Management Zone Pilot Study

Guidance to Develop Key Elements of a Preliminary Management Zone Proposal with Early Action Plan

Prepared for:

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Background

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin (Basin Plans) to Incorporate a Central Valley-wide Salt and Nitrate Control Program (Resolution R5-2018-0034) on May 31, 2018.[1] The State Water Resources Control Board (State Water Board) and the Office of Administrative Law (OAL) approved these amendments to the Central Valley Water Board Basin Plans on October 16, 2019 (Resolution 2019-0057) and January 15, 2020 (OAL Matter Number: 2019-1203-03), respectively. The Nitrate Control Program became effective on January 17, 2020.

The schedule for implementation of the Nitrate Control Program is based on the priority designation of Central Valley Region groundwater basins/subbasins. These basins/ subbasins are prioritized based on existing ambient nitrate concentrations in the upper portion of the groundwater basin/subbasin.

To initiate implementation of the program, the Central Valley Water Board will send a Notice to Comply (NTC) to permitted dischargers in Priority 1 groundwater basins/subbasins in March 2020. Permittees in Priority 2 areas will receive their NTC within two to four years after the Nitrate Control Program effective date.

Following receipt of the NTC, permitted dischargers will have a designated amount of time to submit a Notice of Intent (NOI) that identifies the compliance pathway selected by the permittee. Two compliance pathways are available under the Nitrate Control Program:

- ***Path A: Individual Permit Approach*** – This is the default permit compliance pathway. Under this approach the permittee must comply with all Nitrate Control Program requirements as an individual discharger or as a third-party group subject to a General Order that chooses to be permitted under this approach.
- ***Path B: Management Zone Approach*** – Permitted dischargers that select Path B will work collaboratively with other dischargers and local stakeholders to manage nitrate through formation of a Management Zone. The Nitrate Control Program defines a Management Zone as follows:[2]

[1] Central Valley Water Board, 2018. Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin to Incorporate a Central Valley-wide Salt and Nitrate Control Program. Resolution R5-2018-0034. May 31, 2018. https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2018-0034_res.pdf

[2] *Ibid,* 83.

> *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 SNMP* [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. Where Management Zones cross groundwater basin or subbasin boundaries, regulatory compliance is assessed separately for each basin or subbasin. Management Zones must be approved by the Central Valley Water Board.*

Establishment of a Management Zone creates a collective approach to nitrate management that maximizes resources and provides a more integrated approach to developing local solutions to achieve the goals of the Program. **Figure 1** summarizes the intent and purpose for establishment of a Management Zone.[3]

Figure 1. Intent and Purpose of a Management Zone

Management Zone Intent & Purpose
• Defined area that serves as a discrete regulatory compliance unit for complying with the Nitrate Control Program for multiple permittees. • Basis for the establishment of local management plans to manage nitrate within the Management Zone's boundary. • Participants work collectively to implement SNMP management goals: (1) safe drinking water, (2) achieving balance, and (3) restoring groundwater basins/subbasins (where reasonable, feasible and practicable) across the Management Zone. • Where groundwater within the Management Zone boundary, and groundwater impacted by those permittees within the Management Zone boundary, is being used as a drinking water supply, and where those drinking water supplies are impacted by nitrates and exceed or are likely to exceed nitrate drinking water standards in the foreseeable future, Management Zone participants will ensure the provision of safe drinking water to all residents in the area adversely affected by those dischargers of nitrates from those that are participating in the Management Zone. • Ensure the provision of safe drinking water for the Management Zone through stakeholder coordination and cooperation. • Work towards better resource management through appropriate allocation of resources. • Central Valley Water Board imposes reasonable provisions collectively for the Management Zone, and its permittee participants, that recognize the need to prioritize nitrate management activities over time for compliance with the Nitrate Control Program and the SNMP's Management Goals.

[3] *Ibid,* 62. Adapted from Table N-4.

Management Zone Pilot Studies

Prior to the effective date of the Nitrate Control Program, the State Water Board approved a grant (Resolution 2017-0061) to implement projects designed to support implementation of the Nitrate Control Program once it became effective. Through this effort, the grant administrator, Kings River Water Quality Coalition (KRWQC), worked collaboratively with the Central Valley Salinity Coalition (CVSC) and Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) to pilot the development of draft Preliminary Management Zone Proposals with draft Early Action Plans in two areas of the Central Valley Region:

- Turlock Subbasin (**Figure 2**)
- Kings River East/Alta Irrigation District in the southeastern portion of the Kings Subbasin (**Figure 3**)

Figure 2. Proposed Turlock Subbasin Management Zone Boundary (Draft Management Zone boundary aligns with the Turlock Subbasin boundary)

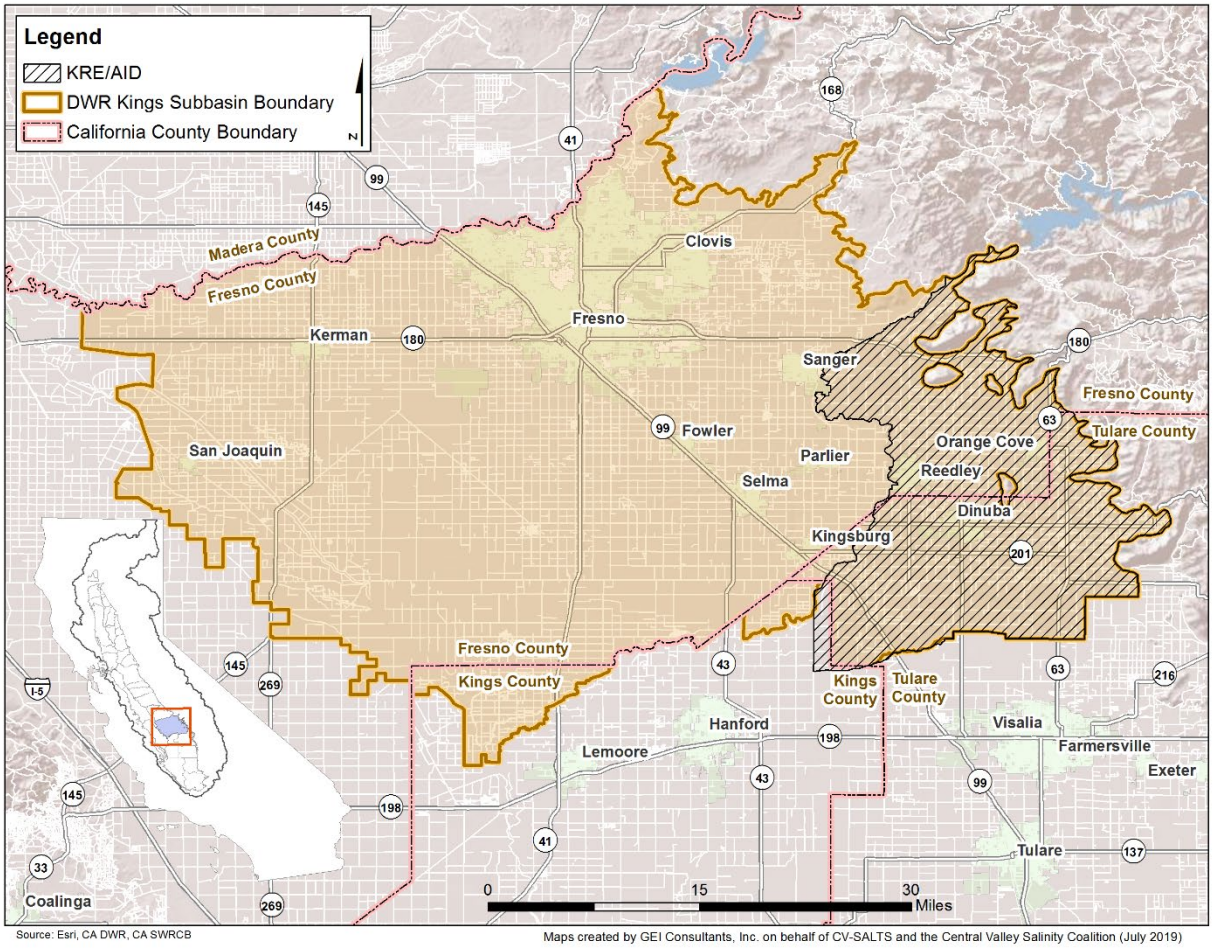

Figure 3. Proposed Kings River East/Alta Irrigation District (KRE/AID) Management Zone Boundary (Draft Management Zone boundary is almost entirely located within the larger Kings Subbasin)

The outcome of these pilot studies was development of non-binding draft Preliminary Management Zone Proposals with Early Action Plans for the two study areas – the first deliverables required when establishing a Management Zone. In addition, through the knowledge gained from the development of these documents, the following template/guidance documents were prepared to support future development of these early Management Zone deliverables by others in the Central Valley Region:

- **Section 1: Management Zone Regulatory Requirements – Page 7**

  Identifies the Priority 1 and Priority 2 groundwater basins/subbasins and summarizes the regulatory requirements and schedule of deliverables for development of a Management Zone.

- **Section 2: Management Zone Boundary Delineation – Page 15**

  While a Management Zone boundary should be based primarily on hydrogeology, there are other considerations as well. This section summarizes the types of information that should be considered when delineating a proposed Management Zone boundary.

- **Section 3: Characterization of Proposed Management Zone – Page 21**

  This guidance summarizes key data sources that should be considered when characterizing a proposed Management Zone.

- **Section 4: Groundwater Quality Analysis to Identify Potentially Impacted Areas – Page 25**

  A key element of the Preliminary Management Zone Proposal is an initial groundwater assessment. This section provides information regarding potential data sources and approaches for characterizing nitrate quality in the groundwater underlying a proposed Management Zone.

- **Section 5: Development of the Management Zone Early Action Plan – Page 31**

  This document summarizes minimum content expectations for an Early Action Plan and identifies key tasks recommended for implementation during development of the Early Action Plan.

- **Section 6: Outreach to Other Permitted Dischargers within the Proposed Management Zone Boundary – Page 47**

  This section summarizes key steps recommended for implementation to identify permitted dischargers within a proposed Management Zone boundary.

- **Section 7: Management Zone Outreach – Page 53**

  Outreach to stakeholders is a key requirement and important step in the development and implementation of a Management Zone. This section summarizes areas where outreach is most critical during the Management Zone development process.

In addition to the above information, the draft Preliminary Management Zone Proposals and Early Action Plans that were developed for the pilot study areas are available from the Central Valley Water Board. These drafts may serve as templates for others to consider when developing their own Management Zone deliverables. However, users of the Early Action Plan templates should note that as of the date of publication of this report, the State Water Resources Control Board's Office of Public Participation was in the process of developing protocols for community outreach that may apply to development of Early Action Plans. Permittees developing a Preliminary Management Zone Proposal should consult with the Regional Board to determine which outreach protocols may apply to development of the Early Action Plan.

Finally, documents prepared under the Management Zone pilot study project should only be used as guidance to facilitate development of these Management Zone deliverables under the Nitrate Control Program. The final content of a Preliminary Management Zone Proposal and Early Action Plan will vary by Management Zone – especially given the need to have local community input on the development of drinking water supply solutions – a key goal of the Nitrate Control Program. Accordingly, the Central Valley Water Board will evaluate each Preliminary Management Zone Proposal based on the needs of the area it covers and the requirements of the Nitrate Control Program.

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Section 1: Management Zone Regulatory Requirements

Purpose

This document summarizes the key regulatory requirements, deliverables and implementation schedule associated with implementation of the Nitrate Control Program with emphasis on the requirements for dischargers that elect to participate in the development of a Management Zone. The Nitrate Control Program establishes timelines for implementation based on the priority designation assigned to groundwater basins/subbasins. **Figure 1** and **Table 1** identify groundwater basins/subbasins designated as Priority 1 or 2 in the Central Valley Region. Implementation of the Nitrate Control Program in these areas begins when existing permitted dischargers receive notification from the Central Valley Water Board through the issuance of a Notice to Comply (NTC). **Table 2** provides the schedule for the issuance of the NTC in each priority area based on the Nitrate Control Program effective date.

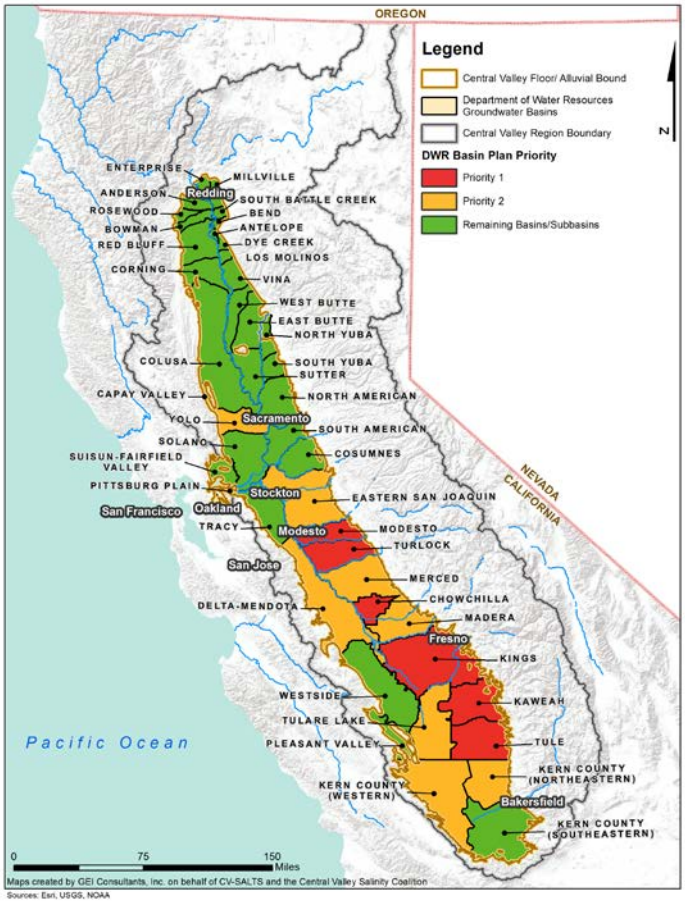


Figure 1. Priority Groundwater Basins/Subbasins in the Central Valley Region

Response to Notice to Comply

Following receipt of the NTC, permitted dischargers will need to select from one of two compliance pathways to meet the requirements of the Nitrate Control Program:

- ***Path A: Individual Permit Approach*** – This is the default permit compliance pathway. Under this approach the permittee must comply with all Nitrate Control Program requirements as an individual discharger or as a third-party group subject to a General Order that chooses to be permitted under this approach.
- ***Path B: Management Zone Approach*** – Permitted dischargers that select Path B will work collaboratively with other dischargers and local stakeholders within a Management Zone area to comply with all requirements of the Nitrate Control Program.

Table 1. Priority 1 and 2 Groundwater/Subbasins in Central Valley Region

Priority 1		Priority 2	
Number	Name	Number	Name
5-22.11	Kaweah	5-21.67	Yolo
5-22.03	Turlock	5-22.04	Merced
5-22.05	Chowchilla	5-22.14	Kern County (Westside South)
5-22.13	Tule	5-22.12	Tulare Lake
5-22.02	Modesto	5-22.14	Kern County (Poso)
5-22.08	Kings	5-22.07	Delta Mendota
		5-22.01	East San Joaquin
		5-22.06	Madera

Table 2. Schedule for Issuance of Notices to Comply with Nitrate Control Program

Groundwater Basin	Schedule
Priority 1	As soon as is reasonably feasible after the effective date of the Nitrate Control Program, but no later than 1 year from the program's effective date (NTC currently scheduled to be issued in March 2020)
Priority 2	Within 2 to 4 years after the effective date of the Nitrate Control Program
Basins/Subbasins Not Prioritized	Based on available resources, and as determined necessary by the Executive Officer of the Central Valley Water Board
Areas Not Part of a Designated Basin/Subbasin	As determined necessary by the Executive Officer of the Central Valley Water Board

Permittees that receive a NTC must submit a Notice of Intent (NOI) regarding the selection of the compliance pathway. The following sections below provide a detailed summary of the NOI and other regulatory requirements associated with selection of the Path B: Management Zone Approach. Permittees that select Path A: Individual Permitting Approach must submit an NOI as well. The schedule for submittal of this NOI is included in the discussion below.

Management Zone Pathway: Schedule of Deliverables and Regulatory Actions

Figure 2 provides the schedule of deliverables for Priority 1 permitted dischargers once the NTC is received. The first key deliverable, Preliminary Management Zone Proposal (PMZP), must be submitted within 270 days of the NTC. This serves as the NOI for Path B permittees, who are named as participants in the PMZP. The schedule for subsequent Management Zone deliverables is based on the Central Valley Water Board completing its required actions on permittee deliverables (see Figure 2).

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		
Submit NOI				
Begin EAP Implementation	Within 60 days of submittal unless Board objects		Board reviews PMZP submittal and oversees public comment period	Minimum 30-day public comment period
		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 Final Management Zone Proposal (FMZP)	Within 180 days after receipt of PMZP comments from Board			
			Following completion of review, Executive Officer accepts FMZP	Minimum 30-day public comment period
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

Description of Required Deliverables for Management Zone Participants

The sections below provide a summary of the key elements to be included in each of the Management Zone deliverables. The Basin Plans contain a more detailed discussion of the requirements associated with each of these deliverables:[1]

Preliminary Management Zone Proposal

Permittee Responsibilities

The PMZP is the first deliverable due to the Central Valley Water Board (within 270 days of receipt of the NTC in a Priority 1 area). **Figure 3** summarizes the key elements for inclusion in the PMZP. In general, the PMZP defines the Management Zone boundary, identifies participating dischargers, characterizes the area, including current nitrate conditions in the groundwater, and contains an Early Action Plan (EAP) to address the immediate drinking water needs of those drinking groundwater from a source with nitrate levels that exceed the water quality objective.

Figure 3. Key Elements of a Preliminary Management Zone Proposal

Preliminary Management Zone Proposal
• Proposed preliminary boundaries of the Management Zone area; • Initial Management Zone participants/dischargers and other potential participants; • Initial assessment of groundwater conditions; • Current treatment and control efforts, or management practices of participating dischargers; • Initial identification of public water supplies or domestic wells within the Management Zone area with nitrate concentrations exceeding the water quality objective; • Areas within/adjacent to the Management Zone that overlap with other management areas/activities; • Early Action Plan to address drinking water needs for those relying on wells with nitrate levels exceeding the water quality objective (see Figure 4 below); • Proposed timeline for (a) identifying additional participants; (b) further defining boundaries; (c) developing proposed governance/funding structure for Management Zone administration; (d) additional evaluation of groundwater conditions across the Management Zone, if necessary; and (e) submittal of Final Management Zone Proposal and a Management Zone Implementation Plan; and • Optional: Other constituents of concern that the Management Zone proposes to address.

[1] Central Valley Water Board, 2018. Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin to Incorporate a Central Valley-wide Salt and Nitrate Control Program. Resolution R5-2018-0034. May 31, 2018. https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2018-0034_res.pdf

When reviewing the delineation of a proposed Management Zone boundary, the Central Valley Water Board will expect the following:

- The Management Zone boundary is based primarily on hydrogeology;
- Potential impacts to groundwater associated with downgradient migration of nitrate from the proposed Management Zone have been assessed and clearly documented using quantitative methods;
- Agreements with adjacent Management Zones regarding responsibility for providing drinking water and restoring aquifers have been clearly documented;
- Area of contribution associated with discharges, both within and outside of each Management Zone, have been technically justified; and
- Robust justification has been provided for any areas where impacted groundwater used for domestic or municipal supply are excluded from the proposed Management Zone including: (a) an analysis if that area is covered by a different Management Zone; (b) modeling to justify the exclusion; and (c) documentation that meaningful outreach was conducted to potentially affected parties.

Figure 4 summarizes the requirements to be addressed by the EAP submitted with the PZMP. These requirements focus on identifying and implementing short-term solutions in the Management Zone area to ensure that residents are able to obtain safe drinking water that meets the nitrate water quality objective. Critical to the development of the EAP is conducting meaningful outreach in the local community.

Figure 4. Development of the Early Action Plan

Early Action Plan Requirements
• Early Action Plans will at a minimum include: – Process to identify affected residents; outreach to ensure these residents are informed of and given the opportunity to participate in the development of the Early Action Plan. – A process for coordinating with others that are not dischargers to address drinking water issues; – Specific actions and implementation schedule to address the immediate drinking water needs of those initially identified within the Management Zone impacted by groundwater that exceeds nitrate standards; and – A funding mechanism for implementing the Early Action Plan. • When conducting outreach to develop and implement the EAP, permittees shall meaningfully consult with affected residents, affected water systems, representatives of environmental justice organizations, and other stakeholders, including Central Valley Water Board and State Water Board staffs.

Central Valley Water Board Responsibilities

Following submittal of the PMZP with an EAP, the Central Valley Water Board will conduct the following activities:

- Post the PMZPs on its website and publicly release the PMZPs through its Lyris list-serve to provide opportunity for public comment on the PMZPs for at least 30 days.
- As resources allow, notify by mail permittees who have not yet declared their intention to participate in a Management Zone of the opportunity to participate in the Management Zone being proposed for their area. This would provide these permittees one last opportunity to select the Management Zone Pathway prior to the due date for the submittal of their NOI (330 days after NTC, see Figure 2).
- Notify the Management Zone permittees of any deficiencies in the proposed EAP. If the EAP requires revision, the Board's Executive Officer will establish a schedule for revision, resubmittal and implementation. If no deficiencies are identified, then the permittees begin implementation of the EAP no later than 60 days after submittal.
- Provide comments on the PMZP to the Management Zone based on its own internal review and findings from the public comment process. The Board's internal review will include, but not be limited to, an evaluation of the proposed Management Zone boundary (as noted above), nature of permittee participation and consistency with Nitrate Control Program PMZP requirements.

Final Management Zone Proposal

Permittee Responsibilities

The Final Management Zone Proposal (FMZP) submittal addresses comments received from the Central Valley Water Board on the PMZP and incorporates additional information required to finalize the proposal to establish a Management Zone. It must be submitted to the Central Valley Water Board within 180 days of the receipt of comments on the PMZP. **Figure 5** summarizes the key elements for inclusion in the FMZP, including the final proposed Management Zone boundary, list of participating permitted dischargers and Management Zone governance structure. A complete FMZP functions as an equivalent to a Report of Waste Discharge for all existing permitted dischargers that are participating in the Management Zone.

Central Valley Water Board Responsibilities

Following submittal of the FMZP, the Central Valley Water Board will conduct the following activities:

- Post the FMZP on its website and publicly release the FMZP through its Lyris list-serve to provide opportunity for public comment on the FMZP for at least 30 days.
- Determine if the FMZP meets the minimum requirements of the Nitrate Control Program and can be found to be complete. If complete, the FMZP is accepted by the Executive Officer.

Figure 5. Key Elements of the Final Management Zone Proposal

Final Management Zone Proposal
• Address Central Valley Water Board Comments on PMZP. • Update PMZP to Include: – Timeline for development of the Management Zone Implementation Plan; – Updated list of Management Zone participants; – Governance structure; – Additional evaluation of groundwater conditions across Management Zone area (as needed); – Proposed approach for regulatory compliance, e.g., request for an exception; – Information regarding how the Management Zone intends to interact and/or coordinate with similar water resource management efforts, e.g., implementation of the Sustainable Groundwater Management Act (SGMA); and – Documentation of actions taken to implement the Early Action Plan.

Management Zone Implementation Plan

Permittee Responsibilities

The Management Zone Implementation Plan (MZIP) establishes the nitrate control implementation program that is tailored to the Management Zone and is compliant with the Basin Plan regulations and State Water Board directives.[2] The MZIP must be submitted to the Central Valley Water Board within 6 months after the Executive Officer of the Central Valley Water Board accepts the FMZP. **Figure 6** describes the interim and final goals of the MZIP. **Figure 7** summarizes the key elements that are to be included in the MZIP to support these goals.

Central Valley Water Board Responsibilities

The Central Valley Water Board will conduct the following activities:

- Evaluate the MZIP to determine if the plan is complete. If the MZIP requires revision, the permittees must revise and resubmit the MZIP within a timely manner.
- No longer than six months after finding the proposed MZIP is complete, the Central Valley Water Board shall provide public notice, request comment and hold a public hearing on the MZIP and the request for Alternative Compliance (i.e., request for an exception) submitted as part of the MZIP.

If a submitted MZIP is found to be incomplete and the permittees do not revise and resubmit the MZIP in a timely manner, the permittees will be required to comply with the Nitrate Control Program via Path A.

[2] State Water Board Resolution 2019-0057 (Section 4) directs the Central Valley Water Board to make specific revisions to the Nitrate Control Program. The MZIP discussion provided herein incorporates these State Water Board directives.

Figure 6. Management Zone Implementation Plan Goals[1]

Management Zone Implementation Plan Interim & Final Goals
• Interim Goal: Achieve balanced nitrate loadings within the Management Zone. • Final Goals: – Safe drinking water supply is assured; – Dischargers will cease causing or contributing to exceedances of the nitrate water quality objective in the receiving water; and – Nitrate levels in groundwater are restored to concentrations at or below water quality objectives (to the extent reasonable, feasible and practicable).

[1] These goals are consistent with State Water Board directives in Resolution No. 2019-0057.

Figure 7. Key Elements of the Management Zone Implementation Plan[1]

Management Zone Implementation Plan
• Plans to develop long-term drinking water solutions that: – Consider future impacts from nitrate contamination (e.g., operation and maintenance costs) on public water systems, particularly those systems in disadvantaged communities; and – Have been developed in consultation with affected residents, affected water systems representatives of environmental justice organizations, and Central Valley Water Board and Division of Drinking Water staffs. • Residential sampling program to assist in identifying affected residents within portions of the Management Zone where: – Nitrate concentrations in the shallow zone may exceed the nitrate water quality objective; and – There are nitrate discharges from regulated sources that may impact groundwater. • Nitrate management activities, including short (≤ 20 years) and long-term (> 20 years) projects and/or planning activities to be implemented in the Management Zone. • Water quality characterization to be used as a basis for measuring progress. • Implementation schedule that includes: – Proposals for enforceable and quantifiable interim deadlines that focus on reducing nitrate in ongoing discharges; and – Proposed final compliance date to cease causing or contributing to exceedances of the nitrate water quality objective in the receiving water for each discharger or category of dischargers participating in the Management Zone that is as short as practicable, but no longer than 35 years. • Triggers for implementation of alternative procedures if interim milestones unmet. • Funding or cost share agreements or process to establish such agreements to implement Plan. • Surveillance and monitoring program. • Responsibilities of each discharger, or groups of dischargers, to manage nitrate to achieve the goals of the MZIP.

[1] This figure includes State Water Board directed revisions to the Nitrate Control Program that will affect the content of the MZIP (Resolution No. 2019-0057)

Section 2: Management Zone Boundary Delineation

There are many factors to consider when delineating a Management Zone area. Hydrogeology should be the primary focus, but there are other considerations as well. The table below provides a list of categories and factors to consider.

CATEGORY	FACTORS FOR CONSIDERATION
Institutional	One entity: Is boundary aligned with Management Zone objective?
	More than one entity: Is boundary aligned with multiple objectives?
Physical Setting	Geologic boundaries and/or features (e.g., faults, confining units, etc.) that need to be factored into the Management Zone delineation?
	Hydrologic boundaries (e.g., streams, lakes, groundwater divide, ocean, groundwater basins/subbasins, etc.) that need to be factored into the area?
	Existing hydrogeologic studies/evaluations to develop physical conceptualization of subsurface system. Are potential groundwater quality impacts well understood?
	Groundwater monitoring network: does it provide an understanding of groundwater flow directions in the aquifer system? Will this influence the Management Zone area delineation?
Groundwater Quality Characterization	Availability of groundwater quality data and distribution of those data: does this affect the selection of the Management Zone area, or is this something that is not important to the selection of the area and can be addressed as needed?
	Existing groundwater quality characterization, i.e., do the existing data provide an understanding of the distribution of key constituents of concern (nitrate, salt, other) within various units of the aquifer system? Will this influence the Management Zone area delineation?
	Groundwater quality monitoring network: does the network provide a good understanding of the movement of constituents, including vertical movement from the land surface to groundwater, from the upper part of the aquifer system to the lower part of the aquifer system, and surface water/groundwater interaction as applicable?
Sources of Supply	Location of groundwater use generally known, including completion depths of municipal, irrigation, private and other types of water supply wells?
	Intensive water resources use (especially groundwater); is the use localized within the Management Zone or is it more broadly distributed? Does this affect Management Zone area considerations?
	Recycled water: what is the source of supply (or supplies) and location(s) of use? Does this affect the Management Zone area delineation?
	Stormwater: what is the source of supply (or supplies) and location(s) of discharge and recharge? Does this affect the Management Zone area delineation?

CATEGORY	FACTORS FOR CONSIDERATION
Land Cover	Are land cover data readily available? Do the land cover data relate to entity Management Zone area objectives?
	Variety of land use types: are these adequately encompassed in the Management Zone area?
Dischargers	What types of dischargers are located within the Management Zone? (see also Discharger Template)
Tools	Do existing groundwater flow and/or transport model(s) exist that overlie the Management Zone area? Would one or more of such models be useful for accomplishing Management Zone objectives?
Regional Collaboration	Is the Management Zone area within an existing Integrated Regional Water Management (IRWM), Groundwater Management Plan/Groundwater Sustainability Plan, Groundwater Sustainability Agency (GSA), Agriculture Coalition, etc., and are there factors related to other programs that need to be considered when delineating the Management Zone area?
Water Resources Management Strategies	Are there existing or planned management strategies that would affect the selection of the Management Zone area, i.e., conjunctive use program, recharge facilities, etc.

The boundary of the actual Management Zone is determined by the stakeholders and submitted in a Preliminary Management Zone Proposal to the Central Valley Water Board. The following sections provide information on other administrative or programmatic boundaries to be considered with delineating a Management Zone boundary.

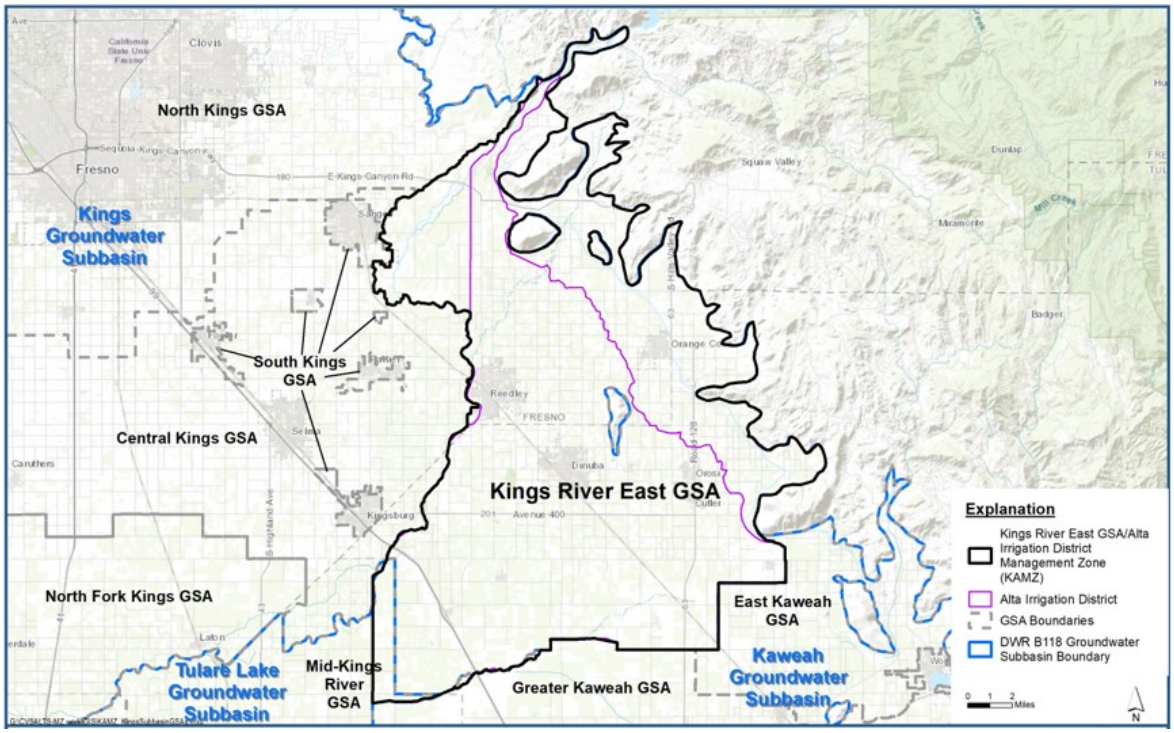
Key Factors for the Successful Delineation of a Management Zone

- Management Zone boundaries are based primarily on hydrogeology.
- Assess and document the potential impacts from downgradient nitrate migration.
- Document agreements with neighboring Management Zones to provide safe drinking water.
- Show technical justification for the area of contribution, or zone of influence, associated with dischargers inside and outside the Management Zone.
- Thorough justification must be provided for exclusion of any impacted areas where groundwater is used for domestic or municipal supply.

1. Identify Sustainable Groundwater Management Act (SGMA) Groundwater Sustainability Agencies (GSAs) in and around the Area of Interest.

GSAs are comprised of water users in the area and are required to list interested parties, including other irrigation districts, public water supply systems, coalitions, etc. involved with groundwater resources in the area. As part of the SGMA requirements, GSA entities are required to develop their own Hydrogeologic Conceptual Model (HCM), determine groundwater conditions in the area (including water quality), and estimate water budget components, including annual groundwater pumping as part of their Groundwater Sustainability Plan (GSP). These data are useful for nitrate

management considerations. DWR provides a Map Viewer of the boundaries of each GSA in the state https://sgma.water.ca.gov/webgis/index.jsp?appid=gasmaster&rz=true, and the boundaries of each GSA can be downloaded as a GIS file from this Map Viewer as well. The lists of interested parties are provided under each GSA's individual link on DWR's SGMA Portal (*https://sgma.water.ca.gov/portal/gsa/all*).



Example of Kings River East/Alta Irrigation District Management Zone Boundary and GSA

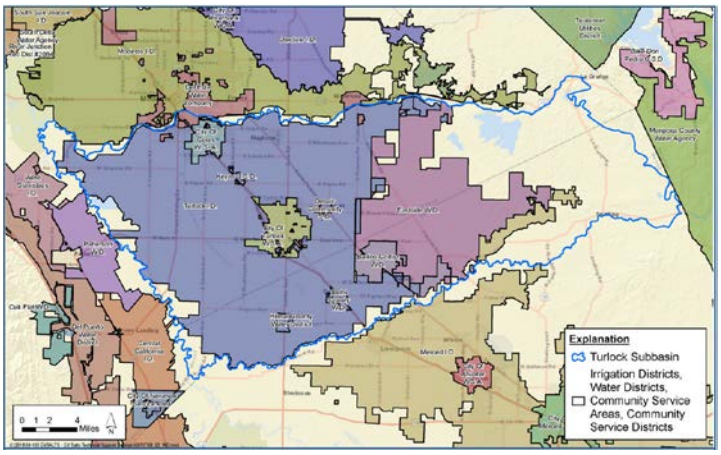
2. Identify the Groundwater Basin(s) or Subbasin(s).

Use DWR's Bulletin 118 Groundwater Basin Boundaries dataset for which the area of interest lies within. DWR updated the basin boundaries in 2016 with some basin boundary modifications. A more recent updated basin boundary GIS coverage is now available (as of February 2019) that contains approved basin boundary modifications (*https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118*).[1] To understand which basin boundaries have been modified or are attempting to be modified, DWR has a Basin Boundary Modification Map Viewer: (*https://sgma.water.ca.gov/basinmod/modrequest/map;jsessionid=658C11952F60F610812069F4F5860BCD*). For example, the Kings Subbasin proposed a boundary modification for the eastern Subbasin boundary to more closely align with the alluvial/bedrock boundary.

[1] GIS file download: *https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/Bulletin-118-Groundwater-Basin-Boundary-GIS-Data---v6_1.zip?la=en&hash=D947E7AC9E03D122CC5D707369E581DF41320E50*.

3. Identify Water District Boundaries, Including Irrigation Districts, Water Districts, Community Service Areas, and Community Service Districts.

Water district and water system data are available in several different datasets that are all incomplete and overlap each other. Water system boundaries and identifications (names or IDs) are inconsistent in small details between the datasets, so that it can be difficult to determine if two features from different datasets are in fact the same water system, without individual examination of each feature.

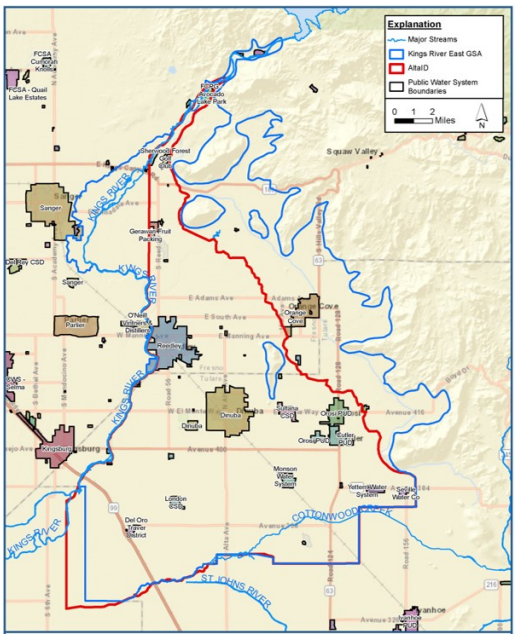


Example: Water Districts within Proposed Turlock Management Zone Boundary

Water district boundaries are compiled by the California into a feature class hosted by the California Open Data Portal here: https://data.ca.gov/dataset/water-districts. These data consist of 3574 polygon features, including public residential water systems, mutual water companies, community services districts, private water systems, schools, and others. The data do not include estimates of the number of people served, indications of who the regulatory authority is, or current status of the systems delineated.

4. Identity Public Water System Boundaries.

Public Water System boundaries are hosted by California Environmental Health Tracking Program (CEHTP) at http://www.cehtp.org/water/download. These system boundaries are identified by their Public Water System Identification Number and include counts of households and populations served, as well as water system type (community, non-transient non-community, transient non-community). All of these are regulated by the state Division of Drinking Water (DDW).

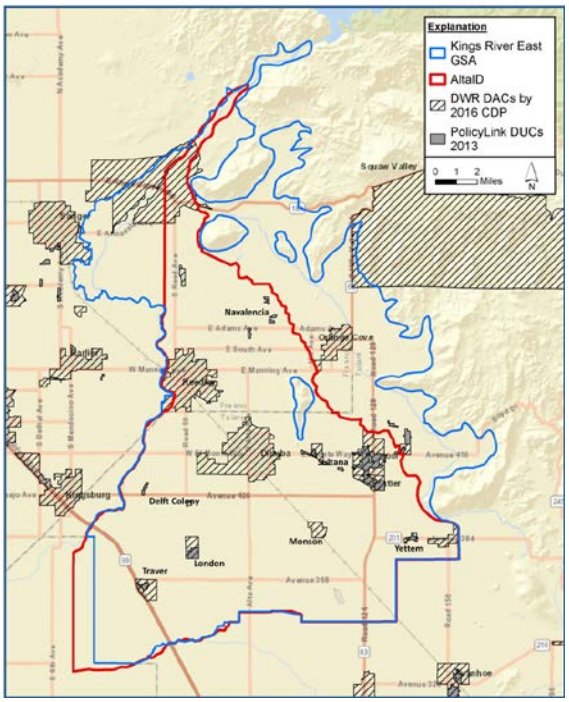


Example: Public Water Systems within Kings River East/Alta Irrigation District Proposed Management Zone Boundary

State Small Water Systems, those serving between 5 and 14 households, are typically regulated at the county level. For these systems, information must be requested from each county Environmental Health Department individually. Each county has a different system for tracking those water systems.

5. Identify and Consider the Boundaries of Disadvantaged Communities (DACs) and Disadvantaged Unincorporated Communities (DUCs)

- DWR hosts 3 versions of the Disadvantaged Communities (DAC) data based on different census analysis levels (*https://data.cnra.ca.gov/organization/dwr*):
  - Census Designated Places that are not congruent with blocks or tracts are based on historically residential areas. These include incorporated and unincorporated areas.
  - Tract is the largest census survey areal designation below County. Tracts are subsets of counties and tract boundaries are congruent with county boundaries.
  - Blockgroup (BG) is the next smaller census survey areal designation below tract. BGs are subsets of and congruent with boundaries of tracts. Blocks are subsets of BGs.
- Each level of analysis is based on the same criteria, but they are assessed at different spatial resolutions. The criteria are based on Proposition 1 IRWM Guidelines (2016).
  - A Place, Tract, or BG that has Median Household Income (MHI) of less than 80% of statewide MHI is defined as a DAC.
  - Policy Link, a non-profit advocacy and research organization in San Francisco (policylink.org) developed a set of Disadvantaged Unincorporated Community Polygons for the San Joaquin Valley in 2013. This dataset has a higher resolution targeting residential neighborhoods that are not recognized as separate Places, Tracts, or BGs, but that are isolated from surrounding communities, either by geography, language, or other considerations, and that meet the 80% of MHI criteria from IRWM.



Example: DACs & DUCs within Kings River East/Alta Irrigation District Proposed Management Zone Boundary

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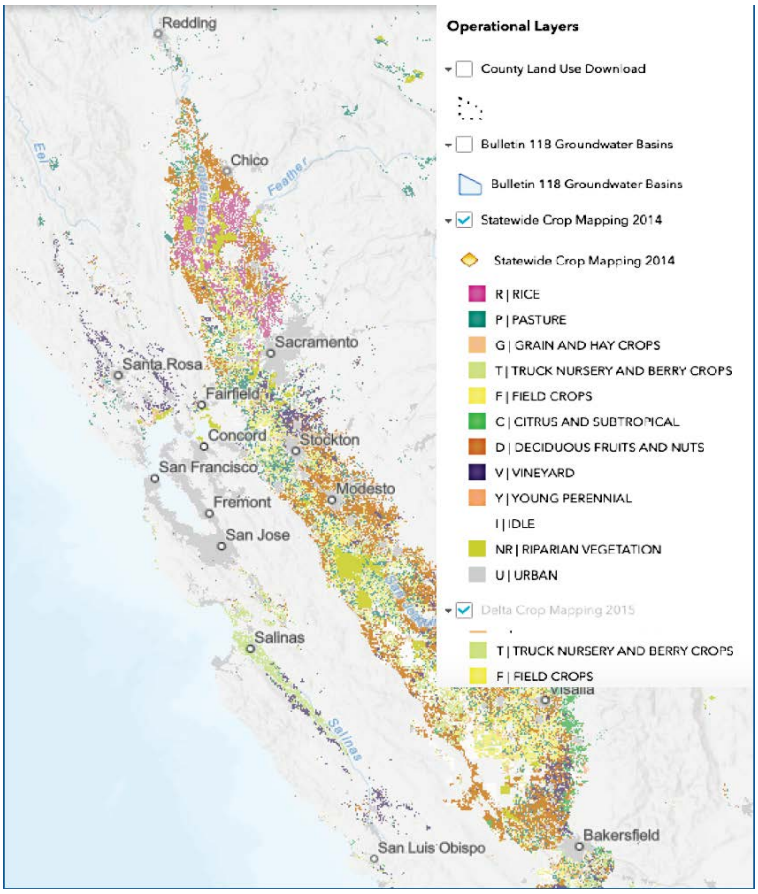
Section 3: Characterization of Proposed Management Zone

Characterizing the Proposed Management Zone entails looking for information about beneficial water users as well as natural and man-made features.

Data Sources

There are several publicly available datasets that can be used to help characterize the proposed Management Zone:

- ***Natural Waterways and Surface Water Features:*** available from the National Hydrography Dataset (NHD) from DWR, USGS, or the California Natural Resources Agency.[1]
- ***Land Use Features:*** crop types available from various publicly available sources including the USGS,[2] the State of California Geoportal,[3] and DWR.[4]
- ***Public Water System Boundaries:*** available through the California Environmental Health Tracking Program (CEHTP).[5] Data from CEHTP includes the number of households and populations the public water system serves, as well as the water system type (e.g., community, non-transient non-community, transient non-community). Public water system boundaries can also be found using the Water Boundary Tool Map Viewer.[6]



Example of Land Use for Central Valley

[1] https://data.cnra.ca.gov/dataset/national-hydrography-dataset-nhd

[2] USGS Land Cover Data Download: https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/land-cover-data-download?qt-science_center_objects=0#qt-science_center_objects

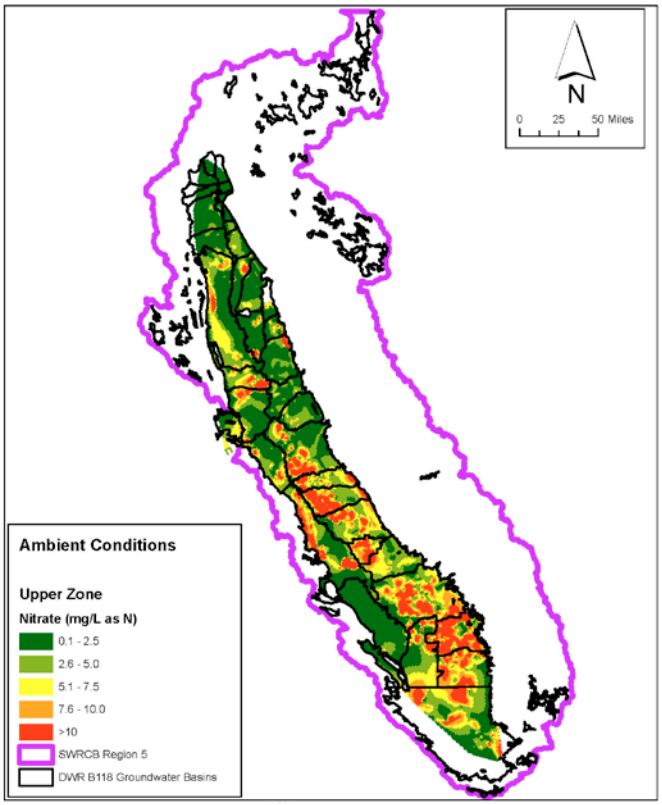
[3] State of California Geoportal: http://portal.gis.ca.gov/geoportal/catalog/main/home.page

[4] DWR Land Use: https://gis.water.ca.gov/app/CADWRLandUseViewer/

[5] http://www.cehtp.org/water/download

[6] https://trackingcalifornia.org/water/map-viewer

- ***Smaller Public Water Systems:*** includes State Small Water Systems, available by request from each county's Environmental Health Department. There is no standard tracking for the State Small Water Systems, nor is there a general repository for system information or water quality laboratory results in a publicly accessible digital format.
- ***State Water Resources Control Board's Division of Drinking Water (DDW) Available from Public Water Systems:*** including population served, as well as treated and untreated water source data.[7]
- ***Spatial Distribution of Domestic, Agricultural, and Industrial Wells:*** can be acquired via the DWR Well Completion Report Map Application.[8]



Ambient Nitrate Concentrations in the Upper Zone of the Groundwater System

Drinking Water Systems

Public drinking water system data requested from the county or downloaded from the sources listed above are used to characterize water systems that provide drinking water to residents. The characterization can involve spatial and tabular presentation of system information. A summary table outlining drinking water systems in the Management Zone can be created that may include:

- Water system name
- Population served
- Number of households served
- Number and status of system wells (active, inactive, destroyed, abandoned, etc.); and
- Number and date range of wells with nitrate data; number of wells with nitrate samples exceeding the Maximum Containment Level (MCL).

[7] https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/EDTlibray.html

[8] https://gis.water.ca.gov/app/wcr/

Characterization of Water Supply Systems Also Involves

- Mapping public water supply system boundaries and point locations of public supply wells overlying the ambient nitrate concentration in the Upper Zone of the groundwater system developed from the Initial Assessment of Groundwater Conditions for the proposed Management Zone or adopted from the 2016 CV-SALTS High Resolution analysis.[9]
- Identification of water systems that have source water potentially being pumped from groundwater with elevated nitrate concentrations.
- Water systems categorized into groups that overlay groundwater with elevated nitrate as N above 7.5 mg/L, and groundwater that exceeds the 10 mg/L MCL.
- Source data from DDW and State Small Water Systems from counties provide information about the number of connections and population served for each system, which can provide estimates for the number of people that may need an alternative water supply.
- Historical nitrate concentrations for public supply wells, as well as some information about water treatment prior to the water being served to the public, can be used to identify wells that may have been compromised by elevated nitrate concentrations in the past or currently.
- The treatment methods associated with the water system can be investigated to ensure that appropriately treated water is delivered to the water system users. For some water systems, time-series nitrate concentration data for wells that have already been treated may be available from the DDW dataset.

Maps and tables can be prepared to illustrate and detail water systems and public supply wells that have exceeded the nitrate MCL. Water system boundaries can be found using the Water Boundary Tool Map Viewer,[10] while water quality time-series and well site location data can be downloaded from the Electronic Data Transfer (EDT) library from the DDW.[11] Local departments on the county level can provide State Small Water System data including nitrate samples and system information.

The spatial distribution of domestic wells (including the number of domestic wells on a 1-mile square grid basis) is available from DWR (https://gis.water.ca.gov/app/wcr/) and can be used to identify wells that potentially produce nitrate affected groundwater. These domestic well owners may or may not be within a public water system service area. Information about domestic wells in elevated nitrate groundwater areas inside and outside of public water system service areas should be gathered, as it is useful for identifying water users that may be affected by elevated nitrate.

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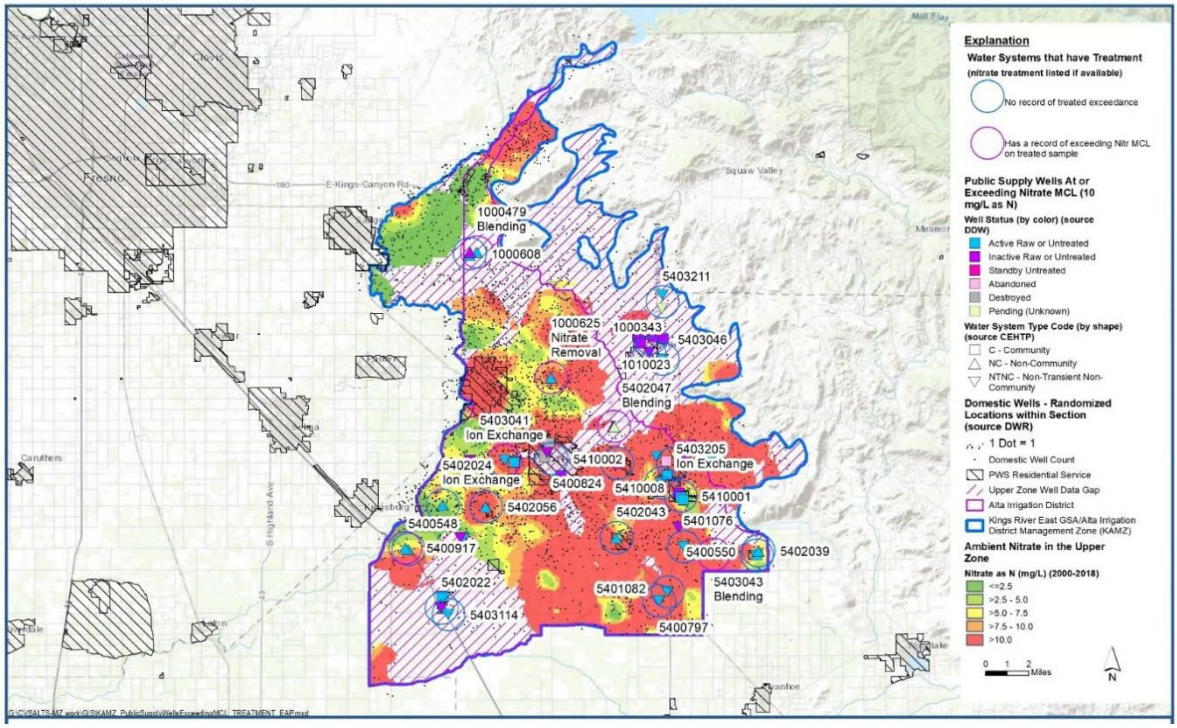
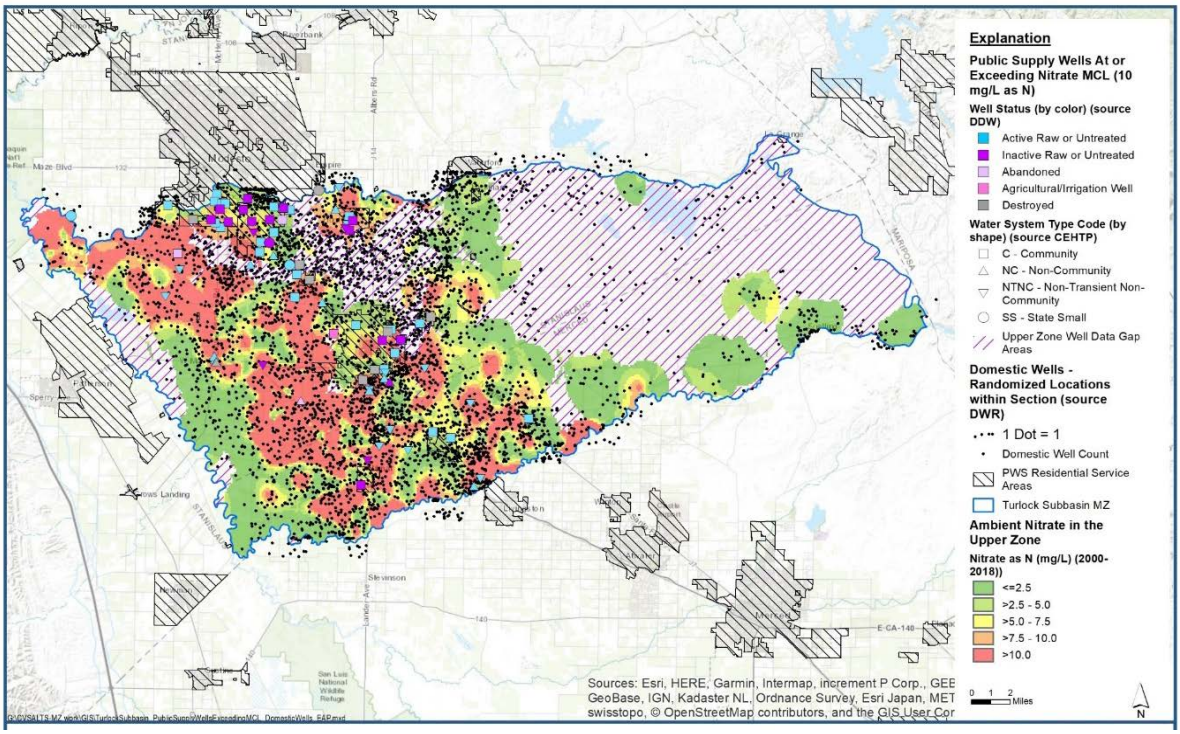
[9] Luhdorff & Scalmanini Consulting Engineers and Larry Walker Associates. 2016. Region 5: Updated Groundwater Quality Analysis and High Resolution Mapping for Central Valley Salt and Nitrate Management Plan; July 2016. Available online *https://www.cvsalinity.org/committees/technical-advisory/conceptual-model-developments/171-updated-groundwater-quality-analysis-for-central-valley.html*

[10] https://trackingcalifornia.org/water/map-viewer

[11] https://www.waterboards.ca.gov/drinkingwater/EDTlibrary.html)



Example of water systems with treatment and public water supply wells with elevated nitrate sample results.



Example of potentially impacted public water supply wells and domestic well locations.

Section 4: Groundwater Quality Analysis to Identify Potentially Impacted Areas

The first step in the groundwater quality analysis begins with collecting readily available nitrate groundwater quality data to be used to identify areas that are potentially impacted by elevated nitrate concentrations. Because groundwater movement may not be dictated by Management Zone boundaries, it helps to identify a buffer zone around the Management Zone that can be used to filter larger datasets of groundwater quality data for use in the water quality analysis. A three-mile buffer was used for the two pilot Management Zone areas, but data availability and hydrogeologic factors (such as groundwater flow patterns, subsurface flow barriers like faults, surface water bodies, etc.) can inform an appropriate buffer zone.

Data Sources

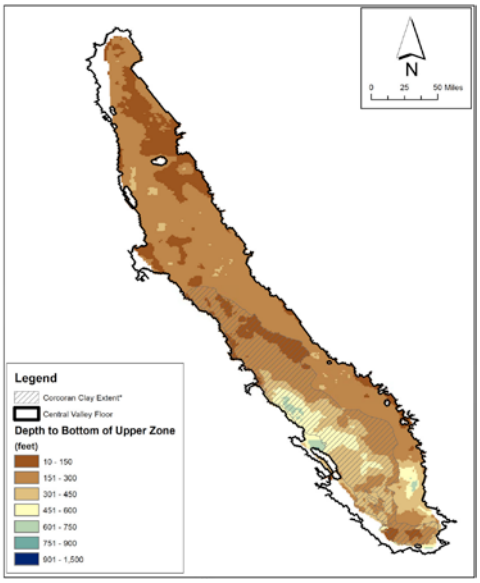
The following sources of groundwater condition data are useful for this section of the Management Zone Proposal.

- ***DWR's Bulletin 118:*** A general overview of groundwater conditions is available for each groundwater basin and subbasin from DWR's Bulletin 118, which provides a very broad but not always current picture of groundwater quality. Inv addition, Groundwater Sustainability Agencies are developing their basin specific Hydrogeological Conceptual Model (HCM), which includes details on groundwater conditions.
- ***SGMA Groundwater Sustainability Agencies (GSAs):*** Some GSAs in basins that are not considered by DWR to be a high or medium priority (according to their Groundwater Basin Prioritization) may not have started or completed their HCMs within the time frame of the Management Zone Proposal. Coordination with the GSAs within the Management Zone is beneficial for possibly obtaining information on groundwater conditions that could be used for this section of the Management Zone Proposal. Point of contact information for each GSA is available through DWR's SGMA Portal (*https://sgma.water.ca.gov/portal/gsa/all*).
- ***CV-SALTS High Resolution Nitrate Geodata****:* Groundwater quality information from the Central Valley Salt and Nitrate management Plan (SNMP) can be selected by location and well records can be updated with more recent groundwater quality data from publicly available sources. On behalf of CV-SALTS, a groundwater quality analysis of the Central Valley Region was prepared, including high resolution mapping of TDS and nitrate in 2016[1] (Note: Other technical projects completed to support CV-SALTS data analysis may be found at the CV-SALTS website).[2] The high

[1] Luhdorff & Scalmanini Consulting Engineers and Larry Walker Associates. 2016. Region 5: Updated Groundwater Quality Analysis and High Resolution Mapping for Central Valley Salt and Nitrate Management Plan; July 2016. Available *online* *https://www.cvsalinity.org/committees/technical-advisory/conceptual-model-developments/171-updated-groundwater-quality-analysis-for-central-valley.htm*

[2] *https://www.cvsalinity.org/committees/technical-advisory/technical-projects-index.html.*

resolution mapping of salt and nitrate is available for the Upper, Lower, and Production Zones of the groundwater system, which are defined in the documentation. Ambient TDS and nitrate conditions are provided, as well as assimilative capacity, groundwater quality trends, and predicted conditions (after 10, 20, and 50 years), can all be found as tables and map figures. The CV-SALTS high resolution dataset utilizes groundwater quality data from 2000-2016. For more recent data to update the assessment of groundwater conditions, several public data sources are available for downloading and obtaining nitrate data within the Management Zone and buffer area.



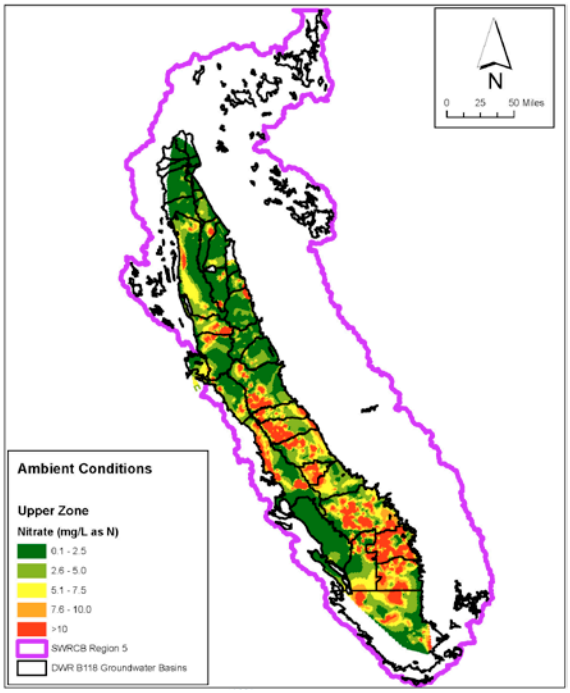
Depth to the Bottom of the Upper Zone (see footnote 1)

The following table summarizes sources of data that may be accessed to update the CV-SALTS and/or GSA's nitrate groundwater dataset for completing the Initial Assessment of Groundwater Conditions.

Data Category	Data Source	Link
General Groundwater Conditions	DWR Bulletin 118 overview of basin/subbasin conditions (groundwater levels and groundwater quality)	https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118
	DWR's Groundwater Sustainability Basin Prioritization	https://water.ca.gov/LegacyFiles/groundwater/casgem/pdfs/lists/PubRel_BasinRank_by_HR_5-18-15.pdf
	Individual GSA's Hydrogeologic Conceptual Model (HCM), via request by the GSA Point of Contact	https://sgma.water.ca.gov/portal/gsa/all
	CV-SALTS High Resolution Salt and Nitrate Mapping for Region 5	https://www.cvsalinity.org/committees/technical-advisory/conceptual-model-developments/171-updated-groundwater-quality-analysis-for-central-valley.html
Publicly Available Groundwater Quality Data Sources	GeoTracker GAMA	http://geotracker.waterboards.ca.gov/gama/gamamap/public/
	DWR Water Data Library	http://wdl.water.ca.gov/waterdatalibrary/waterquality/index.cfm
	USGS National Water Information System	https://waterdata.usgs.gov/nwis/gw
	Geotracker Regulated Facilities	http://geotracker.waterboards.ca.gov/ and http://geotracker.waterboards.ca.gov/datadownload
	Division of Drinking Water (DDW)	https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/EDTlibrary.html
County-specific Data Available by Request	County state small water systems and domestic/local small water systems (water quality data)	Typically, the county's department of public health or environmental health has a website, or a contact person listed on the individual county website.

Initial Assessment of Groundwater Conditions

The groundwater quality data collected from the Central Valley SNMP or GSA's should be compiled and updated with the most recent nitrate sample data. Care must be given to ensure that accurate and consistent values and units are maintained (e.g. all nitrate concentration data converted to nitrate as nitrogen (N) in mg/L; and all well coordinates are in the same coordinate system such as northing/easting or latitude/longitude).



Ambient Nitrate Conditions in the Upper Zone in the Central Valley Floor

Groundwater quality data must then be categorized into aquifer zones:

- When well depths are known, the CV-SALTS high-resolution raster GIS coverages may be used to categorize wells with nitrate data into Upper and Lower Zones.[3]
- When well depths are unknown, well types may be used in conjunction with DWR's spatial coverage of Well Completion Report statistics,[4] or alone.
- Domestic wells should be placed in the Upper Zone category, but the zone for other well types (production, agricultural, industrial, monitoring, etc.) can refer to the DWR statistics for well depths. The DWR spatial coverage provides general statistics (number of wells, average well depth, minimum well depth, and maximum well depth) which can be used to help place wells with nitrate data into the appropriate aquifer depth zone.

The Upper Zone wells with nitrate data can be used to update a high-resolution spatial analysis of nitrate conditions in the Upper Zone within the Management Zone using the following steps:

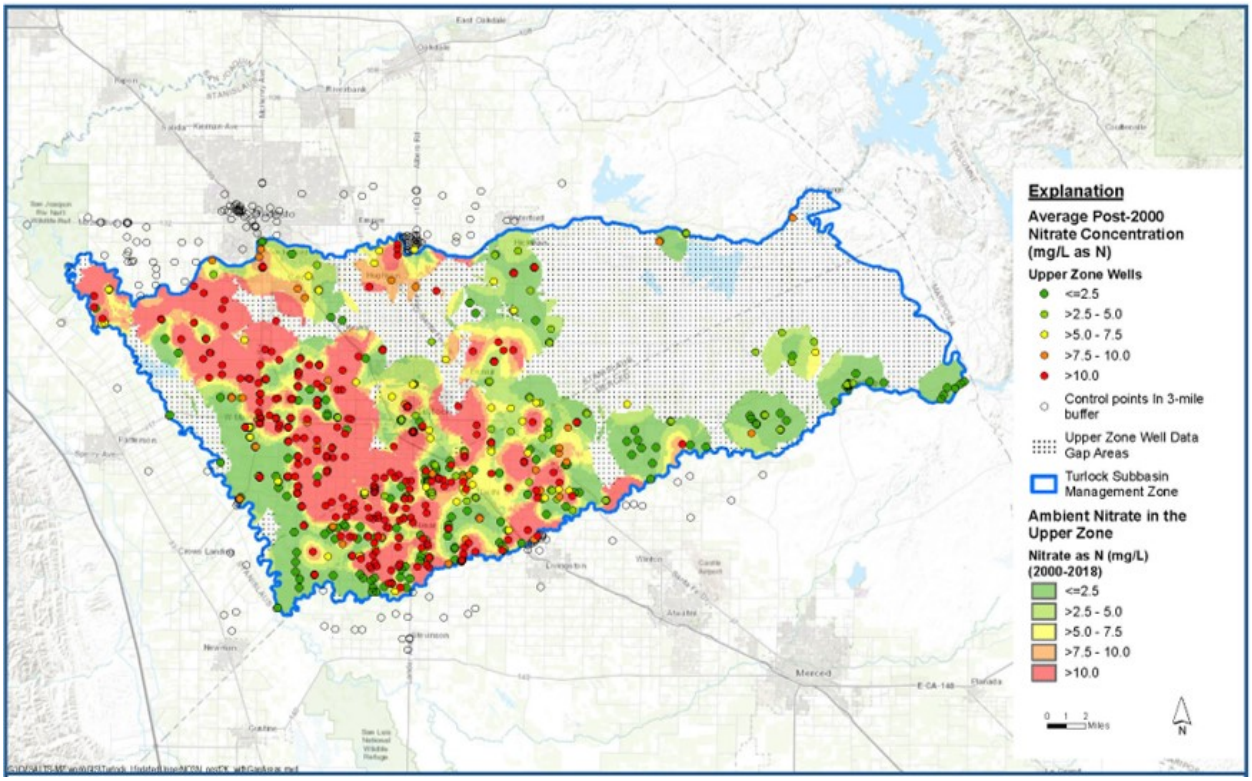
- **Temporal Declustering:** Annual average nitrate concentrations were calculated for each well for the years since 2000; those annual averages can then be averaged to yield one average nitrate concentration representing recent conditions.

[3] The CV-SALTS High Resolution geodatabase contains raster coverages (GIS surfaces) of the depth to the bottom of the Upper and Lower Zones. Aquifer Zone depths were developed for CV-SALTS, using a weighting system that uses bottom well perforation data across the entire Central Valley (see Central Valley Salt and Nitrate Management Plan, https://www.cvsalinity.org/index.php/docs/central-valley-snmp/final-snmp.html). For example, the weighting system puts the highest weight on domestic well bottom perforations for calculating the bottom of the Upper Zone.

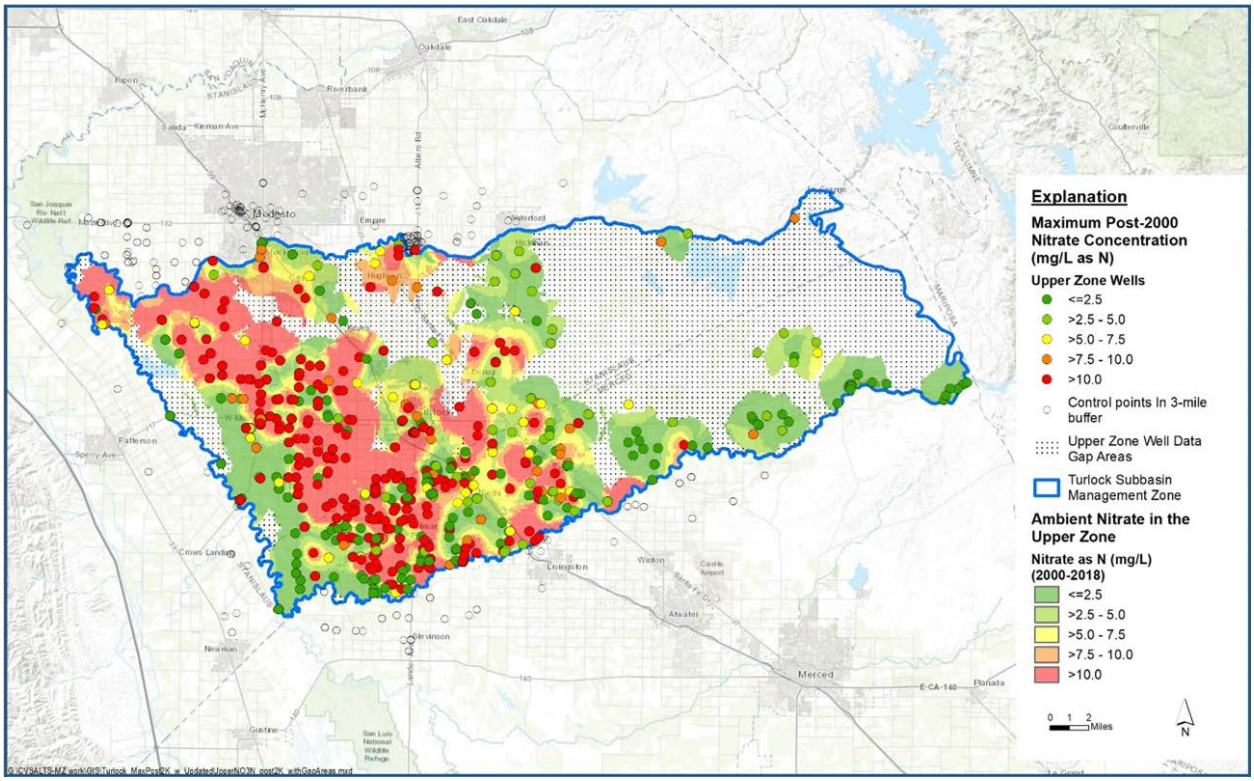
[4] DWR maintains a Well Completion Report Map Application, found here: https://gis.water.ca.gov/app/wcr that provides well statistics by PLSS Section.

- **Maximum Recent Value**: Calculate the maximum nitrate concentration since 2000 for each Upper Zone well.
- **Upper Zone Wells Outside the Management Zone and Within the Buffer Zone (E.g.,3 Miles) Around the Management Zone Boundary**: Compile and use in the updated high-resolution analysis.
- **Geospatial Interpolation of the Well Point Data:** Can perform (e.g., kriged or comparable method) using an appropriate search radius (e.g. 1.5 miles).
- **Gap Areas:** These exist where post-2000 upper zone nitrate well data are insufficient to produce the spatial interpolation using the 1.5-mile (or other appropriate radius) search criteria.
- **Recent Trends:** Calculate if nitrate time-series data are sufficient.

A comparison may be made between the maximum recent value and the annual average nitrate concentration since 2000 to ensure that the kriged ambient nitrate is not underestimating or under-displaying areas where elevated nitrate may be more recently prevalent. These methods help to ensure that residents using groundwater potentially impacted by elevated nitrate are identified.



Example of Updated Ambient Post-2000 Nitrate Concentration in the Upper Zone for the Turlock Subbasin Management Zone.



Example Demonstrating that the Maximum and Annual Average Concentrations are Similar (Only a few differences are noticeable in the north and west; however, these differences do not change the overall picture of ambient nitrate conditions).

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Section 5: Development of the Management Zone Early Action Plan

Regulatory Background

The Nitrate Control Program provides two pathways for compliance for permitted discharges to groundwater (See ***Section 1: Management Zone Regulatory Requirements***). Pathway A is for individual permittees and sets conservative limitations for source control. Pathway B is for permittees proposing to be regulated under a Management Zone. Each pathways has its own specific milestones and timelines, but both Pathways require development of an Early Action Plan (EAP). The purpose of the EAP is to identify how the Management Zone will provide short-term safe drinking water supplies to users impacted by nitrate concentrations greater than 10 mg/L (nitrate as N) in their groundwater source. While this document can be helpful to dischargers that select Pathway A, it is primarily intended to support dischargers that select Pathway B.

Early Action Plan Development Requirements

The Nitrate Control Program includes the following regulatory requirements for establishment of an EAP:[1]

- A process to identify affected residents and the outreach utilized to ensure that impacted groundwater users are informed of and given the opportunity to participate in the development of proposed solutions;
- A process for coordinating with others that are not dischargers to address drinking water issues, which must include consideration of coordinating with affected communities, domestic well users and their representatives, the State Water Board's Division of Drinking Water, Local Planning Departments, Local County Health Officials, Sustainable Groundwater Management Agencies and others as appropriate;
- Specific actions and a schedule of implementation that is as short as practicable to address the immediate drinking water needs of those initially identified within the Management Zone, that have drinking groundwater that exceeds nitrate standards and that do not otherwise have interim replacement water that meets drinking water standards; and

Key Early Action Plan Tasks

- Task 1 - Establish Process to Identify Potentially Impacted Residents
- Task 2 – Conduct Outreach During EAP Development
- Task 3 – Develop Program to Provide Temporary Drinking Water to Impacted Residents
- Task 4 – Develop Outreach Program for Use During EAP Implementation
- Task 5 – Establish Process to Coordinate with Non-Dischargers during EAP Implementation
- Task 6 – Establish Funding Mechanism to Implement EAP

[1] Central Valley Water Board, 2018. *Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and Tulare Lake Basin to Incorporate a Central Valley-wide Salt and Nitrate Control Program.* Draft Staff Report. May 2018.

- A funding mechanism for implementing the Early Action Plan, which may include seeking funding from Management Zone participants, and/or local, state and federal funds that are available for such purposes.

The text box above summarizes these requirements in the form of six key, practical tasks that should be completed during development of an EAP. The sections below are intended to provide additional information for consideration during the implementation of each of these tasks.

Early Action Plan Development Tasks

Task 1 - Establish Process to Identify Potentially Impacted Residents

The goal of this task is to identify residents within the Management Zone that are dependent on groundwater from wells that exceed the primary maximum contaminant level (MCL) for nitrate (10 mg/L nitrate as N). Impacted residents may include residents that obtain drinking water from (a) private domestic wells; and (b) public water systems, where the system is not in compliance with the primary MCL for nitrate. To establish this process, three steps should be considered:

- **Step 1: Identify Potentially Impacted Residents.** Identify groundwater areas where private domestic wells are potentially providing water that exceeds 10 mg/L nitrate as N (See **Section 4: *Groundwater Quality Analysis to Identify Potentially Impacted Areas***).
- **Step 2: Evaluate Public Water System (PWS) Compliance.** Characterize PWSs within the proposed Management Zone boundary to determine if any are not in compliance with the primary MCL for nitrate (See **Section 3: *Characterization of Proposed Management Zone***).
- **Step 3: Develop Process to Identify Potentially Impacted Residents.** The outcome of this step is a description of the process that will be executed when the EAP begins implementation. Completion of this step is necessary to ensure that residents that may be drinking nitrate-contaminated water can be targeted for outreach so that they are provided the opportunity to receive interim replacement water that meets drinking water standards (see Task 3 below).

  Different methods exist to identify potentially impacted residents. **Table 1** provides three such examples. Complex, labor intensive methods are expected to result in a more refined list of residents for targeted outreach, that is, those residents most likely to be obtaining their drinking water from nitrate-contaminated groundwater. In contrast, simpler methods would be expected to result in a less-refined targeted outreach list, that is, it is more likely to include some residents that already have safe drinking water. Ultimately, the Management Zone will need to determine the degree of certainty it wants to have when developing a targeted outreach list for use in Task 4 below. Regardless of the method employed, the Management Zone must be able to demonstrate that it has conducted appropriate due diligence in identifying potentially impacted residents within the proposed Management Zone.

Table 1. Examples of Methods to Identify Residents Potentially Impacted by Nitrate Contamination within a Proposed Management Zone

Method	General Description	Pro	Con
Method 1: Identify to the maximum extent practicable all residents within the proposed Management Zone	All residents within the Management Zone boundary are identified and targeted for outreach	• Simplest approach: Task 1 Steps 1 and 2 are unnecessary • Least data resource intensive	• If Management Zone Area is large, method greatly increases the level of effort required to complete a resident mailing list • Increases the potential number of residents that may request water testing during EAP implementation
Method 2: Identify all residents within the proposed Management Zone *not served* by a compliant PWS	Remove from the outreach list those residents that are connected to a compliant PWS	• Moderate approach: Step 1 is unnecessary • Requires fewer data resources as required for Method 3	• If Management Zone is large, method may somewhat increase the level of effort required to complete a resident mailing list
Method 3: Identify residents within the proposed Management Zone most likely to be using groundwater as a drinking water source with nitrate exceeding 10 mg/L	Filters list of all residents in the proposed Management Zone to target only those residents that are most likely to obtain their drinking water from a source that has nitrate that exceeds 10 mg/L	• Most targeted approach: focuses outreach to only residents most likely relying on a nitrate contaminated drinking water source	• Most data resource intensive approach • Potentially labor intensive to identify only those residents in specific areas, as identified in Step 1

Task 2 – Conduct Outreach During Early Action Plan Development

As of the date of publication of this report, the State Water Resources Control Board's Office of Public Participation was in the process of developing protocols for community outreach that may apply here. Permittees developing a Preliminary Management Zone Proposal should consult with the Regional Board to determine which outreach protocols may apply to development of the Early Action Plan.

Outreach must occur to impacted groundwater users in the proposed Management Zone area to: (a) keep them informed about the developing Management Zone; and (b) provide them the opportunity to participate in the development of solutions to ensure residents have access to safe drinking water during EAP implementation. Accordingly, early in the development of the EAP Management Zone outreach

activities must be implemented that include, but are not necessarily limited to the following:

- Conduct an adequate number of public meetings within the proposed Management Zone to provide sufficient opportunity for residents to provide input to the approach(es) being considered for implementation under the EAP.
- Collaborate with non-dischargers within the proposed Management Zone to obtain their input on potential drinking waters solutions and assist with the sharing of information regarding the developing EAP, e.g., sharing information about the EAP through regular communication activities with their stakeholders; and
- Encourage stakeholders participating in the development of the Management Zone proposal to disseminate information about the EAP to their own organizations.

The EAP must document the outreach that was conducted within the Management Zone to obtain input from the community during EAP development. The purpose of this documentation is to demonstrate that the local community was given sufficient opportunity to contribute to the short-term drinking water solutions included in the EAP.

Task 3 – Develop Program to Provide Temporary Drinking Water to Impacted Residents

The purpose of this task is to establish temporary sources of safe drinking water for residents until permanent sources of safe drinking can be developed. This program should include at least two key elements:

- Public Access Water Program, whereby residents may obtain safe drinking water from publicly available facilities; and
- Alternative Water Program (AWP), which provides mechanisms for residents to obtain safe drinking water from sources other than publicly accessible locations.

This task includes two key steps for completion during development of the EAP:

- **Step 1 – Develop Temporary Drinking Water Program Elements. Table 2** lists the key elements associated with each of the above programs that should be considered during development of the EAP. Note that it is the expectation of the Central Valley Water Board that more than one AWP option be available to local residents.
- **Step 2 – Establish Implementation Schedule.** The Nitrate Control Program regulations do not establish a specific schedule for implementation of the EAP. The regulations only state that the EAP must begin implementation no later than 60 days after submittal to the Central Valley Water Board, unless the Board objects to the EAP prior to the end of this 60-day period. Although the regulations do not specify a schedule for implementation, the following principles should be considered when developing the EAP Implementation schedule:
  - By definition, the purpose of the EAP is to implement early actions throughout the proposed Management Zone to provide safe drinking water to residents that rely on groundwater that exceeds that nitrate water quality objective. Accordingly, the implementation schedule should be consistent with this purpose.

Table 2. Elements to Consider When Developing Temporary Water Program Provisions

Temporary Water Program Type	Elements	General Considerations
Public Access Water Program	Types of Facilities	• Self-operating water filling stations where residents may bring containers to be filled • Vendor-supplied facility where a resident may pick up full water containers and drop off empty containers • Others as determined by the Management Zone
	Siting Factors	• Publicly accessible at no cost • Provided water is from an existing PWS that is compliant with State requirements to provide safe drinking water • Open to the public as many hours/day/week as possible with a goal of being accessible 24/7 • User safety considered (e.g., well-lit area with parking; limited potential for congestion) • Good neighbor practices implemented, e.g., noise, trash concerns minimized
	Number of Facilities	• Vary by Management Zone due to (a) extent of areas that have nitrate-contaminated groundwater; (b) size of the Zone; (c) potential population to be served; and (d) availability of siting opportunities • Initial planning should consider siting locations to serve an area with a 10-12 mile diameter. The actual area served will depend on the siting factors described above and expected degree of use (see Attachment A to this section for initial planning example)
	Development & Implementation Considerations	• Approach to provide water containers to residents will need to be established • Operational agreements will need to be established with the land/property owner where the facility is sited • Facility design, construction and operation and maintenance (O&M) requirements must comply with state and federal regulations
	Monitoring	• Monitor water use at public access facilities • Establish additional facilities if needed, based on findings from monitoring

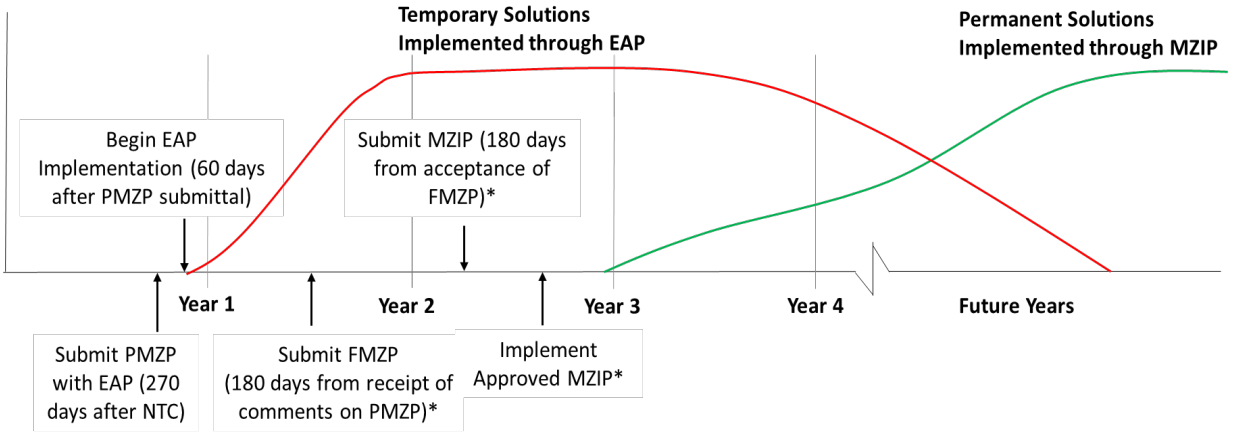
Table 2. Elements to Consider When Developing Temporary Water Program Provisions

Temporary Water Program Type	Elements	General Considerations
Alternative Water Program	Alternative Options	• Home bottled water delivery • Point of Use Treatment System • Others as determined by the Management Zone
	Criteria to Participate	• Resident is within the Management Zone and does not receive drinking water from a PWS that complies with nitrate water quality objective • Resident's drinking water source contains nitrate concentrations above the nitrate water quality objective (conduct free well testing if needed to verify) • Resident willing to sign any necessary agreements with a vendor to participate in the AWP (e.g., to receive bottled water or have a Point-of-Use (POU) treatment system installed and maintained)
	Process to Implement	• Conduct direct outreach to residents identified through Task 1 to provide opportunity to participate in AWP instead of obtaining drinking water through Public Water Access Program • Process requests to participate in AWP • Conduct well testing as needed at no cost to residents • Establish vendor(s) to provide bottled water or POU treatment • Implement program for each approved participant • Conduct follow-up to verify AWP is working as intended, including verification that participants are receiving sufficient water

- The Management Zone must develop a Management Zone Implementation Plan (MZIP) within 180 days after approval of the Final Management Zone Proposal (See ***Section 1: Management Zone Regulatory Requirements***). The MZIP must include the following:

  Identify how emergency, interim and permanent drinking water needs for those affected by nitrates in the Management Zone area are being addressed, and how a drinking water supply that ultimately meets drinking water standards will be available to all drinking water users within the Management Zone boundary, and the timeline and milestones necessary for addressing such drinking water needs.

The EAP remains in effect until it is superseded by the requirements established in the approved MZIP for the Management Zone. Therefore, until projects identified in the MZIP are completed, the EAP serves as the mechanism to ensure a supply of safe drinking water is available within the Management Zone. Accordingly, it should be implemented as expeditiously as possible and continue to be implemented until permanent solutions are in place. **Figure 1** illustrates these expectations for a Management Zone within the context of Management Zone deliverables.



* Assumes Central Valley Water Board acts on submittals within ~90 days of submittal

Figure 1. Conceptual Illustration of Timeline Associated with Key Nitrate Control Program Deliverables for a Management Zone and Provisions to Provide Safe Drinking Water

Given the above, it is recommended that the EAP be implemented as quickly as possible (e.g., no more than two years to develop and implement all of the temporary water provisions of the EAP). Once all elements are active, the EAP will continue to be implemented in a "maintenance" mode to continue to support the temporary drinking water provisions until permanent solutions are established. **Table 3** summarizes the key activities that are recommended for implementation, based on an initial two year EAP schedule.

Task 4 – Develop Outreach Program for Use During Early Action Plan Implementation

The EAP must have an active outreach component to ensure that nitrate-impacted groundwater users: (a) are made aware of where they may obtain safe drinking water within the Management Zone; and (b) are kept informed of and given the opportunity to participate in the development of proposed long-term solutions for obtaining safe drinking water. Accordingly, the Management Zone should consider including the following types of activities in its outreach program for implementation under the EAP:

- Establish mechanism(s) to publicly share information
- Prepare informational materials for general public

- Coordinate with non-dischargers
- Conduct periodic public outreach meetings
- Regularly notify the community about the availability of temporary publicly available drinking water facilities
- Continue to implement targeted outreach to residents

Table 3. Recommended Timing for Completion of Key Activities within First Two-Years of EAP Implementation

Year 1		Year 2
First Six Months	**Second Six Months**	
• Identify potentially impacted residents for targeted outreach • Public Water Access Facilities – Finalize site locations – Initiate facility designs for approval • Outreach – Website available – Public outreach meetings, informational materials development – Targeted mailout to residents – Public notices (availability of Public Access Water Facilities and AWP) • Initiate processing requests to participate in AWP including implementing well testing • Progress Report	• Public Water Access Facilities – Continue facility design for approval – Install approved facilities • Alternative Water Program – Continue to process requests to participate in AWP, including water testing – Follow-up with AWP participants • Initiate program monitoring • Progress Report	• Public Water Access Facilities – Complete facility designs for approval – Install remaining approved facilities • Manage AWP • Outreach - Public outreach meetings, materials, notifications (as needed) • Continue monitoring • Progress Report

Task 5 – Establish Process to Coordinate with Non-Dischargers during Early Action Plan Implementation

The regulations list the following as examples of entities where coordination should be considered: "affected communities, domestic well users and their representatives, the State Water Board's Division of Drinking Water, Local Planning Departments, Local County Health Officials, Sustainable Groundwater Management Agencies."

The degree to which various non-dischargers should or need to participate will greatly vary depending on the size and location of the proposed Management Zone. **Table 4** provides a summary of key entities that the developer of an EAP should consider including in their process to coordinate with non-dischargers. The roles of non-dischargers will vary. For example, these roles may range from regulatory oversight to assisting with the installation of a facility to provide temporary drinking water or dissemination of program information to residents within the proposed Management Zone.

Table 4. Types of Non-Dischargers to Consider During Development of EAP

Non-Discharger Category	Key Role(s) in EAP Implementation
County Government	Boards of Supervisors – Assist with dissemination of information to County residents and support approval of EAP-related projects
	County Agencies, e.g., planning, development or health services, responsible for drinking water related infrastructure/safety; support approval of EAP-related projects
Communities	Coordinate with commerce centers (incorporated and unincorporated/census-designated places) where public temporary drinking water facilities, such as water filling stations, may be established
Regulatory Agencies	Coordinate with regulatory agencies as needed (e.g., Central Valley Water Board and State's Division of Drinking Water) to verify that EAP development and implementation are consistent with Nitrate Control Program requirements
Non-governmental Organizations (NGOs)	Coordinate with local organizations that represent various community interests that potentially can assist with implementation of EAP elements, especially activities related to community outreach
Groundwater Sustainability Agencies	Coordinate with agencies involved in the use of water within the Management Zone planning area
Trade Organizations	Coordinate with trade organizations to assist with dissemination of information to their membership, e.g., Irrigated Lands Regulatory Program agricultural coalitions, California League of Food Producers, dairy organizations, e.g., Dairy Cares, Western United Dairymen or Milk Producers, and Farm Bureaus

The process for coordination during EAP implementation can vary to meet the needs of a particular proposed Management Zone, but it should consider activities such as the following:

- Conducting outreach activities to non-discharger organizations to share EAP-related information;
- Developing tailored outreach materials collaboratively to target specific audiences;
- Soliciting help from representatives of non-discharger organizations to assist with EAP implementation, especially in the local community; and
- Keeping regulators informed regarding the status of EAP implementation.

Task 6 – Establish Funding Mechanism to Implement Early Action Plan

The regulations require that the EAP include information regarding how the EAP will be funded during its implementation. Inherent in this requirement is the need to complete the following two steps:

- **Step 1 – Develop EAP Implementation Budget/Costs. Table 5** identifies key areas to consider when developing an EAP budget for a Management Zone. Given the newness of the EAP program, initially it will be difficult to estimate EAP implementation costs in the following key areas:[2, 3]
  - Public Access Water Facility Design, Installation and Operation – The costs to establish and operate one of these facilities can only be estimated as the development and construction costs are likely to vary by site.
  - Public Access Water Facility Usage – Budget needs to include funds to reimburse the land/property owner that allows the facility to connect to the PWS at the site. Reimbursement costs will depend on local water rates, the number of users and frequency of usage by residents.
  - AWP Well Testing – After receiving notice of the opportunity to participate in an AWP, the number of residents that will actually request to have their water tested is unknown.
  - AWP Participation – As noted above, the expectation is that a Management Zone will offer at least two AWP options, e.g., bottled-water delivery or installation of a POU treatment system. The number of residents that request AWP participation and qualify for the program will be unknown at the outset. Moreover, it is unknown how may AWP qualified residents will choose bottled water delivery versus a POU treatment system.

[2] Over time experience will be gained by the initially proposed Management Zones. As a consequence, EAP's developed several years into implementation of the Nitrate Control Program will have more information from which to develop cost estimates.

[3] These are estimated costs for implementation of the EAP; the Management Zone will incur additional costs to develop the EAP, especially to ensure adequate community outreach is completed during EAP development

Given the uncertainty in the ability to establish firm costs for the above key program elements, it is recommended that the initial budget established for the EAP either develop a range of budget estimates, include a substantial contingency fund, or both.

- **Step 2 - Establish Agreements to Fund and Implement EAP.**

  [PLACEHOLDER – to be developed in the future]

Table 5. Factors to Consider When Developing an EAP Budget for a Management Zone

EAP Program Area	Key Elements to Consider Including in EAP Budget	Factors to Consider
Identify Potentially Impacted Residents	Development of mailing list for targeted outreach to residents	• More complex, data resource intensive methods are likely to cost more to complete, but the resulting targeted outreach list will be more refined and could reduce implementation costs later • Table 1 provides three potential options. Costs would be expected to be the least for Method 1; highest for Method 3
Outreach	Website development	• Costs reduced if an existing website can be used
	Informational materials	• Assume need to develop in both English and Spanish • Potential need to develop materials in other languages on local basis
	Public meetings	• At least one round of public meetings during EAP development • Consider two or more rounds of public meetings during first two years of implementation • Additional meetings may be necessary after second year
	Public notices	• Notices intended for all residents in Management Zone • Regular public notices needed to inform residents of availability of Public Access Water Facilities
Monitoring & Reporting	• 6 month status report • 1 year progress report • Annual progress reports thereafter	• Costs to evaluate program implementation data and prepare periodic reports

Table 5. Factors to Consider When Developing an EAP Budget for a Management Zone

EAP Program Area	Key Elements to Consider Including in EAP Budget	Factors to Consider
Public Access Water Facility Development	Establish facility locations	• Finalize site locations for facility development through desktop/site assessments and meetings with land/property owners • Number of site locations to identify will be specific to the size of the Management Zone and the water quality characteristics in the underlying groundwater (see Attachment A below in this section as an example of how to estimate a number of facilities for budget planning purposes)
	Establish agreements with land/property owners that agree to host a facility	• Develop all necessary agreements to establish and operate a facility at each site • Include funds in the budget for reimbursing site owners for water usage at the facility
	Facility development (design/approval)	• Costs to prepare the facility design, installation/construction-related documents, operational procedures, O&M requirements, approvals/agreements, etc.; prepare any necessary supporting regulatory-related documents (e.g., permit applications) to support project • Anticipate that development cost/facility will decline over time as general development standards are developed
	Facility installation	• Include cost to construct each planned facility; costs will be site-specific based on the site characteristics and design
	Facility operation & maintenance	• Costs will be site-specific depending on the facility design and location

Table 5. Factors to Consider When Developing an EAP Budget for a Management Zone

EAP Program Area	Key Elements to Consider Including in EAP Budget	Factors to Consider
Alternative Water Program	Targeted mailout to residents identified as potentially impacted	• Cost to conduct targeted outreach to residents identified in Task 1
	Establish and maintain vendor agreements to provide alternative water	• Cost to procure and establish agreements with vendors • Cost to manage agreements
	Process AWP participation requests	• Administrative costs to review/process requests to participate in AWP
	Conduct well testing	• Budget should include the following: – Coordination with residents to conduct testing and laboratories to receive samples – Labor to collect water samples and submit to a laboratory – Laboratory analysis costs – Evaluate/report well testing results – It is unknown how many residents will request well-testing. To budget, consider the number of potential wells to be tested and number of residents targeted for outreach and create a range of estimated costs
	Implement bottled water delivery program	• Costs will be vendor-specific • Costs will be dependent on factors such as: – Number of potential participating residences – Number of gallons delivered per month to each household (assume minimum of 65 to 100 gallons/household of 4/month as a starting baseline) – Delivery/fuel surcharges by vendor (if any) – Credit for empty bottles (if any)
	Install POU treatment system	• Costs will be vendor-specific • Two major costs to budget: installation and annual maintenance • Costs dependent on number of residents that select this option
	Conduct follow-up with residents participating in the AWP	• Labor cost to contact AWP participants to check in on AWP implementation at their residence

Attachment A – Examples of a simple approach to estimate the number of Public Access Water Facilities that may be needed within a proposed Management Zone. Actual number will depend on factors such as availability of sites to host a facility and anticipated usage. The approach relies on (a) identification of areas identified as most likely to have nitrate-contaminated groundwater; and (b) assignment of 10-12 mile diameter planning areas associated with areas of nitrate-impacted groundwater.

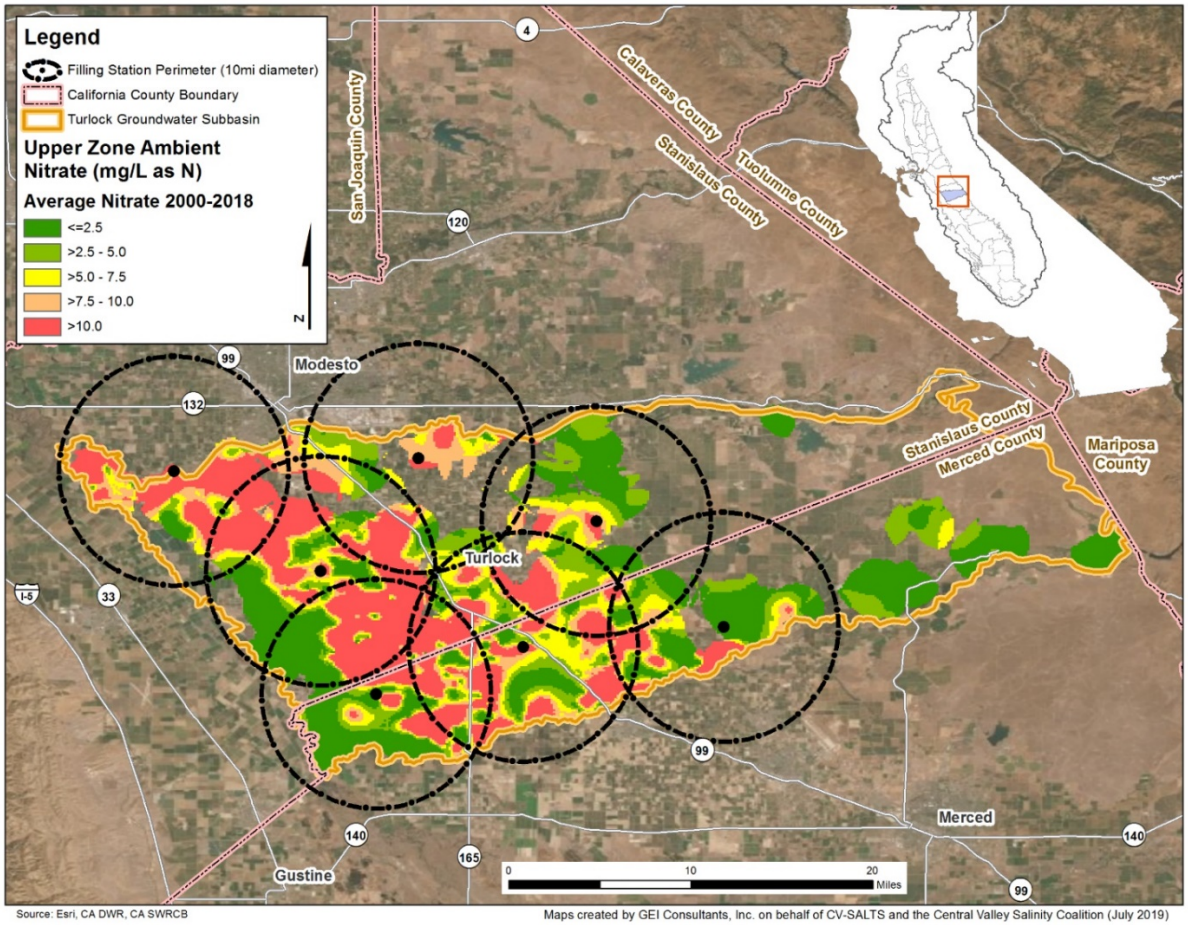


Figure A-1. Areas in the proposed Turlock Management Zone targeted for installation of a Public Access Water Facility based on application of 10-mile diameter planning areas (circles) generally centered in areas most likely to have nitrate-contaminated groundwater.

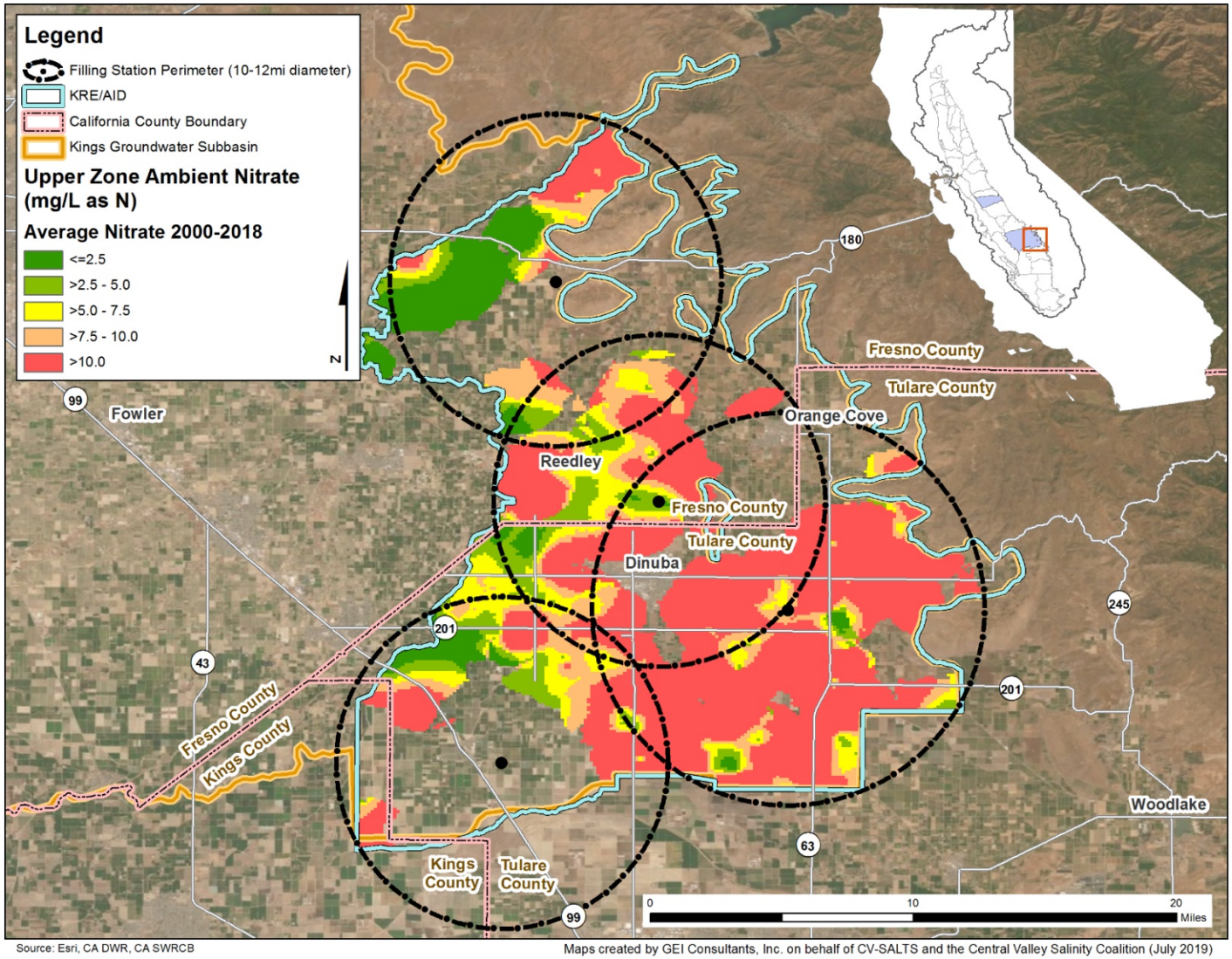


Figure A-2. Areas within the Kings River East/Alta Irrigation District proposed Management Zone targeted for installation of a Public Access Water Facility based on application of 10 to 12-mile diameter planning areas (circles) generally centered in areas most likely to have nitrate-contaminated groundwater.

Section 6: Outreach to Dischargers in Proposed Management Zone Area

Purpose

A critical but challenging early step in the development of a Preliminary Management Zone Proposal is to identify permitted dischargers within a proposed Management Zone boundary who are interested in becoming a Management Zone participant. This guidance provides a step-by-step approach to identify these dischargers within a defined boundary.

Note: Prior to implementation of outreach efforts, it is recommended that the Central Valley Water Board be consulted to determine how they can assist with the implementation of these steps. The Board may be able to offer an alternative to Steps 2 and 3 below.

Procedure

Step 1: Identify the Water Quality Coalition that Represents the Owners and Operators of Irrigated Lands in Proposed Management Zone Area

Owners and operators of irrigated lands are regulated under the Irrigated Lands Regulatory Program (ILRP) and are represented by a third party coalition. Under the Nitrate Control Program, the Notice to Comply (NTC) will be sent to the coalition rather than to individual growers. **Table 1** identifies the coalitions in each of the Priority 1 groundwater subbasins and how to contact them.

Step 2: Query the California Integrated Water Quality System Project Database

The California Integrated Water Quality System (CIWQS) database may be used to support efforts to identify other permitted dischargers within the proposed Management Zone boundary. Complete the following actions to create a list of permitted dischargers based on this database:

- Access CIWQS: https://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.html.
- Scroll down to “Facilities Reports” and click on “Interactive Regulated Facilities Report.”
- Select the option to search by County; within the County box highlight any relevant counties.
- Scroll down and click on “Run Report”. The total number of regulated facilities by County and type is provided in the bottom right corner of the table.
- Click on the total number of facilities (bottom right of table) to view a list of the first page of regulated facilities; click on the option to “Export This Report to Excel.” Save the file as an Excel file.

Table 1. Water Quality Coalition Contact Information for Priority Groundwater Subbasins

Groundwater Subbasins	Key ILRP Coalition(s)	Contact
Priority 1		
Modesto	East San Joaquin Water Quality Coalition, www.esjcoalition.org	See current contact at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/201912_coalition_contact_info_sac.pdf
Turlock		
Chowchilla		
Kings	Kings River Water Quality Coalition, www.kingsriverwqc.org	See current contact at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/201912_coalition_contact_info_fresno.pdf
Kaweah	Kaweah Basin Water Quality Association, www.kaweahbasin.org	
Tule	Tule Basin Water Quality Coalition, www.tbwqc.com	
Priority 2		
Yolo	Sacramento Valley Water Quality Coalition, www.svwqc.org/	See current contact at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/201912_coalition_contact_info_sac.pdf
	California Rice Commission, www.calrice.org	
Eastern San Joaquin	San Joaquin County & Delta Water Quality Coalition, www.sjdeltawatershed.org/	
Merced	East San Joaquin Water Quality Coalition, www.esjcoalition.org	
Madera		
Delta Mendota	Grasslands Drainage Area	
	Westside San Joaquin River Watershed Coalition, https://www.westsidesjr.org/	
Tulare Lake	Kings River Water Quality Coalition, www.kingsriverwqc.org	See current contact at: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/for_growers/coalition_groups/201912_coalition_contact_info_fresno.pdf
Kern County (Westside South)	Buena Vista Coalition	
	Kern River Watershed Coalition Authority, www.krwca.org	
	Westside Water Quality Coalition, www.wwqc.org	
Kern County (Poso)	Cawelo Water District Coalition, www.cawelowd.org	
	Kern River Watershed Coalition Authority, www.krwca.org	

- Within the Excel spreadsheet, sort by "Place/Project Type" and "Order No." Numerous facility types will be included. This list should be divided into three parts:
  - **List of Applicable Dischargers** – These facilities are expected to receive a NTC. This list should include the following facility types: Animal Feeding Facilities,[1] Aquaculture/Hatchery, Food Processing/Food Processor, Mobile Home Park, Power Plant, Recycled Water Use Area, Rendering, Wastewater Treatment Facility, and Winery.
  - **List of Non-Applicable Dischargers** – Facilities that did not receive a NTC under the Nitrate Control Program. At a minimum, this list should include all of the following permit types: Construction, industrial; dredge/fill, habitat restoration area, and waterway/shoreline site.
  - **List of Potential Dischargers** – These are the remaining facilities that may have received a NTC with the Nitrate Control Program (subject to the Central Valley Water Board's discretion).

The outcome of the above filtering process is an Excel spreadsheet with the three lists of known permitted dischargers within the area searched.

Step 3: Finalize List of Applicable Dischargers with Central Valley Water Board Staff

It is recommended that the List of Applicable Dischargers and Potential Discharger List be sent to the Central Valley Water Board for review for two reasons: (a) Verify the CIWQS database generated lists are consistent with the list of permitted dischargers sent a NTC in the area; and (b) Identify which facilities on the Potential Discharger List should be included on the List of Applicable Dischargers. The outcome will be a final List of Applicable Dischargers for the searched areas. Any remaining dischargers on the Potential Discharger List should be combined with the List of Non-Applicable Dischargers and set aside.

Step 4: Identify Permitted Dischargers within Proposed Management Zone Boundary

The information downloaded in Step 2 includes GIS coordinates for each permitted discharger. Using GIS tools, separate the List of Applicable Dischargers into two parts:

- **Dischargers Located within Proposed Management Zone Boundary** – This "Management Zone Master List" will be the primary focus of outreach efforts for the Management Zone.

[1] Note that the "Animal Feeding Facility" Place/Project Type includes three different types of facilities regulated by separate Orders: Dairies (R5-2013-0122); Poultry Farms (R5-2015-0087); and Confined Bovine Feeding Operations (R5-2017-0058).

- **Dischargers Located Outside of the Proposed Management Zone Boundary** – It is recommended that this list of remaining permitted dischargers from the searched area be sorted to identify which dischargers are located near (e.g., within five miles) the Management Zone boundary. Outreach to some of these dischargers may be necessary during development of the Management Zone if it is determined that their activities have the potential to impact Management Zone implementation.

For the resulting Management Zone Master List, it is recommended that the list be separated into two parts: (a) Permittees subject to a General Order (i.e., dairy, confined bovine feeding operation, and poultry farm) for use in Step 5; and (b) permittees subject to an individual WDR for use in Step 6.

Step 5: Conduct Outreach to Dischargers Permitted Under a General Order

It is recommended that outreach to these types of dischargers include two activities:

- Outreach to entities that represent the interests of many dischargers subject to a General Order, e.g., for Dairies, reach out to Dairy Cares.
- Direct mailout to each permitted discharger identified in the Management Zone Master List generated under Step 4 (If there is an entity representing a group of dischargers, this mailout should be coordinated with that entity).

Through either mechanism, the permitted dischargers within the Management Zone should be prepared to share the following information through the outreach effort:

- Requirements of the Nitrate Control Program;
- Potential compliance pathways available to the dischargers when responding to the NTC;
- Basis for the proposed Management Zone;
- Requirements to participate in the Management Zone as the elected compliance pathway;
- Options for how the permitted discharger may participate in the Management Zone, including an invitation to participate in Management Zone meetings; and
- Contact information to obtain additional information, if necessary.

Step 6: Conduct Outreach to Permitted Dischargers with an Individual WDR

Outreach to these dischargers requires identification of a point of contact. It is recommended that initial contact with an individual permitted discharger be made via telephone. Be prepared to follow-up a telephone call with written information sent by email. If unable to contact someone by telephone or email, it is recommended that a letter be sent with all the relevant information about the proposed Management Zone (see list of recommended materials above).

Identification of an appropriate point of contact can be obtained by consulting various sources. Following is a list of these sources in no particular order (it may be necessary to consult multiple sources to identify the best contact):

CIWQS Database

- Access CIWQS: https://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.html.
- Scroll down to the "Facilities Reports" and click on "Facilities-At-A-Glance."
- Enter the facility's name as shown under the "Agency" column on the Management Zone Master List and click on "Run Report."
- Click on the Place ID number for the best option of the facilities listed to review the facility information. There will often be other hot links that take you to screens that provide potential contacts at the facility. Note: Often the contact information is out of date in this database, especially the person's name, but the associated telephone and/or email information for a facility can be helpful.

Facilities Website

Many facilities have a website that may provide information on who to initiate contact with for more information about the facility. When calling a facility, ask for the person responsible for implementing the facility's WDR.

Central Valley Water Board

If not already obtained, e.g., through Step 3, find out where/who the NTC was mailed to at each facility.

Other Sources of Information

Some permitted dischargers are members of organizations associated with the facility type. For example, food processors may be members of the California League of Food Producers and wastewater facilities may be associated with the Central Valley Clean Water Association. These organizations may be of assistance when trying to identify who to contact at a particular permitted facility.

Step 7: Document all Outreach Activities

Document all outreach activities to individual dischargers and dischargers permitted under a General Order - even if the outreach resulted in no response. This information should be included in the Preliminary Management Zone Proposal as part of the documentation to show how the proposed Management Zone conducted outreach in the area.

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Section 7: Management Zone Outreach

(To be developed)

Introduction

Early Action Plan

Community Outreach During Development

Community Outreach During Implementation

Preliminary Management Zone Proposal

Outreach to Permitted Dischargers

Outreach to Non-dischargers in Management Zone Area

Final Management Zone Proposal

Management Zone Implementation Plan

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