Table 4. Detiled Selected Stakeholder Contributions to Manage Central Valley Salt and Nitrate 11/30/2015

Table 4 Expands and provides further detail for the categories listed in Table 2

Type of Contribution Agency Project/Effort Name	Contributes to CV-SALTS by:	Cost to Date Voluntary	Cost to Date Permit Required	Total Projected 2015/16 +	Total Voluntary	Total All
Treatment Alternatives		$7,564,913	$206,440	$694,189	$8,259,102	$8,465,542
City of Vacaville						
Alternate Water Supply and Source Water Treatment Feasibility Cost Analysis	Alternate Water Supply and Source Water Treatment Feasibility Cost Analysis	$62,588			$62,588	$62,588
Major permitted industrial users conduct Salinity Treatment Feasibility Cost Analysis.	Determine feasibility and costs of treating major salinity waste streams, identified from Source Identification Studies, to achieve a specified reduction in salinity mass loading.	$240,000	$40,800		$240,000	$280,800
Receiving Water Study	Characterize Receiving water follow-on work from the WQM Study		$57,988		$0	$57,988
Tulare Lake Drainage District (TLDD)						
Metropolitan Water District (MWD) Drainage Water Treatment Feasibility Study	TLDD and MWD evaluated the feasibility of using agricultural drainage water to secure additional water supplies by processing the drainage water through reverse osmosis	$150,000			$150,000	$150,000
Pearl H20 Pilot Drainage Water Treatment Trial	Engineering designed and tested a lab scale pilot that treated TLDD's drainage water utilizing an anaerobic selenium bioreactor and reverse osmosis	$1,692,000			$1,692,000	$1,692,000
Combined Solar Technologies Drainage Water Treatment Pilot	Pilot plant treating TLDD's drainage water with local bio-fuel, thermal reactors, and boilers to convert drainage water into product water and zero-liquid discharge	$186,131			$186,131	$186,131
Renewable Energy and Water Drainage Water Pilot	Evaluated the feasibility of treating TLDD's drainage water with an on-site pilot plant utilizing a polymer based resin and reverse osmosis	$731,941			$731,941	$731,941
UCLA Water Technology Research for Reverse Osmosis advances	UCLA researchers testing new class of reverse-osmosis membranes for desalination that resists the clogging from drainage water desalination.	$350,000			$350,000	$350,000
New Sky Energy Ag Water Treatment Pilot	Developing technology to treat agricultural drainage water with reverse osmosis and convert the waste concentrate into useable products	$10,000			$10,000	$10,000
Merlin Bird Radar and Deterrent Technology	Merlin tested the bird deterrent effectiveness of their radar controlled automated tracking and long range acoustical sound devise on TLDD's evaporation basins	$30,000			$30,000	$30,000
Enhanced Evaporation Trial with Large Impact Sprinklers	Tested the effectiveness of enhancing evaporation over an evaporation basin cell utilizing large volume impact sprinkler heads	$115,000			$115,000	$115,000
Spray Field (Enhanced Evaporation) Pilot Trial with Small Micron Nozzles (1 Acre)	Testing the effectiveness of "enhanced evaporation" over ponded water in a basin cell employing closely spaced small micron spray heads for drainage water disposal	$1,200,000		$500,000	$1,700,000	$1,700,000
Sac Regional CSD						
Salinity Minimization Plan	Sac Regional has completed a Salinity Minimization Plan under their NPDES Permit to manage salts identifying salt sources for CV-SALTS.		$63,064		$0	$63,064

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Source Evaluation Study	Analyzing salinity in the metropolitan Sacramento Area		$44,588		$0	$44,588
Facilities and Staff Support for CV-SALTS	Meeting Location and support service provided for three plus years.	$100,000		$20,000	$120,000	$120,000
Central Valley Clean Water Association						
Salinity Toolbox for POTWs	CV-SALTS, POTWs, and RWB staff with effective management tools to control salts at POTWs. The toolbox will be vetted through CV-SALTS and streamline future efforts by all parties involved.	$44,050			$44,050	$44,050
Food Processors/Wine						
Low Salt Peeling Research and Development (FREP Grant)	Implementation study by UC and CSU facilities under FREP into the source reduction options for food processing by low salt or steam peeling while maintaining product quality.	$900,000			$900,000	$900,000
Wine Institute						
Land application Study for Wineries	Improving land application practices for wineries and reducing nitrate and salt contributions	$1,050,000			$1,050,000	$1,050,000
Salinity and Energy Reduction Manual	Reducing Salt Contribution in process water discharges and energy reduction across the organizations in Central Valley.	$250,000			$250,000	$250,000
Coalition Urban Rural Environmental Stewardship (CURES)						
Cost Efficient Nitrate BMP Development for Irrigated Agriculture (FREP Grant)	Study, identify, and pilot test methods for measuring movement of nitrates beyond the root zone of irrigated crops by a nutrient management plans via Specialty Crop Block Grant.	$174,189		$174,189	$348,378	$348,378
Dairy Cares/Western United Dairymen						
Animal Waste Pond Studies	2007 and 2012 studies reviewed literature on pond performance as salinity and nutrient sources to groundwater and recommendation pond characterization method	$279,014			$279,014	$279,014
Support for Basin Planning Activities		$1,953,500	$13,886	$1,433,000	$3,386,500	$3,400,386
City of Vacaville						
General Salinity Public Education and Outreach	To increase awareness of salinity impacts to the wastewater treatment plant effluent and environment.		$13,886		$0	$13,886
Central Valley Clean Water Association						
Variance Basin Plan Amendment Assistance	Provides the regulatory option while CV-SALTS is developed to participate in CV-SALTS and ultimate long term solutions rather than immediate low benefit projects.	$129,744			$129,744	$129,744
CV-SALTS Committee and Engagement Support	Supports CV-SALTS and CVCWA Members by engagement on work of CV-SALTS meetings, committees, for technical & regulatory support towards a long-term sustainable solution.	$53,200		$50,000	$103,200	$103,200
Central Valley Salinity Coalition						
Support for Administration Facilitation	CVSC provides support for CV-SALTS Committees, Committee meetings, website, logistics and for Coalition Building supporting SNMP. Providing support for TAC Chair and specialty consultants.	$1,082,844		$1,308,000	$2,390,844	$2,390,844

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Pilot Salt and Nutrient Source Identification Study	The Salinity Coalition funded and managed study as a predecessor to SNMP, covering approximately 10% of the Central Valley. The consultants performed work in addition to the scope paid	$519,712			$519,712	$519,712
Dairy Cares/Western United Dairymen						
Stock Water Quality Criteria Study (FREP Grant)	Study to document the water quality criteria of stock animals for salt and nitrates to support CV-SALTS standard setting processes and planning	$29,000			$29,000	$29,000
Tulare Lake Drainage District						
Committee Chair Support	Tulare Lake interests authorized a consultant familiar with the Central Valley needs and Ag interests to participate in CV-SALTS as the TAC Chair.	$50,000		$25,000	$75,000	$75,000
California Rice Commission						
Consultant Participation and Support	Agricultural Coalitions and interested funded consultants to participate on their behalf in CV-SALTS committees and assist in outreach development and in meetings.	$54,000		$50,000	$104,000	$104,000
City of Dixon						
Committee Chair Support	The City of Dixon authorized a consultant familiar with the Central Valley needs and wastewater issues to participate in CV-SALTS as the Education and Outreach Chair.	$35,000			$35,000	$35,000
Gathering Water Quality Information		$3,173,000	$2,803,121	$228,207	$3,401,207	$6,204,328
City of Vacaville						
Household Self Regenerating Water Softener Study	Determines contribution of salinity, if any, from residential water softeners relative to baseline levels from homes without water softeners.		$61,391		$0	$61,391
Conduct Electrical Conductivity Monitoring in Sanitary Sewer System	Quantify contribution of salinity from sanitary sewer service areas based on continuous measurement of electrical conductivity.		$28,678		$0	$28,678
Conduct Citywide Water Softener Survey	To obtain an estimate of the number, location, age, type, and status of water softeners installed at residential, commercial, and industrial addresses.		$37,886		$0	$37,886
Industrial User Monitoring of Source Water and Wastewater	Determine maximum salinity mass loading reduction by determining change in salinity from source water to wastewater.		$17,856		$0	$17,856
Major industrial users conduct Salinity Source Identification Studies	To quantify salinity sources of various waste streams generated within major industrial permitted industries.		$120,000		$0	$120,000
US Bureau of Reclamation						
West Side SJR Salt and Nutrient Source Study	Provides information on the sources of salts and nitrated focused on the West side of the San Joaquin River and coordinated with data needed for CV-SALTS.	$425,000		$150,000	$575,000	$575,000
Ironhouse Sanitary District						
Salinity Management Plan	Determining sources of salinity from a 95% domestic system		$37,310		$0	$37,310
EKI Consultants						

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Turlock Salt Management Study	Independent Study of the Turlock basin for Salt Balance contributed to CV-SALTS.	$50,000			$50,000	$50,000
LWA Team of Consultants						
Value Added ICM Report Contribution	Ensuring that the innovative work that was completed for CV-SALTS met the original scope of work and provided a solid foundation for the Phase II Conceptual Model. Costs in excess of amount billed.	$568,000			$568,000	$568,000
Dairy Cares/Western United Dairymen						
Representative Monitoring Program	Conducts groundwater monitoring on 45 dairies/300 monitoring wells plus dairy operating and physical conditions to assess management practices. Provides info to CV-SALTS	$2,130,000	$2,500,000	$78,207	$2,208,207	$4,708,207
Implementation Activities to Manage Salt and Nitrate		$32,490,086	$4,230,304	$4,000,000	$36,490,086	$40,720,390
Grassland Area Farmers						
San Joaquin River Improvement Project	The SJRIP has many project components some of the elements that are most related to salinity management and CV-SALTS are included. Only Local districts and federal funds shown.	$16,921,215	$4,230,304	$4,000,000	$20,921,215	$25,151,519
Grasslands Area Firebaugh Canal WD salinity reduction projects	Many projects which reduce salinity through reduction of seepage from canals which result in problematic saline waters in the environment. Only local funding share shown.	$9,545,000			$9,545,000	$9,545,000
US Bureau of Reclamation						$0
Real Time Management Studies and efforts	Research and coordination on an alternative for management of salt in the San Joaquin River to improve water quality and more efficiently use dilution waters.	$725,000			$725,000	$725,000
Tulare Lake Drainage District (TLDD)						$0
Spray Field (Enhanced Evaporation) project with Small Micron Nozzles (120) Acres	Full Scale trial project utilizing "enhanced evaporation" over ponded water in a basin cell employing closely spaced small micron spray heads for drainage water disposal	$5,263,606			$5,263,606	$5,263,606
Dairy Cares/Western United Dairymen						$0
California dairy industry-wide study of salinity sources and management practices	Study identified main salinity sources on dairies, irrigation water/feeds and identified management practices used to reduce or minimize salinity	$35,265			$35,265	$35,265
Ongoing Agency Efforts That Parallel and are Linked to CV-SALTS		$11,000,000	$0	$2,200,000	$13,200,000	$13,200,000
CA Department of Water Resources						
Agricultural Drainage Program	Participating in the CV-SALTS program and conducting the Ag. Drainage Program which activities are compatible with the goals of the CV-SALTS.	$9,750,000		$1,950,000	$11,700,000	$11,700,000
San Joaquin River Real-time Water Quality Monitoring	Meeting SJR water quality objectives for salinity near Vernalis and preserving high quality New Melons water while lowering salt concentrations entering the Delta.	$1,250,000		$250,000	$1,500,000	$1,500,000

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		Voluntary	Permit Required			
Total Voluntary Contributions, Regulatory Required and Agency Efforts:		**$56,181,499**	**$7,253,751**	**$8,555,396**	**$64,736,895**	**$71,990,646**