parry presented the draft Nitrate Zone Program Progress & Results showing current Management Zone metrics. Management Zone leadership is also developing a similar document that highlights cumulative outreach activities.
     - Valley Water Collaborative held a press conference the afternoon of March 17th in conjunction with the rollout of the new phase of co-contaminant well testing. The press coverage generated by the news conference (ABC10, Turlock Journal, Modesto Bee) is posted on the Residential Well Testing page of the CV-SALTS website.

4) Prioritization and Optimization Study
   - Bobbi Larson provided an overview of discussion topics and informational items:
     - Baseline Data Acquisition – Update on Data Collection Small Group
     - Analytical Tools and Models – Overview & Preliminary Evaluation and Selection Criteria
     - Data Management Systems - Overview

- Data Collection Small Group - Tom Grovhoug and Mike Trouchon gave an update on the activities of the Data Collection Small Group, which held its first meeting on February 18, 2022. The group is still in the process of reaching out to potential data sources.
- Analytical Tools/Model Identification and Evaluation Criteria – Presentations of Candidate Tools/Models were provided by Tom Grovhoug, Ken Miller, and Barb Dalgish. List of Tool/Model Types presented:
    - Groundwater Tools/Models
    - Watershed Tools/Models
    - Water Management Tools/Models
    - Delta Models
    - Crop Salinity Tolerance Tools
  - Detailed presentations were provided on the following models:
    - CV-SWAT – Central Valley Soil & Water Assessment Tool
      - Ken Miller, Formation Environmental
    - CVHM & C2VSIM
      - Barb Dalgish, Luhdorff & Scalmanini Consulting Engineers
  - Evaluation Criteria – A draft of potential Evaluation Criteria was presented:
    - *Does the tool/model have the ability to model/address both hydrodynamics and salinity?*
    - *Is the tool/model ready to be used in the P&O Study? If not, what modifications are needed to meet the specific/fundamental needs of the P&O Study?*
    - *Is the tool/model currently in use in the Central Valley? What is the model/tool's track record in addressing identified P&O Study needs in the Central Valley? In other study areas?*
    - *What is the capability of the tool/model to meet specific needs at specific spatial and temporal scales? For example, entire Region 5, Central Valley floor, specific hydrologic regions, local (archetype) scale?*
    - *What is the cost and time frame to develop and utilize the tool/model to meet essential P&O Study needs?*
    - *What are the run times of the tool/model (computational efficiency)?*
    - *How flexible is the tool/model to efficiently analyze different land use, water management, and climate scenarios?*
    - *Ability to address different salinity management scenarios?*
    - *Is the tool/model calibrated for use in the Central Valley? What are the data requirements for calibration and utilization of the tool/model and what is the availability of required data in the Central Valley?*
    - *Does the tool/model provide essential outputs needed to inform important later steps of the P&O Study*?
  - Committee members were asked to review and provide comments on:
    - Candidate Tools/Models
    - Evaluation Criteria and the Evaluation Matrix Tool
- Data Management Systems – Richard Meyerhoff and Mike Cornelius presented an overview and review of types of DMS tools. Committee members were asked to review and provide comments. A draft DMS plan will be presented at the May Executive Committee meeting.

5) <u>SAMP (Sampling & Monitoring Program)</u>
- Daniel Cozad presented an overview, proposed schedule, and workflow to develop the SAMP. Comments on the SAMP should be forwarded to Daniel.

6) PEOC Status Update
   - Daniel Cozad provided an update on PEOC activities. A copy of the final Salt Control Program and P&O Study Update was included in the package and is posted on the CV-SALTS website. The CV-SALTS website update is now complete.

7) Review Meeting Schedule/Location
   - PEOC Meeting: **Tuesday, April 5, 2022, 3:00 - 4:00 PM – Conference Call**
   - Policy Meeting: **Thursday, April 7, 2022, Tentatively 9:00 – 3:00 (Final Times TBD) - Zoom**

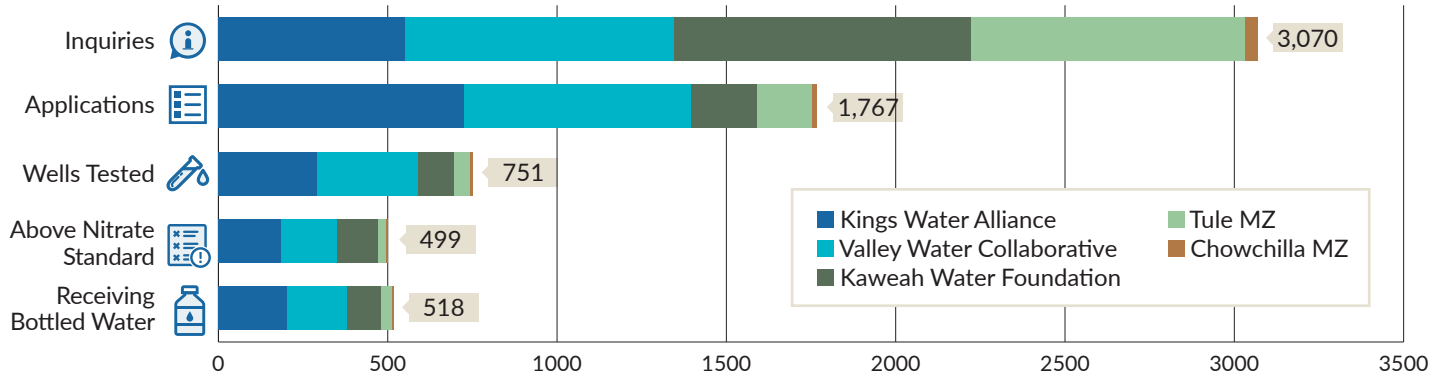
CV-SALTS Nitrate Program Progress & Results

PROGRAM GOAL

Provide safe drinking water to households whose wells exceed nitrate standards.

Households Processed for Bottled Water Deliveries

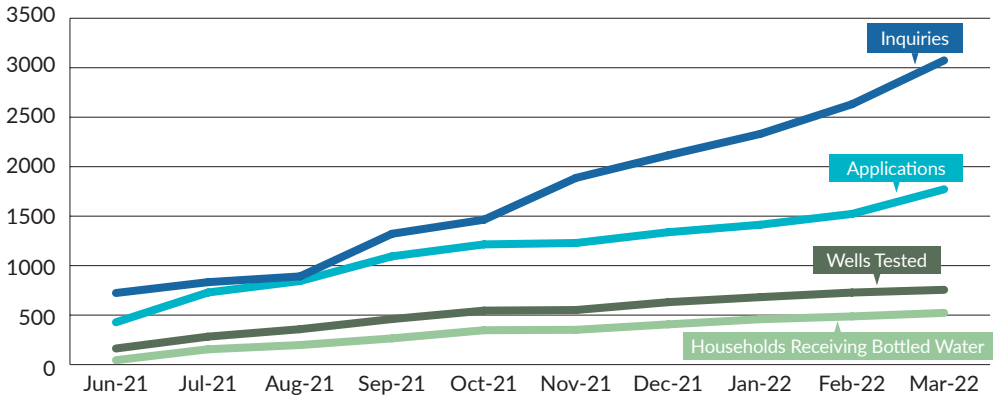
Outreach efforts generate inquiries. → Inquiries are contacted to explain the program and invite applications. → Applications are qualified and scheduled for testing. → Testing analyzes household well water. → If the sample exceeds safe standards, the household is scheduled for water delivery. → Water deliveries start.



66% of wells tested have exceeded the nitrate standard

735 gallons per day provided to households from 7 free water fill stations.

Bottled Water Program Participation



33% of applications were ineligible

20% of applications have not responded to follow-up contacts.

YEAR 1 OUTREACH ACTIVITIES

Active Management Zones submitted Early Action Plans in 2021 for providing safe drinking water to households affected by high levels of nitrate in groundwater. Since then, Management Zones have been conducting community outreach and engagement to inform residents about the program, test private wells, and provide bottled water where needed.

ACTIVE MANAGEMENT ZONES

- Valley Water Collaborative
- Chowchilla Management Zone
- Kaweah Water Foundation
- Kings Water Alliance
- Tule Management Zone

POSTCARD & FLYERS

Management Zones use direct mail and door-to-door flyer distribution to get program information to potentially affected households. Rural areas pose a particular challenge for door-to-door efforts.

24 campaigns

126,464 household contacts

PROMOTION

Management Zones use radio, television, newspapers, road signs, and social media to describe and promote the program.

615 placements

739,392 impressions

MEETINGS & EVENTS

Management Zones hold in-person and online community meetings and attend community events such as school events, food banks, farmers markets, vaccination sites, and swap meets to describe the program and encourage applications.

143 events

22,525 participants

WEBSITES

Each Management Zone manages a website as an information source and means for residents to apply.

22,376 website visitors

ONE-ON-ONE DISCUSSIONS

Management Zones talk individually with residents at street events, door-to-door, and by phone to answer questions, follow-up on applications, and encourage participation.

787 events / activities

7,594 contacts

COMING SOON Email and social media metrics for Management Zone outreach activities.

CV-SALTS Management Zone Program Summary						
Cumulative Total Program Year 1 - 2021-2022	**3/31/22**	**Valley Water Collaborative**	**Kings Water Alliance**	**Kaweah Water Foundation**	**Tule MZ**	**Chowchilla MZ**
Inquiries/Interest/calls	**3,070**	551	793	879	809	38
Initial Estimate of Impacted Wells		> 5000	>5000	<1000	<1000	<1000
Testing Applications Submitted	**1,767**	725	669	195	164	14
Ineligible	**589**	146	296	42	101	4
Not Responsive	**211**	82	57	44	8	20
Wells Tested/Scheduled/Known	**751**	290	298	107	48	8
Tested or Known Above 10 Mg/l	**499**	186	164	119	25	5
Average Percent over 10 mg/L	**66%**	64%	55%	111%	52%	63%
Households receiving bottled water	**518**	203	175	102	31	7
Fill Station (FS) Locations	**7**	0	3	2	2	0
FS Average Gallons per Day	**744**	0	245	137	362	0
Total Households/equivalents	**890**					

CENTRAL VALLEY SALINITY COALITION

CV SALTS
Central Valley Salinity Alternatives for Long-term Sustainablity

Prioritization & Optimization Study

4-07-22

CVSALTS Executive Committee Presentation
Prepared by the Central Valley Salinity Coalition

Overview

- Agenda Item: Baseline Data Collection:
  - Today: Update regarding Data Compilation Small Group activities—contacts with ILRP, oil and gas etc.

CENTRAL VALLEY SALINITY COALITION

Overview

Agenda Item: Analytical Tools and Models

- February 10 meeting: Introduction to Analytical and Modelling Tools
- March 17 meeting:
  - Overview of candidate tools and models
  - Presentation of preliminary evaluation and selection criteria

CENTRAL VALLEY SALINITY COALITION

Overview

Today:

- Information Item: Review of additional tools:
  - Delta models
  - Crop Tolerance
- Action Item: Discuss and Finalize Evaluation Criteria
- Action Item: Decision re formation of small group to develop recommendations on tools and models

Overview

Agenda Item: Data Management Systems

- March 17: Presentation by GEI Team: Overview of Data Management Plan
  - Data management systems
  - Communication portal options

Overview

- Today
  - Summary of Communication Portal Demo
  - Outline of Draft Data Management Plan
    - Draft plan to be released mid-April for comments be a due date TBD
    - Final Draft Report presented May 19 meeting
    - Approve final Data Management Plan June 23 meeting

PRIORITIZATION & OPTIMIZATION STUDY

CV-SALTS Executive Committee Meeting

Technical Consultant Team Presentation

Selection Criteria - Tools/Models

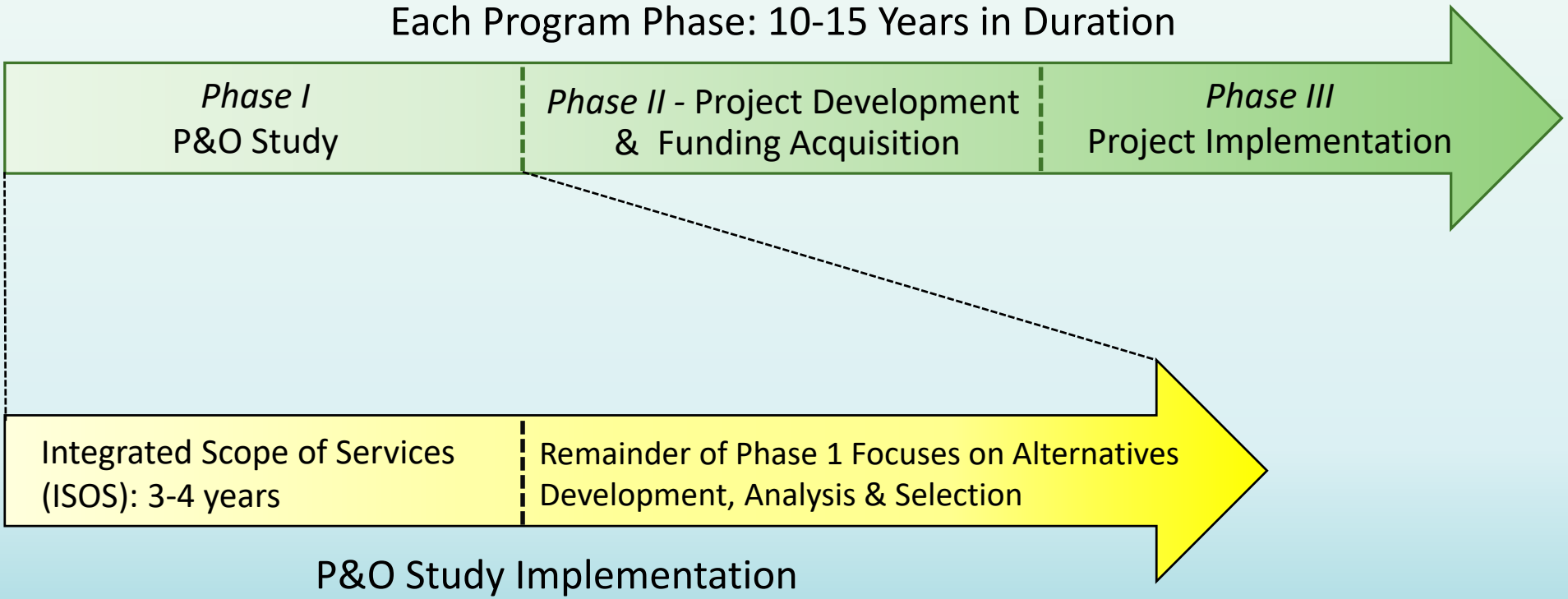
April 7, 2022

CV SALTS
Central Valley Salinity Alternatives for Long-term Sustainability

PURPOSE

- **Continue description of candidate tools/models** – ask for additions to list
- **Review Evaluation/Selection Criteria** – seek input/decisions from Executive Committee
- **Discuss tools/models decision making process, role of expert reviewers** – seek input on process options

TIMELINE – SALT CONTROL PROGRAM



FINAL INTEGRATED SCOPE OF SERVICES, PAGE 1

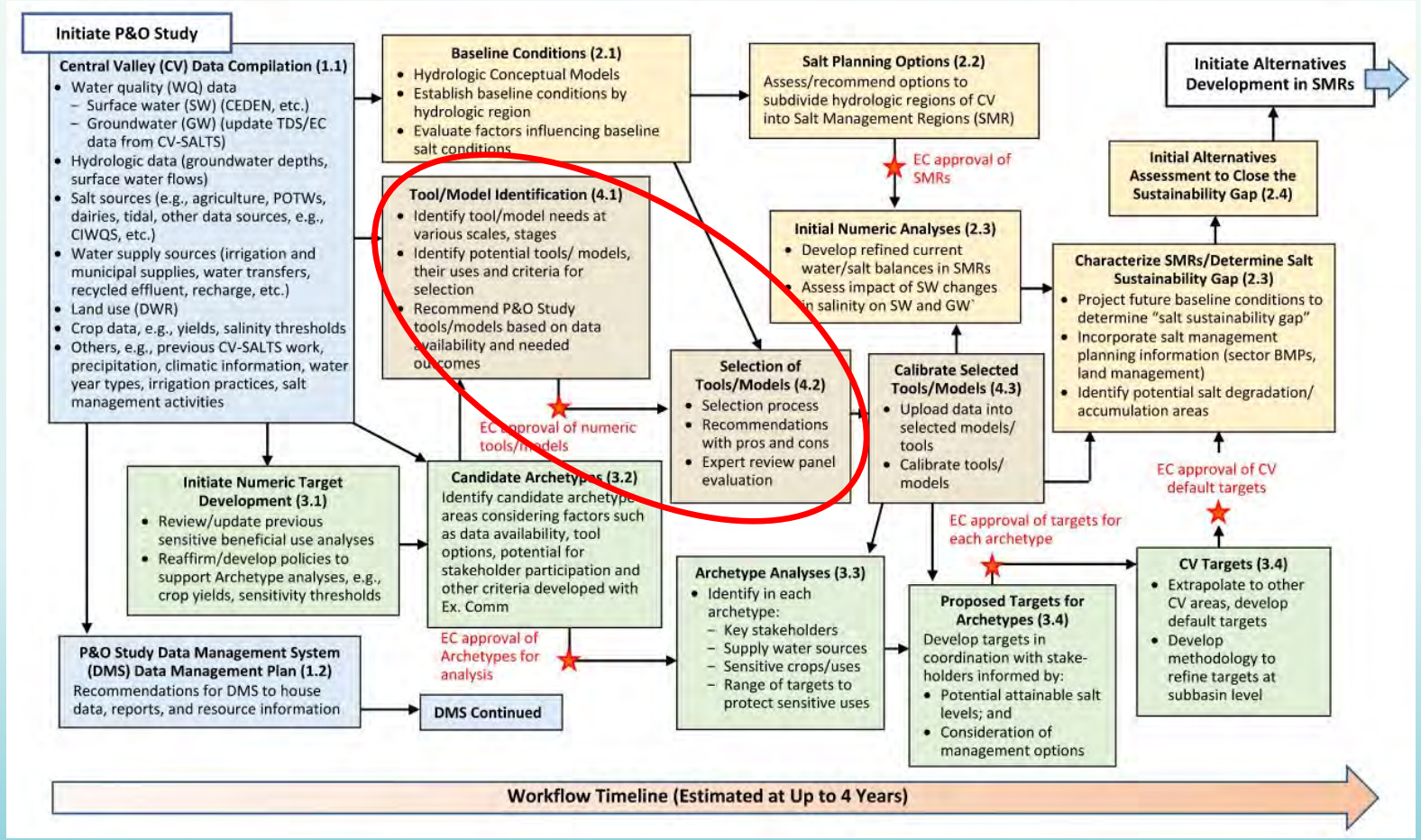
"The P&O Study will, in later phases, need to **prioritize actions and projects and optimize investments** in the same to achieve Salt Control Program goals. **Protection of beneficial uses of water, and particularly the mitigation or avoidance of impacts due to impairment of these uses by salinity**, is an overall goal of the P&O Study. Work performed **[and thus tools that are selected]** under this Integrated SOS **must inform and support those later decisions**."

PARTIAL P&O STUDY TIMELINE

- Schedule from approved Integrated Scope of Services (ISOS)

We Are Here

Task No.	Task Description	Year (Quarter)												
		'21	2022				2023				2024			
		4	1	2	3	4	1	2	3	4	1	2	3	4
1	**Data Development and Management**													
1.1	Data Compilation													
1.2	DMS Data Management Plan/Develp DMS Demo			★										
1.3	Establish DMS													
1.4	Implement and Maintain DMS													
2	**Baseline/Future Characterization of Salt Conditions**													
2.1	Baseline Characterization													
2.2	Long-term Salt Planning Options (ID SMRs)					★								
2.3	Characterize SMRs/ID Sustainability Gap													
2.4	Alternatives to Close Sustainability Gap													
3	Appropriate Numeric Salt Mgmt Targets													
3.1	Protection of Sensitive Beneficial Uses													
3.2	ID Candidates/Select Archetype Areas					★								
3.3	Archetype Analysis													
3.4	Numeric Target Development									★		★		
4	**Numeric Salt Management Tool Development**													
4.1	ID Needs and Candidate Tools/Models													
4.2	Select Tools/Models				★									
4.3	Calibrate Tools													
5	**Additional Technical and Regulatory Tasks**													
5.1	Regulatory Review Plan													
5.2	Salt Minimization Practices													
5.3	Groundwater Recharge Analysis													
5.4	Treatment Technologies Evaluation													
5.5	Salt Management Areas													
6	**Administrative Support Tasks**													
6.1	Progress Reports													
6.2	Phase 1 Funding & Governance Plan													


Initiate P&O Study
Central Valley (CV) Data Compilation (1.1)
• Water quality (WQ) data
– Surface water (SW) (CEDEN, etc.)
– Groundwater (GW) (update TDS/EC data from CV-SALTS)
• Hydrologic data (groundwater depths, surface water flows)
• Salt sources (e.g., agriculture, POTWs, dairies, tidal, other data sources, e.g., CIWQS, etc.)
• Water supply sources (irrigation and municipal supplies, water transfers, recycled effluent, recharge, etc.)
• Land use (DWR)
• Crop data, e.g., yields, salinity thresholds
• Others, e.g., previous CV-SALTS work, precipitation, climatic information, water year types, irrigation practices, salt management activities
Baseline Conditions (2.1)
• Hydrologic Conceptual Models
• Establish baseline conditions by hydrologic region
• Evaluate factors influencing baseline salt conditions
Salt Planning Options (2.2)
Assess/recommend options to subdivide hydrologic regions of CV into Salt Management Regions (SMR)
Initiate Alternatives Development in SMRs
EC approval of SMRs
Initial Alternatives Assessment to Close the Sustainability Gap (2.4)
Tool/Model Identification (4.1)
• Identify tool/model needs at various scales, stages
• Identify potential tools/ models, their uses and criteria for selection
• Recommend P&O Study tools/models based on data availability and needed outcomes
Initial Numeric Analyses (2.3)
• Develop refined current water/salt balances in SMRs
• Assess impact of SW changes in salinity on SW and GW`
Characterize SMRs/Determine Salt Sustainability Gap (2.3)
• Project future baseline conditions to determine "salt sustainability gap"
• Incorporate salt management planning information (sector BMPs, land management)
• Identify potential salt degradation/ accumulation areas
EC approval of numeric tools/models
Selection of Tools/Models (4.2)
• Selection process
• Recommendations with pros and cons
• Expert review panel evaluation
Calibrate Selected Tools/Models (4.3)
• Upload data into selected models/ tools
• Calibrate tools/ models
EC approval of CV default targets
Initiate Numeric Target Development (3.1)
• Review/update previous sensitive beneficial use analyses
• Reaffirm/develop policies to support Archetype analyses, e.g., crop yields, sensitivity thresholds
Candidate Archetypes (3.2)
Identify candidate archetype areas considering factors such as data availability, tool options, potential for stakeholder participation and other criteria developed with Ex. Comm
EC approval of targets for each archetype
Archetype Analyses (3.3)
• Identify in each archetype:
– Key stakeholders
– Supply water sources
– Sensitive crops/uses
– Range of targets to protect sensitive uses
Proposed Targets for Archetypes (3.4)
Develop targets in coordination with stake-holders informed by:
• Potential attainable salt levels; and
• Consideration of management options
CV Targets (3.4)
• Extrapolate to other CV areas, develop default targets
• Develop methodology to refine targets at subbasin level
EC approval of Archetypes for analysis
P&O Study Data Management System (DMS) Data Management Plan (1.2)
Recommendations for DMS to house data, reports, and resource information
DMS Continued
Workflow Timeline (Estimated at Up to 4 Years)

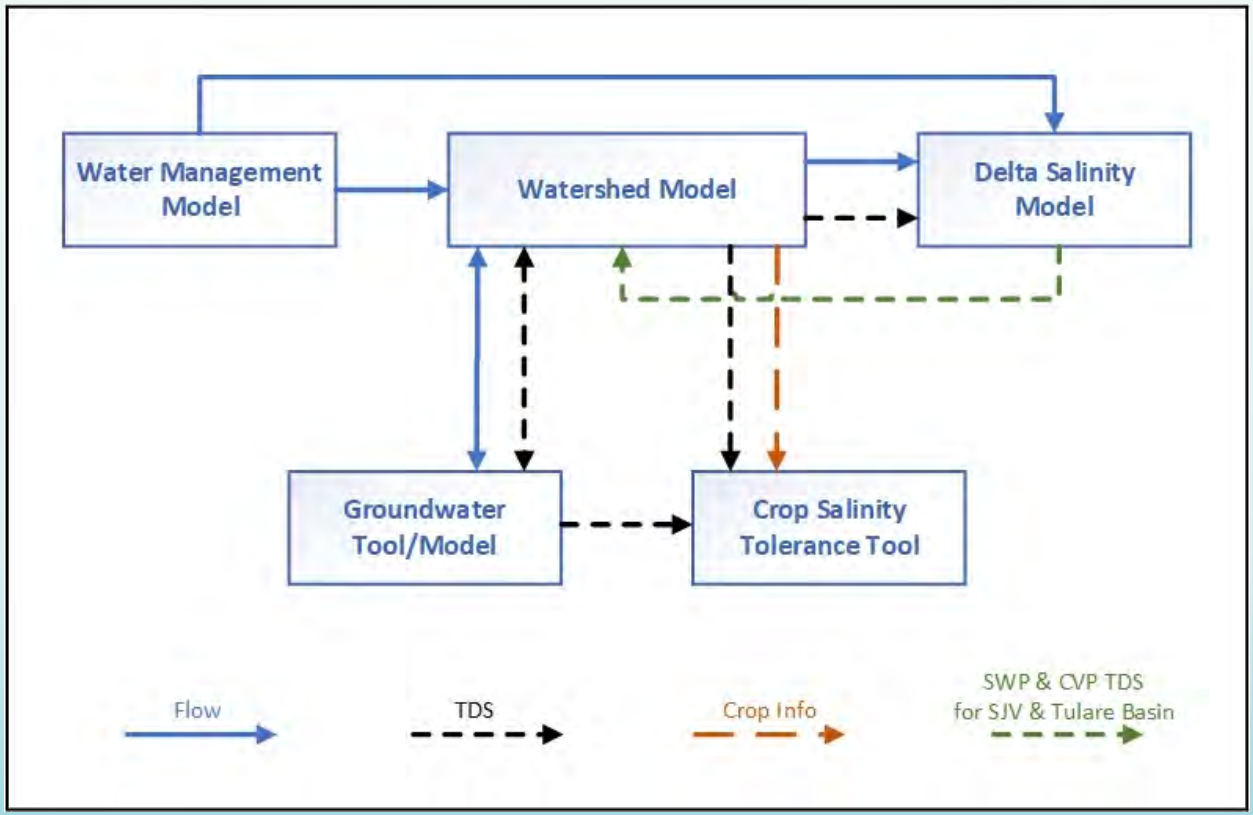
PRESENTATION OUTLINE

- Candidate Tools/Models Descriptions (Continued)
- Evaluation/Selection Criteria
- Tool/Model Selection Process – Options

CANDIDATE TOOLS/MODELS

Tool/Model Type	Candidate Tools/Models
Groundwater Tools/Models	NP-SAT
	CVHM (MODFLOW platform)
	C2VSIM (IWFM platform)
Watershed Tools/Models	CV-SWAT
	WARMF
Water Management Tools/Models	CalSim 3
	SACWAM (WEAP platform)
Delta Models	**DSM2**
	RMA
Crop Salinity Tolerance models	**Ayers and Westcot; Hoffman**
	Grattan-Isidoro

FLOW CHART SHOWING LINKAGES BETWEEN TOOLS/MODELS



DELTA MODELS

LWA

DELTA SALINITY MODELS

- DSM2
- RMA Bay-Delta Model

DSM2 – DELTA SIMULATION MODEL II

- Developed by DWR in 1994, most recent version 2021
- One-dimensional numerical hydrodynamic and salinity model of Delta
- Extends up major tributaries (e.g. to Shasta Dam)
- Outputs: stage, flow, velocity, salts, temperature, DO
- Use in Central Valley
  - *By DWR: BiOps, BDCP, WaterFix*
  - *By SWRCB: Bay-Delta Plan Salinity Objectives, D-1641 annual reports*

RMA BAY DELTA MODEL

- Developed by Resource Management Associates in 1996
- Numeric Hydrodynamic and water quality model
- 2-dimensional in large channels, embayments
- Encompasses Delta, San Francisco Bay and major tributaries
- Outputs: stage, flow, velocity, salts, other WQ parameters
- Use in Central Valley
  - *DWR: BDCP, Water Fix*
  - *Water Boards: Drinking Water Policy*
  - *Multiple POTWs – dilution studies*

CROP SALINITY TOLERANCE MODELS

LWA

CROP SALINITY TOLERANCE DATA TOOLS/MODELS

Crop Salinity Tolerance Data

- Maas-Hoffman (1977)
- Maas-Grattan (1999)
- Grieve-Grattan-Maas (2012)

Crop Salinity Tolerance Models

Steady State: Ayers and Westcot (1985); Hoffman (2010)

Transient State: Grattan-Isidoro (2016), others

AYERS AND WESTCOT; HOFFMAN

- **Steady-state approach**
- Developed using salt tolerance data by Maas and Hoffman
- Prior use in Central Valley
  - *Bay-Delta Salinity objectives*
  - *Lower San Joaquin River salinity objectives*
  - *Site-specific studies by individual dischargers*
- Inputs: Crop salt tolerance data, irrigation method, leaching factor
- Outputs: Crop yield potential with increasing salinity

GRATTAN-ISIDORO

- **Transient model**
- Developed using salt tolerance data by Maas-Hoffman; Maas-Grattan
- Prior Use in Central Valley
  - *site-specific studies for individual dischargers*
- Inputs: crop salt tolerance data; leaching factor; rainfall; irrigation method, amount and frequency; soil type; climate data
- Outputs: Crop yield potential with increasing salinity

TOOL/MODEL EVALUATION CRITERIA – DRAFT

- Does the tool/model have the ability to model/address both **hydrodynamics** and **salinity**?
- Is the tool/model **ready to be used** in the P&O Study? If not, **what modifications are needed** to meet the specific/fundamental needs of the P&O Study?
- Is the tool/model **currently in use** in the Central Valley? What is the model/tool's track record in addressing identified **P&O Study needs** in the Central Valley? In other study areas?
- What is the capability of the tool/model to meet specific needs at **specific spatial** and **temporal scales**? For example, **entire Region 5, Central Valley floor, specific hydrologic regions, local (archetype) scale**?
- What is the **cost and time frame to develop and utilize** the tool/model to meet essential P&O Study needs?
- What are the **run times** of the tool/model (computational efficiency)?

DRAFT EVALUATION CRITERIA – CONTINUED

- Is the tool/model flexible to efficiently analyze different **land use**, **water management**, and **climate conditions**?
- Ability to address different future **salinity management scenarios**?
- Is the tool/model **calibrated** for use in the Central Valley? What are the **data requirements for calibration** and utilization of the tool/model? What is the availability of the required data in the Central Valley?
- Does the tool/model provide **essential outputs** needed to inform important later steps of the P&O Study, e.g. alternatives analysis?
- Can the tool/model or its output be **efficiently "linked" or "cascaded"** to other tools/models as required for the P&O study?
- Has the model been **peer reviewed**? Is it well **documented**? Is it **proprietary**?

EVALUATION MATRIX – TEMPLATE

	Capability		Readiness		Scale				Use in Central Valley		
Candidate Tool/ Model	Can handle hydro-dynamics?	Can handle salinity?	Ready to be used in Central Valley?	Modifi-cations needed	Region 5 scale?	Central Valley floor scale?	Hydro-logic region scale?	Archetype Scale?	Currently used in CV?	Past use in CV?	If no, where used before?

EVALUATION MATRIX – TEMPLATE (CONTINUED)

	Cost and Time				Outputs	Mgmt. Scenarios	Future Scenarios				Calibration	
Candidate Tool/ Model	Cost and Time to develop for P&O use	Cost to use in P&O	Run Times	Out-put can be effici-ently linked to other mo-dels	Provides essential outputs to meet P&O needs?	Can handle different salinity mgmt. scenarios?	Can handle diff. land uses?	Can handle diff. crop types?	Can handle diff. SWP/CVP water mgmt. scenarios?	Can handle diff. climate scenarios?	Is cali-brated for use in CV?	Can be cali-brated for use in P&O study?

TOOL/ MODEL SELECTION PROCESS – CURRENT APPROACH

1. Initial Development of Evaluation Matrices by Consultant Team
2. Selection of other Modeling Experts by Executive Committee members
3. Review and input by other Modeling Experts
4. Discussion with Executive Committee [over several EC meetings]
5. Refinement of Evaluation
6. Final Decision(s)

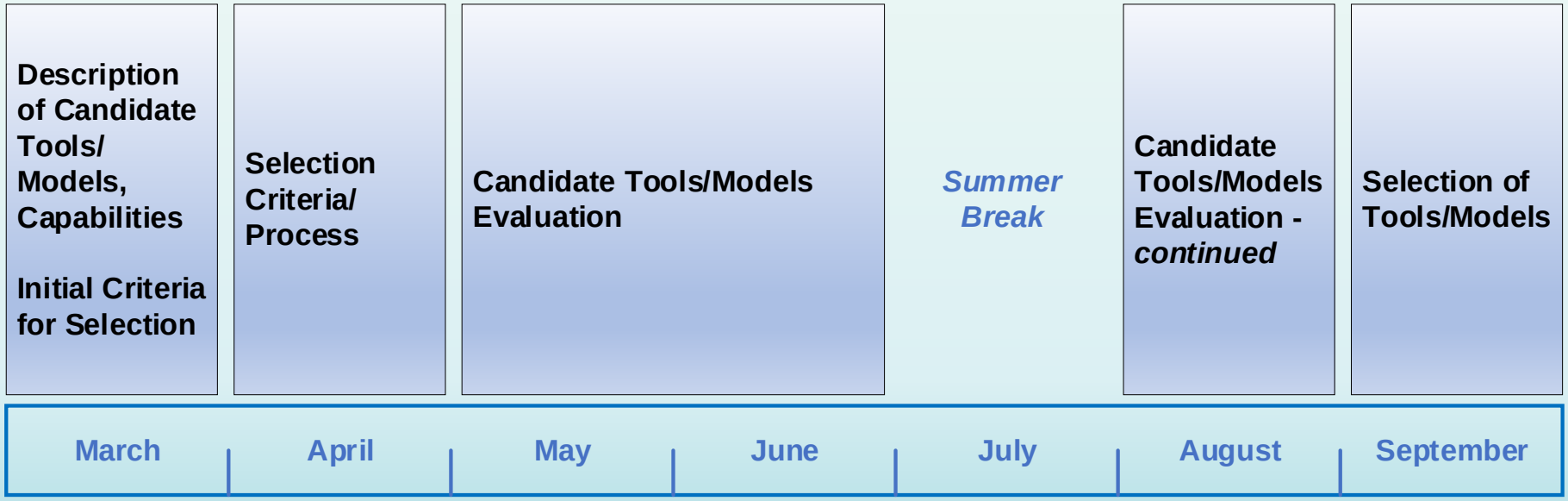
TOOL/MODEL SELECTION PROCESS – RECOMMENDED CHANGE

- After Step 2 – Switch to detailed review by Small Group
  - *Convene outside meetings of Small Group (includes other experts) – use evaluation criteria to assess candidate tools*
  - *Bring back Small Group status/recommendations to Executive Committee at each Executive Committee meeting*
  - *Review/discuss SG recommendations with Executive Committee*
  - *Refine SG recommendations, as necessary*
  - *Final decision(s) by Executive Committee*

ZOOM POLL QUESTIONS

- Straw Poll of Executive Committee
- Intent: To get a sense of where we are and to document progress to date

SCHEDULE FOR UPCOMING MEETINGS ON THIS TOPIC



THANK YOU

Questions/Comments?

PRELIMINARY EVALUATION OF CV-SWAT AND WARMF (EXAMPLE)

	Capability		Readiness		Scale				Use in Central Valley		
Candidate Tool/ Model	Can handle hydro-dynamics?	Can handle salinity?	Ready to be used in Central Valley?	Modifi-cations needed	Region 5 scale?	Central Valley floor scale?	Hydro-logic region scale?	Archetype Scale?	Currently used in CV?	Past use in CV?	If no, where used before?
CV-SWAT	Yes	Yes	Yes	Yes – to add salinity	Yes	Yes	Yes	Yes	Yes	Yes	---
WARMF	Yes	Yes	Some Areas	Yes – to add coverage	No	No	Some	Yes	Unknown	Yes	---

PRELIMINARY EVALUATION OF CV-SWAT AND WARMF (CONT.) (EXAMPLE)

	Cost and Time to Develop				Outputs	Mgmt. Scenarios	Future Scenarios				Calibration	
Candidate Tool/ Model	Cost to develop for P&O use	Time to develop for P&O Use	Cost to use in P&O	Run Times	Provides essential outputs to meet P&O needs?	Can handle different salinity mgmt. scenarios?	Can handle diff. land uses?	Can handle diff. crop types?	Can handle diff. SWP/CVP water mgmt. scenarios?	Can handle diff. climate scenarios?	Is cali-brated for use in CV?	Data req'd/ avail. for cali-bration?
CV-SWAT	Moderate	Months	Low-Mod.	Hours	Yes	Yes	Yes	Yes	Yes	Yes	Not for salinity	Depends
WARMF	Substantial	Months/ Year	Mod.-High	Hours -Days	Limited	Limited	Limited	Limited	Yes	Yes	Mainly hydro-logy	Depends

PRIORITIZATION & OPTIMIZATION STUDY

CV-SALTS Executive Committee Meeting

Technical Consultant Team Presentation
Data Management System (DMS)

April 7, 2022

CV SALTS
Central Valley Salinity Alternatives for Long-term Sustainability

1

PARTIAL P&O STUDY TIMELINE

- Schedule from approved Integrated Scope of Services (ISOS)

Task No.	Task Description	'21	2022				2023				2024			
		4	1	2	3	4	1	2	3	4	1	2	3	4
1	**Data Development and Management**													
1.1	Data Compilation													
1.2	DMS Data Management Plan Development				★									
1.3	Establish DMS													
1.4	Implement and Maintain DMS													
2	**Baseline/Future Characterization of Salt Conditions**													
2.1	Baseline Characterization													
2.2	Long-term Salt Planning Options (ID SMRs)					★								
2.3	Characterize SMRs/ID Sustainability Gap													
2.4	Alternatives to Close Sustainability Gap													
3	Appropriate Numeric Salt Mgmt Targets													
3.1	Protection of Sensitive Beneficial Uses													
3.2	ID Candidates/Select Archetype Areas					★								
3.3	Archetype Analysis													
3.4	Numeric Target Development									★	★			
4	**Numeric Salt Management Tool Development**													
4.1	ID Needs and Candidate Tools/Models													
4.2	Select Tools/Models				★									
4.3	Calibrate Tools													
5	**Additional Technical and Regulatory Tasks**													
5.1	Regulatory Review Plan													
5.2	Salt Minimization Practices													
5.3	Groundwater Recharge Analysis													
5.4	Treatment Technologies Evaluation													
5.5	Salt Management Areas													
6	**Administrative Support Tasks**													
6.1	Progress Reports													
6.2	Phase 1 Funding & Governance Plan													

We Are Here

4/5/2022

2

2

PURPOSE FOR THE P&O STUDY DMS (ISOS, TASK 1.2.1)

- Establish a repository for data and information, including, but not necessarily limited to:
  - Task reports and technical memoranda
  - Data files - including both processed data files and, if available, the original raw data; GIS shapefiles
  - Committee or Small Group meeting agendas, notes and presentations
  - Key documents identified through literature reviews or that provide key support to P&O Study recommendations
  - Documents that may need to be part of an administrative record for future Basin Plan amendments

3

GOALS OF P&O STUDY DATA MANAGEMENT SYSTEM

- Preserve institutional knowledge about the Study over the long-term
- Given the anticipated 10-15 year length of the P&O Study, support succession planning as the participating personnel change over time
- Streamline access to documents, data and tools by P&O Study participants
- Support preparation of the administrative record for any future Basin Plan amendments

4

MARCH EXECUTIVE COMMITTEE RECAP

- Described basic elements for consideration in the development of a Data Management System
- Presented examples of the following types of DMS tools/modules
  - Document Management System
  - Model and Data Storage Module
  - Optional Tool - Communication Support Module to support document reviews
- Obtained sufficient information to initiate preparation of a Preliminary Draft Data Management Plan

5

PURPOSE OF TODAY'S PRESENTATION

- Provide a Status Update on Preparation of a Preliminary Draft Data Management Plan
  - Review key elements planned for inclusion in the Data Management Plan
  - Review Schedule for Preliminary Draft Data Management Plan Schedule
- Report out on morning Communications Portal Demonstration

6

DATA MANAGEMENT PLAN - PURPOSE

- Purpose of the **Data Management Plan** is to:
  - Demonstrate understanding and document current P&O Study data and information management needs
  - Identify the different tools that can meet those needs
- **Data Management Plan** demonstrates concurrence between P&O Study needs and what is proposed for development by:
  - Describing the need for data and information management
  - Identifying options
  - Aligning and documenting tool performance
  - Providing a scope of services and schedule for development
  - Providing a budget estimate

2/10/22 7

7

DATA MANAGEMENT PLAN - MODULES

Data Management Plan will include a Section for each module planned for inclusion in the DMS:

- Document Management System
- Model and Data Storage
- *Optional* - Communications Support Tools (Comments Module)

Module Sections address the following

- Advantages & Disadvantages
- Functionality
- Costs
- Schedule
- Hosting
- Users Manual/Training

4/7/2022 8

8

DATA MANAGEMENT PLAN – MODULES

- Cost of development of each module has to be evaluated separately because they have:
  - Independent functionality
  - Separate deployment and maintenance requirements
  - Different starting points for development because the team will leverage existing tools to the maximum extent practicable
- Cost also depends on degree of customization of the module to support P&O Study needs

9

NEXT STEPS – 2022 DMS DEVELOPMENT SCHEDULE

Preliminary Draft Data Management Plan Submit for Review	Revised Draft **Data Management Plan** for Review	Final **Data Management Plan** for Executive Committee Approval	Develop Approved DMS Periodic Progress Reports
Target: April 18 **Comments: April 29**	**May**	**June**	**July - December**

10

11

As the first quarter of 2022 comes to a close, both CV-SALTS Programs have made significant progress. Under the **Nitrate Program**, **Management Zones** continue to form new partnerships, build relationships in their communities, and encourage eligible residents to apply for **well testing** and free bottled water.

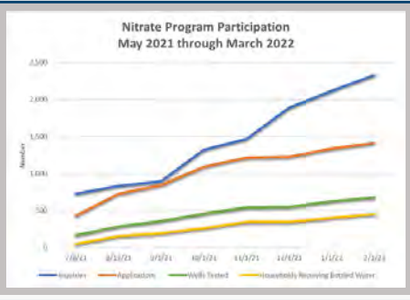
On the **Salt side of the program**, thousands of regulated entities are participating in the program and the **Prioritization & Optimization (P&O) Study** team has begun characterizing salt conditions in the Valley and selecting and developing data management tools and models to support the study.

The **CV-SALTS program website** has been updated with the history and latest information about nitrate and salt.

Management Zones Continue to Deliver

The **Nitrate Control Program** continues to focus on its top priority: Providing safe drinking water to families currently relying on well water tainted with unsafe levels of nitrate. **Management Zones** are continuing to spread the word about the program through their outreach programs, encouraging residents to inquire about testing and bottled water.

Effective outreach is difficult in some rural areas, so Management Zones continue to experiment with different methods, as well as develop community relationships. Despite this learning curve, residents continue to submit applications, increasing the total participants, and more and more households are receiving their free bottled water.



Although the **Nitrate Control Program** was initially established to provide testing and relief exclusively for unsafe nitrate levels, CV-SALTS Management Zones are partnering with the state water quality program, **SAFER (Safe and Affordable Funding for Equity and Resilience)**, to test wells for other contaminants. Modesto and Turlock subbasins are the first areas to establish a single local program for testing residential groundwater wells. See the media coverage **here**. Most other Management Zones are now replicating this unique partnership with the SAFER program.

Visit our website for additional information on the **Nitrate Control Program**.

Long-term Salinity Study Planning Underway

First-year activities for the **Prioritization & Optimization Study** are underway. More than 850 permittees and coalitions have joined the P&O Study and paid fees to support it. The study is intended to update the understanding of salt conditions across the Valley, identify salt management regions and salinity targets, and develop initial alternatives for managing salt to close the gap between current conditions and the salinity targets.

The **CV-SALTS Executive Committee** has begun reviewing tools and models for assessing and forecasting salt conditions and support study activities. At the same time, the P&O Study team is compiling existing information to characterize current salt conditions and water management across the Valley.

Learn more about the **Salt Control Program** requirements and permitting approaches on our website.

Preliminary

CV-SALTS Meeting Calendar

2022

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

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

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

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

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

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

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

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

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

10	October						
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
40							1
41	2	3	4	5	6	7	8
42	9	10	11	12	13	14	15
43	16	17	18	19	20	21	22
44	23	24	25	26	27	28	29
45	30	31					

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

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

Notes/Key

Light Red conflicts

Executive Committee Meetings

Policy or Admin Calls

Yellow Salty 5

State Board Worshops/Hearings

PEOC Committees

MZ Support

Committee Meeting Conflicts

10/26/2021