

## Section 1

# Executive Summary

California's Central Valley is one of the most productive agricultural regions in the world and is home to almost 20% of California's population (estimated at over 38 million in 2015). By 2030 the state population is expected to increase by more than 13% to over about 44 million people and by 2050 the population is expected to be close to 50 million people. This steady growth will put significant, increased demands on state and regional water resources.<sup>1,2</sup> Communities in the Central Valley rely on surface and groundwater to support many beneficial uses, including agriculture and drinking water supplies. However, elevated salt and nitrate concentrations in portions of the Central Valley impair, or threaten to impair, the region's water and soil quality. Such impairment, in turn, threatens agricultural productivity and/or the region's drinking water supplies. For example, a 2009 economic study, projected that if salt management did not change, direct economic costs could exceed \$1.5 billion a year within the Central Valley by 2030.<sup>3</sup>

While the threats to the region's water supplies with respect to salts and nitrates is fairly well understood, the solutions for addressing such threats are complex and multi-faceted. As a result, to address these complex issues, a broad coalition of representatives from agriculture, cities, industry, state and federal regulatory agencies and the public (including Environmental Justice advocates on behalf of Disadvantaged Communities and populations) banded together, starting in 2006, to develop an environmentally and economically sustainable plan for the management of salts and nitrates in the Central Valley. This effort became known as the Central Valley Salinity Alternatives for Long-Term Sustainability initiative, or otherwise CV-SALTS. The overarching goals adopted by CV-SALTS include<sup>4</sup>:

- Sustain the Valley's lifestyle;
- Support regional economic growth;
- Retain a world-class agricultural economy;
- Maintain a reliable, high-quality urban water supply; and
- Protect and enhance the environment.

CV-SALTS was tasked with developing a Salt and Nitrate Management Plan (SNMP)<sup>5</sup> for the entirety of the Central Valley Regional Water Quality Control Board's (Central Valley Water

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<sup>1</sup> *Groundwater Quality Protection Strategy A "Roadmap" for the Central Valley Region*, Central Valley Water Board, August 2010

<sup>2</sup> <http://www.dof.ca.gov/research/demographic/reports/projections/P-1/>

<sup>3</sup> *The Economic Impacts of Central Valley Salinity*. Final Report to the State Water Resources Control Board; prepared by Howitt et al., University of California Davis, March 20, 2009

<sup>4</sup> <http://cvsalinity.org/>

<sup>5</sup> Since salt and nitrate are of critical concern in Central Valley groundwater, the SNMP does not address constituents of emerging concern (CECs) or nutrients other than nitrate. **\*\*\*CEC's a requirement\*\*\***

Board's) jurisdictional area (also referred to as "Central Valley" or "Region 5")<sup>6</sup> (**Figure ES-1**). The Central Valley SNMP builds on a range of water quality management policies and mechanisms already in existence, proposes additional policies and tools needed to provide the Central Valley Water Board with flexibility in addressing legacy and ongoing loading of salt and nitrate in the diverse region, and presents a comprehensive regulatory and programmatic approach for the sustainable management of salt and nitrate.

Although broader in overall scope, the SNMP was also developed to meet requirements set forth in the State Recycled Water Policy<sup>7</sup> (RWP), adopted in 2009 by the State Water Resources Control Board (State Board). The RWP provides statewide direction regarding the appropriate criteria to be used when issuing permits for recycled water projects. In addition, the RWP articulates the State Board's policy that every groundwater basin/sub-basin in California needs to have a consistent salt/nutrient management plan (i.e., SNMP). To ensure that such plans were developed in a timely manner, the RWP establishes criteria and timelines for their development. One of the overarching goals of the RWP is to develop salt and nutrient management plans (for groundwater basins or sub-basins) that are sustainable on a long-term basis and to provide the state with clean, abundant water. It is the intent of the RWP that local stakeholders work collaboratively to fund and develop locally driven SNMPs. Specific goals identified by the RWP include:

- Facilitate the development of local SNMPs that are consistent and/or integrated with the Central Valley SNMP;
- Support increased recycled water use in the region;
- Support the use of stormwater recharge as a water management measure;
- Maintain a reliable, high-quality water supply by protecting the beneficial uses of groundwater;
- Balance the use of assimilative capacity and the implementation of management measures within the region; and
- Monitor the implementation of SNMPs to determine if desired outcomes are being achieved.

Addressing the goals and requirements of the SNMP components of the RWP through the CV-SALTS initiative was a logical progression, and to that end, the State Board allocated \$5-million of Clean-up and Abatement Account funds to facilitate the effort. Stakeholders have matched the \$5-million with over \$2-million directly related to the SNMP development, and several million directed to funding ongoing control and monitoring activities.

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<sup>6</sup> The Central Valley Regional Water Quality Control Board is a state agency, organized under the Porter Cologne Water Quality Control Act at Water Code section 13200(g). The water code defines the Central Valley's jurisdictional area as "all basins, including Goose Lake Basin draining into the Sacramento River and San Joaquin Rivers to the easterly boundary of the San Francisco Bay region near Collinsville."

<sup>7</sup> State Water Resources Control Board Resolution No. 2009-0011, amended by Resolution No. 2013-0003 [http://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2013/rs2013\\_0003\\_a.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2013/rs2013_0003_a.pdf)

## 1.1 Management Goals & Priorities

Overall, to achieve desired outcomes for the management of salt and nitrate within the Central Valley, this Central Valley SNMP addresses the requirements of the RWP, and also addresses legacy and ongoing salt and nitrate accumulation issues. Further, the Central Valley SNMP looks to address both surface and groundwater issues with respect to salts and nitrates. However, the primary focus for early actions is on the need to address salt and nitrate issues in groundwater in a manner that leads to environmental and economic sustainability. The Central Valley SNMP is built on the following management goals:

### *Goal 1: Ensure a Safe Drinking Water Supply*

The most important salt and nitrate management goal for the Central Valley Region is to ensure that a safe drinking water supply is available to all residents of the region. The need to ensure a safe drinking water supply is the highest priority for this SNMP and shall be addressed as quickly as possible in areas in the Central Valley Region where residents do not have drinking water that meets applicable drinking water standards.

### *Goal 2: Achieve Balanced Salt and Nitrate Loadings*

Goal 2 seeks to establish a balance of the mass of salt and nitrate in groundwater underlying each permitted or managed area, meaning that achievement of this goal results in no additional degradation of the receiving water.

### *Goal 3: Implement Managed Aquifer Restoration Program*

This goal seeks to restore salt and nitrate levels within groundwater basins/sub-basins, or locally managed areas, to concentrations that are at or below the applicable water quality objectives established for each constituent. Studies commissioned by CV-SALTS, as well as studies conducted by others in the Central Valley,<sup>8</sup> demonstrate that achieving applicable salt and nitrate objectives in already impaired waters represents a significant challenge. Given this challenge, this SNMP not only focuses on restoring water quality to meet the applicable objectives where possible, but it also seeks to minimize or prevent further degradation so that additional impairments do not occur.

In general, these goals recognize the need to focus limited resources first on health risks, and then focus on balancing salt and nitrate loading followed by restoring impacted water. Notably, however, activities (both regulated and unregulated) leading to salt and nitrate balance are ongoing now (e.g., preparation and implementation of nutrient management plans, improved irrigation practices, real-time management of discharges, pilot studies, etc.) and are anticipated to continue and improve moving forward. With respect to the ultimate goal of restoring the region's groundwater basins, the SNMP recognizes that it will be a time and resource intensive effort. The SNMP provides a framework with milestones and timelines for undertaking such restoration efforts. The Central Valley SNMP also identifies a number of proposed policy changes that will

<sup>8</sup> See for example: (a) King et al. 2012. Groundwater Remediation and Management for Nitrate. Technical Report 5 in: *Addressing Nitrate in California's Drinking Water with a Focus on Tulare Lake Basin and Salinas Valley Groundwater. Report for the State Water Resources Control Board Report to the Legislature*. Center for Watershed Sciences, University of California, Davis. (b) Harter et al. 2012. *Addressing Nitrate in California's Drinking Water with a Focus on Tulare Lake Basin and Salinas Valley Groundwater. Report for the State Water Resources Control Board Report to the Legislature*. Center for Watershed Sciences, University of California, Davis.

support this effort, and recommends that the Central Valley Water Board take action to adopt these policy recommendations.

## 1.2 Central Valley SNMP

The Central Valley SNMP provides the over-arching framework, including default identification of current ambient water quality and available assimilative capacity in the Central Valley's groundwater basins, for the Central Valley. However, due to the diversity of the region, the SNMP also provides for local flexibility and encourages local-scale management plans to be developed and implemented by local and/or regional entities as local stakeholders deem appropriate. For the purposes of this SNMP, these locally developed management areas are referred to as Management Zones, which are discussed in detail in **Section XXX** of the SNMP.

The SNMP includes the required elements from the RWP and recommends new policies to be considered for adoption by the Central Valley Water Board. The Regional Board's water quality control policies/regulations are adopted into water quality control plans, as is required by law.<sup>9</sup> For the Central Valley, there are two such plans: *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (SRSJR Basin Plan), and the *Water Quality Control Plan for the Tulare Lake Basin* (TLB Basin Plan) (collectively referred to as "Basin Plans"). Thus, to the extent that the SNMP includes recommended policies, or proposed changes/clarifications to existing Regional Board policies, such revisions would need to be adopted by the Central Valley Water Board as part of a process for amending the Basin Plans. Thus, the SNMP includes recommended policy/clarification changes to facilitate implementation of the SNMP; however, the Central Valley Water Board reserves the right and authority to adopt or reject the recommended changes. If adopted, the outcome would be a revised regulatory framework with the flexibility necessary to make salt and nitrate management decisions at the appropriate temporal, geographic and/or management scales.<sup>10</sup>

To better explain some of the proposed policy changes (and how they might work in reality), the SNMP is supported by archetype/prototype studies ("proofs of concept") that provide examples and/or guidelines for consideration when implementing various elements of this SNMP. Further, findings from technical studies provide the basis for SNMP recommendations for the short and long term management of salt and nitrate throughout the Central Valley.

### 1.2.1 Implementation Framework

The Central Valley SNMP establishes the minimum or default expectations for the management of salt and nitrate in discharges to surface and groundwater in the Central Valley Region. Generally, and after the relevant recommendations are adopted into Basin Plans, the SNMP recommends that management measures identified in the SNMP be implemented through the Central Valley Water Board's issuance of Waste Discharge Requirements (WDRs) (individual or General Order) or Conditional Waivers (Waivers).<sup>11</sup> The SNMP recommends that incorporation of the

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<sup>9</sup> California Water Code, §13240.

<sup>10</sup> See CV-SALTS Strategy and Framework at <http://www.cvsalinity.org/index.php/docs/committee-document/executive-committee-docs/1411-cv-salts-program-work-plan-v-8-approved-3912pdf/file.html>

<sup>11</sup> All persons discharging wastes, or threatening to discharge wastes, to waters of the state are required to obtain authorization for such discharges from the Central Valley Water Board. The Central Valley Water Board's authorization is

management measures from the plan be phased-in across the Region to allow focus on the most significant water quality priorities first, and to allow for a reasonable allocation of resources. For some dischargers, current WDR and/or Conditional Waiver requirements may already be set at a level necessary to implement or meet the management measures recommended in the SNMP. For others, additional requirements may be necessary.

Where a group of dischargers desire to work collaboratively to comply with and implement this SNMP within a delineated area, these dischargers are encouraged to establish a Management Zone in accordance with the recommended Management Zone Policy, which is provided in section **Attachment A-X** of the SNMP. Once a Management Zone is established, WDRs and/or Conditional Waivers for multiple dischargers participating in the zone will likely need to be amended (individually or collectively) to incorporate the salt and nitrate management measures that are established specifically for that Management Zone.

## 1.2.2 Protection of Beneficial Uses

Groundwater basins in the Central Valley are considered suitable or potentially suitable for the following beneficial uses: Municipal and domestic water supply (MUN), agricultural water supply (AGR), industrial service supply (IND), and industrial process supply (PRO). Water quality objectives have not been established for IND or PRO. For MUN<sup>12</sup> and AGR,<sup>13</sup> the following nitrate or salinity water quality objectives provide the basis for the protection of these uses:

### 1.2.2.1 MUN Beneficial Use

#### *Nitrate*

The existing nitrate water quality objective for the protection of drinking water supplies in the Central Valley is 10 mg/L (nitrate measured as nitrogen). This SNMP reaffirms that objective for the protection of a waterbody used as a drinking water supply.

#### *Salinity*

Implementation of this SNMP is based on the protection of a range of total dissolved solids (TDS) or electrical conductivity (EC) concentrations established in 22 California Code of Regulations (CCR) Table 64449-B (“Secondary Maximum Contaminant Levels [SMCL] Ranges”) and incorporated by reference into the Basin Plans (Chapter 3, Water Quality Objectives, Chemical Constituents). The salinity water quality objective to protect the MUN beneficial use shall be 1,000 mg/L TDS or 1,600  $\mu\text{S}/\text{cm}$  EC, consistent with the “Upper” level provided in 22 CCR Table 64449-B.

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provided through the adoption of waste discharge requirements or adoption of a conditional waiver from waste discharge requirements, which are essentially permits that allow the discharge. See Wat. Code § 13260 et seq.

<sup>12</sup> The Basin Plans define MUN as “Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.”

<sup>13</sup> The SRSJR Basin Plan defines AGR as: “Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing”; the TLB Basin Plan defines AGR as: “Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing”.

### 1.2.2.2 AGR Beneficial Use

#### *Nitrate*

No water quality objective has been established for nitrate to protect the AGR beneficial use.

#### *Salinity*

The Central Valley Basin Plans do not establish explicit numeric water quality objectives for salinity in groundwater for the protection of the AGR beneficial use. Instead, the Basin Plan relies on a narrative water quality objective to protect AGR. To support translation of the narrative water quality objective, this SNMP recommends the establishment of four AGR classes based on levels of protection required for crop irrigation and stock watering (see Policy: “Salinity Management to Provide Reasonable Protection of AGR Beneficial Uses in Groundwater”, Attachment A-X):

- *AGR Class 1:* TDS < 1,000 mg/L (EC < 1,500  $\mu$ S/cm).
- *AGR Class 2:* 1,000 mg/L < TDS < 2,000 mg/L (1,500  $\mu$ S/cm < EC < 3,000  $\mu$ S/cm).
- *AGR Class 3:* 2,000 mg/L < TDS < 5,000 mg/L (3,000  $\mu$ S/cm < EC < 7,500  $\mu$ S/cm).
- *AGR Class 4:* TDS > 5,000 mg/L (EC > 7,500  $\mu$ S/cm).

These classes are assigned to groundwater basins/subbasins based on existing ambient TDS water quality conditions determined for the production zone (see Section 4.2).

### 1.2.3 Existing Water Quality Conditions & Assimilative Capacity

The SNMP uses the groundwater basins/sub-basins established by the Department of Water Resources (DWR)<sup>14</sup> as the basic or default unit for the management of salt and nitrate in the Central Valley. The SNMP establishes existing water quality conditions and water quality trends within each of these basins and sub-basins for upper, lower, and production zones.<sup>15</sup> In addition, the SNMP establishes the default amount of assimilative capacity that may be available on a sub-basin basis that would allow for the assimilation of salt and nitrate discharges up to a certain level, and that would still be protective of beneficial uses. Absent further information, the SNMP intends for the Central Valley Water Board to rely on these water quality findings as the basis for making relevant permit decisions.

Notably, the default values established in the SNMP for existing water quality conditions and assimilative capacity are applied broadly to an entire groundwater basin/sub-basin and do not consider variability in salt and nitrate concentrations at the local or sub-regional scale. For example, the broad default values presented in the SNMP do not evaluate existing water quality conditions or available assimilative capacity for Management Zone areas or for the zone of influence for a single discharge. To address concerns related to the creation of broad default values, the SNMP provides the necessary flexibility that allows discharger(s) the opportunity (individually or collectively) to provide supplemental information that may supersede or replace

<sup>14</sup> *California's Groundwater*, 2003. DWR Bulletin 118, Update 2003. October 2003. See Sacramento River, San Joaquin River and Tulare Lake Hydrological Regions

<sup>15</sup> See Section 4 of this SNMP for definitions of the upper, lower and production zones.

default water quality characteristics established in the SNMP. For permitting purposes, should dischargers propose different existing conditions and/or available assimilative capacity, such changes must be acceptable to the Central Valley Water Board.

#### 1.2.4 Process for Implementing the SNMP in WDRs & Conditional Waivers

As indicated, the SNMP includes a recommended management measures that will need to be addressed and/or incorporated into WDRs or Conditional Waivers. Thus, the SNMP anticipates that all existing dischargers covered by a WDR or Conditional Waiver will need to seek a revised WDR/Waiver so that the management measures established in the SNMP can be formally incorporated into their permit requirements. Or, at the very least, existing dischargers will need to provide the Central Valley Water Board with an appropriate level of information to demonstrate that their existing WDRs or Conditional Waiver sufficiently complies with the SNMP.

The SNMP recognizes that there are hundreds of existing dischargers in the Central Valley covered by individual WDRs, and thousands of individuals subject to General Orders. Accordingly, it is not feasible or possible for the Central Valley Water Board to amend all WDRs and General Orders at once to incorporate provisions from the SNMP. To address this simple reality, the SNMP establishes an orderly and priority process for reviewing existing WDRs and Conditional Waivers for the incorporation of applicable measures specified in the SNMP. In short, dischargers will be notified by the Central Valley Water Board when their WDRs/Waivers must be evaluated to determine if their applicable permit needs to be updated to incorporate elements from the SNMP. Notification by the Central Valley Water Board will be provided based on a priority scheme as described below.

Newly proposed dischargers, or existing dischargers looking to substantially modify current discharges, will need to propose how they expect to comply with the SNMP when they submit their application for WDRs to the Central Valley Water Board (otherwise referred to as a “Report of Waste Discharge”). For these dischargers, the submittal schedule as well as steps (1) and (2) of the implementation process described below in Section 1.2.4.2 do not apply. The remaining steps provide information regarding the requirements to comply with the SNMP.

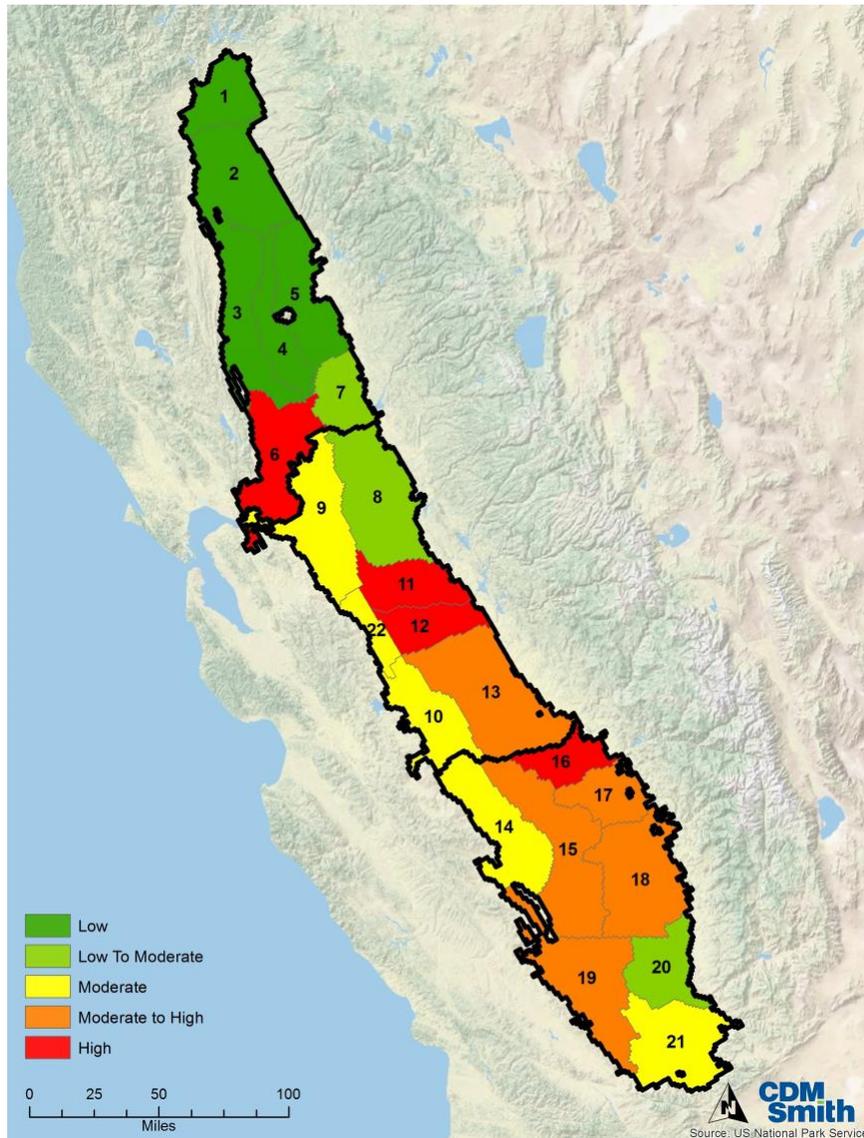
##### 1.2.4.1 Priority for Implementation

The basis for prioritizing implementation of the SNMP is provided in technical work conducted by CV-SALTS.<sup>16</sup> Prioritizing implementation is necessary so that Central Valley Water Board and discharger resources are focused on the most significant areas of water quality concern first. Central Valley Initial Analysis Zones (IAZ, a unit of analysis similar to groundwater basins/sub-basins) were ranked using criteria that included (a) nitrate/TDS existing conditions and estimated loading and trends; (b) percentage of public water supply wells impacted; (c) total number of wells; (d) overlying irrigated acreage; and (e) population. These factors were weighted to produce a score for each IAZ; higher scores indicate an increased water quality concern and therefore a higher priority for implementation. **Table ES-1** summarizes the priority for SNMP implementation based on the findings in **Figure ES-1**.

<sup>16</sup> *Nitrate Implementation Measures Study Final Report*. Report prepared by CDM Smith on behalf of CV-SALTS, March 31, 2016.

**Table ES-1. Central Valley SNMP Implementation Priority**

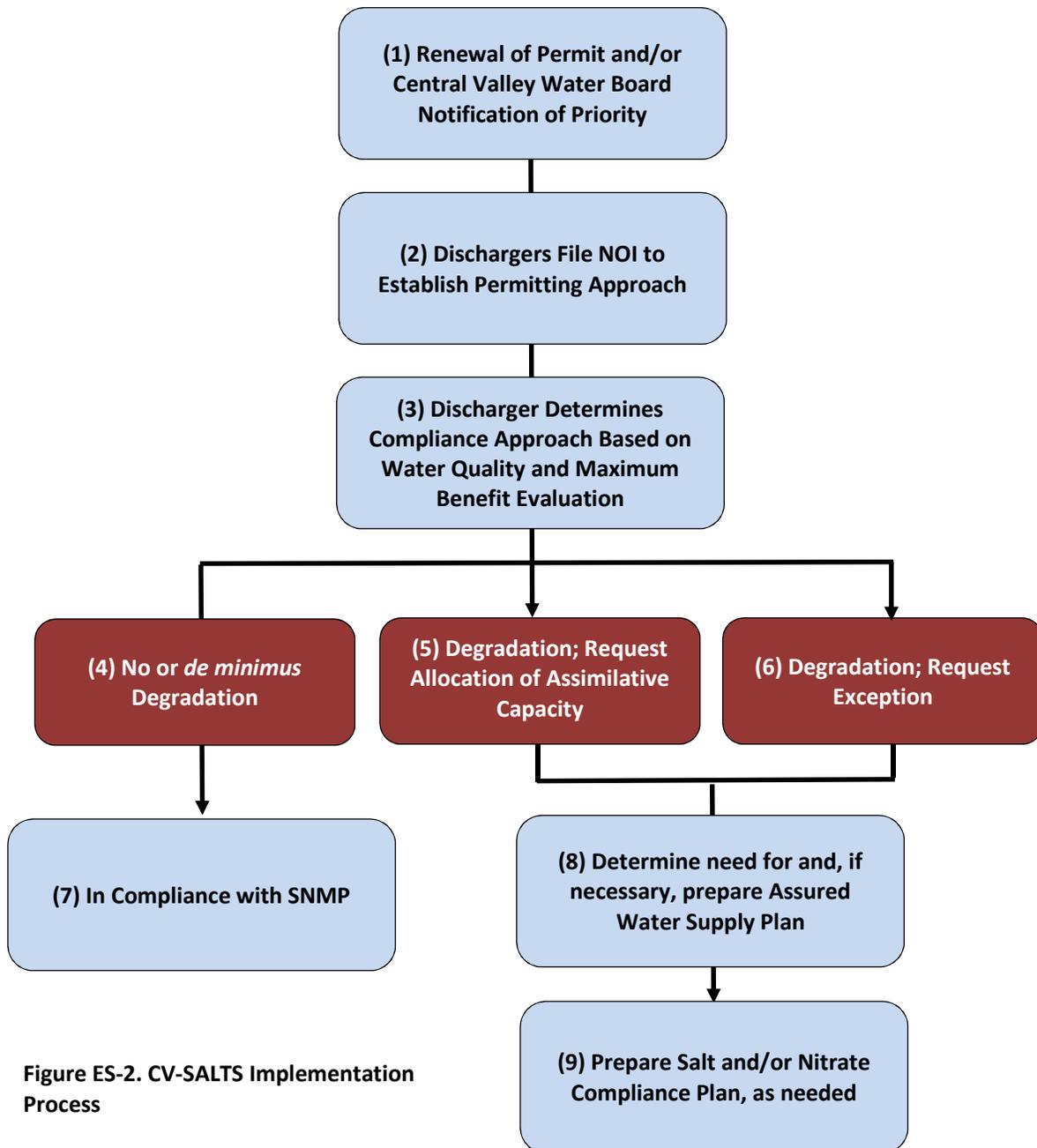
Priority	Dischargers Affected
1	Dischargers located in red IAZ: 6, 11, 12, 16
2	Dischargers with an existing WDR in orange IAZs: 13, 15, 17, 18, 19
3	Dischargers with an existing WDR in yellow IAZs: 9, 10, 14, 21, 22
4	Dischargers with an existing WDR in green IAZs: 1, 2, 3, 4, 5, 7, 8, 20 and areas within the Central Valley Region that are outside of an IAZ



**Figure ES-1. Priority for SNMP implementation based on both TDS and nitrate (Nitrate Implementation Measures Study Final Report, 2016)**

### 1.2.4.2 Compliance with the Central Valley SNMP<sup>17</sup>

**Figure ES-2** illustrates the overall Central Valley SNMP implementation process and **Table ES-2** summarizes the SNMP's proposed compliance deadlines associated with this process (including identification of priority areas for implementation). Below is an overview of the key requirements in the implementation process (numbers in parentheses refer to Figure ES-2). For dischargers that decide to establish a Management Zone, a different process and time schedule is established in the Management Zone Policy.



**Figure ES-2. CV-SALTS Implementation Process**

<sup>17</sup> For new dischargers or an existing discharger that has applied for permit renewal through the submittal of a Report of Waste Discharge, steps (1) and (2) in Table ES-2 and Figure ES-2 do not apply.

**Table ES-2. SNMP Implementation Schedule (Numbers in Process Step refer to Figure ES-2)**

Process Step	Compliance Date
Central Valley Water Board Notification (1)	<ul style="list-style-type: none"> <li>• Priority 1 - Within 90 days of the effective date of BPA</li> <li>• Priority 2 – Within 1.5 years of adoption of BPA</li> <li>• Priority 3 – Within 3 years of adoption of BPA</li> <li>• Priority 4 – Within 5 years of adoption of BPA</li> </ul>
Discharger Notice of Intent (2)	Within 90 days of receipt of notification
Compliance Approach (Water Quality Evaluation) (3)	Within 180 days of submittal of the NOI
Determine Need for Assured Water Supply Plan (8)	Within 180 days of submittal of the NOI
Submit Assured Water Supply Plan (8)	Within 1 year of submittal of NOI
Submit Salt/Nitrate Compliance Plan (9)	Within 2 years of submittal of NOI

- (1) The Central Valley Water Board notifies existing dischargers of their responsibility to comply with the SNMP. The first notification shall occur in the Priority 1 areas upon submittal of the SNMP to the Central Valley Water Board and no later than 90 days after the Basin Plan amendments to incorporate the SNMP become effective<sup>18</sup>. Table ES-2 summarizes notification dates for other priority areas.
- (2) Within 90 days of receipt of the letter of notification, dischargers (or collective groups of dischargers) shall submit a Notice of Intent (NOI) to the Central Valley Water Board to provide their planned approach for addressing SNMP provisions. In the NOI, the responding party shall indicate how the discharger (or dischargers) intends to meet the SNMP provisions. Specifically, the NOI shall specify if the discharger intends to comply: (a) as an individual discharger through an existing or revised WDR/Waiver; (b) under an existing General Order<sup>19</sup>; or (c) as part of a Management Zone. If the discharger(s) intends to participate in a Management Zone, then the procedures established in the Management Zone Policy shall guide implementation and the following steps do not apply.

With respect to existing dischargers, once an existing discharger (or group of dischargers if covered by a General Order) receives notification from the Central Valley Water Board as summarized in Table ES-1, the discharger (or collective dischargers) will need to conduct an initial analysis of water quality to evaluate the discharge for consistency with and/or compliance with this SNMP. Specifically, the initial analysis should evaluate receiving water quality and/or the quality of their discharge with respect to salts and nitrates.<sup>20</sup> Findings from this initial analysis are intended for the dischargers purpose only to inform their

<sup>18</sup> The SNMP will become effective after approvals are obtained from the Central Valley Water Board, State Board and the Office of Administrative Law.

<sup>19</sup> Where there is a General Order for a group of dischargers that are members of a Third Party Group, the Third Party Group may prepare the NOI on behalf of all its members.

<sup>20</sup> There may be other constituents in the discharge that are of also of concern that are outside the scope of the SNMP and are not addressed here.

response to the notification and is not an evaluation that is required to be submitted to the Central Valley Water Board.

Based on the initial analysis, the discharger (or collective group of dischargers) must then determine how it intends to meet the management goals established in the SNMP, and provide notice to the Central Valley Water Board in the form of an NOI of the dischargers proposed path forward. For some dischargers, the proposed path forward may consist of a simple demonstration relevant to existing WDR requirements, existing discharge quality and/or *de minimus* impacts to groundwater quality to illustrate compliance with the SNMP. For others, the demonstration may require additional evaluations and/or development of proposed implementation plan(s) that outlines how the Central Valley management goals will be met on an individual basis or collectively through a proposed Management Zone.

- (3) Within 180 days of submittal of the NOI, the discharger(s) shall determine the approach to comply with applicable salinity and nitrate water quality objectives based on known discharge quality and its potential impact on receiving water quality in the area under the influence of the discharge. Or, if discharge quality is not known, the discharger(s) shall determine the approach to comply with applicable salinity and nitrate water quality objectives based on other information that the Central Valley Water Board determines is reasonable and appropriate for evaluating impacts to receiving water quality (e.g., historical monitoring data for areas with consistent land uses, modeling, etc.). When determining the approach to comply, the discharger(s) shall evaluate the area under the influence of the discharge to determine if it exceeds one or both of the following trigger criteria (applicable to both salt and nitrate):
  - Upper zone ambient water quality is > 50% of the applicable water quality objective and the water quality in the upper zone of the groundwater basin/sub-basin is trending upwards and will continue to trend upwards over the 20-year planning horizon; OR
  - Upper zone ambient water quality is > 75% of the applicable water quality objective.

These trigger criteria shall be assessed for the area under the influence of the discharge using the default ambient water quality and trend data provided in the SNMP (Section 4), unless the discharger(s) provides more up to date, localized data. The assessment of these trigger criteria shall also include an assessment of potential contributions from the vadose zone.

Based on the water quality evaluation described above, IF:

- Water quality of the sub-basin is better than the defined triggers for salt and nitrate AND the discharge will not degrade water quality (i.e., discharge water quality is better than that of the sub-basin), or if the impact to the receiving water from the discharge is *de minimus* (4), then the discharger(s) is considered to be in compliance with the SNMP (7) and findings to that effect will be formalized through revisions to applicable WDRs.
- OR, if the water quality of the sub-basin or water quality in the area of influence of the discharge is better than the defined triggers for salt and nitrate and the discharge will

degrade water quality at a level that is considered above *de minimus* but the discharger is able to demonstrate to the Central Valley Water Board compliance with State Board Resolution 68-16 in first encountered groundwater, then the discharger(s) is considered to be in compliance with the SNMP (7) and findings to that effect will be formalized through revisions to applicable WDRs.

- OR, if the water quality of the sub-basin is worse than the defined triggers for salinity or nitrate constituents, the water quality of the sub-basin exceeds the applicable objectives, or if degradation is more than *de minimus* and the discharger cannot demonstrate compliance (including using assimilative capacity) at first encountered groundwater, then the discharger must seek an allocation of assimilative capacity (5) (based on default ambient water quality or on a scale that is more reflective of the area affected by the discharge) or an exception from a water quality objective (6). In either of these cases the discharger must propose an alternative compliance strategy for Central Valley Water Board consideration. In the event that a discharger(s) seeks to propose an alternative compliance strategy, the discharger(s) proposed compliance strategy must address the goals/priorities of the SNMP, including providing safe drinking water to those in the proposed area of influence; bringing salt/nitrate loading into balance; and establishing a plan for management restoration, where feasible. An alternative compliance strategy may propose any combination of management practices/strategies appropriate to the area and issue(s) of concern (e.g., mitigation banks, offsets, stormwater harvesting, pump/treat, participation in a salt reduction program, e.g., through a regulated brine line).
- Where it is determined that an alternative compliance strategy is necessary, the SNMP provides that the discharger(s) shall take the following steps to meet the SNMP's management goals:
  - (8) Determine within 180 days of submittal of the NOI the need for an Assured Water Supply Plan to comply with Management Goal 1 to ensure a safe drinking water supply within the area under the influence of the discharge. This Plan, which must be submitted to the Central Valley Water Board for approval within one year of submittal of the NOI, shall include both an interim and permanent solution to the identified safe drinking water concerns for the area of influence. To the extent practicable, the identified permanent solution should be fully implemented within five years of approval of the Plan.
  - (9) Submit a Salt/Nitrate Compliance Plan within two years of submittal of the NOI. This Plan shall provide the short and long-term approach to comply with Management Goals 2 and 3 within the area under the influence of the discharge. The specific content of the Plan depends on the significance of water quality concerns within the area of influence and that is covered by the WDRs/Waivers in question. In general, the Plan, which will be phased at ten-year intervals and implemented as part of an adaptive iterative process, shall include both short-term ( $\leq 20$  years) projects and a long-term ( $> 20$  years) strategy to meet the SNMP Management Goals. The Compliance Plan may rely

on the use of alternative compliance strategies, such as the use of offsets, mitigation banks or other approaches.

Short-term compliance focuses on (a) specific projects to be implemented during Phase 1 or within the first ten years of implementation; and (b) potential or conceptual projects that are planned for implementation in Phase 2, i.e., the second ten years of implementation. For the long-term, the Plan will provide an overall strategy to achieve the management goals applicable to the permitted area, including commitment to long term regional solutions. For salt management this could include commitments 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 management site.

#### 1.2.4 Recommended New Policies, Regulatory Tools and Clarifications

Through the CV-SALTS process, stakeholders developed recommendations for clarifications to the Basin Plans, adoption of new or modified policies, and regulatory tools for incorporation into the Central Valley Basin Plans. These recommended clarifications, policies and tools are designed to facilitate implementation of the SNMP and efforts to achieve the Central Valley salt and nitrate management goals. Recommendations include:

- *Establish Default Management Areas* - Incorporate the DWR Bulletin 118 groundwater basin/sub-basin boundaries for use as default salt and nitrate management areas unless a group of dischargers elects to establish a Management Zone, which is a delineated area within groundwater basin/sub-basin (see below). The SNMP documents the existing salt and nitrate conditions in the upper, lower and production zones within each of these groundwater basins/sub-basins.
- *Provide Secondary Maximum Contaminant Level (SMCL) Guidance* - Incorporate guidance on appropriate use of 22 CCR §64449 SMCLs for the protection of the MUN beneficial use in surface waters and groundwater. In particular, provide guidance on the appropriate use of the “Recommended”, “Upper”, and “Short Term” consumer acceptance levels established for total dissolved solids and electrical conductivity in 22 CCR Table 64449-B.
- *Clarify Protection of the AGR Beneficial Use* - Incorporate guidance on interpretation of the existing narrative objective for chemical constituents for setting numeric salinity objectives for the protection of the AGR beneficial use. AGR covers both crop irrigation and stock watering protection. Salinity requirements to protect these uses vary widely depending on the crop or type of stock. This guidance will provide the basis for tailoring the protection of the AGR beneficial use to reflect local and regional differences in water use for agriculture and also identify triggers that will determine if additional action is needed to improve existing/trending water quality.
- *Authorize Implementation of Alternative Compliance Strategies* - Develop a framework for alternative compliance strategies that focuses on ensuring safe drinking water, minimizing degradation, and implementing long-term restoration when discharges cause salt and nitrate degradation in a receiving water. Strategies may include use of offsets, which provide an indirect approach to compliance with a WDR/Waiver requirement for a given

pollutant by managing other sources and loads so that the net effect on receiving water quality from all known sources is functionally-equivalent to or better than that which would have occurred through direct compliance with the WDR at the point-of-discharge.

- *Clarify Factors to Support a Maximum Benefit Finding* – To authorize a discharge that is expected to lower water quality, the Central Valley Water Board must make a finding that authorizing the discharge is "consistent with maximum benefit to the people of the state". It is recommended that guidance be incorporated into the Basin Plan regarding factors to be considered when making a maximum benefit finding.
- *Support Establishment of Management Zones* - Amend the Basin Plans to allow and encourage management of salt and/or nitrate through the establishment of management zones. In general, a Management Zone consists of multiple dischargers working collectively to manage salt and/or nitrate to first insure safe drinking water supplies, then create a balance within the defined Management Zone area, and then ultimately to develop a long-term plan for restoration of groundwater (where feasible) to meet applicable water quality objectives. The Basin Plans do not currently prevent the creation of a Management Zone to manage salt/nitrate; however, it is recommended that the Basin Plans be amended to clearly define requirements for establishment of a Management Zone and ensure that criteria for approval of a Management Zone by the Central Valley Water Board are properly established in regulation.
- *Clarify Allocation of Assimilative Capacity* – Establish guidance on the requirements for allocation of assimilative capacity in groundwater basins/sub-basins or Management Zones. Guidance will include the basis for calculating assimilative capacity within a managed area.
- *Revise the Exceptions Policy* – Revise requirements for granting exceptions in the Central Valley Region to facilitate efforts to achieve water quality objectives in impaired groundwater or to provide the time needed to revise an inappropriate water quality objective. Specifically, it is recommended that the following revisions be made to the current exceptions policy: (a) amend the existing policy to add nitrate to the list of chemical constituents for which the Central Valley Water Board may authorize an exception; (b) remove the existing sunset provision that prohibits the granting of exceptions beyond June 30, 2019; and (c) retain the existing provision that limits the term of an exception to no more than 10 years, but add a new provision stating that exceptions may be reauthorized for one or more additional 10-year periods and that a status report (summarizing compliance with the terms and conditions of the exception) must be presented to the Central Valley Water Board every 5 years.
- *Establish Drought and Water Conservation Policy* – Incorporate into the Basin Plan automatic triggers that may be used to implement a drought-based exception to salinity water quality objectives. Incorporation of such a trigger prevents the need for individual requests for an exception and ensures timely application when the specified conditions exist.

The recommendations are based on technical reviews, case studies, and extensive review and discussion by CV-SALTS stakeholders. Details on each are either included in this document or summarized here with the details referenced in supporting documents.

### 1.3 CEQA and Economics Analysis

To be developed:

- CEQA Scoping for the SNMP was completed in 2013
- Findings from the CEQA/Economic Analysis of the SNMP

### 1.4 SNMP Technical Support

To be developed:

- Executive Summary level discussion of technical findings that support this SNMP.

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