

Policy No. X: Management Zone Policy

1.0 Regulatory Basis for Establishment of a Management Zone

The Central Valley Salt and Nitrate Management Plan (SNMP) looks to establish a programmatic approach to salt and nitrate management in the Central Valley Region. As part of the programmatic approach, the SNMP recommends that the Basin Plans¹ be amended to allow and encourage management of salt and/or nitrate through the establishment of Management Zones. In general, a Management Zone would consist of multiple dischargers working collectively to manage salt and/or nitrates to first create a balance within the defined management area, and then ultimately to develop and implement a long-term plan for restoration of groundwater (where feasible) to meet applicable water quality objectives. Although the Basin Plans do not currently prevent the management of salts and nitrates through the creation of Management Zones, the SNMP recommends the inclusion of a Management Zone policy within the Basin Plans so that what constitutes a proper Management Zone is clearly defined and to ensure that criteria for approval of a Management Zone by the Central Valley Water Board are properly established in regulation. The justification for authorizing the establishment of Management Zones is expressed in various statewide and Central Valley Water Board policies, which are summarized below.

1.1 Recycled Water Policy SNMP Requirements

The Recycled Water Policy² (RWP) makes key findings with regard to SNMPS³ and management of salt and nitrate within geographically defined areas. These findings encourage the management of salts and nitrates on a groundwater basin/sub-basin level, which logically leads to the need for Management Zones:

- Salts and nutrients from all sources should be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses (Section 6.a.(2)).
- The appropriate way to address salt and nutrient issues is through the development of regional or subregional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects (Section 6.a.(2)).
- It is the intent of the RWP for every groundwater basin/sub-basin in California to have a consistent salt and nutrient management plan (Section 6.b.(1)(a)).
- It is recognized that the local water and wastewater entities, together with local salt and nutrient contributing stakeholders, will fund locally driven and controlled, collaborative

¹ The Central Valley Region has two Basin Plans: Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Sacramento-San Joaquin Basin Plan), and the Water Quality Control Plan for the Tulare Lake Basin (Tulare Lake Basin), (collectively referred to as Basin Plans).

² State Water Board Recycled Water Policy, Resolution 2009-0011, adopted February 3, 2009, as amended by Resolution 2013-003, adopted January 22, 2013.

³ In the list below the use of the word “nutrient” is used to be consistent with the text of the RWP; however, for the Central Valley Region it has been determined that the Central Valley SNMP as well as local SNMPS will focus on nitrate rather than nutrients in general.

processes open to all stakeholders that will prepare salt and nutrient management plans for each basin/sub-basin in California (Section 6.b.(1)).

- The degree of specificity within these plans and the length of these plans will be dependent on a variety of site-specific factors, including but not limited to size and complexity of a basin, source water quality, stormwater recharge, hydrogeology, and aquifer water quality (Section 6.b.(1)(a)).
- Plans shall be tailored to address the water quality concerns in each basin/sub-basin and may include constituents other than salt and nutrients that impact water quality in the basin/sub-basin. Such plans shall address and implement provisions, as appropriate, for all sources of salt and/or nutrients to groundwater basins, including recycled water irrigation projects and groundwater recharge reuse projects (Section 6.b.(1)(b)).
- SNMPs should include local implementation plans for those groundwater basins where water quality objectives for salts or nutrients are being, or are threatening to be, exceeded (Section 6.b.(2)).

In general, the RWP promotes the management of salt and nitrate at the appropriate scale through the adoption of local SNMPs that are tailored to the water quality concerns of specific areas. While the Central Valley SNMP is intended to guide salt and nitrate management at the programmatic level throughout the entire Central Valley Region, this policy establishes the basis for the establishment of Management Zones to guide salt and nitrate management at the local or subregional level, consistent with the RWP.

1.2 Protection of Groundwater Quality in Groundwater Basins/Sub-basins in the Central Valley Region

California law has long recognized that groundwater is a valuable natural resource in California, and should be managed to ensure both its safe production and its quality.⁴ Over the years, the California Legislature has encouraged local agencies to work cooperatively to manage groundwater resources within their jurisdiction.⁵ Recently, and effective January 1, 2015, the California Legislature enacted the Sustainable Groundwater Management Act, which is intended to enhance local management of groundwater, and provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater.⁶

Moreover, the regional water quality control boards are required to formulate and adopt water quality control plans that consist of designating or establishing, for all waters within the region including groundwaters, beneficial uses to be protected, water quality objectives, and a program of implementation for achieving water quality objectives. For the Central Valley Water Board, the delineated basins/sub-basins in Department of Water Resources (DWR) Bulletin 118⁷ can provide a basis for identifying beneficial uses of groundwater within the Central Valley. For example, the Tulare Lake Basin (TLB) Basin Plan identifies groundwater basins and sub-basins in Table II-2 that for the most part

⁴ California Water Code §10750.

⁵ *Id.*

⁶ California Water Code §10750, et seq.

⁷ *California's Groundwater*, 2003. DWR Bulletin 118, Update 2003. October 2003. See Sacramento River, San Joaquin River and Tulare Lake Hydrological Regions

match those shown in DWR Bulletin 118.⁸ However, when DWR Bulletin 118 was last updated in October 2003, DWR deleted several of the sub-basins. TLB Basin Plan Table II-2 has not been similarly revised to reflect DWR's changes.⁹ The Sacramento River and San Joaquin Basin (SRSJB) Plan¹⁰ does not currently identify or enumerate specific groundwater basins or sub-basins.

1.3 Management Zone Facilitates Management of Groundwater Quality

The primary concerns regarding salinity and nitrate in the Central Valley Region are associated with the Central Valley floor. Accordingly, and consistent with the RWP, Central Valley SNMP development has been tailored to focus on the areas of the Central Valley with the most significant water quality concerns. To identify these areas of concern, preparation of the Central Valley SNMP included development of the Initial Conceptual Model (ICM),¹¹ which relied on Initial Analysis Zones (IAZ) to characterize water balance and water quality for salt and nitrate in groundwaters in the Central Valley floor. The ICM analysis was supplemented by additional groundwater quality analyses to update existing salt and nitrate conditions throughout the Central Valley Region.¹²

The findings from these studies, which are summarized in Section 4 of the SNMP, demonstrate that there are significant areas of water quality concern on the valley floor and that some of these areas of concern are large in geographic area. The SNMP finds that to effectively manage salt and nitrate in these areas, an approach is needed that considers the scale of the water quality problem so that salt and nitrate management activities can be tied as closely as possible to local management efforts.

The DWR-designated groundwater basins and CV-SALTS IAZs are very large - often encompassing more than 1,000 square miles. Activities at the surface and groundwater quality may vary dramatically within such large areas. This reality makes it more difficult to:

- Develop appropriate WDRs for individual facilities, or WDRs in general orders for certain types of discharges like irrigated agriculture and dairies.
- Tailor salt and nitrate management programs to mitigate non-compliance with water quality objectives to protect drinking water supplies.
- Determine where and how to allocate resources to address the most critical water quality problems first, while at the same time ensuring that salt and nitrate management occurs at a sufficient level to achieve balanced salt and nitrate loadings and begin the process of restoring salt and nitrate levels to concentrations that are below the applicable water quality objectives.

⁸ Water Quality Control Plan for the Tulare Lake Basin (TLB Basin Plan). Second Edition. Central Valley Water Quality Control Board. Revised October 2011, pages II-5 & II-6)

⁹ The following "Satellite Basins" listed in the TLB Basin Plan were removed as groundwater sub-basins in the DWR 2013 update: Squaw Valley, Cedar Grove Area, Three Rivers Area, Springville Area, Templeton Mountain Area, Monache Meadows Area, Secator Canyon Valley, Rockhouse Meadow Valley, Inns Valley (Linns Valley in TLB Basin Plan), Bear Valley

¹⁰ Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (SRSJR Basin Plan). Fourth Edition. Central Valley Water Quality Control Board. Revised October 2011.

¹¹ *Initial Conceptual Model Final Report: Task 7 and 8 - Salt and Nitrate Analysis for the Central Valley Floor and a Focused Analysis of Modesto and Kings Subregions*. December 2013.

¹² *Draft Region 5: Updated Groundwater Quality Analysis and High Resolution Mapping for Central Valley Salt and Nitrate Management Plan*; prepared by Larry Walker Associates and Luhdorff & Scalmanini on behalf of CV-SALTS. May 2016.

- Calculate and allocate assimilative capacity equitably. The distribution and allocation of assimilative capacity is particularly important when pollutant concentrations at some water supply wells violate water quality objectives even though average water quality in the broader groundwater basin (or IAZ) indicates there is assimilative capacity available.

Given these findings, it is appropriate in some areas to manage groundwater quality on a scale commensurate with the regulatory and resource management decisions that must be made to manage salt and nitrate in a practical manner.¹³ A large basin could be partitioned into smaller sub-basins or zones where the relationship between existing land use activities, water sources and uses, and pollutant levels can be more accurately described and managed. Where basins or IAZs are partitioned into smaller areas to facilitate salt and nitrate management at a more appropriate scale, this partitioned area shall be referred to as a Management Zone.

2.0 Establishment of a Management Zone

The Central Valley SNMP recommends the establishment of Management Zones as an option for groundwater quality management at the local or subregional level, especially within the Central Valley floor. The establishment of a Management Zone, as a discrete regulatory compliance unit for the purposes of complying with the Central Valley Region's SNMP, is most appropriate in areas where the interactions among land use, water quality and water users are complex and significant concerns exist with meeting the water quality objectives established to protect the MUN and AGR beneficial uses in groundwater. In areas where these complexities or water quality concerns do not exist, establishment of a Management Zone may not be the best approach for managing discharges to groundwater. This may be particularly true for dischargers located in areas where existing salinity and nitrate water quality is good and long term water quality trends are not a concern. Similarly, establishment of a Management Zone may not be appropriate outside of the Central Valley floor in the surrounding foothills and valleys. In either of these situations (areas with good water quality or outside the valley floor), compliance with the salt and nitrate management requirements of the Central Valley SNMP may be best accomplished through existing water quality management programs implemented through individual WDRs.

In general, a Management Zone is:

- A portion of a larger groundwater basin/sub-basin or IAZ that serves as a discrete regulatory compliance unit;
- Intended to include all of the groundwater and all of the regulated dischargers that wish to participate in the Management Zone within the land area encompassed by the Management Zone boundary.
- Intended, where nitrates in groundwater are impacting groundwater supplies, to facilitate the assurance of safe drinking water for all residents in the zone adversely affected by dischargers

¹³ A key finding in a recent study conducted in the Kings and Tulare Lake groundwater sub-basins within Fresno, Kings and Tulare Counties was that given sub-basin interdependencies it is unlikely for groundwater management to be successful when done in isolation or on too small a scale. *Transitioning to Sustainability: Modeling Groundwater Sustainability in the Kings-Tulare Lake Region*, Report prepared on behalf of the California Water Foundation. November 2015.

participating in the management zone and that are within the zone boundary¹⁴, encourages more stakeholder coordination and cooperation, promotes better water resource management through appropriate allocation of resources, and provides greater regulatory flexibility where needed to prioritize salt and nitrate management activities and allow time to achieve compliance with the Central Valley SNMP's management goals.

- The basis for the establishment of local management plans to manage salt and nitrate within the Management Zone's boundary in accordance with the Central Valley Region's overall salt and nitrate management goals established in the Central Valley SNMP.
- Voluntarily proposed by those regulated dischargers located within the proposed Management Zone boundary that have decided to work collectively to comply with the salt and nitrate management requirements of the Central Valley SNMP

2.1 Proposed Requirements for Approval of a Management Zone

The Central Valley SNMP allows dischargers to determine the most effective approach for complying with the SNMP's salt and nitrate management requirements. For dischargers within a geographic area that decide to manage salt and nitrate collectively with other dischargers through the establishment of a Management Zone, a proposed Management Zone Policy, to be adopted into the Basin Plans, would (a) set forth the general criteria and process for establishing a Management Zone; and (b) establish the minimum requirements necessary for a proposed Management Zone to be approved by the Central Valley Water Board.

The proposed process for applying for a Management Zone would be as follows:

Step 1 - An initiating group of dischargers shall submit an Initial Notice of Intent (NOI) to develop a Management Zone to the Central Valley Water Board. The NOI would need to include the following preliminary information:

- Proposed preliminary boundary areas;
- Draft list of other dischargers and stakeholders in the preliminary Management Zone area that the initiating group intends to contact to determine if they are interested and willing to participate in the Management Zone;
- Initial assessment of groundwater conditions based on existing data and information;
- Identified constituents of concern the group intends to address with the Management Zone (i.e., salt and/or nitrates);
- Proposed timeline for:
 - Identifying additional participants;
 - Further defining boundary areas;

¹⁴ Where there are dischargers within a Management Zone boundary that choose not to participate in the Management Zone, they must be able to provide assurance to the Central Valley Water Board that they are addressing any adverse affects directly or indirectly associated with their discharge.

- Developing proposed governance and funding structure;
- Additional evaluation of groundwater conditions across the Management Zone boundary area;
- Identification of need for assimilative capacity on a Management Zone basis, or need for obtaining an approved exception from meeting a salinity or nitrate water quality objective; and
- Preparing and submitting a Workplan for development of a Management Zone implementation plan.

Step 2 - Within 180 days of submittal of the Initial NOI (see Step 1), submit a Revised NOI that identifies confirmed participants, defined boundary areas, proposed governance and funding structure, additional evaluation of groundwater conditions (if necessary), the need for assimilative capacity and/or exception from a meeting water quality objective(s), and a Workplan for development of an implementation plan.

Step 3 – After approval of the Revised NOI by the Central Valley Water Board for the specified Management Zone, the governing entity shall submit the proposed Implementation Plan within one year of receiving the Notice of Approval for the Management Zone from the Central Valley Water Board.

Step 4 – Upon approval of the Implementation Plan for the Management Zone by the Central Valley Water Board, the Management Zone shall begin implementing the approved Implementation Plan.

Upon submittal of the Initial NOI, dischargers identified as being participants of the Management Zone shall be deemed to be in compliance with salt and nitrate requirements in individual or general waste discharge requirements or in Conditional Waivers as long as the discharger continues to be an active participant in development of the Management Zone. As additional dischargers join the Management Zone, the Initial NOI can be revised and/or updated to identify additional participants receiving coverage under the NOI. Such coverage should continue as long as the Management Zone submits its Revised NOI, Workplan and Implementation Plan in a timely manner, as determined by the Central Valley Water Board.

2.2 Minimum Requirements for Management Zone Implementation Plan

An Implementation Plan prepared for a Management Zone shall meet the following minimum requirements:

- It must be consistent with the management goals of the Central Valley SNMP, including, addressing short-term and long-term drinking water needs affected by nitrates, plan for achieving balanced salt and nitrate loadings within the Management Zone, and plan for establishing a managed aquifer restoration program to restore salt and nitrate levels to concentrations at or below the water quality objectives to the maximum extent practicable.
- The highest water quality priority within any Management Zone where there are nitrate in groundwater issues is the assurance that drinking water that meets drinking water standards is available to all drinking water users within the Management Zone boundary.
- It shall include a governance framework that, at a minimum, establishes the following: (a) roles and responsibilities of all participants; (b) funding or cost-share agreements to implement short and

long-term salt and nitrate management projects/activities; and (c) a mechanism to resolve disputes among participating dischargers.

- Implementation of salt and nitrate management activities within a Management Zone may be prioritized based on factors identified in the Central Valley SNMP and the results of the characterization of salt and nitrate conditions. Prioritization provides the basis for allocating resources with resources directed to the highest water quality priorities first.
- It shall include a water quality characterization and salt and nitrate management measures consistent with the requirements established in the Central Valley SNMP, including:
 - Characterization of salt and nitrate conditions within the proposed Management Zone which will be used as the basis for demonstrating how salt and nitrate will be managed within the Management Zone over short and long-term periods to meet the management goals established in the Central Valley Region SNMP.
 - Short (≤ 20 years) and long-term (> 20 years) projects and/or planning activities that will be implemented within the Management Zone as whole and in particular within prioritized areas (if such areas are identified in the Implementation Plan) to make progress towards attaining each of the management goals established by the Central Valley SNMP. Over time as water quality improves in prioritized areas, updates to the plan may shift the priorities in the Management Zone.
 - Mechanism(s) to support achievement of the overall Central Valley SNMP's long-term strategy to achieve balanced nitrate and salt loadings and managed aquifer restoration. Mechanisms may include, but not be limited to, direct participation in the development of a Central Valley regulated brine line, participation in a mitigation bank to support development of a regulated brine line, or participation in the development of a Central Valley Water Board approved salt disposal site.
 - A short and long-term schedule for implementation of salt and/or nitrate management activities with interim milestones.
 - Identification of triggers for the implementation of alternative procedures or measures to be implemented if the interim milestones are not met.
 - A water quality surveillance and monitoring program that is adequate to assure that plan when implemented is achieving the expected progress towards attainment of management goals.
- The plan may be modified periodically to incorporate changes that will benefit water quality in the Management Zone. Any modifications to the plan that impact or change timelines, milestones or deliverables identified in the Implementation Plan must be approved by the Central Valley Water Board.
- Identify the responsibilities of each regulated discharger, or groups of regulated dischargers participating in the Management Zone to manage salt and/or nitrate within the Zone. The Central Valley Water Board shall incorporate the responsibilities of each discharger, or groups for salt and/or nitrate within the Management Zone into their respective Individual or General WDRs.

- Before the Central Valley Water Board may modify any WDRs to incorporate the use of assimilative capacity on a Management Zone basis or to adopt an exception to meeting a water quality objective in a WDR for a discharger participating in the Management Zone, the Central Valley Water Board's Executive Officer must approve the establishment of the Management Zone and its Implementation Plan after providing public notice and opportunity to comment. Executive Officer approval of the Management Zone in no way changes the requirement that any modifications to WDRs must be approved by the Central Valley Water Board after public notice and hearing.

2.3 Requirements for Allocating Assimilative Capacity on a Management Zone Basis

- Within a Management Zone, available assimilative capacity will be determined based solely on the volume-weighted average¹⁵ of groundwater quality within the production zone within the delineated boundary of the Management Zone.
- Assimilative capacity, calculated using a volume-weighted average approach within the production zone of the delineated Management Zone, can only be allocated to participating stakeholders within the Management Zone. Otherwise, assimilative capacity for non-participating stakeholders within the Management Zone may only be granted under the Central Valley Water Board's traditional approach of determining if there is assimilative capacity in the shallow groundwater table within the zone of influence of an individual discharger or a group of dischargers.
- Before the Central Valley Water Board can authorize any allocation of assimilative capacity, a Management Zone proposal shall include a comprehensive antidegradation analysis, consistent with statewide Antidegradation Policy.¹⁶ Dischargers seeking an allocation of assimilative capacity within a Management Zone, shall as part of the development of the Implementation Plan:
 - Demonstrate there is sufficient assimilative capacity to ensure that the proposed discharge, together with all other discharges to the same Management Zone, including discharges to recharge projects, will not cause the volume-weighted average water quality in the production zone underlying the Management Zone to exceed the applicable Basin Plan objective(s);
 - Demonstrate that the proposed discharges covered by the Management Zone will not unreasonably affect present and anticipated beneficial uses in or down-gradient to the Management Zone;
 - Demonstrate that the allocation of assimilative capacity, and the resulting net effect on receiving water quality, is consistent with maximum benefit to the people of the State; and
 - Demonstrate that Best Efforts will be implemented to assure that a pollution or nuisance will not occur and will be consistent with maximum benefit.
- Where water quality for drinking water wells within the Management Zone does not meet drinking water standards for salt or nitrate, and dischargers propose to rely on the calculated assimilative capacity of the production zone to demonstrate compliance for salt or nitrate, then the dischargers

¹⁵ See **Section X** of the Central Valley SNMP for acceptable method to calculate a volume-weighted average for the production zone.

¹⁶ State Water Board Resolution 68-16. *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Antidegradation Policy).

within the Management Zone must accept responsibility to mitigate localized impacts of discharges within the Management Zone, and provide "maximum benefit" by implementing and maintaining an alternate drinking water source for impacted areas (e.g., alternate water supply, well-head treatment, point-of-entry treatment, etc.). Providing an alternate drinking water source may rely on temporary methods in the short-term (< 5 years), but the Implementation Plan for the Management Zone shall establish a permanent solution for providing safe drinking water along with a schedule for implementation within a reasonable time frame.

- Where water quality for agricultural supply wells within the Management Zone does not meet standards for salt to protect the AGR beneficial use, and dischargers propose to rely on the calculated assimilative capacity of the production zone to demonstrate compliance for salt, then the dischargers within the Management Zone must accept responsibility to mitigate localized impacts of the discharge, and provide "maximum benefit" by implementing appropriate activities that provide an alternative means of meeting the agricultural water supply standards.
- Where assimilative capacity is not available for allocation, the proposed Management Zone may propose that an exception to meeting salinity water quality objectives may be granted in the Management Zone, subject to the requirements for granting an exception established in the Central Valley region Basin Plans.

3.0 Proposed Modifications to the Basin Plans to Support Policy Implementation

The following subsections summarize the key changes anticipated for each Basin Plan to support adoption of this policy.

Existing and Potential Beneficial Uses

This policy recommends updating the Basin Plans to incorporate the current list of groundwater basins and sub-basins in DWR Bulletin. This recommendation is made so that the Basin Plans are consistent with regards to the designated groundwater basins and sub-basins in the Central Valley Region but does not affect implementation of this policy or the Central Valley SNMP.

Water Quality Objectives

No modifications anticipated.

Implementation

Incorporate the relevant elements of this Policy into the Basin Plans to encourage the use of Management Zones for the management of salt and/or nitrate, especially in areas with significant water quality concerns.