



KINGS RIVER
WATER QUALITY COALITION

NITRATE CONTROL PROGRAM/ KINGS MANAGEMENT ZONE

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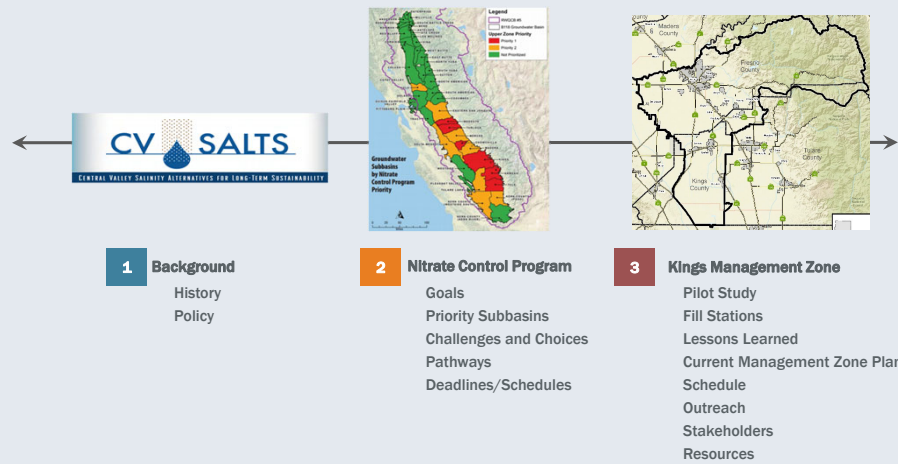
VIRTUAL MEETING PROTOCOLS

- As an Attendee:
 - You are muted.
 - Use the “Raise Hand” button to ask questions.
 - To un-mute yourself to ask a question (once acknowledged by the speaker)
 - Computer: Teams audio control
 - Phone: *6 on keypad
 - Use the Chat feature only to report technical problems. We will assist if we are able.

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OUTLINE



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BACKGROUND: HISTORY

- Last 150 years, increased agricultural, industrial, municipal activities and population growth
 - Resulted in dramatic increases in salts and nitrates in groundwater, soils, and surface waters in the Central Valley.
 - High nitrate concentrations have caused unsafe drinking water in some communities
 - Salt accumulations resulted
 - 250,000 acres taken out of production
 - 1.5 million acres declared salinity impaired
- Economic impacts of salts and nitrates on the Valley are estimated to exceed \$3-billion per year, if not addressed.

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BACKGROUND: HISTORY

- In 2006, stakeholders began discussions on how to balance maintaining a strong economy while ensuring safe drinking water:
 - Government agencies (Federal, State, Local)
 - Permitted Dischargers
 - Growers
 - Ranchers
 - Municipalities
 - Food processors
 - Environmental justice groups
- Initiative called Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS)

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BACKGROUND: POLICY

- In 2008, Central Valley Salinity Coalition was established
 - Funding for technical and scientific studies necessary to support the development of alternative regulatory approaches
- Establishment of Central Valley-wide Salt and Nitrate Control Program: Salt and Nitrate Management Plan (SNMP)
 - Released January 2017
 - Strong regulatory, technical, and policy foundation
 - Recommended amendments to existing Basin Plans to include new and revised regulations allowing for flexibility to manage salts and nitrates locally while providing safe drinking water supplies

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BACKGROUND: POLICY

■ Basin Plan Amendments

- Central Valley Water Board oversees regulation of dischargers for nitrates and salts within the Valley
- Two Basin Plans are the basis for regulating water quality
 - Sacramento River-San Joaquin
 - Tulare Lake
- Amendments adopted October 16, 2019
 - “Balanced loading” of salt into surface/groundwater and nitrate into groundwater
 - Loading of salt and nitrate mass is equal to mass of salt and nitrate removed
 - Early Action Plans
 - Addresses immediate needs of those drinking groundwater that exceeds primary maximum contaminant level for nitrate

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BACKGROUND: POLICY

■ Basin Plan Amendments (Continued)

- Management Zone Implementation Plans
 - Proposals for enforceable and quantifiable interim deadlines that focus on reducing nitrates in ongoing discharges
 - Proposed final compliance dates for ongoing discharges of nitrate to cease causing or contributing to exceedances of the applicable water quality objective in receiving water
 - Delineation and review of management zones:
 - Boundaries based primarily on hydrogeology;
 - Potential groundwater impacts associated with downgradient migration of nitrate from management zone shall be assessed and documented using quantitative methods;
 - Agreements with adjacent management zones shall be clearly documented;
 - Discharger zones of influence shall be technically justified;
 - Justification shall be provided for areas where impacted groundwater used for domestic or municipal supply is excluded from management zone.

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BACKGROUND: POLICY

■ Basin Plan Amendments (Continued)

- Targeted revisions to amendments within one year of approval
 - Clarification of interim versus final goals
 - Residential sampling program
 - Management Zone boundaries modifications
 - Consideration of future impacts on public water systems from nitrate contamination
 - Exceptions policy revision to 35 years to cease causing or contributing to exceedances of water quality objectives
 - Maximum of 50 years as goal for restoring basins to achieve nitrate water quality objectives

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OUTLINE

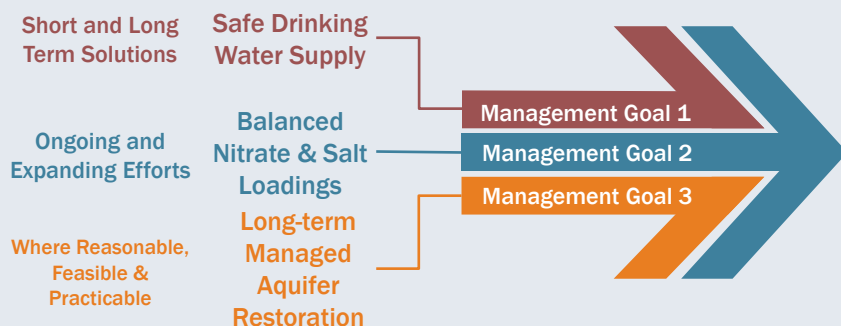


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NITRATE CONTROL PROGRAM: GOALS

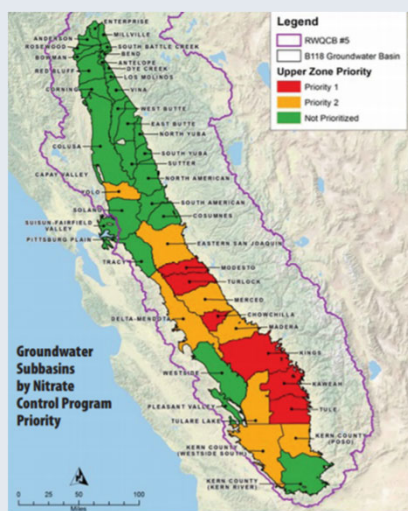
NITRATE CONTROL PROGRAM GOALS



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NITRATE CONTROL PROGRAM: PRIORITY GROUNDWATER BASINS\SUBBASINS



Groundwater Basin\Subbasin

- **Priority 1:** Modesto, Turlock, Chowchilla, Kings, Kaweah, Tule
- **Priority 2:** Yolo, Eastern San Joaquin, Delta-Mendota, Merced, Madera, Tulare Lake, Kern County (Westside South), Kern County (Poso)

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NITRATE CONTROL PROGRAM: CHALLENGES/CHOICES

■ Challenges/Choices

- Provide safe drinking water, especially for residents in affected areas as quickly as possible
- Managing nitrate discharges to reduce or eliminate impacts to groundwater
- Pathway selection
 - Pathway A: Individual Permitting
 - Pathway B: Management Zone
- Funding
- Deadlines/Schedules

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NITRATE CONTROL PROGRAM: PATHWAYS

NITRATE MANAGEMENT STRATEGY



IMPLEMENTED BY GROUNDWATER
BASIN/SUBBASIN PRIORITY
DESIGNATION UPON RECEIPT OF A
NOTICE TO COMPLY (LATE MAY 2020)

Nitrate Compliance Pathways

Path A:
Individual
Permitting
Approach

Path B:
Management
Zone Permitting
Approach

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NITRATE CONTROL PROGRAM: PATHWAY A

■ PATHWAY A: INDIVIDUAL PERMITTING

- Regulated discharger or groups of dischargers subject to a single WDR may opt to comply under individual permit provisions that:
 - Define requirements to protect shallow groundwater
 - Assess nitrate impacts
 - Establish five discharge categories with associated compliance requirements in Shallow Zone:
 - No Degradation (1)
 - Discharge quality better than water quality objective and is better than average nitrate concentration
 - *De minimus* (2)
 - Average nitrate concentration is better than water quality objective, and, over a 20-year planning horizon:
 - Discharge effect on average nitrate concentration expected to use less than 10% of available assimilative capacity
 - Discharge, in combination with other nitrate inputs is not expected to cause average nitrate concentrations to exceed a nitrate trigger of 75% of water quality objective.

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NITRATE CONTROL PROGRAM: PATHWAY A

■ PATHWAY A: INDIVIDUAL PERMITTING (Continued)

- Establish five discharge categories with associated compliance requirements in Shallow Zone:
 - *De minimus* (2)
 - Average nitrate concentration is better than water quality objective, and, over a 20-year planning horizon:
 - Discharge effect on average nitrate concentration expected to use less than 10% of available assimilative capacity
 - Discharge, in combination with other nitrate inputs is not expected to cause average nitrate concentrations to exceed a nitrate trigger of 75% of water quality objective.
 - Degradation Below Trigger (3)
 - Average nitrate concentration is better than the water quality objective
 - Discharge is more than *de minimis* (2) but will not cause average nitrate concentration to exceed a trigger of 75% of water quality objective over a 20-year planning horizon

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NITRATE CONTROL PROGRAM: PATHWAY A

■ PATHWAY A: INDIVIDUAL PERMITTING (Continued)

- Establish five discharge categories with associated compliance requirements in Shallow Zone:
 - Degradation Above Trigger (4)
 - Average nitrate concentration is better than the water quality objective
 - Discharge is reasonably expected to cause the average nitrate concentration to exceed a trigger of 75% of water quality objective over a 20-year planning horizon, average nitrate concentration is expected to remain at or below water quality objective over the same 20-year planning horizon
 - Discharge Above Objective (5)
 - Either
 - Average nitrate concentration is better than water quality objective, but the discharge may cause the average nitrate concentration to exceed water quality objective over 20-year planning horizon, or
 - Average nitrate concentration exceeds the water quality objective and the discharge quality also exceeds water quality objective

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NITRATE CONTROL PROGRAM: PATHWAY A

■ PATHWAY A: INDIVIDUAL PERMITTING (Continued)

- Establish trigger levels for additional required actions
- Ensure that those affected by nitrate in the discharge area have safe drinking water

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NITRATE CONTROL PROGRAM: PATHWAY A

■ Pathway A compliance options

- Difficult and expensive if
 - drinking water wells near facility are high in nitrates
 - discharge is high in nitrates
 - local shallow groundwater exceeds 75% of the nitrate drinking water standard
- If any of the above conditions are true, Pathway A may require some or all of the following:
 - Make significant upgrades to your facility
 - Conduct extensive monitoring of discharge and local groundwater including assessing nitrate impacts to shallow groundwater
 - Provide replacement drinking water to local residents
 - Provide rigorous technical hydrogeological justification of what groundwater will look like in your area in 20 years

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NITRATE CONTROL PROGRAM: PATHWAY A

■ Pathway A compliance options (Continued)

- Prepare an Early Action Plan if nitrate effects drinking water
- If a discharger is in Category 4 or 5, subject a proposed Alternative Compliance Project (ACP) to the Central Valley Water Board as an additional condition

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NITRATE CONTROL PROGRAM: PATHWAY A TIMELINE

■ Pathway A Timeline:

- Within 11 months of Notice to Comply, submit Notice of Intent with
 - (a) initial nitrate assessment of your ability to meet the water quality objective for nitrates, and
 - (b) if your discharge is causing any well used for drinking water in your area to exceed the nitrate water quality objective, then prepare and implement an Early Action Plan to provide safe drinking water, and
 - (c) if required for your nitrate category, prepare and implement an Alternative Compliance Project;
- OR, switch to Pathway B and join the Management Zone in your area.

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NITRATE CONTROL PROGRAM: PATHWAY A TIMELINE

Figure 2. Schedule of Deliverables and Actions for Permitted Dischargers in a Priority 1 Groundwater Subbasin^{1, 2}

Priority 1 Permitted Dischargers			Central Valley Water Board	
Deliverables/Action	Schedule		Board Action on Deliverables	Schedule
	Path B	Path A		
Preliminary Management Zone Proposal (PMZP) with Early Action Plan (EAP)	Submit within 270 days after receiving the NTC. PMZP submittal serves as the NOI for Permittees selecting Path B	Within 330 days of receipt of NTC, submit a NOI with (a) initial nitrate assessment as required per Nitrate Control Program regulations; and (b) EAP and/or Alternative Compliance Project (as needed); OR, switch to Path B and support the Management Zone that has been proposed in their area	Board reviews PMZP submittal and oversees public comment period	Minimum 30-day public comment period
Submit NOI				
Begin EAP Implementation	Within 60 days of submittal unless Board objects		Following completion of review, Executive Officer accepts PMZP	Minimum 30-day public comment period
Submit Final Management Zone Proposal (FMZP)	Within 180 days after receipt of PMZP comments from Board	Permitted dischargers remaining on Path A: (a) Implement their own EAP within 60 days of submittal unless the Board objects; and (b) comply with Nitrate Control Program requirements established in their permit (as revised by the Board)		
Submit Management Zone Implementation Plan (MZIP)	Within 6 months of Board acceptance of FMZP		Board reviews MZIP for completeness; approves MZIP through public hearing process	Implement public notice/hearing process no later than six months after MZIP deemed complete
Implement MZIP	Schedule to achieve interim and final goals established in MZIP		Board reviews EAP and MZIP every two years to confirm plans are achieving quantifiable progress towards the goal of providing drinking water to residents, as applicable	

¹ Under Priority 2, PMZP must be submitted within 1 year of receipt of NTC; NOI submittal for Path A permittees must be submitted within 425 days of NTC. Schedule for subsequent deliverables remains the same as Priority 1

² The Central Valley Water Board will update permits as needed to reflect new nitrate management requirements

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NITRATE CONTROL PROGRAM: PATHWAY A

- **FAQs**
 - WDR does not need to mention Nitrate or Nitrate monitoring to have received a notice to comply
 - Permits were evaluated and determination was made on discharge that has or likely includes nitrates that could impact groundwater
 - If a Discharger believes that discharge has no nitrate, they will need to provide adequate technical justification.
- Additional questions about your individual permit and Pathway A can be directed to consultants or cvsalts@waterboards.gov.

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NITRATE CONTROL PROGRAM: PATHWAY B

- **Pathway B – What is a Management Zone?**
 - Formally defined area with specific boundaries where a formal contractual agreement among regulated dischargers will be required to provide safe drinking water and to manage nitrate
 - Hallmarks of MZ approach:
 - Flexibility
 - Local Discretion
 - Cooperation
 - Shared resources/costs

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■ Management Zone Concept

■ Basin Plan Amendment Definition

“A discrete and generally hydrologically contiguous area for which permitted discharger(s) participating in the management zone **collectively work to meet the goals of the Salt and Nitrate Management Plan** and for which **regulatory compliance is evaluated based on the permittees collective impact**, including any alternative compliance programs, on a defined portion of the aquifer...”

NITRATE
CONTROL
PROGRAM :
PATHWAY B

Key
Language

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NITRATE CONTROL PROGRAM: PATHWAY B

■ Pathway B – Management Zone Benefits

- Ensure safe drinking water to those who need it
- Avoid “going it alone” under demanding individual permit (Pathway A)
- Establish local control and more flexibility than under past regulations
- Adapt management to local conditions
- Supports a vision that manages nitrate for a viable local economy and community
- Share resources, costs, and knowledge
- Protect water resources over the long-term

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NITRATE CONTROL PROGRAM: PATHWAY B

■ Pathway B – Initial Management Zone Deliverables

- Preliminary Management Zone Proposal
 - Boundary of management zone area
 - Identifies participating dischargers and participants
 - Characterizes groundwater quality to identify nitrate-impacted areas
 - Assesses current treatment and control efforts
 - Includes an Early Action Plan that identifies how the Management Zone will provide short-term drinking water
 - Documents Outreach

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NITRATE CONTROL PROGRAM: PATHWAY B

■ Pathway B – Forming a Management Zone

- Step 1: Management Zone Boundary
 - Proposed by dischargers and stakeholders
 - Relevant Considerations
 - Hydrogeology
 - Institutional boundaries
 - Land uses
 - Groundwater quality
 - Sources of supply
 - Water resources management strategies
- Step 2: Identify stakeholders and participants
 - Dischargers
 - Municipalities, utilities, water agencies
 - Community and environmental organizations

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NITRATE CONTROL PROGRAM: PATHWAY B

■ Pathway B – Forming a Management Zone

- Step 3: Discussions on shared actions, costs, and decision-making
 - Technical evaluation
 - Governance structure
 - Cost allocation
- Step 4: Characterize Management Zone
 - Existing data and analysis to inform management actions
 - Nitrate conditions
 - Dischargers
 - Hydrogeology
 - Drinking water supplies
- Step 5: Clean drinking water locations and/or deliveries
 - Identify areas where nitrate in groundwater exceeds safe drinking water standards.
 - Outreach and inclusivity

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NITRATE CONTROL PROGRAM: PATHWAY B

■ Pathway B – Initial Management Zone Deliverables

- Early Action Plan
 - Outreach to residents and community leaders
 - Identifying affected residents
 - Develop specific actions
 - Well Sampling
 - Interim replacement drinking water
 - Fill Stations and/or
 - Vendor-Supplied Water Facilities and/or
 - Bottled water delivery and/or
 - Point of Use Treatment System

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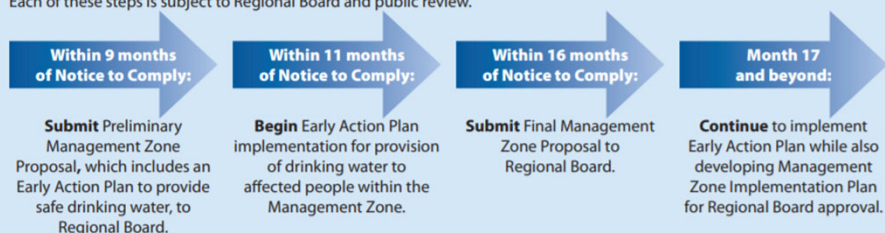
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NITRATE CONTROL PROGRAM: PATHWAY B

■ Pathway B – Deadlines for Priority 1 Subbasins

Deadlines for Priority 1 Subbasins

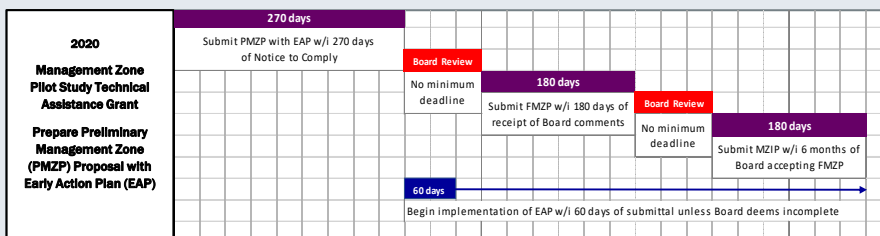
Regulated dischargers face tight timelines for forming Management Zones. Each of these steps is subject to Regional Board and public review.



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NITRATE CONTROL PROGRAM: PATH B SCHEDULE



- Coordination Agreement
 - Governance Structure
- Develop Final Management Zone Proposal
- Implement Early Action Plan

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MANAGEMENT ZONE PILOT STUDY: FUNDING

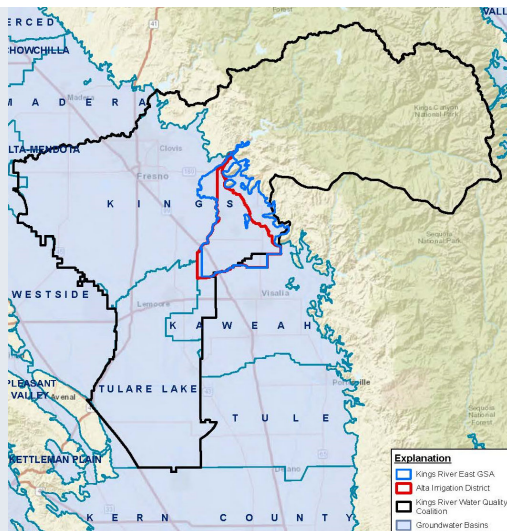
- No templates exist for development of a Management Zone
- State Water Board provided grant funding to CV-SALTS to support early implementation of the Salt & Nitrate Control Program
 - Two Management Zone Pilot Studies funded (other project will be within the Turlock Groundwater Subbasin)
- Grant deliverables relevant to the Nitrate Control Program:
 - Preliminary Management Zone Proposals with Early Action Plans
 - Templates for use by future developers of Management Zones

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MANAGEMENT ZONE PILOT STUDY : BOUNDARY

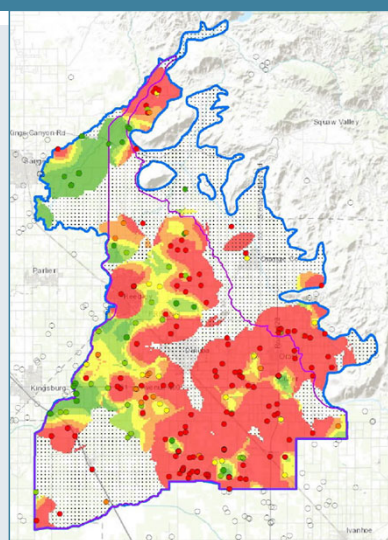
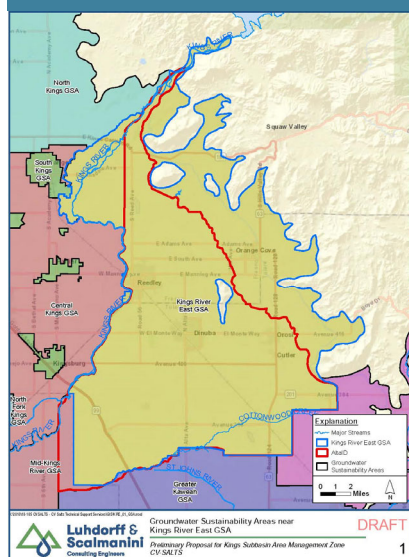
- Kings River Water Quality Coalition
- Kings Subbasin
- Kings River East Groundwater Sustainability Agency
- Alta Irrigation District
- Fresno County and Tulare County (not shown)



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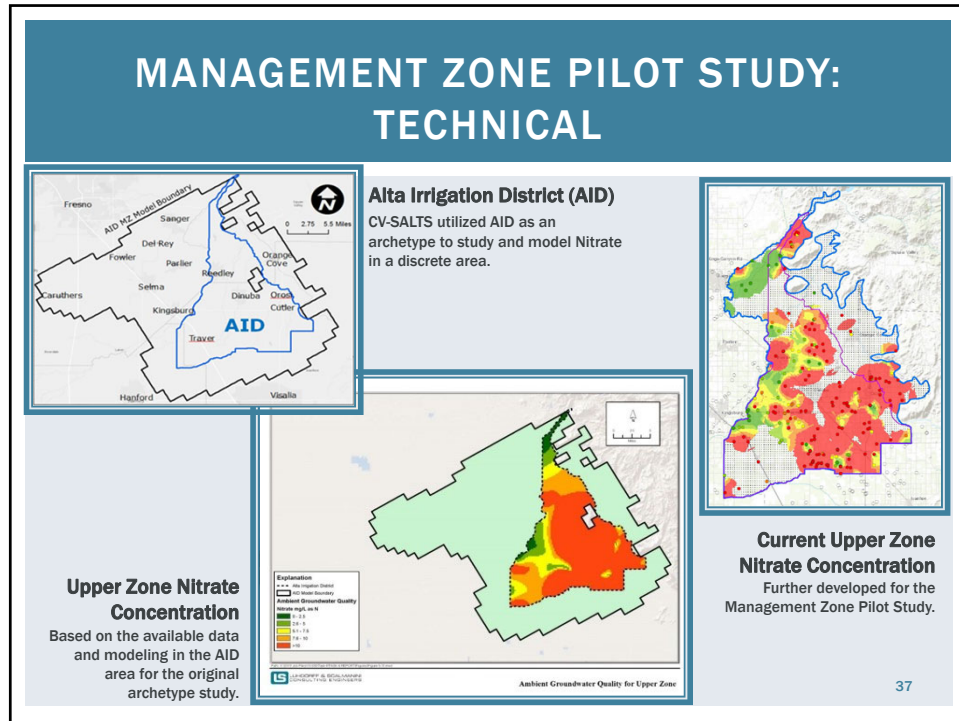
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MANAGEMENT ZONE PILOT STUDY : BOUNDARY

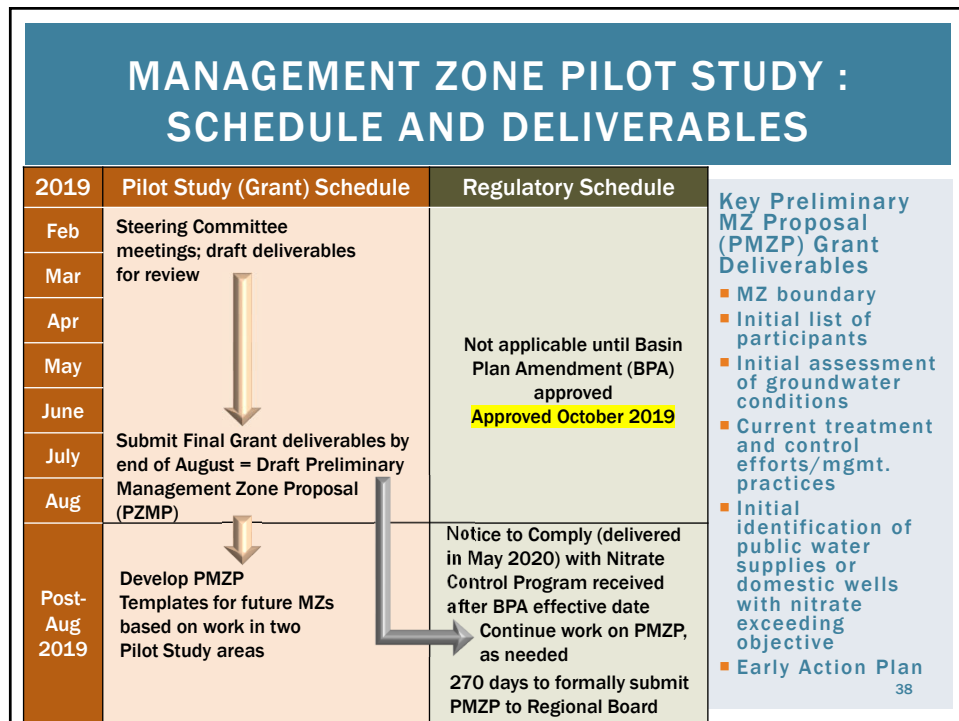


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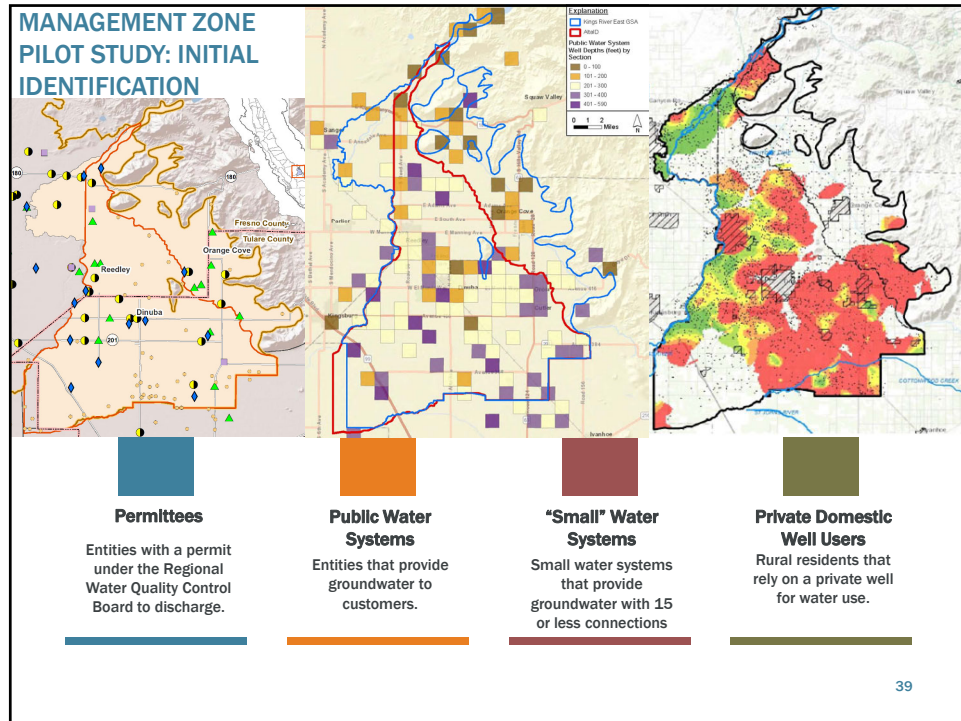
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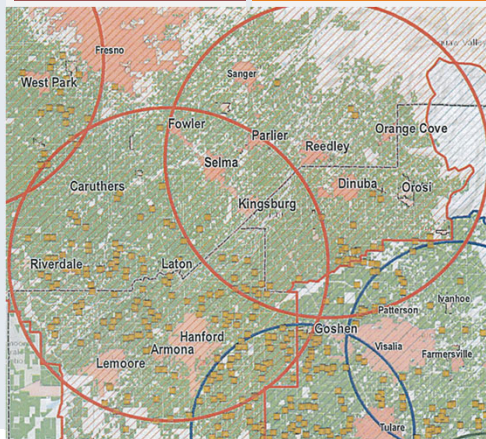
MANAGEMENT ZONE PILOT STUDY : EARLY ACTION PLAN

Process to identify affected residents and conduct outreach to ensure impacted users are informed and can participate in identifying solutions

Process to coordinate with non-dischargers

Replacement Water Program

Water Kiosk



Specific implementation schedule to address immediate drinking water needs

Funding mechanism to implement EAP

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EARLY ACTION PLAN ACTIVITIES

Table 6-1. EAP Implementation Schedule

EAP Element		Task	Schedule/Milestones
Resident Identification		Identify residences in area covered by EAP and develop mailing list to support outreach	Within 120 days of EAP effective date
Community Outreach Program	General Activities	Establish Management Zone Website	Within 120 days of EAP effective date
		Develop public notice mechanisms/outlets	Within 120 days of EAP effective date
		Prepare informational materials to support community outreach activities	General materials – within 120 days of EAP effective date Targeted materials – as needed to support community outreach activities
	Non-Discharger Coordination & Outreach	Targeted outreach to key non-dischargers not participating in Management Zone	Within 30 days of EAP effective date
		General community outreach support	Ongoing as needed
	Community Outreach Meetings	Initial Community Outreach Meetings	Complete community outreach meetings at two locations within the Management Zone within six months of EAP effective date
Second round of Community Outreach Meetings		Complete community outreach meetings at two locations within the Management Zone after two public access water facilities become operational	
Third round of Community Outreach Meetings		Complete community outreach meetings at two locations within the Management Zone when last planned public access water facility becomes operational	
Additional Community Outreach Meetings		As determined necessary	
Public Notice Activities	Community Outreach Meetings	Notice provided no later than 30 days prior to scheduled meeting	
	Opening of a public access water facility	Within 30 days after each public access water facility becomes operational.	
	Targeted Outreach	Mailout to residents within EAP area	See Temporary Water Delivery Program – Alternative Water Program below
Temporary Water Delivery Program – Public Access Water Facilities		Establish list of potential land/properties for locating a public access water facility within targeted areas	Within 30 days of EAP effective date
		Establish final list of locations and types of public access water facilities to be developed	Identify all locations within 90 days of EAP effective date
		Complete documentation necessary to establish facilities at each location (see text for requirements)	Complete documentation for each facility and seek necessary permits or approvals per the following milestones: <ul style="list-style-type: none">Facilities 1 & 2: within 180 days of EAP effective dateFacilities 3 & 4 within 360 days of EAP effective date

<https://kingsriverwqc.org/cv-salts/>

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KINGS MANAGEMENT ZONE: FILL STATION

- Agreement that establishes the basis for a Replacement Water Program consistent with the following requirements of the Early Action Plan:
 - Provides alternative drinking water source now while exploring longer-term alternatives
 - Includes outreach in the affected areas
 - Collaboratively work to implement/fund the Agreement
- Agreement states:
 - “...provision of replacement water as provided pursuant to this Agreement fulfills all or parts of an Early Action Plan (EAP) that is part of proposed Central Valley Water Board basin plan amendments for a Nitrate Control Program”



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KINGS MANAGEMENT ZONE: FILL STATION



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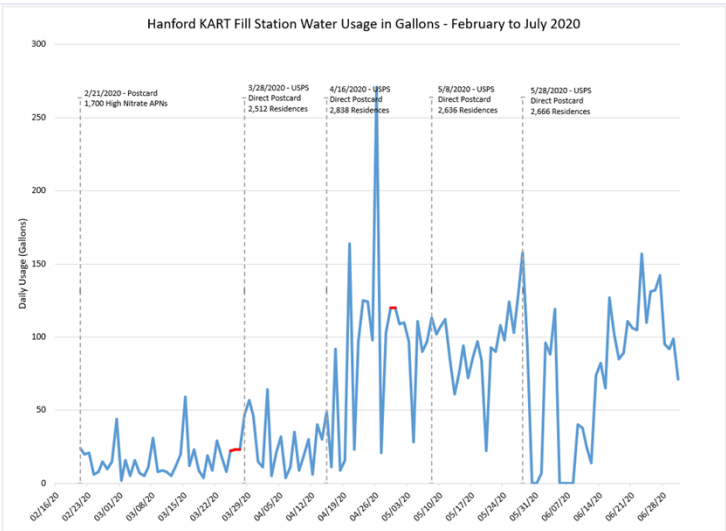
KINGS MANAGEMENT ZONE: FILL STATION



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KINGS MANAGEMENT ZONE: FILL STATION



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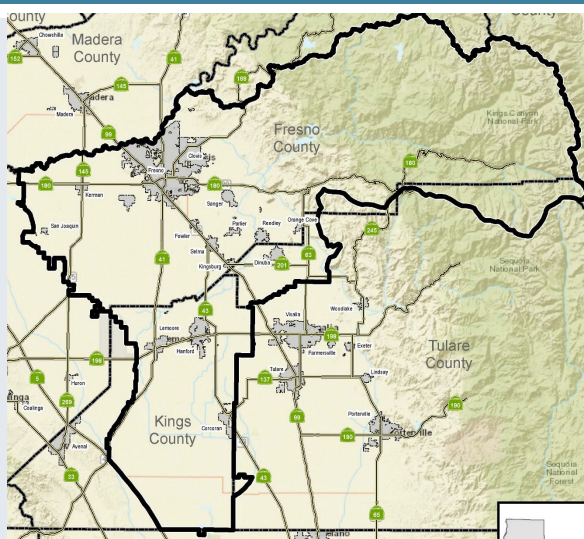
LESSONS LEARNED

- Dischargers/Leadership
- Research/Technical/Sub-consultants
- Data Gaps
- Scheduling/Timelines
- Conflicts
- Resources/Community Groups

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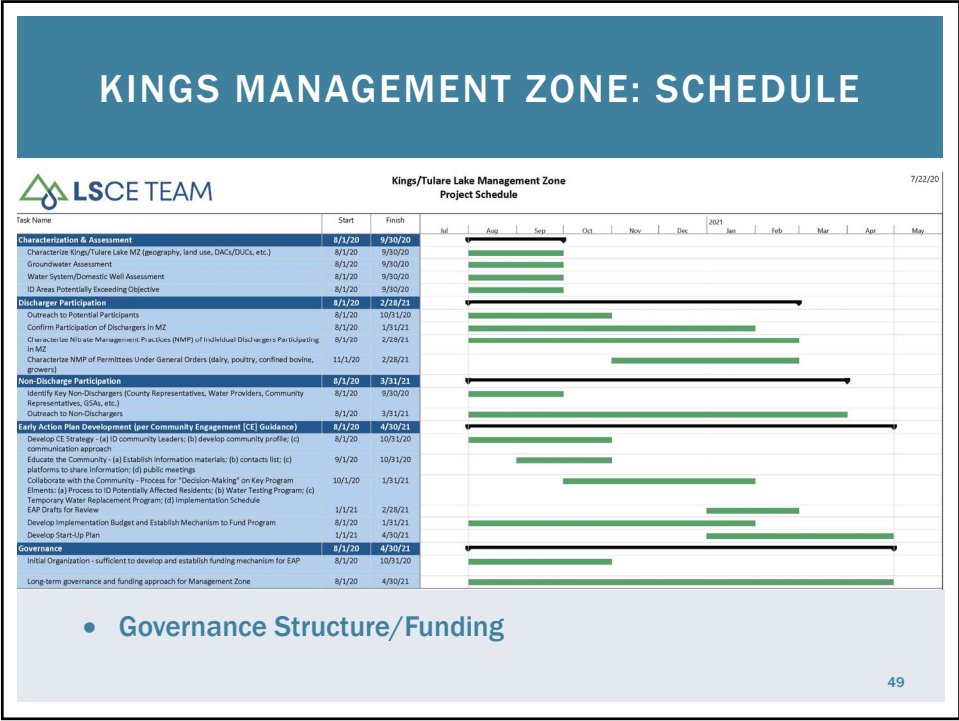
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CURRENT MANAGEMENT ZONE



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KINGS MANAGEMENT ZONE: OUTREACH

■ Guidance for Engaging Communities During Development of Early Action Plans

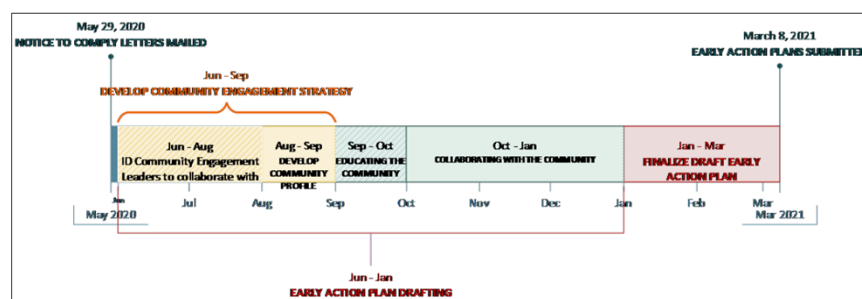
- Communicate effectively
- Protect personal information
- Acknowledge diverse interests
- Evaluate and revise
- Learn about the community
- Educate the community
- Collaborate with the community
- Maintain involvement

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KINGS MANAGEMENT ZONE: OUTREACH

Figure 1. Timeline for community engagement during Early Action Plan development



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NEXT STEPS: CONTINUING EFFORTS

- **Kings River Water Quality Coalition**
 - Kings Management Zone monthly meetings
 - August 2020 – Doodle Poll will be emailed with potential dates/times
 - Administrative
 - Governance
 - Fees
 - Technical

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