VIX.B

CV-SALTS

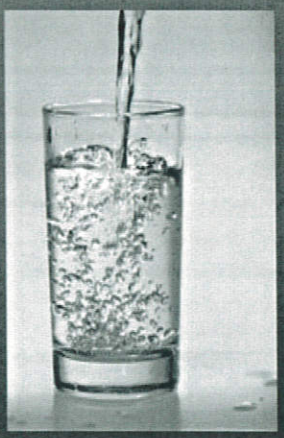
Regulatory Background related to the Nitrate Management Plan for the Central Valley

David W. Cory
July 6, 2021

1

Central Valley Nitrate Issues

- Legacy Conditions
- Direct Impacts
  - Drinking Water Supplies
- Economic Costs
  - Treatment
  - Alternate Supply
- Diverse Sources



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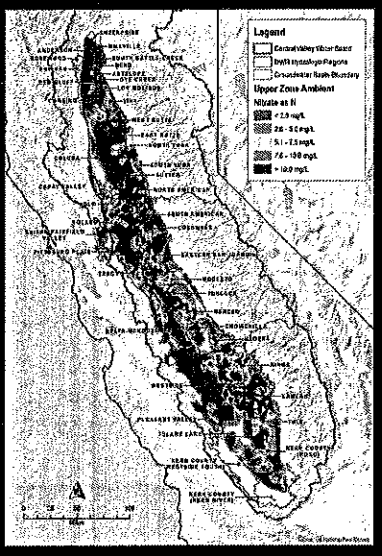
98

Nitrates in Groundwater



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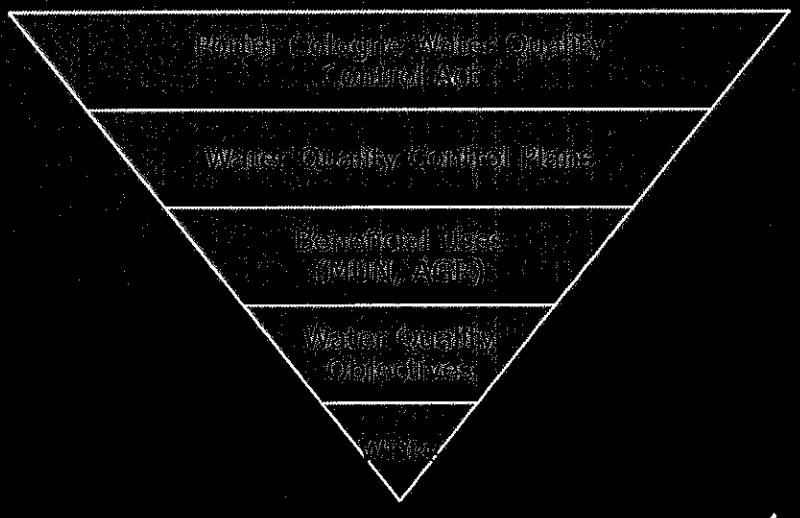
Legal Foundations



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Traditional Permitting Requirements

- In areas where groundwater quality is poor (e.g. does not meet water quality objectives), discharges to the basin must not exceed the applicable water quality objective.

SWRCB WQO #73-04 and WQO #81-05

- In areas where the groundwater quality is good, discharges are generally regulated to prevent further degradation except under special conditions.

SWRCB Res. No. 68-16

5

Traditional Regulatory Options

- Board May allocate assimilative capacity with certain findings
- If no assimilative capacity:
  - (a) require discharge to meet water quality objective; (Time schedule possible)
  - (b) change the water quality standard; or
  - (c) prohibit the discharge
- Mandate Replacement Water - Issue Cleanup and Abatement Order

6

180

Addressing Nitrate in Groundwater

- Addressing legacy nitrate will take decades
- Drinking water protections need to occur much sooner
- Traditional regulatory scheme could result in prohibited discharges without resolving drinking water problems

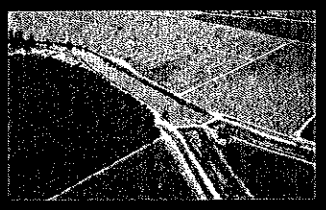
7

Nitrate Program Focused on Addressing Two Primary Goals

Assure Safe Drinking Water

and

Sustain the Agricultural Economy

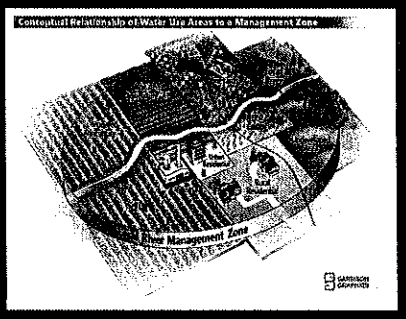


The focus needs to be on solving **both** problems

8

Alternative Compliance Strategy

- Gives the Regional Board *authority* to permit discharges that cannot meet objective
- Prioritize:
  1. Safe Drinking Water
  2. Reduce Impacts
  3. Managed Restoration



At Regional Water Board Discretion

9

Permittees Have the Opportunity to Select a Compliance Pathway

Individual Pathway
(Traditional Compliance)

Management Zone Pathway
(Alternative Compliance)

10

10 of

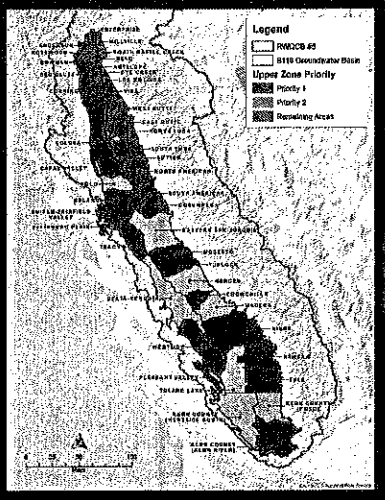
Management Zone Pathway

- Mechanisms to provide alternative water supplies to impacted users
- Means to legally authorize discharges to groundwater from modern farming practices

11

Priority Areas

- Priority 1 Area (Red) – Notice to Comply Issued May 2020
- Priority 2 Area (Orange) Notice to Comply Expected to be Issued in 2022
- Non-priority Areas (Green) Implementation to be phased in at a later date



12

Priority 1 Basins

- Kaweah
- Turlock
- Chowchilla
- Tule
- Modesto
- Kings

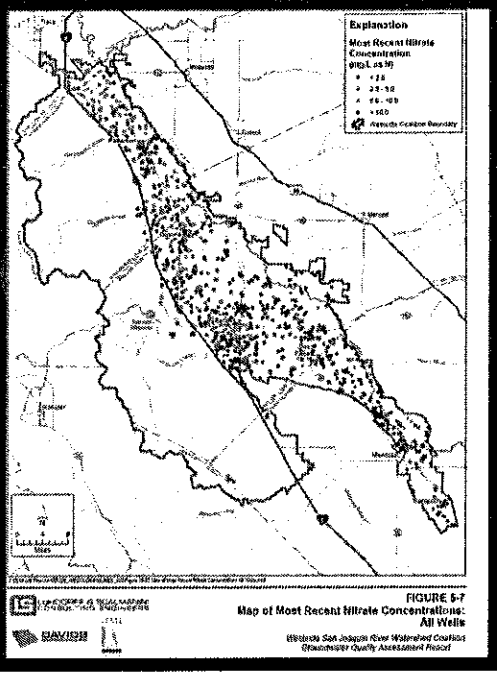
13

Priority 2 Basins

- Yolo
- Eastern San Joaquin
- Delta Mendota
- Merced
- Madera
- Tulare Lake
- Kern County (Westside South)
- Kern County (Poso)

14

104



15

Management Zones

Defined basin or area

- Voluntary request to the Regional Board to take ownership of water supply, quality and supports dischargers needs in the region

- Requirement to ensure water supply quality for beneficial uses such as domestic well users

- Maximizes value to community and water users

16

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106

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VIX B.

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/1/2021 to 3/16/2021

Blewett Drain at Highway 132

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	986	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
EC	174	3/9/2021	1184	µmhos/cm		900	
Flow	174	3/9/2021	0.7	cfs		0	

Del Puerto Creek at Hwy 33

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	1205	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
pH	174	3/8/2021	9.03			8.5	6.5
Boron	174	3/9/2021	960	ug/L		800	
EC	174	3/9/2021	1255	µmhos/cm		900	
Flow	174	3/9/2021	14.4	cfs		0	
pH	174	3/9/2021	9.38			8.5	6.5

Del Puerto Creek near Cox Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	1227	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
pH	174	3/8/2021	9.28			8.5	6.5
Boron	174	3/9/2021	810	ug/L		800	
Flow	174	3/9/2021	27	cfs		0	
pH	174	3/9/2021	9.94			8.5	6.5

Delta Mendota Canal at DPWD

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Flow	174	3/9/2021	1440	cfs		0	
pH	174	3/9/2021	9.37			8.5	6.5

Hospital Creek at River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	1257	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
Hyalella azteca	174	3/8/2021	20	%	yes		
pH	174	3/8/2021	8.93			8.5	6.5
Boron	174	3/9/2021	880	ug/L		800	
EC	174	3/9/2021	1219	µmhos/cm		900	
Flow	174	3/9/2021	0	cfs		0	
pH	174	3/9/2021	8.86			8.5	6.5

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/1/2021 to 3/16/2021

Ingram Creek at River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	1163	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
pH	174	3/8/2021	9.41			8.5	6.5
Boron	174	3/9/2021	960	ug/L		800	
Flow	174	3/9/2021	21.6	cfs		0	
pH	174	3/9/2021	9.51			8.5	6.5

Los Banos Creek at China Camp Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Arsenic	174	3/9/2021	12	ug/L		10	
Boron	174	3/9/2021	2100	ug/L		800	
EC	174	3/9/2021	2448	µmhos/cm		900	
Flow	174	3/9/2021	0	cfs		0	
Molybdenum	174	3/9/2021	24	ug/L		10	

Los Banos Creek at Hwy 140

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	2251	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
Boron	174	3/9/2021	1500	ug/L		800	
E. Coli	174	3/9/2021	1986.3	MPN/100 mL		235	
EC	174	3/9/2021	1792	µmhos/cm		900	

Mud Slough Upstream of San Luis Drain

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	174	3/9/2021	1700	ug/L		800	
EC	174	3/9/2021	2274	µmhos/cm		900	
Flow	174	3/9/2021	211	cfs		0	

Newman Wasteway near Hills Ferry Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
DO	174	3/8/2021	2.1	mg/l			5
EC	174	3/8/2021	2331	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
Boron	174	3/9/2021	950	ug/L		800	
DO	174	3/9/2021	1.8	mg/l			5
EC	174	3/9/2021	2264	µmhos/cm		900	
Flow	174	3/9/2021	0	cfs		0	

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108

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/1/2021 to 3/16/2021

Poso Slough at Indiana Ave

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	1442		µmhos/cm		900	
Flow	174	3/8/2021	0		cfs		0	
Bifenthrin	174	3/9/2021	0.002		ug/L		0.00001	
E. Coli	174	3/9/2021	920.8		MPN/100 mL		235	
EC	174	3/9/2021	1373		µmhos/cm		900	
Flow	174	3/9/2021	5.2		cfs		0	

Salt Slough at Lander Ave

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/9/2021	1631		µmhos/cm		900	
Flow	174	3/9/2021	280		cfs		0	

Salt Slough at Sand Dam

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Ceriodaphnia dubia	174	3/9/2021	0		%	yes		
Flow	174	3/9/2021	18.3		cfs		0	
Malathion	174	3/9/2021	6.1	=	ug/L		5E-07	

San Joaquin River at Lander Ave

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/9/2021	1159		µmhos/cm		900	
Flow	174	3/9/2021	27		cfs		0	

San Joaquin River at PID Pumps

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Boron	174	3/9/2021	1000		ug/L		800	
EC	174	3/9/2021	1356		µmhos/cm		900	
Flow	174	3/9/2021	585		cfs		0	
pH	174	3/9/2021	9.09				8.5	6.5

San Joaquin River at Sack Dam

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Flow	174	3/9/2021	42		cfs		0	

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Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/1/2021 to 3/16/2021

Westley Wasteway near Cox Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	174	3/8/2021	1155	µmhos/cm		900	
Flow	174	3/8/2021	0	cfs		0	
pH	174	3/8/2021	9.37			8.5	6.5
Boron	174	3/9/2021	930	ug/L		800	
EC	174	3/9/2021	1212	µmhos/cm		900	
Flow	174	3/9/2021	13.5	cfs		0	
pH	174	3/9/2021	9.66			8.5	6.5

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110

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/18/2021 to 3/20/2021

Del Puerto Creek near Cox Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	890	ug/L		800	
EC	R30	3/19/2021	1239	µmhos/cm		900	
Flow	R30	3/19/2021	18	cfs		0	
pH	R30	3/19/2021	8.95			8.5	6.5

Delta Mendota Canal at DPWD

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
DO	R30	3/19/2021	4.31	mg/l			5
Flow	R30	3/19/2021	1800	cfs		0	
pH	R30	3/19/2021	8.92			8.5	6.5

Hospital Creek at River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	1100	ug/L		800	
EC	R30	3/19/2021	1136	µmhos/cm		900	
Flow	R30	3/19/2021	1.8	cfs		0	
pH	R30	3/19/2021	9.06			8.5	6.5

Ingram Creek at River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	920	ug/L		800	
EC	R30	3/19/2021	1180	µmhos/cm		900	
Flow	R30	3/19/2021	9	cfs		0	
pH	R30	3/19/2021	9.01			8.5	6.5

Los Banos Creek at China Camp Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Arsenic	R30	3/19/2021	13	ug/L		10	
Boron	R30	3/19/2021	2200	ug/L		800	
DO	R30	3/19/2021	2.9	mg/l			5
EC	R30	3/19/2021	2353	µmhos/cm		900	
Flow	R30	3/19/2021	0	cfs		0	
Molybdenum	R30	3/19/2021	24	ug/L		10	

Los Banos Creek at Hwy 140

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	1700	ug/L		800	
E. Coli	R30	3/19/2021	275.5	MPN/100 mL		235	
EC	R30	3/19/2021	1820	µmhos/cm		900	
Nitrate + Nitrite as N	R30	3/19/2021	15	mg/L		10	

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111

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/18/2021 to 3/20/2021

Mud Slough Upstream of San Luis Drain

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	1600	ug/L		800	
EC	R30	3/19/2021	1967	µmhos/cm		900	
Flow	R30	3/19/2021	282	cfs		0	
Molybdenum	R30	3/19/2021	11	ug/L		10	

Newman Wasteway near Hills Ferry Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	1200	ug/L		800	
DO	R30	3/19/2021	3.2	mg/l			5
EC	R30	3/19/2021	2710	µmhos/cm		900	

Poso Slough at Indiana Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	R30	3/19/2021	0.0007	ug/L		0.00001	
E. Coli	R30	3/19/2021	1203.3	MPN/100 mL		235	
EC	R30	3/19/2021	1235	µmhos/cm		900	
Flow	R30	3/19/2021	10.4	cfs		0	

Salt Slough at Lander Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	810	ug/L		800	
EC	R30	3/19/2021	1663	µmhos/cm		900	
Flow	R30	3/19/2021	369	cfs		0	

Salt Slough at Sand Dam

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	R30	3/19/2021	1012	µmhos/cm		900	
Flow	R30	3/19/2021	10	cfs		0	

San Joaquin River at Lander Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
EC	R30	3/19/2021	1289	µmhos/cm		900	
Flow	R30	3/19/2021	70	cfs		0	

San Joaquin River at PID Pumps

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	980	ug/L		800	
EC	R30	3/19/2021	1274	µmhos/cm		900	
Flow	R30	3/19/2021	640	cfs		0	
pH	R30	3/19/2021	8.63			8.5	6.5

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112

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 3/18/2021 to 3/20/2021

San Joaquin River at Sack Dam

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Flow	R30	3/19/2021	38	cfs		0	

Westley Wasteway near Cox Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	R30	3/19/2021	960	ug/L		800	
EC	R30	3/19/2021	1234	µmhos/cm		900	
Flow	R30	3/19/2021	18	cfs		0	
pH	R30	3/19/2021	9			8.5	6.5

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DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 4/11/2021 to 4/15/2021

Blewett Drain at Highway 132

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.0005		ug/L		0.00001	
DO	175	4/13/2021	3.98		mg/l			5
EC	175	4/13/2021	948		µmhos/cm		900	
Flow	175	4/13/2021	5.4		cfs		0	
pH	175	4/13/2021	8.59				8.5	6.5

Del Puerto Creek at Hwy 33

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Boron	175	4/13/2021	960		ug/L		800	
DO	175	4/13/2021	3.57		mg/l			5
EC	175	4/13/2021	1421		µmhos/cm		900	
Flow	175	4/13/2021	4.5		cfs		0	
Lambda cyhalothrin	175	4/13/2021	0.0005		ug/L		0.00001	
pH	175	4/13/2021	9.01				8.5	6.5

Del Puerto Creek near Cox Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.001		ug/L		0.00001	
Boron	175	4/13/2021	890		ug/L		800	
Cyfluthrin, total	175	4/13/2021	0.0005		ug/L		0.00024	
DO	175	4/13/2021	3.71		mg/l			5
EC	175	4/13/2021	1331		µmhos/cm		900	
Esfenvalerate/Fenvalerate	175	4/13/2021	0.001		ug/L		0.00001	
Flow	175	4/13/2021	18		cfs		0	
Lambda cyhalothrin	175	4/13/2021	0.0006		ug/L		0.00001	
pH	175	4/13/2021	9.06				8.5	6.5

Delta Mendota Canal at DPWD

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
DO	175	4/13/2021	3.2		mg/l			5
Flow	175	4/13/2021	1800		cfs		0	
pH	175	4/13/2021	9.12				8.5	6.5

Hospital Creek at River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.003		ug/L		0.00001	
Boron	175	4/13/2021	890		ug/L		800	
DDE(p,p')	175	4/13/2021	0.0071	DNQ	ug/L		0.00059	
E. Coli	175	4/13/2021	365.4		MPN/100 mL		235	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

114

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 4/11/2021 to 4/15/2021

Ingram Creek at River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.0008		ug/L		0.00001	
Boron	175	4/13/2021	970		ug/L		800	
Cyfluthrin, total	175	4/13/2021	0.0006		ug/L		0.00024	
Cypermethrin	175	4/13/2021	0.0004	DNQ	ug/L		0.00001	
DDE(p,p')	175	4/13/2021	0.0046	DNQ	ug/L		0.00059	
DO	175	4/13/2021	4.59		mg/l			5
EC	175	4/13/2021	1277		µmhos/cm		900	
Esfenvalerate/Fenvalerate	175	4/13/2021	0.001		ug/L		0.00001	
Flow	175	4/13/2021	18		cfs		0	
Lambda cyhalothrin	175	4/13/2021	0.0008		ug/L		0.00001	
pH	175	4/13/2021	9.06				8.5	6.5

Los Banos Creek at China Camp Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.0007		ug/L		0.00001	
E. Coli	175	4/13/2021	2419.6	>	MPN/100 mL		235	
EC	175	4/13/2021	1140		µmhos/cm		900	
Esfenvalerate/Fenvalerate	175	4/13/2021	0.001		ug/L		0.00001	
Lambda cyhalothrin	175	4/13/2021	0.0006		ug/L		0.00001	

Los Banos Creek at Hwy 140

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Arsenic	175	4/13/2021	11	ug/L		10	
Boron	175	4/13/2021	1900	ug/L		800	
E. Coli	175	4/13/2021	727	MPN/100 mL		235	
EC	175	4/13/2021	1918	µmhos/cm		900	
Flow	175	4/13/2021	22.5	cfs		0	

Marshall Road Drain near River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.04	ug/L		0.00001	
Boron	175	4/13/2021	820	ug/L		800	
DO	175	4/13/2021	2.69	mg/l			5
E. Coli	175	4/13/2021	547.5	MPN/100 mL		235	
EC	175	4/13/2021	1306	µmhos/cm		900	
Flow	175	4/13/2021	13.5	cfs		0	
Hyalella azteca	175	4/13/2021	0	%	yes		
pH	175	4/13/2021	9.12			8.5	6.5

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 4/11/2021 to 4/15/2021

Mud Slough Upstream of San Luis Drain

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Boron	175	4/13/2021	2700		ug/L		800	
EC	175	4/13/2021	3089		µmhos/cm		900	
Flow	175	4/13/2021	60		cfs		0	
Molybdenum	175	4/13/2021	11		ug/L		10	

Newman Wasteway near Hills Ferry Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Boron	175	4/13/2021	960		ug/L		800	
DO	175	4/13/2021	3.2		mg/l			5
E. Coli	175	4/13/2021	1203.3		MPN/100 mL		235	
EC	175	4/13/2021	1650		µmhos/cm		900	

Poso Slough at Indiana Ave

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Ammonia as N	175	4/13/2021	2.9		mg/L		1.5	
Arsenic	175	4/13/2021	11		ug/L		10	
Dimethoate	175	4/13/2021	5.4	=	ug/L		1	
Diuron	175	4/13/2021	16	=	ug/L		2	
DO	175	4/13/2021	3.7		mg/l			5
E. Coli	175	4/13/2021	2419.6	>	MPN/100 mL		235	
EC	175	4/13/2021	1300		µmhos/cm		900	
Esfenvalerate/Fenvalerate	175	4/13/2021	0.001		ug/L		0.00001	
Flow	175	4/13/2021	14.7		cfs		0	
Lambda cyhalothrin	175	4/13/2021	0.0007		ug/L		0.00001	
Selenastrum capricornutum	175	4/13/2021	496000		cells/ml	yes		

Salt Slough at Lander Ave

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Boron	175	4/13/2021	960		ug/L		800	
DO	175	4/13/2021	4.9		mg/l			5
EC	175	4/13/2021	1884		µmhos/cm		900	
Flow	175	4/13/2021	184		cfs		0	

Salt Slough at Sand Dam

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.004		ug/L		0.00001	
EC	175	4/13/2021	1060		µmhos/cm		900	
Flow	175	4/13/2021	11.3		cfs		0	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

114

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 4/11/2021 to 4/15/2021

San Joaquin River at Lander Ave

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	175	4/13/2021	920.8		MPN/100 mL		235	
EC	175	4/13/2021	1436		µmhos/cm		900	
Flow	175	4/13/2021	28		cfs		0	

San Joaquin River at PID Pumps

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Boron	175	4/13/2021	960		ug/L		800	
EC	175	4/13/2021	1992		µmhos/cm		900	
Flow	175	4/13/2021	335		cfs		0	
pH	175	4/13/2021	8.86				8.5	6.5

San Joaquin River at Sack Dam

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
EC	175	4/13/2021	950		µmhos/cm		900	
Flow	175	4/13/2021	37		cfs		0	

Westley Wasteway near Cox Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	175	4/13/2021	0.001		ug/L		0.00001	
Boron	175	4/13/2021	930		ug/L		800	
Cyfluthrin, total	175	4/13/2021	0.0005		ug/L		0.00024	
Cypermethrin	175	4/13/2021	0.0004	DNQ	ug/L		0.00001	
DO	175	4/13/2021	4.92		mg/l			5
E. Coli	175	4/13/2021	304.4		MPN/100 mL		235	
EC	175	4/13/2021	1230		µmhos/cm		900	
Esfenvalerate/Fenvalerate	175	4/13/2021	0.001		ug/L		0.00001	
Flow	175	4/13/2021	18		cfs		0	
Hyalella azteca	175	4/13/2021	43.3		%	yes		
Lambda cyhalothrin	175	4/13/2021	0.004		ug/L		0.00001	
pH	175	4/13/2021	9.26				8.5	6.5

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 5/1/2021 to 5/31/2021

Blewett Drain at Highway 132

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.0005		ug/L		0.00001	
Lambda cyhalothrin	176	5/11/2021	0.0004	DNQ	ug/L		0.00001	

Del Puerto Creek at Hwy 33

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.002	ug/L		0.00001	

Del Puerto Creek near Cox Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.001		ug/L		0.00001	
Permethrin	176	5/11/2021	0.003	DNQ	ug/L		0.00001	

Hospital Creek at River Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.01	ug/L		0.00001	

Ingram Creek at River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.004		ug/L		0.00001	
E. Coli	176	5/11/2021	2419.6	>	MPN/100 mL		235	
Lambda cyhalothrin	176	5/11/2021	0.001		ug/L		0.00001	

Los Banos Creek at China Camp Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Arsenic	176	5/11/2021	15	ug/L		10	
Boron	176	5/11/2021	2200	ug/L		800	
E. Coli	176	5/11/2021	461.1	MPN/100 mL		235	
Molybdenum	176	5/11/2021	13	ug/L		10	

Los Banos Creek at Hwy 140

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	176	5/11/2021	2400	ug/L		800	
E. Coli	176	5/11/2021	396.8	MPN/100 mL		235	
Molybdenum	176	5/11/2021	13	ug/L		10	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

118

Westside San Joaquin River Watershed Coalition

Water Quality Value Exceedances for the period of 5/1/2021 to 5/31/2021

Marshall Road Drain near River Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Arsenic	176	5/11/2021	14		ug/L		10	
Bifenthrin	176	5/11/2021	0.004		ug/L		0.00001	
E. Coli	176	5/11/2021	325.5		MPN/100 mL		235	
Esfenvalerate/Fenvalerate	176	5/11/2021	0.0004	DNQ	ug/L		0.00001	
Lambda cyhalothrin	176	5/11/2021	0.0005		ug/L		0.00001	

Mud Slough Upstream of San Luis Drain

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Boron	176	5/11/2021	2200	ug/L		800	
Molybdenum	176	5/11/2021	16	ug/L		10	

Newman Wasteway near Hills Ferry Road

Analyte/Species	Event	Sample Date	Result		Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.004		ug/L		0.00001	
Lambda cyhalothrin	176	5/11/2021	0.0004	DNQ	ug/L		0.00001	

Poso Slough at Indiana Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Ammonia as N	176	5/11/2021	2	mg/L		1.5	
E. Coli	176	5/11/2021	517.2	MPN/100 mL		235	

Salt Slough at Sand Dam

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.001	ug/L		0.00001	

San Joaquin River at Lander Ave

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
E. Coli	176	5/11/2021	721.5	MPN/100 mL		235	

Westley Wasteway near Cox Road

Analyte/Species	Event	Sample Date	Result	Units	Significant Toxicity	WQV Max	WQV Min
Bifenthrin	176	5/11/2021	0.007	ug/L		0.00001	
E. Coli	176	5/11/2021	240	MPN/100 mL		235	
Lambda cyhalothrin	176	5/11/2021	0.002	ug/L		0.00001	

WQV = Water Quality Value as established by the Central Valley Regional Water Quality Control Board

DNQ = Detected, Not Quantifiable

Blank

VIX. B.

SUMMERS ENGINEERING
887 N. Irwin St. – PO Box 1122
Hanford, CA 93232
(559) 582-9237 FAX (559) 582-7632

MEMORANDUM

TO: SJVDA Board of Directors

FROM: Orvil Mckinnis

DATE: July 2, 2021

SUBJECT: WSJRWC Work Task Progress

Current tasks being completed include:

- Receiving and processing Management Practices Implementation Reports forms from growers who attended the recent (6/23 & 6/24) Surface Water and Groundwater Focused Outreach meetings covering the subwatersheds of Blewitt Drain, Mud Slough, and Los Banos Creek.
- Assisting MLJ to create Management Plan Completion Reports using Focused Outreach MPIRs.
- Reviewing and editing the 2020-2021 Annual Monitoring Report including all data, sub-reports, and attachments.
- Analyzing Pesticide Use Report data to create grower contact list for Outreach packets for pesticide exceedances in 11 separate subwatersheds.
- Continuing to receive and process FE and INMPSR forms from growers. The INMPSR was due 4/15/2021 and the FE was due 3/1/2021.
- Working with Coalition staff and Districts to prepare the 7/31/2021 Membership List submittal to the Regional Board.
- Attend Formula, Values, and Targets meetings; review and analyze Nitrogen applied data at the Township level to determine the N applied values for the Coalition's GW HVAs.
- Attend CVGMC meetings and provide groundwater information and data to the group for the November 30, 2021 Groundwater Quality Monitoring Report submittal to the Regional Board.

Entity Name	FE			INMPSR		
	Acres Returned	Surveyed Acres	Pct	Acres Returned	Surveyed Acres	Pct
Central California ID	106,702	125,888	85%	96,591	122,886	79%
Columbia CC	14,162	15,629	91%	14,063	15,621	90%
Del Puerto WD	27,185	38,962	70%	23,914	38,649	62%
Fresno Slough WD	1,321	1,321	100%	1,321	1,321	100%
Individual	30,168	33,768	89%	28,688	30,374	94%
Lone Tree MWC	9,594	11,344	85%	9,881	11,344	87%
Oak Flat WD	1,078	2,029	53%	1,345	2,029	66%
Patterson ID	8,868	10,950	81%	7,341	10,898	67%
San Luis CC	36,871	38,007	97%	34,450	36,142	95%
San Luis WD	24,317	33,977	72%	23,687	33,977	70%
Tranquillity ID	7,183	9,746	74%	7,183	9,746	74%
Turner Island WD	6,314	6,314	100%	6,314	6,314	100%
Twin Oaks ID	2,387	2,387	100%	2,387	2,387	100%
West Stanislaus ID	16,965	20,112	84%	17,381	20,094	86%
White Lake MWC	433	1,230	35%	433	1,230	35%
	293,548	351,665	83%	274,978	343,013	80%

VIX. C.

DWR/SWRCB GSP Assessment Question & Answer Session
June 24th, 11:30 AM – 1:00 PM

- General items re: GSPs
  - Decisions on GSPs will be at the Basin/Subbasin level
    - In the case of multiple GSPs: if one fails, all fail.
    - In the case of multiple GSPs, individual GSPs or parts of them could be incorporated into state intervention efforts if one GSP is determined incomplete.
    - If deemed incomplete due to one GSP, extraction/reporting fees could be waived for individual and/or multiple GSPs.
  - GSAs/GSP Groups have the power and authority to implement GSPs once they are adopted, *even if they haven't received a determination from DWR.*
- Notification letters
  - The released notification letters are not the final determinations from DWR regarding GSP approval/deficiencies
  - Final determinations will be shared by January 2022 per statutory deadline
    - If a GSP is given an "Incomplete" determination, GSA(s) have 180 days to address plan deficiencies
- Recommended vs. required corrective actions
  - Recommended corrective actions
    - Generally, recommended GSP changes can be incorporated into Five Year Updates
    - GSPs with recommended corrective actions would be considered fully approved (not conditional or qualified approval)
  - Required corrective actions
    - Corrective actions are required once a basin is determined "Incomplete"
    - GSAs have 180 days to address the plan deficiencies → *this timing is based on DWR's final determination, and is different from the day a consultation letter is received*
- Initial GSP findings
  - Eliminating overdraft is a central objective, but not the only requirement - this must be done in concert with avoiding undesirable results and development of SMC
  - DWR emphasized detail needed for undesirable results, minimum thresholds and measurable objectives
    - GSPs must include justification for selection of MTs
    - GSPs must evaluate effect of SMCs on all beneficial uses and users
    - Clearly show your work, identify data gaps, and have a detailed schedule for how you intend to fill those gaps

Q&A Session – relevant items for the Delta-Mendota Subbasin

- DWR acknowledged the complexity of GSPs. The first four GSPs evaluated are a single-GSP single-subbasin, and are more geographically isolated. DWR noted that there is no formula for which GSPs will be evaluated next

    - Given the Delta-Mendota Subbasin's complex structure and multiple GSAs and GSPs, it is likely that the Subbasin will not receive determinations until the end of 2021
- DWR encouraged other GSPs to read the released assessments to better understand DWR's evaluation process to prepare responses once notifications and/or determinations are shared
- Subbasins with multiple GSPs will be reviewed within the same period → the Delta-Mendota Subbasin GSPs can plan to receive notifications and assessments at the same time
- DWR understands the reality of data gaps, and explained that they're looking for the best available data to address SMC development.
- Subbasins with multiple GSPs will be evaluated at the subbasin scale → the Delta-Mendota Subbasin's six GSPs can plan to receive the same determination

Table 9-1. Minimum Thresholds and Measurable Objectives – Groundwater Levels

Representative Wells			Purpose for Monitoring					Selection Criteria											Final Selection		MO Interim Milestones (ft msl or rates of subsidence ft/yr)		
			Lowering of Groundwater Levels					Lowering of Groundwater Level									Surface Water Depletion	Subsidence					
CASGEM ID	Local Name	Reference Point Elevation (ft)	Domestic Wells	GDE	Areas Solely Dependent On GW	Surface Water Depletion	Subsidence	GWL Ave Spring [2050-2070] (ft msl)	Minimum Domestic Well Depth (ft bgs)	Minimum Depth with Pump (ft bgs)	Minimum Domestic + Pump (ft msl)	GDEs GWL [2030 2015] (ft msl)	GDEs GWL Last Ten Years (ft msl)	GDEs GWL MTs (ft msl)	Groundwater Sole Areas Minimum Well Depths (ft bgs)	Groundwater Sole Areas Minimum Well + Pump (ft msl)	Historical Groundwater Level Low 3 Feet (ft msl)	Historical Groundwater Level Low (ft msl)	Selected MTs (ft msl)	Selected MOs (ft msl)	Year 5 (ft msl)	Year 10 (ft msl)	Year 15 (ft msl)
Upper Aquifer Wells																							
377341N1213039W001	Well N	23.36		X		X		8	82	62	-39	14	8	-3			5		5	8	8	8	8
377063N1214199W001	Well Q	121.41	X		X			60	103	83	17				83	17			17	60	60	60	60
377953N1216013W001	02S03E01Q001M	90	X		X			82	113	93	-3				113	-3			-3	82	82	82	82
377813N1214420W001	02S05E08B001M	4.3	X	X		X		0	45	25	-21	9	-5	-7			-6		-6	0	0	0	0
377976N1214569W001	01S05E31R002M	4.6	X			X		1	85	65	-61						-2		-2	1	1	1	1
376388N1213233W001	03S06E28N001M	148.24	X					68	100	80	53								53	68	68	68	68
377528N1215159W001	02S04E15R001M	63.41	X		X			53	65	45	18				65	18			18	53	53	53	53
377979N1215800W001	01S04E31P005M	60		X		X		46				13	47	35			40		35	46	46	46	46
378103N1215649W001	OIL-1W	16.6				X		0									-3		-3	0	0	0	0
	MWH-2R	16.88		X		X		4				16	3	-6			0		0	4	4	4	4
	MWH-2S	16.25		X		X		5				12	4	-9			3		3	5	5	5	5
	SAD MW-402D	24.52	X					6	60	40	-35								-35	6	6	6	6
	PW15-031	20.42				X		5									0		0	5	5	5	5
	PW16-236	23.26	X					2	85	65	-42								-42	2	2	2	2
Lower Aquifer Wells																							
376713N1214581W001	Corral MW-5	303.33	X			X		-85	000	580	-280				600	-280		-58	-58	-36	-36	-36	-36
377402N1214508W002	MW-1B	50.09					X	-15									-68	-68	-68	-15	-15	-15	-15
377039N1214485W002	MW-3B	138.08					X	-20										-59	-59	-20	-20	-20	-20
377427N1213943W002	MW-5B	47.82				X	X	-16									-59	-59	-59	-16	-15	-16	-15
377656N1214199W002	MW-6B	25.65				X	X	-19									-66	-66	-66	-19	-19	-19	-19
376974N1213258W002	03S06E05R001M	53.69					X	-5										-43	-43	-5	-5	-5	-5
	PW20-500	119.82					X	2										-8	-8	2	2	2	2
Lower Aquifer Subsidence Station																							
	PBO-P257						X												-0.04[1]	-0.01[1]	-0.01[1]	-0.01[1]	-0.01[1]

Notes: 1 = rates of subsidence in feet/year

Used to select MTs, MOs, and Interim Milestones

Delta Mendota Subbasin - Upper Aquifer																							
	06-004																		14.8	38.9			
Lower Aquifer																							
	01-007																		-12	15.5			
	01-008																		-6.1	7.8			
	01-010																		-0.13[1]	-0.11[1]			
	01-011																		-0.13[1]	-0.11[1]			

Eastern San Joaquin Subbasin - Upper Aquifer																							
	Manteca 18																		-16	5.8	9.1	9.1	7.5
377138N1212508W001	02S07E31N001																		6.5	13	13.8	13.8	13.4
380067N1213458W003	Swenson-3																		-26.6	-19.3	-19.3	-19.3	-19.3

Notes: Only one principal aquifer defined. Lower aquifer not defined in the Subbasin

Notes: The minimum threshold is set at the deeper of 1992 and 2015-2016 groundwater levels with a Buffer of 100 percent of historical range applied, or the 10th percentile domestic well depth, whichever is shallower. In municipalities with ordinances requiring the use of City water, the 10th percentile municipal well depth is used in place of the 10th percentile domestic well depth criteria.

Notes: 5-year milestones are assumed to remain similar to current for the first 10 years and then follow along a linear trend between the current condition and the measurable objective

East Contra Costa Subbasin - Upper Aquifer																							
Lower Aquifer (not defined in GSP)																							

Notes: Currently not available

Sites 01-010 and 01-011 are in the NCDM's subsidence monitoring network

Groundwater levels are used as a proxy for subsidence, groundwater storage, and interconnected surface water

124

Table 9-3. Minimum Thresholds and Measurable Objectives – Water Quality

PWS Code	Local Name	TDS (Secondary Upper MCL = 1,000 mg/L)				Nitrate (mg/L) (Primary MCL = 10 mg/L)				Boron (Irrigation Objective 0.7 mg/L)				MO Interim Milestones (TDS, Nitrate, Boron)		
		Historical Maximum (mg/L)	Historical Minimum (mg/L)	Selected MTs (mg/L)	Selected MOs (mg/L)	Historical Maximum (mg/L)	Historical Minimum (mg/L)	Selected MTs (mg/L)	Selected MOs (mg/L)	Historical Maximum (mg/L)	Historical Minimum (mg/L)	Selected MTs (mg/L)	Selected MOs (mg/L)	Year 5 (mg/L)	Year 10 (mg/L)	Year 15 (mg/L)
Upper Aquifer Wells																
	SJCDW00032	1100	1100	1210	1100	7.8	7.8	10	7.8	3.8	3.8	4.2	3.8	1100, 7.8, 3.8	1100, 7.8, 3.8	1100, 7.8, 3.8
	SJCDW00034	1200	1200	1320	1200	13.0	13.0	14	13	0.9	0.9	1.0	0.9	1200, 13, 0.9	1200, 13, 0.9	1200, 13, 0.9
3910015-005	WELL 06	470	350	500	470	6.3	2.6	10	6.3	0.2	0	0.7	0.2	470, 6.3, 0.2	470, 6.3, 0.2	470, 6.3, 0.2
Lower Aquifer Wells																
3910702-006	WSW009	733	460	1000	733	2.0	<1.0	10	2.0	1.5	0.3	1.7	1.5	733, 10, 1.5	733, 10, 1.5	733, 10, 1.5
3910011-003	PRODUCTION WELL 01	910	728	1000	910	4.6	<1.0	10	4.6	2.6	2.3	2.9	2.6	910, 10, 2.6	910, 10, 2.6	910, 10, 2.6
3910011-018	WELL 04R - NEW LINCOLN	850	740	1000	850	3.0	<1.0	10	3.0	1.3	1.2	1.4	1.3	850, 10, 1.3	850, 10, 1.3	850, 10, 1.3
3910011-032	PRODUCTION WELL 06	760	538	1000	760	1.3	0.7	10	1.3	1.4	0.9	1.5	1.4	760, 10, 1.4	760, 10, 1.4	760, 10, 1.4
3910011-034	PRODUCTION WELL 07	830	290	1000	830	1.9	0.4	10	1.9	1.8	0.45	2.0	1.8	830, 10, 1.8	830, 10, 1.8	830, 10, 1.8
Upper Aquifer Wells - Delta Mendota Subbasin																
	06-004			4000	4000			80	80			3.0	3.0	Current groundwater quality		
Lower Aquifer Wells - Delta Mendota Subbasin																
	01-007			2000	2000			50	50.0			3.0	3.0	Current groundwater quality		
	04-001			4000	4000			70	70.0			0.7	0.6	Current groundwater quality		

Notes: Interim milestones for degraded water quality are set for years 5 through 15 to maintain current groundwater quality.

Wells - Eastern San Joaquin Subbasin																
	Well 16			280	600									360	440	520
	Stockton SSS-8			370	600									427	485	543

Notes: Only one principal aquifer defined. Lower aquifer not defined in this Subbasin.

Upper Aquifer Wells - East Contra Costa Subbasin																
Lower Aquifer Wells - East Contra Costa Subbasin																

Notes: Currently not available.

126

Figure 5-17). It is possible the subsidence was due to a delayed reaction caused by lowering of groundwater levels between 2006 and 2009.

Table 9-3 provides a summary of the historic rates of subsidence in the Subbasin along with minimum thresholds and measurable objectives established in adjacent basins. It shows the variance of subsidence estimates based on the various methods.

Table 9-3. Rates of Subsidence

Groundwater levels are used as a proxy for subsidence, groundwater storage, and interconnected surface water

Local Name	Historical Rate of Inelastic Subsidence (ft)	Selected Subsidence Rates		MO Interim Milestones (rates of subsidence ft/yr)		
		MT Rate of Inelastic Subsidence (ft/yr)	MO Rate of Inelastic Subsidence (ft/yr)	Year 5	Year 10	Year 15
PBO Station (P257) Subsidence Rates						
2006 to 2012	0					
2014 to 2015	-0.04					
2006 to 2020	-0.03					
Satellite-Based Subsidence Rates						
May 2015 to Sep 2016	-0.08 to -0.70					
Delta-Mendota Canal Benchmarks in Tracy Subbasin						
1984-2018	-0.21 to -0.71					
Delta-Mendota Canal Benchmarks in Delta-Mendota Subbasin [1]						
01-010 (Subsidence Monitoring Point #1)	-0.13	-0.13	-0.11	-0.12	-0.12	-0.11
01-013 (Subsidence Monitoring Point #4)	-0.13	-0.13	-0.11	-0.12	-0.12	-0.11

Notes: 1 = From Northern & Central Delta-Mendota Subbasin GSP

9.7.2 Undesirable Results

Figure 3-22 show the locations of some of the infrastructure (canals and highways) in the Subbasin that could be affected by subsidence. Over 60 percent of the land use in the area is agriculture, as shown on **Figure 3-6,** which would not be significantly impacted by subsidence, but may require releveling of fields and deepening of earthen canals.

The criteria used to define significant and undesirable results for subsidence (due to groundwater extractions) are:

- The ability to deliver surface water supplies in the Delta-Mendota Canal and California Aqueduct.
- Impacts to sewer and storm drains preventing proper drainage.
- Replacement of pavement on Highways 580 and Interstate 5 due to cracking induced by subsidence.
- Lowering of levee crowns adjacent to rivers allowing flooding to occur.

For the Tracy Subbasin, undesirable results would be an increase from historic rates of subsidence (refer to **Table 9-3**) in the Non-Delta Management Area caused by lowering of groundwater levels that impacts infrastructure.

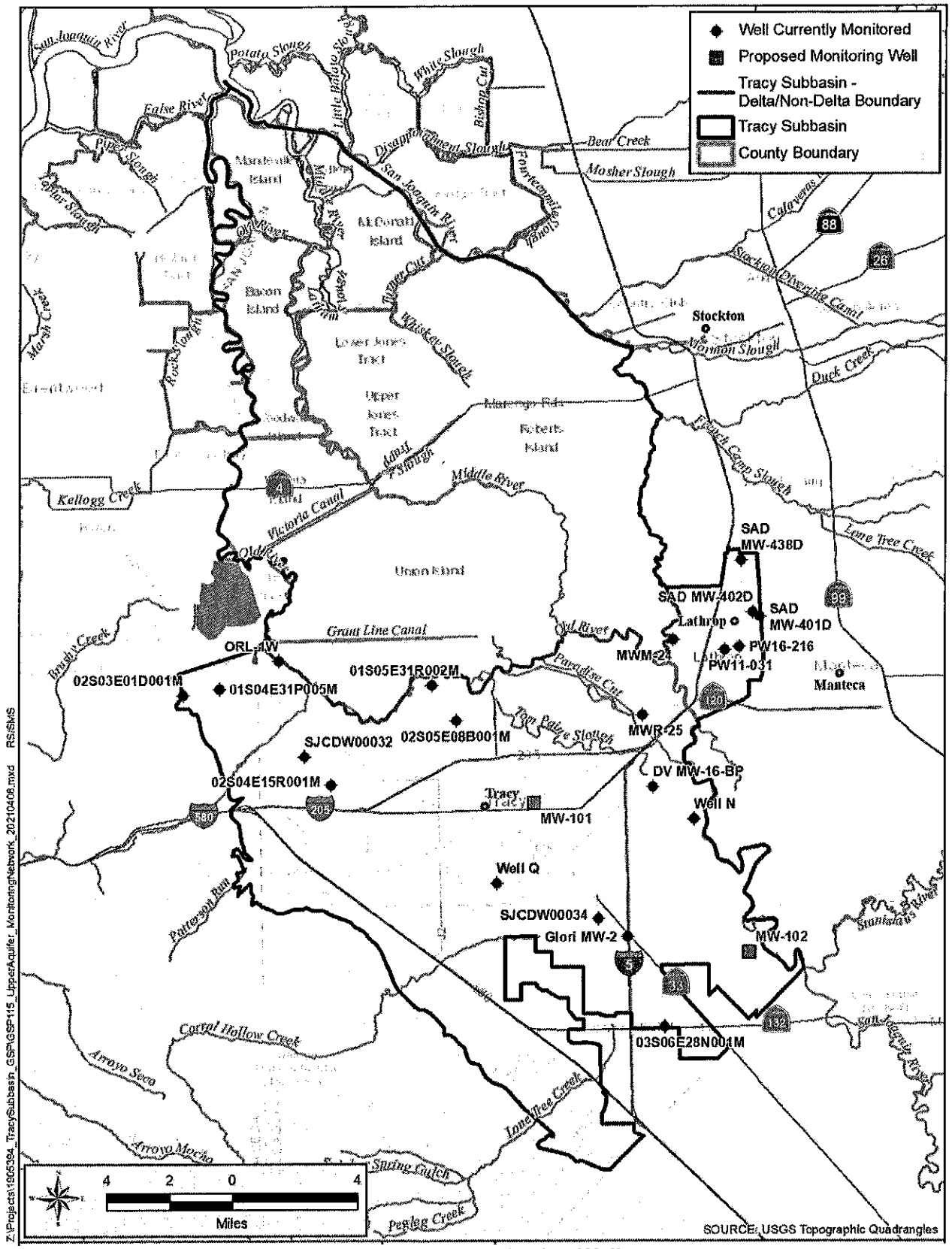


Figure 8-1. Upper Aquifer Groundwater Level Monitoring Wells

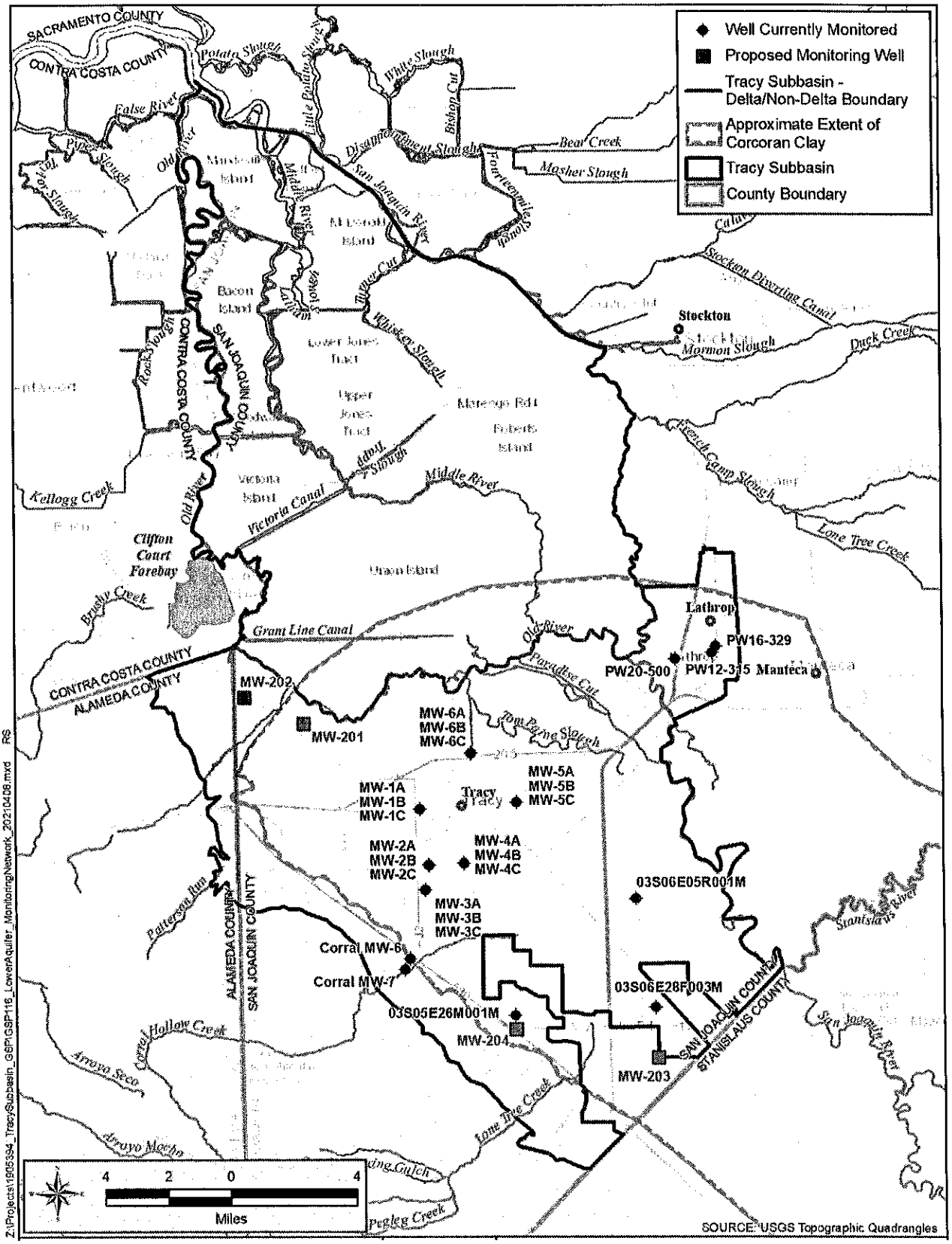


Figure 8-2. Lower Aquifer Groundwater Level Monitoring Wells

Table 8-4. Data Gap Monitoring Wells

Figure No.	Total Depth (feet bgs)	Location	Benefit
Upper Aquifer			
8-3 shown as MW-101 (new)	70	Install on City of Tracy Property, adjacent to Lower aquifer nested well MW-5.	Provides monitoring for protection of domestic well owners. Provides for vertical heads between Upper and Lower Aquifers.
8-6 shown as MW-102 (new)	50	Install in San Joaquin County Road easement.	Provides monitoring for protection of groundwater dependent ecosystems.
Lower Aquifer			
8-9 shown as MW-201 (new)	805	Install in Banta-Carbona canal easement.	Provides monitoring for protection of agriculture wells. Needed to define extent of Corcoran clay and gradient leaving basin.
8-9 shown as MW-202 (new)	1100	Install in Mountain House water treatment facility.	Provides monitoring for protection of agriculture wells. Needed to define extent of Corcoran clay and gradient leaving basin.
8-9 shown as MW-203 (new)	750	Install in south portion of the subbasin, to replace 03S05E26M001M. Approximate location.	Provides monitoring for protection of agriculture wells. Needed to resolve gradient between subbasins (TSb and DMSb).
8-9 shown as MW-204 (new)	800	Install in south portion of the subbasin to replace 03S06E28F003M. Approximate location.	Provides monitoring for protection of agriculture wells. Needed to resolve gradient between subbasins (TSb and DMSb).

8.3 Reduction in Groundwater Storage Monitoring Network

Change in groundwater storage monitoring network will use the groundwater level representative monitoring network described above in **Chapter 8.2.2**. The DWR has utilized for decades changes in groundwater elevations along with specific yield estimates to estimate changes in storage.

Because groundwater levels will be used as a proxy for groundwater storage changes, discussions of monitoring frequency and spatial density will be the same as for chronic lowering of groundwater levels as described in **Chapters 8.2.3 and 8.2.4.**

8.4 Seawater Intrusion Monitoring Network

As stated previously, the Subbasin is not located near the Pacific Ocean which precludes the consideration of seawater intrusion as a sustainability indicator. The closest area where saline water intrusion is present is about 20 miles west of the Subbasin boundary, near the city of Antioch. Therefore, seawater intrusion is not present and is not likely to occur in the Subbasin and a monitoring network and monitoring is not required.

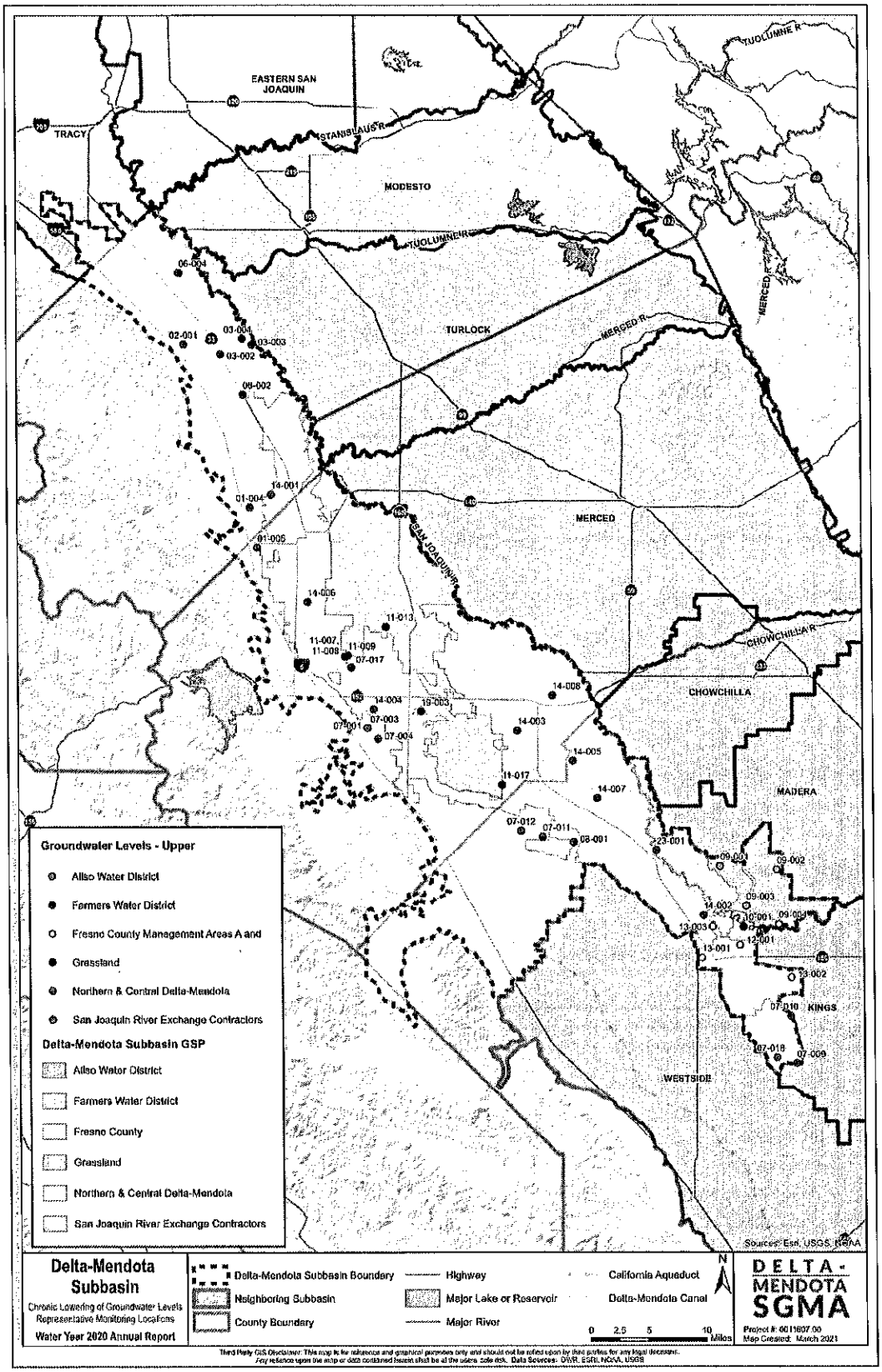


Figure A-1. Chronic Lowering of Groundwater Levels Representative Monitoring Network, Upper Aquifer

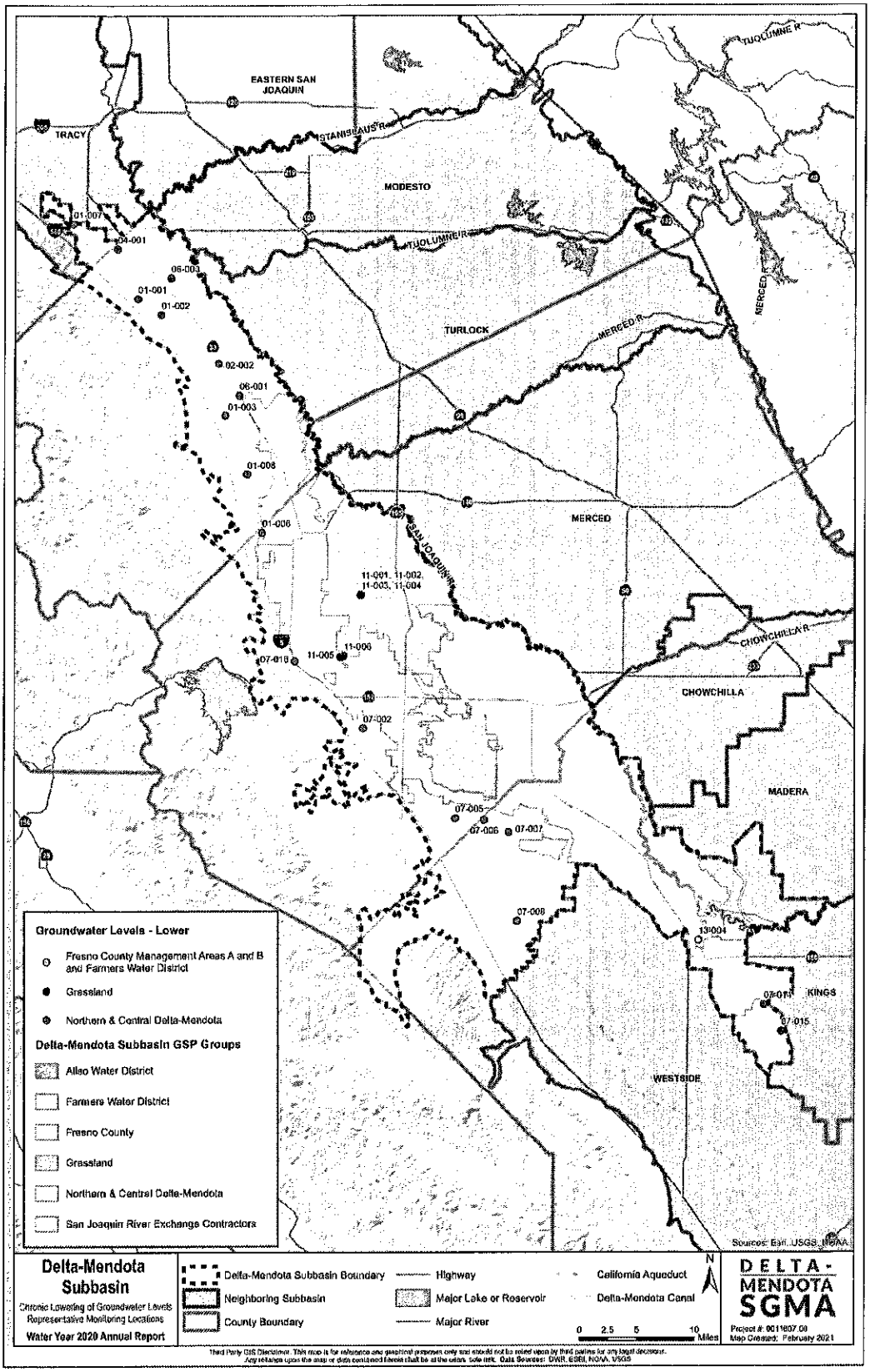


Figure A-2. Chronic Lowering of Groundwater Levels Representative Monitoring Network, Lower Aquifer

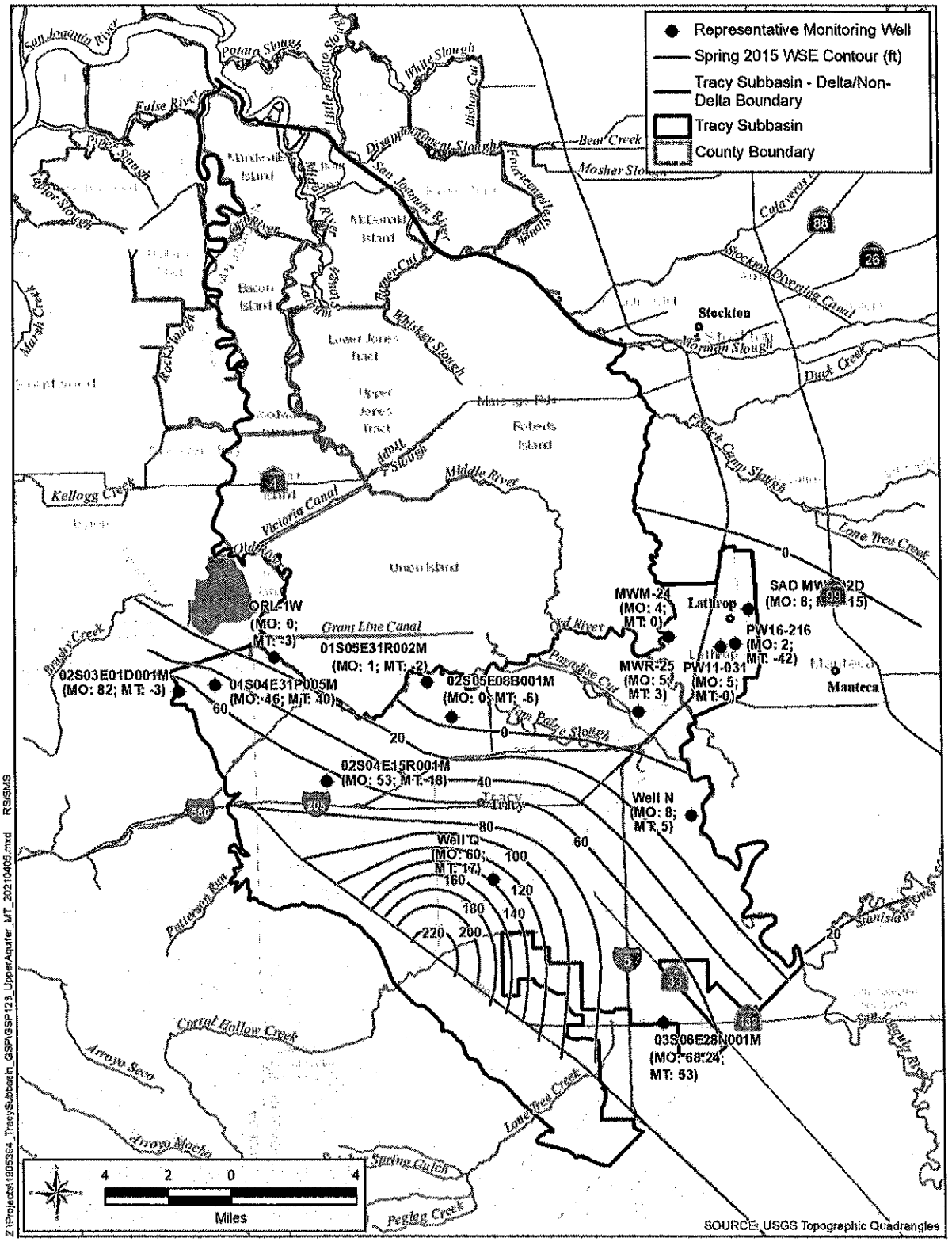


Figure 9-1. Upper Aquifer Groundwater Levels to Minimum Thresholds

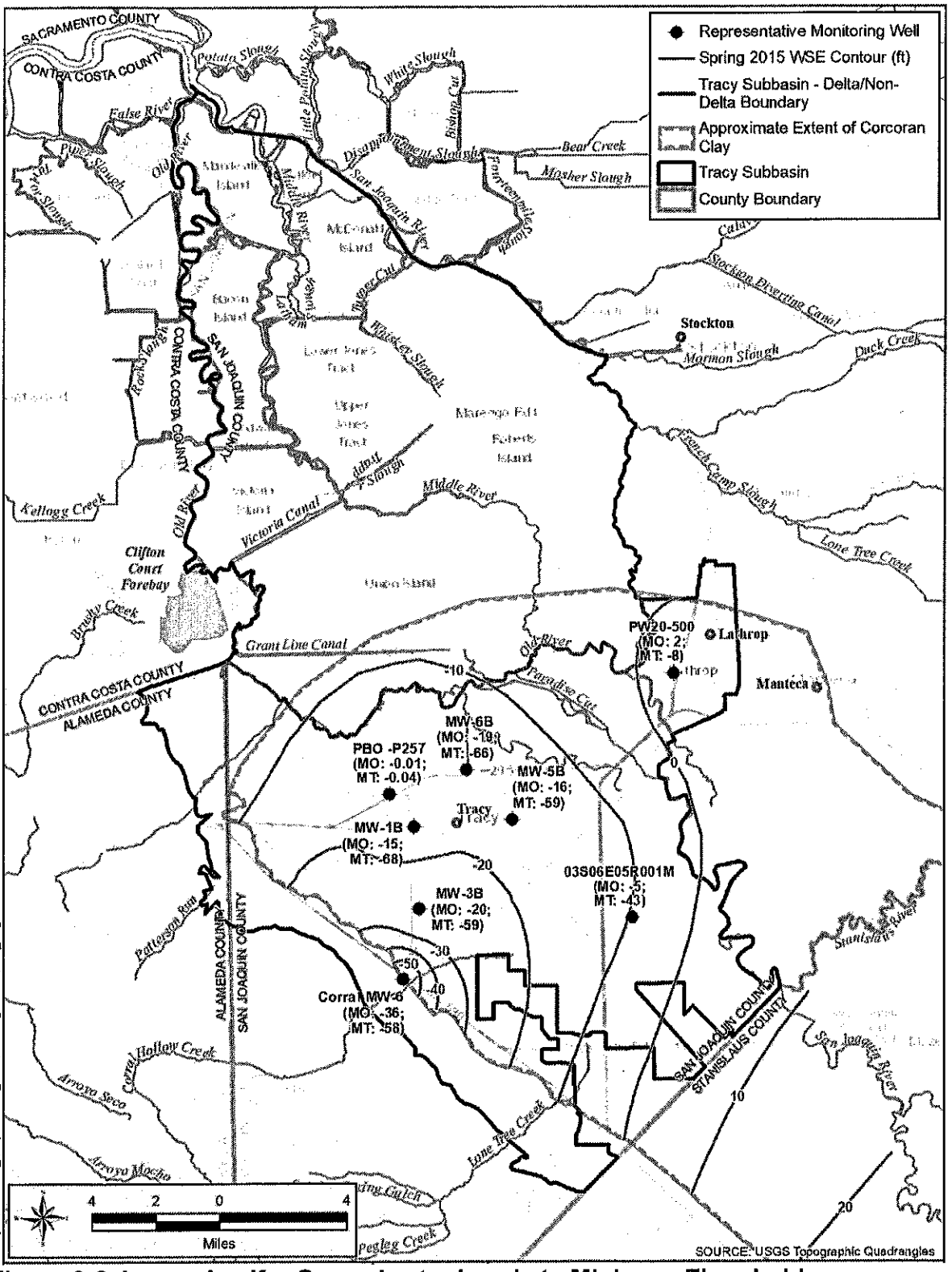


Figure 9-2. Lower Aquifer Groundwater Levels to Minimum Thresholds

137

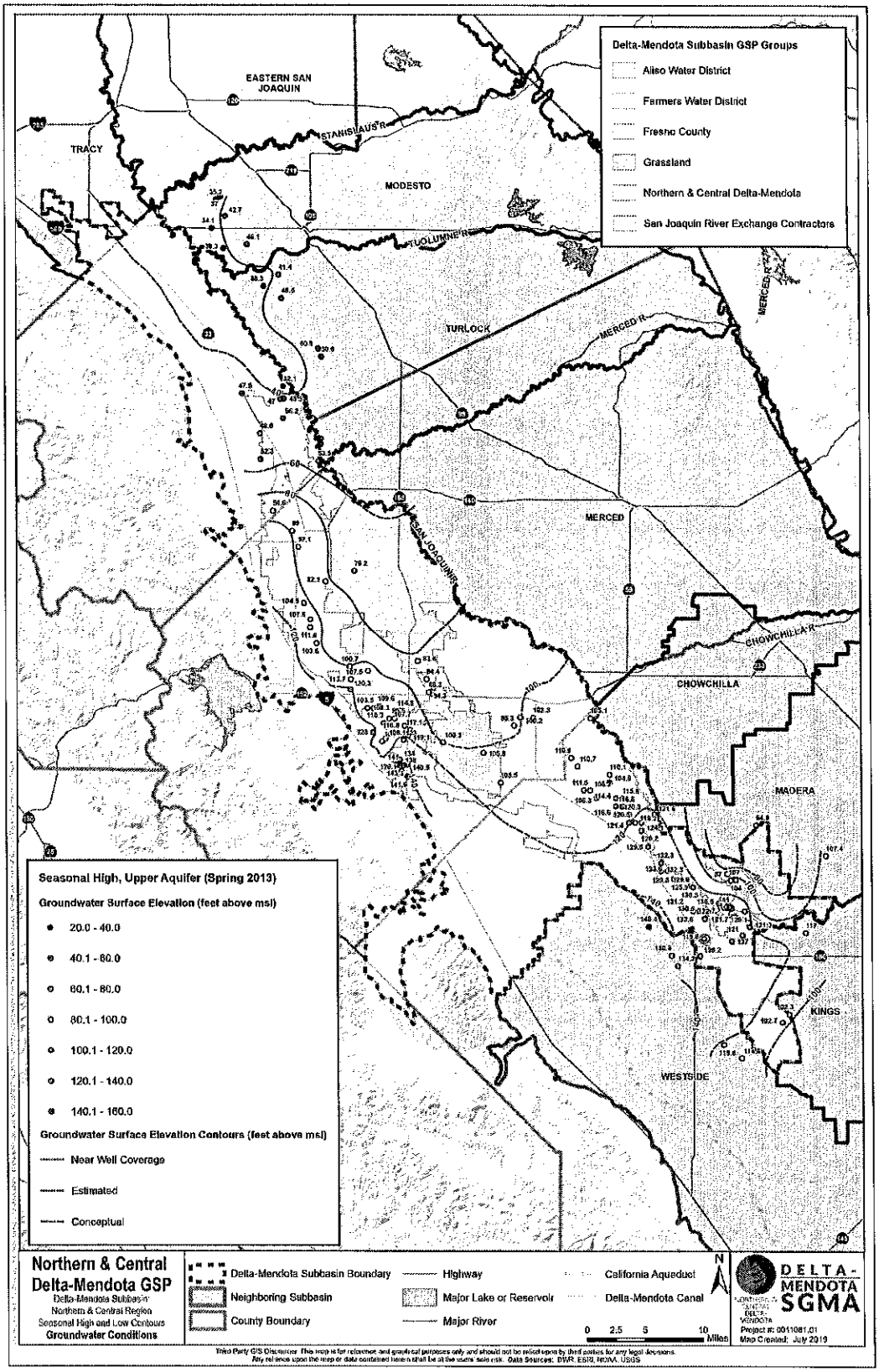


Figure 5-80. Spring 2013 Upper Aquifer Groundwater Contour Map, Delta-Mendota Subbasin

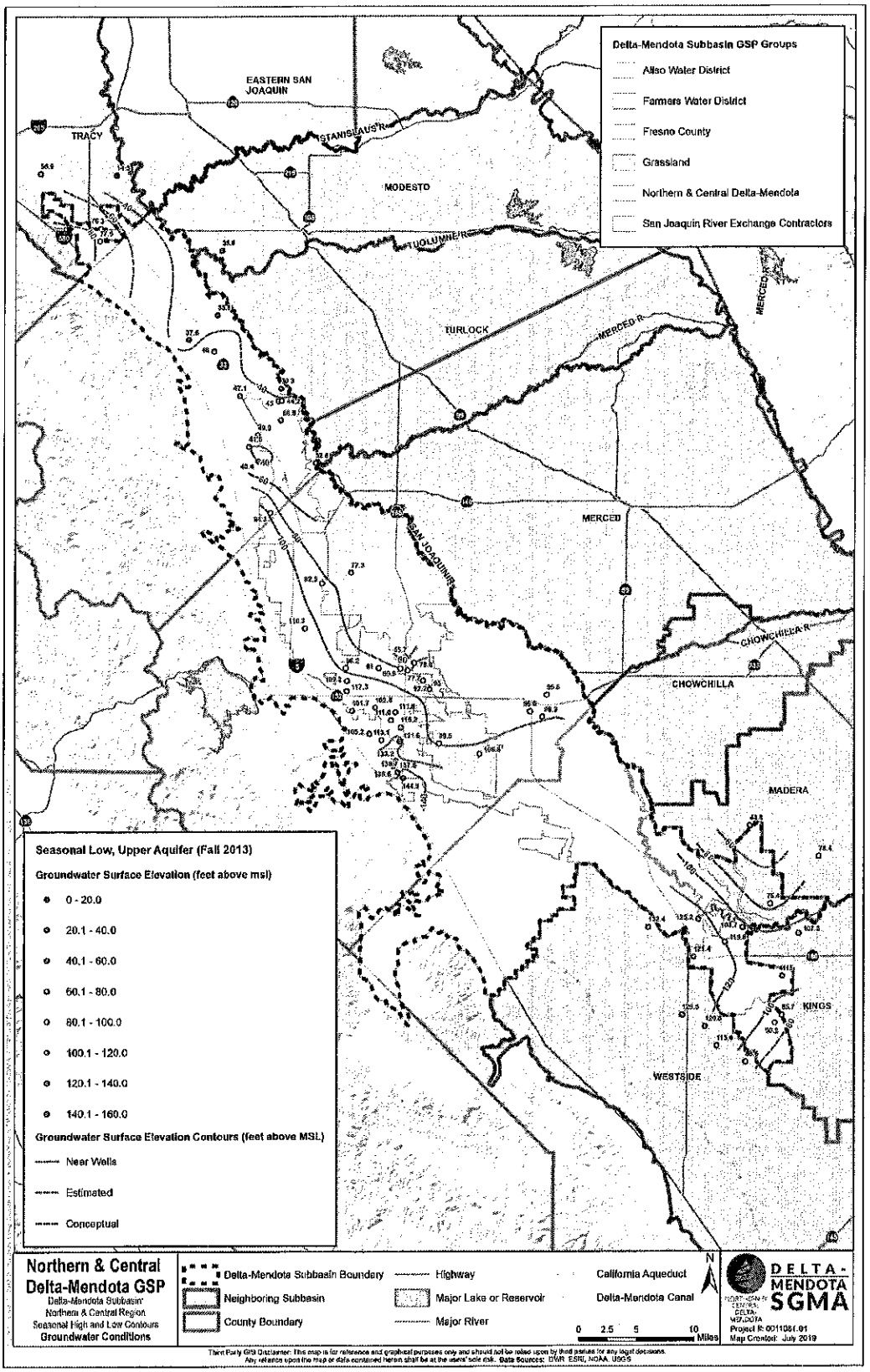


Figure 5-81. Fall 2013 Upper Aquifer Groundwater Contour Map, Delta-Mendota Subbasin

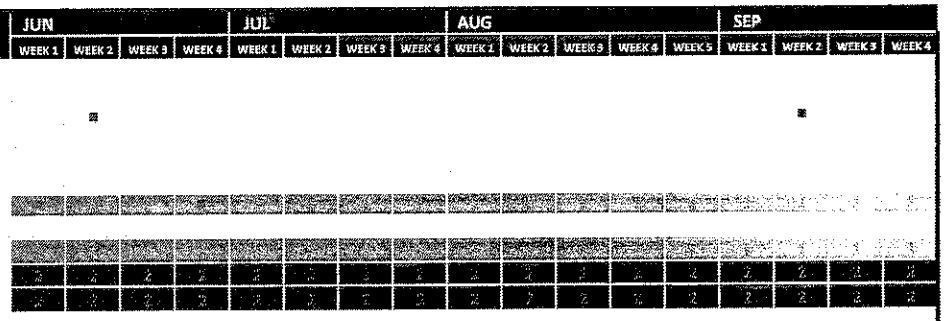
DRAFT

GSP Implementation Schedule

Northern Central & Delta-Mendota GSP Region

3-MONTH LOOK-AHEAD SCHEDULE

TASK	RESPONSIBLE PARTY	START	END
BASIN-SCALE COORDINATION			
Intra-Basin Coordination			
Coordination Committee	Basin GSAs	Quarterly (2nd Monday)	
DM Technical Working Group	Basin GSAs	As-needed	
DMS Working Group	Basin GSAs	As-needed	
Inter-Basin Coordination			
Inter-Basin Coordination Meetings	Basin GSAs / Stantec	6/1/20	12/31/21
Prop 68 Coordination			
Grant Administration[a]	WSID / W&C	6/1/20	4/1/22
Well Census and Inventory	Basin GSAs / P&P	7/15/20	12/31/21
Subsidence Characterization and Feasibility Study[a]	Basin GSAs / GSI	12/21/20	4/1/22
N-C REGION COORDINATION / ADMINISTRATION			
N-C Coordination Meetings			
Northern and Central Region Mngmt Committees Meetings	GSAs	Monthly	
Northern Region Management Committee Meetings	GSAs	As-needed	
Central Region Management Committee Meetings	GSAs	As-needed	
Technical/Finance Working Group Meetings	GSAs	TBD	
Quarterly GSP Progress Checks			
GSP Implementation Progress Reports (Tracking Tools)	GSAs	Tri-Annually	
Quarterly GSP Implementation Update Reports	W&C	Quarterly	
N-C REGION GSP IMPLEMENTATION			
Water Level Monitoring			
Upload Spring Water Level Data to DWR MNM	GSAs / W&C	6/1/21	6/30/21
Collect Fall Water Level Data	GSAs / SLDMWA	9/1/21	10/31/21
Data QA/QC	GSAs / W&C	10/31/21	11/30/21
Data Consolidation/Upload to DMS/SGMA Portal	GSAs / W&C	10/31/21	12/31/21
Install New Monitoring Wells	GSAs	7/1/20	3/31/22
Water Quality Monitoring			
Collect Water Quality Data	GSAs	5/1/21	8/31/21
Data QA/QC	GSAs / W&C	7/31/21	9/30/21
Data Consolidation/Upload to DMS	GSAs / W&C	7/31/21	9/30/21
Interconnected Surface Water Monitoring			
Install/identify New Monitoring Wells	WSID / PID / NWDM	3/1/20	12/31/21
Meet with Adjoining GSP Groups	WSID / PID / NWDM	As-needed	
Subsidence Monitoring			
Collect Subsidence Data	USBR / GSAs	12/1/20	7/31/21
Data QA/QC	GSAs / W&C	3/1/21	8/31/21
Data Consolidation/Upload to DMS	GSAs / W&C	3/1/21	8/31/21
Projects[e]			
Los Banos Creek Recharge and Recovery Project	SLWD	PD Complete	TBD
Kaljian Drainwater Reuse Project	SLWD	3/1/20	12/31/25
Orestimba Creek Recharge and Recovery Project	DPWD	3/1/20	12/31/24
NVRRWP – Increased Modesto and Turlock Portions[b]	DPWD	Complete	
Percolation Ponds for Stormwater Capture and Recharge	City of Patterson	TBD	TBD
WSID Lateral 4-North Recapture and Recirculation Reservoir[c]	WSID	FS in 2021	TBD
Revision to TRID Lower Aquifer Pumping[d]	TRID	On-going	



1/26

Rev: 6/16/2021

EKI Environment & Water, Inc.

GSP Implementation Schedule

Northern Central & Delta-Mendota GSP Region

3-MONTH LOOK-AHEAD SCHEDULE

TASK	RESPONSIBLE PARTY	START	END	JUN				JUL				AUG					SEP			
				WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 1	WEEK 2	WEEK 3	WEEK 4
Management Actions[a]																				
Lower Aquifer Pumping Rules for Minimizing Subsidence	GSAs	6/25/20	12/31/22																	
Maximize Use of Other Water Supplies	GSAs	6/25/20	12/31/25																	
Increasing GSA Access to and Input on Well Permits	GSAs	6/11/20	12/31/21																	
Drought Contingency Planning in Urban Areas	GSAs	2/1/20	6/30/21																	
Fill Data Gaps	GSAs	2/1/20	12/31/25																	
Additional GSP Activities																				
USGS / Basin Model	USGS/USBR	3/1/20	12/31/21																	
Project Management and Communication	SLDMWA / EKI	3/1/20	2/28/22																	
As-Needed Technical Support	EKI / W&C	3/1/20	2/28/22																	

Abbreviations

DMS = Data Management System
DM = Delta Mendota
DPWD = Del Puerto Water District
EKI = EKI Environment & Water, Inc.
FS = Feasibility Study
GSA = Groundwater Sustainability Agency
GSP = Groundwater Sustainability Plan
NVRRWP = North Valley Regional Recycled Water Program
P&MA = Projects and Management Actions
PD = Preliminary Design
PID = Patterson Irrigation District
P&P = Provost & Pritchard
QA/QC = Quality Assurance/Quality Control
SLDMWA = San Luis & Delta-Mendota Water Authority
SLWD = San Luis Water District
TBD = to be determined
TRID = Tranquillity Irrigation District
USBR = United States Bureau of Reclamation
USGS = United States Geological Survey
W&C = Woodard & Curran
WSID = West Stanislaus Irrigation District
WY = Water Year

Notes

(a) Prop 68 Grant Coordination activities extend through 4/1/2022; Projects and Management Actions extend through 2025.
(b) Portion of project is complete. Increased supply of recycled water expected.
(c) Needs to be coordinated with Orestimba and Del Puerto Creek projects.
(d) In operation starting in 2017.

VIX. E.

Anthea Hansen

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Friday, July 9, 2021 10:28 AM
To: Anthea Hansen; Adam Scheuber
Cc: Way, Kristen@Waterboards
Subject: Re: 8507-110 Irrigation System Improvement Project II

Ok, thank you for the clarification. I'll pass this information along and we will probably try to set up another meeting with you soon to discuss options and recommendations.

Dave

David M. Houston, P.E.
Water Resource Control Engineer
Division of Financial Assistance, Water Recycling Funding Program
State Water Resources Control Board
1001 "I" Street, 16th Floor, Sacramento, CA 95814
(916) 322-6042 | david.houston@waterboards.ca.gov

From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Friday, July 9, 2021 10:25:43 AM
To: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: RE: 8507-110 Irrigation System Improvement Project II

EXTERNAL:

Dave,

Once we are able to secure the funding agreement, we would notice the "program" with a sign-up date. Project construction would likely commence six months or so following that. If not all of the funds were requested in the first "offering:, we would them take applications on a first come-first served basis until all of the funding was exhausted, or until the Agreement expired (if not extended).

Anthea

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Friday, July 9, 2021 10:20 AM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: Re: 8507-110 Irrigation System Improvement Project II

Hi Anthea,

Ok, thank you. So, the construction start date would be flexible, depending on when funds can be made available by our program?

138

Dave

David M. Houston, P.E.
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Division of Financial Assistance, Water Recycling Funding Program
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(916) 322-6042 | david.houston@waterboards.ca.gov

From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Friday, July 9, 2021 9:51:56 AM
To: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: RE: 8507-110 Irrigation System Improvement Project II

EXTERNAL:

Hi Dave

Sounds good. Hopefully ADLP will have some funds, even if a lesser amount. That is probably the reason we were directed to that program last time after our original SRF.

Also, I think the application window would be less, say two to three years to get all of the funding assigned to projects. The repayment window for the loans would be up to ten years.

Anthea

Anthea G. Hansen
General Manager
Del Puerto Water District
PH 209-892-4470/FAX 209-892-4469

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Friday, July 9, 2021 9:43 AM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: Re: 8507-110 Irrigation System Improvement Project II

Hi Anthea,

Yes, I have an update, and a call will likely need to be scheduled at a later date, but we are fact finding right now.

We met internally yesterday with several technical and environmental staff and managers, and feel that SRF isn't a great fit for the funding for your project because of the environmental requirements of the program. However, we are talking to the supervisor of the ADLP program that the District was funded by in the past to see if there are funds available.

139

A question came up as to the timing of the project. The project description mentions a 10-year window for landowners to apply to the program set up by the District, but is there a start date in mind? Or does the start date depend on when the funding can be made available?

Dave

David M. Houston, P.E.
Water Resource Control Engineer
Division of Financial Assistance, Water Recycling Funding Program
State Water Resources Control Board
1001 "I" Street, 16th Floor, Sacramento, CA 95814
(916) 322-6042 | david.houston@waterboards.ca.gov

From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Friday, July 9, 2021 9:01:45 AM
To: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: RE: 8507-110 Irrigation System Improvement Project II

EXTERNAL:

Hi Dave,

Any updates for us? Do we need to have another call?

Anthea G. Hansen
General Manager
Del Puerto Water District
PH 209-892-4470/FAX 209-892-4469

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Thursday, June 24, 2021 6:10 PM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: RE: 8507-110 Irrigation System Improvement Project II

Thank you, Anthea!

We will get back to you regarding any items we may need for the environmental review asap.

Dave

David M. Houston, P.E.
Water Resource Control Engineer
Division of Financial Assistance, Water Recycling Funding Program
State Water Resources Control Board
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From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Thursday, June 24, 2021 3:42 PM
To: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: RE: 8507-110 Irrigation System Improvement Project II

EXTERNAL:

Dave,

Attached is the District's ADLP Agreement. The DRF was, in fact, the one you already found in your system from 1998. My how time flies.

Anthea G. Hansen
General Manager
Del Puerto Water District
PH 209-892-4470/FAX 209-892-4469

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Tuesday, June 15, 2021 4:28 PM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: Re: 8507-110 Irrigation System Improvement Project II

Hi Anthea,

I received some confirmation regarding the eligibility of this project. It appears to be eligible from a technical standpoint. There may be some internal bookkeeping distinctions for us because different funds have different rules, but that shouldn't have any bearing on the District.

Since we have the green light to proceed, I will go ahead and coordinate a meeting to discuss environmental aspects of the project. I am leaving on vacation for a few days, I will be back to work on 6/24. It looks like Kristen and I have availability the following times at the end of next week:

- 6/24, from 1:00 to 3:30
- 6/25, from 9:00 to 12:30

If those times don't work, I can take a look at the following week.

41

Thanks,
Dave

David M. Houston, P.E.

Water Resource Control Engineer

Division of Financial Assistance, Water Recycling Funding Program

State Water Resources Control Board

1001 "I" Street, 16th Floor, Sacramento, CA 95814

(916) 322-6042 | david.houston@waterboards.ca.gov

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Wednesday, June 9, 2021 1:22 PM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Cc: Way, Kristen@Waterboards <Kristen.Way@Waterboards.ca.gov>
Subject: Re: 8507-110 Irrigation System Improvement Project II

Hi Anthea,

I'm still waiting on some direction from our supervising engineer, Mike Downey. I spoke to him and our senior engineer, Sunny Kals, yesterday about the project. The feeling is that the project is eligible as a non-point source project to benefit Delta water quality, but there may be some issues with the structure of the project since the equipment would be on private property to be operated and maintained by the landowner. Mike plans to meet with legal counsel to discuss the project before we move forward.

Dave

David M. Houston, P.E.

Water Resource Control Engineer

Division of Financial Assistance, Water Recycling Funding Program

State Water Resources Control Board

1001 "I" Street, 16th Floor, Sacramento, CA 95814

(916) 322-6042 | david.houston@waterboards.ca.gov

From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Wednesday, June 9, 2021 1:01 PM

To: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Subject: RE: 8507-110 Irrigation System Improvement Project II

EXTERNAL:

Hi Dave,

I am just circling back to see if we can schedule a discussion on this.

Anthea G. Hansen
General Manager
Del Puerto Water District
PH 209-892-4470/FAX 209-892-4469

From: Anthea Hansen
Sent: Thursday, May 27, 2021 10:05 AM
To: 'Houston, David@Waterboards' <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Subject: RE: 8507-110 Irrigation System Improvement Project II

Dave,

Sounds good. Recall, we've had two very successful previous programs (SRF & ADLP) that utilized our same proposed structure. I know things change over time with requirements, but I am hopeful whatever guidance was used previously may also be applicable now.

Anthea G. Hansen
General Manager
Del Puerto Water District
PH 209-892-4470/FAX 209-892-4469

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Thursday, May 27, 2021 9:58 AM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Subject: Re: 8507-110 Irrigation System Improvement Project II

Hi Anthea,

Yes, it sounds like a meeting would be a good idea. Before we meet with Kristen, I want to loop in our unit's senior engineer and maybe our section's supervising engineer to make sure we don't run into any eligibility issues. SRF funds need to be for the benefit of a public entity, not a private landowner, so we need to make sure that the project can be conducted in a way that meets eligibility requirements for the funds, and they

143

may have some suggestions. I will discuss the project with them and see if they feel a meeting with them would be a good idea, then schedule a call with Kristen either separately or at the same time.

Dave

David M. Houston, P.E.

Water Resource Control Engineer

Division of Financial Assistance, Water Recycling Funding Program

State Water Resources Control Board

1001 "I" Street, 16th Floor, Sacramento, CA 95814

(916) 322-6042 | david.houston@waterboards.ca.gov

From: Anthea Hansen <ahansen@delpuertowd.org>
Sent: Thursday, May 27, 2021 8:57 AM
To: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>; Adam Scheuber <ascheuber@delpuertowd.org>
Subject: RE: 8507-110 Irrigation System Improvement Project II

EXTERNAL:

Hi Dave,

This is really good news! We appreciate your continued efforts on our behalf.

Would it be possible for us to convene a call with you and Kristen Way to review these deliverables? All of the projects will be implemented by the respective Landowners on private property, similar to our previous projects. Thus, we have minimal intersection with the requirements of CEQA.

Please let us know when might be a convenient time for you, and we can schedule a call.

Anthea G. Hansen

General Manager

Del Puerto Water District

PH 209-892-4470/FAX 209-892-4469

From: Houston, David@Waterboards <David.Houston@Waterboards.ca.gov>
Sent: Tuesday, May 25, 2021 2:42 PM
To: Anthea Hansen <ahansen@delpuertowd.org>; Adam Scheuber <ascheuber@delpuertowd.org>
Subject: 8507-110 Irrigation System Improvement Project II

Hi Anthea and Adam,

I have some good news. It isn't official yet, but it looks like, barring unforeseen changes, this project will make it onto the fundable list in our Intended Use Plan (IUP) for the coming fiscal year. The IUP will be officially voted on by the Board in mid-June. We try to start the environmental review part of our process as early as possible, because it tends to have the longest lead time due to consultations with other agencies. After her initial review, the environmental reviewer for this project (Kristen Way) has a few items that she will need to move forward.

For a design-build project, even though the District doesn't have exact locations, we still must review whatever area might be in the project. So, we would need to identify all potential project areas.

We will need the following for the environmental review:

- Updated Environmental Package Form (attached)
- Map that shows all of the potential areas for the project
- Official Species Lists for the Endangered Species Act
- Biological Report
- Cultural Report (SEND DIRECTLY TO ME, NOT TO FAAST)
- NOE- A paper was submitted to FAAST that shows what would be on the NOE, but we need to verify that it was submitted. Please show proof that an NOE was filed with the State Clearinghouse and the County Clerk.

Please submit all except the cultural report to FAAST. The cultural report will contain some information that is confidential, so it should be sent directly to us.

Let me know if you have any questions or if there is anything you would like to discuss.

145

Dave

David M. Houston, P.E.
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146

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