

Establishment of a Central Valley Salt and Nitrate Management Plan Public Workshop and CEQA Scoping Meeting Information Document

INTRODUCTION

A wide variety of human activities are resulting in salt and nitrate impacts to water and soil in the Central Valley Region. The slow and steady accumulation of salts threatens not only the long-term viability of agriculture and industry in the Central Valley, but also the water supplies for more than 25 million people. The Central Valley Regional Water Quality Control Board (Central Valley Water Board or Board) is proposing to develop amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River and the Tulare Lake Basin (collectively, Basin Plans) to address this problem.

These amendments will potentially incorporate many components of a stakeholder-developed Central Valley-wide Salt and Nitrate Management Plan (SNMP). Board staff have scheduled four public workshops to discuss the SNMP and to solicit comments and suggestions from the public regarding these planning activities. In this early public consultation period, the Board is asking for public input regarding the range of project actions, alternatives, reasonably foreseeable methods of compliance, significant and cumulative impacts, and potential mitigation measures that the Board will need to analyze in the course of developing amendments to the Basin Plans.

The following are elements of a SNMP that the Board may ultimately incorporate into the Basin Plans through the basin plan amendment process:

- Changing the Basin Plan's Beneficial Use Classification System: The Board may define new beneficial uses or new beneficial use subcategories that could be applied to specified waterbodies or categories of water bodies. This includes defining subcategories of the municipal and domestic supply (MUN) beneficial use and/or the agricultural irrigation and stock watering supply (AGR) beneficial use. Such subcategories may include "limited" MUN or AGR beneficial uses. The Board may also consider de-designating existing beneficial uses in specific waterbodies or categories of waterbodies.
- Specifically Delineating Waterbodies: The Board may specifically delineate waterbodies or classes of waterbodies that are currently only generally mentioned in the Basin Plans.
- Management Zone Concept: The Board could delineate "management zones" which would be portions of existing waterbodies where alternate regulatory measures would apply. The Board would develop specific implementation plans to address salt and nitrate concerns within these zones
- Changing Existing Salinity Water Quality Objectives (WQOs): The Board may establish new numeric and/or narrative WQOs, and may adopt guidance for interpreting and implementing new or existing narrative WQOs.
- Adding Implementation Plans and/or Changing Existing Implementation Plans: The Basin Plans currently contain implementation plans that do not adequately address current and historic salt and nitrate impacts. The Board may adopt new implementation plans and/or change existing implementation plans, and this could include:

- Altering existing compliance evaluation methodologies, which could include redefining the point of compliance (POC) where water quality objectives must be achieved, allowing for averaging periods to determine compliance with WQOs, and adding provisions related to data analysis procedures;
 - Incorporating new implementation provisions related to variances, compliance schedules, and alternative compliance strategies;
 - Adding new provisions to ensure adequate drinking water supplies in areas that rely on groundwater that has already been impacted by salt and/or nitrates; and
 - Addressing in-basin and out-of-basin salt containment and disposal options.
- Adopting New Policies: The Board may adopt new policies to address concerns such as water recycling, climate change, extreme weather conditions (including drought), and the recharge of stormwater runoff.

The salinity problem in the Central Valley is complex and multi-faceted, and presents a daunting challenge for the Board to confront alone. To assist in the Board's long-term planning efforts, a broad group of agriculture, cities, industry, and regulatory agencies joined together in 2006 to form the Central Valley Salinity Alternatives for Long-Term Sustainability initiative (CV-SALTS). CV-SALTS participants, including the Central Valley Water Board, are working together to develop a plan to address salinity and nitrate concerns in a comprehensive, consistent, and sustainable manner.

The current planning efforts are also intended to satisfy State Water Board Resolution 2009-0011 (*Recycled Water Policy*). The *Recycled Water Policy* requires the development of salt and nutrient management plans for all groundwater basins of the state, including those in the Central Valley. The development of a Central Valley-wide SNMP not only fulfills the requirements under the *Recycled Water Policy*, but is consistent with the purposes of CV-SALTS. The Central Valley SNMP, when incorporated into the Basin Plans, is expected to be an iterative and adaptive process that will involve periodic review and reassessment; this process may require subsequent revisions to the Basin Plans.

This document is intended to solicit discussion regarding the proposed amendments to the Basin Plans to help fulfill the Central Valley Water Board's obligation to seek early public consultation in connection with basin planning actions.

BACKGROUND

The Central Valley faces a future where rising salt levels threaten to turn this productive basin into a region where the water is not fit to drink and land is not capable of growing crops. It will not happen tomorrow, or even next year, but salts are slowly and steadily impacting water and soil, which are vital to agriculture and which provide water supplies for more than 25 million people across the state.

This problem has not gone unnoticed. As mentioned above, the Central Valley Water Board and other CV-SALTS participants are diligently developing short-term and long-term plans for the management of salts and nitrates. The CV-SALTS Executive Committee is a decision-making body with 30 voting members that represent diverse stakeholder groups, including agriculture, cities, industry, regulatory agencies, and community and environmental justice representatives. In addition, dischargers participating in CV-SALTS

formed the non-profit Central Valley Salinity Coalition to manage and fund the effort, and have entered into a Memorandum of Agreement with the State Water Board and the Central Valley Water Board to formalize their commitment. Goals adopted by CV-SALTS include (www.cvsalinity.org):

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

In addition, CV-SALTS is committed to evaluating, promoting, and initiating options to provide safe drinking water to communities already impacted by salt and nitrates.

In 2009, the State Water Board adopted the *Recycled Water Policy*, which supports state efforts to move towards the sustainable management of surface waters and groundwater through enhanced water conservation, water reuse, and the use of stormwater. The *Recycled Water Policy* requires the development of a salt and nutrient management plan for all regions of the state, including the Central Valley. Development of a Central Valley SNMP serves the purpose of the *Recycled Water Policy* by establishing a comprehensive approach for managing salt and nitrates on a regional or watershed basis and for all sources, rather than through individual recycled water projects. Given the close relationship between the goals of CV-SALTS and the *Recycled Water Policy's* requirement to establish a salt and nutrient management plan for the Central Valley region, CV-SALTS stakeholders are working collaboratively to develop a Central Valley-wide SNMP. The adoption of an SNMP for the Central Valley will ultimately require amendments to the Basin Plans.

REGULATORY CONTEXT

The State Water Board and the nine Regional Water Quality Control Boards (Regional Water Boards) are the state agencies with primary responsibility for coordination and control of water quality. (Wat. Code, § 13000.) Each Regional Water Board is required to adopt a Basin Plan, which provides the basis for regulatory actions to protect water quality. (Wat. Code, §13240 et seq.) A Basin Plan designates beneficial uses of water, WQOs to protect the uses, a program of implementation to achieve the objectives, and a monitoring program to ensure the goals of the program are met. (Wat. Code, §13050(j).) Basin Plans, once adopted, must be periodically reviewed and may be revised. (Wat. Code, § 13240.)

State Policies implemented through the Basin Plans that directly or indirectly apply to the development of an SNMP include:

- State Water Board Resolution 2009-0011 (*Recycled Water Policy*); as amended by State Water Board Resolution 2013-0003

The purpose of the *Recycled Water Policy* is to increase the use of recycled water from municipal wastewater sources in a manner that implements state and federal water quality laws. Policy implementation is intended to encourage the use of recycled water, stormwater, water conservation, conjunctive use of surface and groundwater, and improve the use of local water supplies. Within the

Recycled Water Policy is a requirement for the development of salt and nutrient management plans for each groundwater basin in California. Pursuant to paragraph 6(b)(1) of the *Recycled Water Policy*, the salt and nutrient management plans shall include:

- (a) A basin/sub-basin wide monitoring plan that includes an appropriate network of monitoring locations. The scale of the basin/sub-basin monitoring plan is dependent upon the site-specific conditions, and shall be adequate to provide a reasonable, cost-effective means of determining whether the concentrations of salt, nutrients, and other constituents of concern are consistent with applicable water quality objectives. Salts, nutrients, and other constituents of concern shall be monitored as follows:
 - (i) The monitoring plan must be designed to determine water quality in the basin, and must focus on basin water quality near water supply wells and areas proximate to large water recycling projects, particularly groundwater recharge projects. Also, monitoring locations shall, where appropriate, target groundwater and surface waters where groundwater has connectivity with adjacent surface waters.
 - (ii) The preferred approach to monitoring plan development is to collect samples from existing wells if feasible as long as the existing wells are located appropriately to determine water quality throughout the most critical areas of the basin.
 - (iii) The monitoring plan shall identify those stakeholders responsible for conducting, compiling, and reporting the monitoring data. The data shall be reported to the Regional Water Board at least every three years.
 - (b) A provision for annual monitoring of Constituents of Emerging Concern (e.g., endocrine disrupters, personal care products or pharmaceuticals) (CECs) consistent with recommendations by CDPH and consistent with any actions by the State Water Board taken pursuant to paragraph 10(b) of this policy [the *Drinking Water Policy*].
 - (c) Water recycling and stormwater recharge/use goals and objectives.
 - (d) Salt and nutrient source identification, basin/sub-basin assimilative capacity and loading estimates, together with fate and transport of salts and nutrients.
 - (e) Implementation measures to manage salt and nutrient loading in the basin on a sustainable basis.
 - (f) An antidegradation analysis demonstrating that the projects included within the plan will, collectively, satisfy the requirements of Resolution No. 68-16.
- State Water Board Resolution 88-63 (*Sources of Drinking Water Policy*)

The *Sources of Drinking Water Policy* establishes a policy that all waters are considered suitable or potentially suitable to support the MUN beneficial use, with certain exceptions. The Basin Plans implement this policy by generally assigning the MUN beneficial use to all surface waters and groundwaters in the Central Valley unless those waters have already been identified as not supporting the MUN use in the Basin Plans. Under existing regulations, exemptions to the MUN beneficial use can only be made in the Basin Plans themselves.

- State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (*State Anti-Degradation Policy*)

The *State Anti-Degradation Policy* applies to both surface waters and groundwaters. The *State Anti-Degradation Policy* generally prohibits the Board from authorizing discharges that will degrade “high-quality waters,” unless the Board first finds that the degradation is consistent with the maximum benefit to people of the state, that the discharge will be controlled through the use of “best practicable treatment or control” methodologies, and that the discharge will not unreasonably affect present and potential beneficial uses.

The Central Valley Water Board amends its Basin Plans through a structured process involving peer review (as necessary), public participation, and environmental review. The Board must comply with the California Environmental Quality Act (CEQA) (Pub. Res. Code, § 21000 et seq.) when amending its Basin Plans. However, the Secretary of Natural Resources has certified the Board’s basin planning process as exempt from the CEQA requirement to prepare an environmental impact report because a sufficiently rigorous environmental review is incorporated into the basin planning process itself. (Pub. Res. Code, § 21080.5.; Cal. Code Regs., tit. 14, § 15251(g).) Before adopting amendments to the Basin Plans, the Board prepares and circulates a substitute environmental document or “SED”, rather than an environmental impact report. In the SED, the Board analyzes any potential adverse environmental effects associated with the proposed amendment(s).

PROBLEM STATEMENT

The Basin Plans provide the foundation of the Board’s regulatory authority over salts and nitrates in the region. However, the existing regulatory framework limits the Central Valley Water Board’s ability to consider innovative salt or nitrate management strategies, including strategies consistent with the intent and purpose of the *Recycled Water Policy*. A comprehensive salinity and nitrate management approach that gives the Board additional regulatory flexibility is needed as part of near- and long-term solutions to ensure a sustainable water supply.

The Board’s records contain ample evidence of the challenges posed by salt and nitrate accumulation; many city and regional wastewater facilities cannot meet current Basin Plan WQOs, industries struggle to comply with salinity limitations, which often places limitations on their growth, agricultural activities are limited and face increased costs due to the management of saline waters, and drinking water sources throughout the region are impacted by nitrates and high levels of salts, which affects the quality of life of many communities. These conditions have been evident and worsening since the 1970s, with nearly a quarter million residents in Tulare Lake Basin impacted by nitrates in groundwater. In addition, to date 1.5 million acres of irrigated land has been identified as salinity-impaired, and a quarter million acres have been taken out of production (California Department of Water Resources communication, Jose Faria, Fresno Office). Unless proactive steps are taken to address these issues, salts and nitrates will affect an even greater portion of California’s communities, economy, and environment.

The Central Valley water supply, used within and outside the area, is affected by salinity and nitrates. Some areas of the Valley are switching to alternative water supplies to comply with salinity regulations and crop salinity requirements. In areas with elevated nitrates, municipalities and individuals are already seeking

alternative sources of safe drinking water. Recycled water is an essential new water source for the Central Valley, but it cannot be fully utilized unless its constituent salts and nitrates are carefully managed.

PROJECT PROPOSAL

The intent of the proposed project is to amend the existing Basin Plans to incorporate an SNMP for the Central Valley region. Adoption of an SNMP not only establishes a foundation for comprehensive, sustainable management of salt and nitrates in the Central Valley region, but it is consistent with the purposes of CV-SALTS and fulfills a requirement of the *Recycled Water Policy*. Once adopted, implementation of the Central Valley SNMP is expected to be an iterative and adaptive process that will involve periodic review and reassessment; this process may require subsequent revisions to the Basin Plans.

Geographic Scope

The project area includes all water bodies (surface water and groundwater) within the Central Valley Region. This region encompasses about 40% of the land in California and stretches from the Oregon border to the Kern County/Los Angeles County line. It is bounded by the Sierra Nevada Mountains on the east and the Coast Range on the west. The Region is divided into three basins (the Sacramento River Basin, the San Joaquin River Basin, and the Tulare Lake Basin), as described in the Basin Plans.

Regulatory Scope

The Basin Plans include the following sections: Introduction, Existing and Beneficial Uses, Water Quality Objectives, Implementation Plan, Surveillance and Monitoring, and Plans and Policies. The proposed project may result in proposals to amend any of these sections in one or both Basin Plans.

Project Alternatives

The Board is asking for public input regarding a range of project actions, alternatives, reasonably foreseeable methods of compliance, significant and cumulative impacts, and potential mitigation measures in order to guide the Board's environmental analysis. The Board's environmental analysis, including a discussion of project alternatives, will be circulated in substitute environmental documentation that will be prepared in accordance with California Code of Regulations, title 23, section 3777. Potential alternatives under consideration through the CV-SALTS process are described in each of the subsections below. These alternatives are generally divided by Basin Plan section, but may be considered individually or in combination.

1. BENEFICIAL USES

The Water Code defines beneficial uses to include, but not be limited to, "...domestic, municipal, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." (Wat. Code, § 13050(f).) The protection and enhancement of existing and potential beneficial uses are recognized as primary goals of water quality planning in both Basin Plans.

The Basin Plans identify some surface waters and groundwater basins by name, while others are not specifically identified. Named water bodies are assigned beneficial uses. For water bodies not specifically identified, beneficial uses are either assigned under generally-applicable designations that purport to cover all waterbodies (e.g. MUN), or are assigned beneficial uses on the basis of downstream designations. Table II-1 in each of the Basin Plans identifies surface waters with assigned beneficial uses. The Tulare Lake Basin Plan (Table II-2) identifies groundwater basins with assigned beneficial uses. Specific groundwater basins have not been identified in the Sacramento/San Joaquin River Basin Plan; instead, selected beneficial uses apply to all groundwaters covered by this Basin Plan.

1.1 Identification of Surface Waters and Groundwaters in the Basin Plans

As part of the development of the Central Valley SNMP, CV-SALTS is considering alternatives that would change how the Board assigns beneficial uses to surface waters and groundwaters. Part of the process may include the identification of additional surface waters and groundwaters. The Central Valley Water Board may consider the following alternatives for managing salts and nitrates under an SNMP:

Surface Water

- No modifications to the surface waters identified in the existing Basin Plans (no action alternative).
- Update Table II-1 to add or modify water body listings to support SNMP implementation.
- Add a process for designating water bodies not specifically listed in the Basin Plans.

Groundwater

- No modifications to groundwaters identified in the existing Basin Plans (no action alternative).
- Further delineate groundwater basins within each of the Basin Plans. Options include:
 - Use the existing groundwater basin designation approach in the Tulare Lake Basin Plan and apply it to the Sacramento/San Joaquin River Basin Plan;
 - Refine the delineations by using vertical and horizontal gradients to identify management zones; or
 - Some combination of these options.

1.2 Refine Beneficial Use Designations

As part of the development of the Central Valley SNMP, CV-SALTS is considering alternatives with respect to refining beneficial uses applied to surface waters and groundwaters. The Central Valley Water Board may consider the following alternatives for managing salts and nitrates under an SNMP:

Municipal & Domestic Supply (MUN)

The Basin Plans define the MUN beneficial use as, “[u]ses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.” In the Basin Plans, the Board has made generally-applicable designations that presumptively assign the MUN beneficial use to all waterbodies (with the exception of those waters that the Board had already specifically identified as not supporting the MUN use). Though exemption criteria are contained in the *Sources of Drinking Water Policy*,

these exemptions must be implemented through a Basin Plan amendment. Given this existing regulatory framework, the Board may consider the following alternatives:

- Continue to work within the existing regulatory framework for applying the MUN beneficial use to water bodies (no action alternative).
- Establish a “limited” or “restricted” MUN subcategory to recognize that there are many circumstances where water quality sufficient to provide municipal and domestic supply may only be achieved with careful management and/or advanced water quality treatment (e.g., denitrification, salt removal, etc.) and establish a process to assign this beneficial use to appropriate water bodies.
- Establish a process to utilize exceptions of the *Sources of Drinking Water Policy* to de-designate MUN from specific water bodies and/or water bodies that are not specifically listed in the Basin Plans without amending the Basin Plans.
- Establish a process to allow interim designation of MUN, limited MUN or no MUN use in water bodies that are not specifically listed within the Basin Plans until such time that the Basin Plans can be amended.

Issues:

- What set of factors could be used to determine where a limited or restricted MUN subcategory use should apply?
- Should groundwaters and surface waters be considered in the same manner or should they be considered differently?
- Do water bodies need to be evaluated individually, or can groups of similar water bodies be categorized?
- Should the process for implementing the exceptions of the *Sources of Drinking Water Policy* be evaluated?
- What impact might refined uses have on existing drinking water supplies?

Agricultural Supply (AGR)

The Basin Plans define AGR as, “[u]ses 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 AGR beneficial use encompasses a wide range of agricultural uses of state waters including stock watering and irrigation of agricultural lands. The application of AGR is of particular interest to SNMP development given the importance of salt and nitrates to agricultural activities. Accordingly, the Central Valley Water Board may consider the following alternatives:

- Retain the existing regulatory framework (no action alternative).
- Establish subcategories of beneficial uses within the AGR beneficial use.

Issues:

- What should be some of the key considerations in establishing subcategories for AGR use?

- Can subcategorization be used to promote reuse of agricultural supply water and recycled water?

2. WATER QUALITY OBJECTIVES

The Water Code defines WQOs as “...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” (Wat. Code, § 13050(h).) Pursuant to Water Code section 13241, when establishing WQOs, the Central Valley Water Board must consider, among other things, the following factors:

- Past, present, and probable future beneficial uses;
- Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
- Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
- Economic considerations;
- The need for developing housing within the region; and
- The need to develop and use recycled water.

As part of the development of the SNMP, the Central Valley Water Board may consider revisions to the existing WQOs for the beneficial uses described below.

2.1 Municipal & Domestic Supply (MUN)

2.1.1 MUN and Secondary Maximum Contaminant Levels (Secondary MCLs)

The Basin Plans currently incorporate the Secondary MCLs from California Code of Regulations, title 22, section 64449 (Tables 64449-A and 64449-B) as WQOs, some of which are salinity-related. While Primary MCLs are designed to protect human health, Secondary MCLs are developed to ensure that consumers receive water that is not affected by objectionable tastes and odors. Per Section 64449, the Secondary MCLs “shall not be exceeded in the water supplied to the public by community water systems,” which implies that the Secondary MCLs were intended to be applied to *finished* drinking water (i.e., after treatment). In addition, the Secondary MCLs identify ranges of concentrations that are considered acceptable for continuous use of the water supply for many of the identified salinity constituents. Without translators or other guidance, the most conservative concentration (lowest concentration) of the Secondary MCL range is typical utilized when regulating discharge quality.

Because the Basin Plans incorporate Secondary MCLs as WQOs, the Central Valley Water Board is required to ensure that discharges achieve compliance with these WQOs. This practice results in the application of Secondary MCLs to waters other than those supplied to a community water system after treatment. The effort that goes into treating discharges to achieve compliance with Secondary MCLs may therefore

represent an inefficient use of limited resources. With this in mind, the Central Valley Water Board may consider the following alternatives:

- No changes to the Basin Plans with regards to Secondary MCLs (no action alternative).
- Remove the Secondary MCLs from the Basin Plans and utilize narrative objectives to prevent nuisance conditions, including objectionable tastes or odors in drinking water supplies.
- Include implementation language for Secondary MCLs in the Basin Plans that explains how the Secondary MCLs shall be implemented.
- Specify that the full range of Secondary MCLs provided in the California Code of Regulations, title 22 for continuous use are considered “reasonable” protection of MUN.
- Specify implementation and compliance evaluation methods including identification of points of compliance and procedures for evaluating how compliance with Secondary MCLs will be evaluated, e.g., through use of appropriate averaging periods.
- Specifically recognize that Secondary MCLs are applicable to *treated* drinking water supplies and develop translators to ensure the adequate protection of raw water supplies.

2.1.2 MUN and Nitrate-related WQOs

The existing nitrate WQO in the Basin Plans for protection of the MUN beneficial use is 45 mg/L nitrate (as NO₃), or 10 mg/L (as N). The Central Valley Water Board is not planning any change to this nitrate standard as part of the development of the SNMP. However, during SNMP development the Board may evaluate how the WQO is implemented. The Central Valley Water Board may consider the following alternatives:

- Continue to rely on the existing Basin Plan language to implement this nitrate WQO (no action alternative).
- Develop additional tools, procedures or implementation measures (e.g., triggers) that provide guidance on how this WQO should be implemented, taking into account factors such as the beneficial use to be protected, point of compliance, surface water versus groundwater, groundwater depth, and existing water quality.

2.1.3 MUN and Other Salinity-related WQOs in the Basin Plans

The existing salinity-related WQOs differ by Basin Plan. Where objectives have been previously adopted, they are based on site-specific antidegradation determinations and/or Secondary MCLs, or are based on an allowable rate of degradation (as measured by electrical conductivity, for specific water bodies in Tulare Lake Basin). During development of the SNMP, the Board may evaluate the appropriateness of existing salinity-related WQOs established to protect the MUN beneficial use. The Central Valley Water Board is seeking input on any other alternatives that should be considered for setting salinity-related WQOs to protect the MUN use.

2.1.4 WQOs to Protect a Limited or Restricted MUN Beneficial Use

The Central Valley Water Board may consider establishing a “limited” or “restricted” MUN beneficial use subcategory or subcategories. As part of this consideration, the Central Valley Water Board may consider alternatives for establishing WQOs to protect this use. Options range from establishing a narrative WQO with guidance on how this use would be protected through the issuance of WDRs to establishing specific numeric WQOs to protect the use. The Board seeks comment on these options, as well as whether proposed WQOs might differ if the water body is a groundwater or surface water body.

Issues:

- Consideration of application in areas where there may already be an existing MUN use.

2.2 Agricultural Supply (AGR)

The Central Valley Water Board relies on narrative WQOs as a basis for protecting the AGR beneficial use. Development of the SNMP provides the opportunity to establish alternate WQOs to protect the AGR use – both stock watering and agricultural irrigation elements. AGR, as applied to irrigation water, is currently protected by narrative WQOs that do not clarify how to protect different crops with significantly different sensitivity to salt. Furthermore, these narrative WQOs do not account for management practices that are based on natural soil salinities and source water quality. Existing numeric guidelines may also be based on outdated information. New models and data exist that could support a region-specific approach to setting and implementing WQOs to protect the AGR beneficial use. With respect to stock watering, the Basin Plans do not currently have any stock watering-specific WQOs. Given this background, the Board may consider the following alternatives:

- Continue to rely on the existing regulatory framework to protect AGR-related beneficial uses of water (no action alternative).
- Clarify the use of narrative or numeric WQOs for protection of agricultural irrigation.
- Account for regional differences in factors that influence crop production, e.g., climate, including drought, available source water quality, soils, or cropping patterns.
- Establish narrative or numeric WQOs specific for the protection of stock watering.

Issues:

- What should be considered when translating the narrative WQO into numeric limitations in the context of permitting actions?
- What level of crop protection is reasonable, especially during drought?
- What should be used as the basis for determining whether discharges will “unreasonably” affect present and probable future beneficial uses of the water for irrigated agriculture (e.g. surface water supply, local groundwater, past cropping patterns, existing water management, other)?
- What are some of the factors that should be considered when establishing stock watering WQOs?

2.3 Aquatic Life (WARM or COLD)

Though aquatic communities depend on surface waters that are designated as supporting the WARM or COLD beneficial uses, the Basin Plans do not include salinity-related numeric WQOs to protect these uses. When developing the SNMP, the Central Valley Water Board may consider establishing salinity-related WQOs to protect WARM or COLD.

3. IMPLEMENTATION

The Water Code requires that the Basin Plans include a program of implementation for achieving WQOs. (Wat. Code, §§13050(j), 13242.) This implementation program shall include:

- (a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private;
- (b) A time schedule for the actions to be taken.
- (c) A description of surveillance to be undertaken to determine compliance with objectives.

Implementation programs may vary depending on whether the WQOs are established to protect a groundwater or surface water body. For example, under the federal Clean Water Act (CWA), where a surface water under CWA jurisdiction has multiple beneficial uses designated, the Board is required to protect the most sensitive beneficial use (40 CFR 131.11(a)(1)). Groundwater is not subject to the CWA but is currently regulated in much the same way. Accordingly, as part of the development of the SNMP, the Central Valley Water Board may explore how to manage groundwater in a manner that balances protection of the multiple uses of this water including management alternatives to ensure adequate drinking water supplies in areas that rely on groundwater that has already been impacted by salt and/or nitrates.

The Water Code establishes various regulatory measures that the Board uses to ensure the protection of beneficial uses. Examples include WDRs (Wat. Code, § 13370.), Time Schedule Orders (TSOs) (Wat. Code, § 13300.), Cleanup and Abatement Orders (CAOs) (Wat. Code, § 13304.), Cease and Desist Orders (CDOs) (Wat. Code, §§13301–13303.), discharge prohibitions (Wat. Code, § 13243.), and others. Furthermore, the CWA requires the Board to establish Total Maximum Daily Loads (TMDLs) for surface waters where a beneficial use is impaired by a pollutant (33 U.S.C. § 1313(d).), and these TMDLs typically become part of the Basin Plan. Specific application of these authorities in the Central Valley is described in the implementation section of the Basin Plans. The proposed project will not affect the continued use of these regulatory tools.

As noted in the Problem Statement, the challenges associated with sustainable salt management over the long term require consideration of alternative approaches for managing water resources in a manner that provides maximum benefit, including encouraging the use and reuse of water consistent with the *Recycled Water Policy*. As such, the Central Valley Water Board is evaluating alternatives that may increase flexibility in how salt and nitrates are managed through SNMP implementation at local, watershed or regional scales. The Board is also exploring alternatives to provide safe drinking water to communities already impacted by salt and nitrates. These potential alternatives are discussed in the following subsections:

3.1 Management Zone Implementation Provisions

The identification of groundwater basins within the Basin Plans can provide a hydrologic or hydrogeologic basis for establishing beneficial uses (see discussion above) and implementation of water quality control programs. However, given the size of groundwater basins, it may be more useful to evaluate and manage groundwater quality on a scale commensurate with the regulatory and resource management decisions that must be made with surface and groundwater sources of salt and nitrate as well as the available data. As such, a large basin could be partitioned into smaller subbasins where the relationship between existing land use activities, water sources and uses, and pollutant levels can be more accurately described and managed. A basin, small or large, also could be partitioned into shallow or deep zones to allow consideration of management decisions or implementation alternatives that may differ based on groundwater depth. In addition, given the complexity of land uses, water resource management needs, and the goals and objectives of the *Recycled Water Policy* and SNMP, it may be appropriate to manage groundwater using a framework that takes into account surface and ground water management linkages other than those that are strictly hydrologic or hydrogeologic based, e.g., through regional management plans or natural jurisdictional relationships. Consequently, the Central Valley Water Board may consider the following alternatives for how impacts to surface and ground water may be managed through implementation of the SNMP:

- Continue to manage surface and ground water using the existing framework in each of the Central Valley Basin Plans (no action alternative).
- Establish an alternative groundwater management structure that takes into account different water management goals for shallow or deep groundwater.
- Establish an alternative management structure that is based on factors other than hydrology or hydrogeology, e.g., defined management zones that could be based on existing Integrated Regional Water Management Plans, Groundwater Management Plans, Agricultural Coalition boundaries, Water Conservation District boundaries, or some other user-defined management area. Within a defined management zone, salt and nitrates would be managed holistically to meet goals defined for the zone as a whole—both surface and groundwater.
- Some combination of the above.

Issues:

- What should some of the key geographic, jurisdictional, regulatory or institutional considerations be for establishment of a management zone approach to water quality management?
- What should some of the key considerations be for establishment of a groundwater management approach that takes into account varying depths of groundwater?
- What types of implementation management strategies may be considered within a management zone if the SNMP provides opportunity to manage water quality from a zonal or depth perspective rather than as individual discharging entities, which is the current practice?
- What should some of the considerations be regarding establishment of a monitoring program to collect the data required to assess water quality in a management zone?

3.2 Implementation Provisions Related to the Protection of Groundwater Beneficial Uses

The Central Valley Water Board Basin Plans define groundwater as “...subsurface water that occurs beneath the ground surface in fully saturated zones within soils and other geologic formations.” Default beneficial uses, including MUN and AGR, are applied to groundwater unless otherwise designated in the Basin Plan. First encountered groundwater, or the most shallow groundwater, is encompassed in the groundwater body with the designated default beneficial uses. When developing WDRs, current Central Valley Water Board practice is to base an evaluation of the potential near and long-term impacts from a discharge on the first encountered groundwater regardless of whether the designated beneficial uses actually occur in that shallow groundwater layer. The result can be issuance of WDRs with overly stringent requirements. The Recycled Water Policy required the identification and utilization of available assimilative capacity in all California groundwater basins. As part of SNMP development, the Central Valley Water Board is evaluating how beneficial uses and water quality objectives are applied to first encountered groundwater including potential use of assimilative capacity. As such, the Central Valley Water Board may consider the following alternatives:

- Continue the current practice of protecting first encountered groundwater when developing WDRs (no action alternative).
- Consider modifications to the existing practice that would allow the Central Valley Water Board to use its discretionary authority to facilitate SNMP implementation alternatives. Modifications would not only protect beneficial uses but at the same time support implementation of innovative approaches for salt and nitrate management (see water quality compliance toolbox).

3.3 Salt Management Implementation Provisions

The Basin Plans already recognize the challenges associated with salt management in the Central Valley. Both Basin Plans note the need to construct a valley-wide drain to remove salt-laden wastewater from the Basin as long as specific criteria are met including protection of beneficial uses, authorization of appropriate permits, and long-term biological monitoring. Furthermore, each of the Basin Plans also includes some implementation measures to guide management of salinity impacts. The Basin Plan for the Sacramento River and San Joaquin River Basins notes the potential use of timed discharge releases, real-time monitoring, and source control as means to manage salinity in the San Joaquin River Valley. The Tulare Lake Basin Plan seeks to control the rate of increase in salinity in groundwater, recognizing that no proven means exist at present that will allow both ongoing human activity in the Basin and the maintenance of groundwater salinity at current levels. In addition, the Tulare Lake Basin Plan states that application or disposal of consolidated treated effluents should be to the west, toward the drainage trough of the valley, that salts in waste streams should be processed for reuse to reduce the need to import salt to the extent feasible, that salt importation should be reduced by ensuring that imported water is of the highest quality possible, and that water conveyance systems used to import water into the Basin should not be used to transport water that is of lower quality.

The *Recycled Water Policy* requires the development of implementation measures to manage salt in the basin on a sustainable basis. Inherent to such measures is making decisions regarding where policymakers want the salt to go, or be disposed of, in the region over the long-term. Alternatives for salt disposal range from keeping the salt on-site to transporting it elsewhere within the Central Valley (“in-valley”), or

exporting it out of the Central Valley (“out-of-valley”), e.g., through ocean disposal via a regulated brine line. As part of SNMP development, the Central Valley Water Board may consider the following alternatives specific to salt management:

- Make no changes to the existing language in the Implementation Sections of the Basin Plans regarding salt management (no action alternative).
- Incorporate concepts of controlled degradation (source water plus a consumptive use allocation) currently contained in the Tulare Lake Basin Plan into the Sacramento-San Joaquin River Basin Plan
- Establish revised salinity management alternatives in the Implementation Sections of each Basin Plan to include acceptable methods for managing salt within the Central Valley, i.e., in-valley salt disposal solutions.
- Establish revised salinity management alternatives in the Implementation Sections of each Basin Plan to include acceptable methods for transporting salt out of the Central Valley, i.e., out-of-valley salt disposal solutions.
- Some combination of in-valley and out-of-valley salt disposal alternatives.

Issues:

- If controlled degradation is allowed in portions of the Sacramento/San Joaquin River Basins, where would it be allowed, what would be the appropriate increment of increase, and how would an upper limit be determined?
- When developing in- or out-of-valley salt disposal alternatives for inclusion in the Basin Plans, what should some of the key geographic, jurisdictional, regulatory or institutional considerations be with respect to protection of groundwater and surface water beneficial uses?
- What are some of the key technical and economic feasibility issues that should be considered by the Central Valley Water Board with regards to implementation of in- or out-of-valley salt disposal options?

4. WATER QUALITY COMPLIANCE TOOLBOX

Existing water quality compliance tools include permitting tools (e.g. WDRs, waivers, and TSOs) enforcement remedies (e.g., CAOs, CDOs and Administrative Civil Liability (ACLs)), as well as prohibitions. The Central Valley Water Board is not proposing any changes to these tools as part of this project; these tools will remain available to support SNMP implementation. However, given the challenges associated with salt and nitrate management, the Central Valley Water Board is considering establishment of additional tools that can provide opportunity to implement innovative approaches for effective management of salt and nitrates. For example, California prohibits the “waste of water” and the state’s *Recycled Water Policy* is intended to encourage the use and reuse of water, which has significant implications with regards to salt management. To ensure compliance with WQOs and protect beneficial uses, regional approaches to salt management may be warranted, which is a departure from the standard practice of managing water quality on a permit-by-permit basis. To facilitate a more regional approach that allows the Central Valley Water Board to employ its discretion in water quality management, the Central

Valley Water Board may consider the adoption of additional water quality compliance tools as part of the development of its SNMP. Accordingly, the Central Valley Water Board seeks comment on the following:

4.1 Compliance Evaluations

When evaluating compliance with a WQO as it applies to the receiving water or an effluent limitation contained in a WDR, one or more points of compliance (POCs) may be used as the basis for a compliance evaluation. In some cases, the basis for evaluating compliance may be included as part of the WQO, and this information is considered during development of WDRs. In cases where the WQO provides no information regarding how compliance is to be determined, the Central Valley Water Board has discretion to select an appropriate water quality monitoring location and approach to serve as the basis for evaluating compliance with WDRs.

In some instances, there is only a limited relationship between where water quality is monitored to evaluate beneficial use protection and where the actual or probable use occurs. Moreover, how compliance is evaluated spatially or temporally at a POC may affect a compliance determination (e.g., how data are averaged spatially and temporally). Thus, the Central Valley Water Board may consider the following alternatives for how compliance evaluations are made:

- Continue to rely on the existing authority in the Basin Plans to determine POCs or how data should be analyzed to evaluate compliance with a WQO or WDR effluent limitation (no action alternative).
- Where needed, amend the Basin Plans to clarify how WQOs should be implemented considering factors such as POCs and data analysis requirements (such as averaging periods) for evaluating protection of a beneficial use.
- Establish additional discretionary authority in the Basin Plans to allow for the consideration of POCs in WDRs based on factors such as where applicable beneficial uses actually or probably occur in the receiving water.
- Some combination of the above.

Issues:

- If additional discretion is allowed with regards to establishing POCs in a WDR, what considerations should be given to WDR monitoring requirements to support WDR compliance evaluations?

4.2 Variance/Exception Policy

There are circumstances where the Board may determine that compliance with an WQO is infeasible at the time it issues a permit. Infeasibility can be the result of a variety of factors, ranging from an inaccurate designation of a beneficial use in the Basin Plan to technological impracticability. A variance or exception is a regulatory tool that provides a mechanism by which the Board may still issue a discharge permit in these circumstances. Variances are authorized under the federal CWA for surface water discharges. Exceptions are allowable under state policy for surface and groundwater discharges not subject to the federal CWA. However, the Basin Plans do not currently provide the Central Valley Water Board with the ability to grant variances.

Previously, the Central Valley Water Board conducted a CEQA scoping meeting on June 24, 2011 to solicit input on potential adoption of a variance policy into the Basins Plans to address salt management concerns associated with issuance of discharge permits (see www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/variances/index.shtml). By the time basin plan amendments associated with the SNMP are proposed, the above variance policy should be in effect. The above proposed variance policy is designed to encourage dischargers to participate in the development of the SNMP through CV-SALTS and the proposed variance policy is designed to sunset when the SNMP amendments take effect. Given CV-SALTS activities associated with SNMP development and the importance of variances as a potential tool for SNMP implementation, it was determined that additional consideration of adoption/continuance of a variance policy would be incorporated into establishment of the SNMP. Alternatives currently being considered include:

- Allow the currently proposed variance to sunset within its specified time limits (no action alternative).
- Update the proposed variance policy for salt and nitrate in surface water (see www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/variances/index.shtml).
- Update the proposed exceptions process (similar to a variance) for groundwater.
- Some combination of the updates.

4.3 Alternative Compliance Strategies

The Central Valley Water Board currently has the authority to consider the use of various compliance strategies to address water quality concerns on a site-specific basis. These strategies include, but are not necessarily limited to, the development of site-specific WQOs to recognize local differences regarding requirements to protect beneficial uses, and the use of translators and compliance schedules. The use of these types of compliance strategies and others will continue. However, as part of SNMP development, the Central Valley Water Board may consider modifications to the Basin Plans that will provide additional discretionary authority to allow implementation of alternative compliance strategies.

An example of an alternative compliance strategy is the implementation of salt and nitrate management activities on a zonal, regional, or watershed scale rather than on a local or permit-specific scale. Alternative compliance strategies of this nature would be especially valuable to the Central Valley when consistent with the goals of the *Recycled Water Policy*. In this regard, situations may occur where mitigation of a salt or nitrate concern offsite from where a discharge occurs may be permitted if it provides a greater environmental benefit (and therefore provides maximum benefit to the people of California) than if mitigation were restricted to the area only covered by the permit. Because there are many instances where salt and nitrate management may be more effective at larger geographic scales, the Board may consider the following alternatives:

- Continue to rely on the existing discretionary authority within the Basin Plans (no action alternative).
- Establish additional discretionary authority within the Basin Plans to allow the Central Valley Water Board to consider alternative compliance strategies when managing salt and nitrate in the Central Valley on a sustainable basis. Some strategies that could be considered include, but are not limited to:

- Direct use protection;
- Utilizing groundwater assimilative capacity;
- Alternative points of compliance;
- Conditional exceptions;
- Specific considerations for projects maximizing water use; and
- Specific considerations during low flow/drought conditions.

Issues:

- If additional discretion is allowed with regards to establishing alternative compliance strategies for salt and nitrate through issuance of a WDR, what are some of the key issues that the Central Valley Water Board should consider when managing salt or nitrate at a zonal, regional, or watershed scale?
- Other than the example compliance strategy described above, what are some other alternative compliance strategies that the Central Valley Water Board should consider for salt and nitrate management that are consistent with the goals of the *Recycled Water Policy*?

5. TECHNICAL AND REGULATORY PROCEDURES

Preparation of the SNMP requires the Board to characterize salt and nitrate water quality, develop implementation measures to sustainably manage salt/nitrate loading, and complete an antidegradation analysis (see SNMP requirements, above). Inherent to all of these SNMP elements is the use of acceptable technical or regulatory procedures for completing these types of analyses. In addition, as noted above, the Central Valley Water Board may consider changes to how selected beneficial uses are applied to water bodies. Modifying beneficial uses also requires application of acceptable procedures to ensure that appropriate water quality goals are met.

Given the above, the Central Valley Water Board may consider amending the Basin Plans to incorporate technical or regulatory procedures, where needed, to facilitate implementation of the SNMP. Examples of procedures that could be incorporated into the Basin Plan include, but may not be limited to, calculation of assimilative capacity in a water body (and how available assimilative capacity could be managed), antidegradation analysis, including criteria for making a “maximum benefit” determination, or methods for evaluating applicability of beneficial uses or designating beneficial uses in water bodies not specifically listed in the Basin Plans. Including procedures explicitly in the Basin Plans provides transparency with regards to implementation requirements. However, once in the Basin Plan, modifications to any procedures would require a Basin Plan amendment.

Issues:

- Should the Basin Plans be amended to incorporate procedures, as described above, that provide clarity regarding SNMP implementation?
- If the Basin Plan is not the appropriate vehicle for establishing technical or regulatory implementation procedures, what are some alternatives for establishing these procedures that creates certainty in the methods for completing the types of analyses mentioned but also allows the

Central Valley Water Board flexibility to modify a procedure without having to implement a costly Basin Plan amendment procedure.

6. SURVEILLANCE AND MONITORING

As noted above, the California Porter-Cologne Act requires that Basin Plans include a program of implementation for achieving WQOs. (Wat. Code, § 13050(j).) In addition, to the implementation elements discussed above, the implementation program shall also include a description of surveillance to be undertaken to determine compliance with WQOs. (Wat. Code, § 13242.)

The *Recycled Water Policy* establishes the minimum surveillance and monitoring requirements for inclusion in the SNMP (see Regulatory Authority Section, Recycled Water Policy subsection above for details). The purpose of the monitoring is to provide a reasonable, cost-effective means of determining whether the concentrations of salt, nitrates, and other constituents of concern as identified in the SNMP are consistent with applicable WQOs. Accordingly, as part of SNMP development the Central Valley Water Board will consider whether the existing Surveillance & Monitoring requirements within each Basin Plan require modification. Two areas will be evaluated:

6.1. MONITORING REQUIREMENTS

A number of monitoring programs already exist to support implementation of the Basin Plans including, but not limited to, Surface Water Ambient Monitoring Program (SWAMP) (www.waterboards.ca.gov/water_issues/programs/swamp/); Groundwater Ambient Monitoring & Assessment (GAMA) Program (www.waterboards.ca.gov/gama/); water quality monitoring being conducted under the Irrigated Lands Regulatory Program (http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/water_quality_monitoring/index.shtml); and monitoring conducted by individual permittees. The Central Valley Water Board is evaluating whether these existing programs are adequate to serve the purposes of the SNMP or if modifications are need. As such, the Central Valley Water Board may consider the following alternatives:

- Continue to rely on the existing monitoring programs (no action alternative);
- Modify one or more existing monitoring programs to accommodate implementation activities that may be unique to the SNMP;
- Develop a separate surveillance and monitoring program specific to SNMP implementation, or
- Develop a more collaborative approach to monitoring such as regional monitoring;
- Some combination of the above.

Issues:

- How should monitoring and surveillance programs be tailored to help support the various types of management approaches or implementation measures being considered as part of the adoption of the SNMP?

6.2. ASSESSMENT PROCEDURES

Implementation of the Basin Plans on occasion may require that the Central Valley Water Board or stakeholders to complete a water quality assessment to evaluate protection of applicable beneficial uses. Assessment procedures for surface waters are defined by the State Water Board for the purposes of meeting periodic federal CWA requirements for assessing compliance with WQOs. This proposed project will have no impact on these procedures for assessing surface water quality. However, to facilitate SNMP implementation, it may be appropriate to develop groundwater quality assessment procedures to support implementation decisions, e.g., evaluation of assimilative capacity or determining baseline water quality to support antidegradation analyses. Examples of groundwater quality assessment procedures that could be developed include, but may not be limited to, methods to facilitate spatial data averaging (both horizontal and vertical), temporal data averaging, or identification of action triggers that could be used to inform the need for a compliance action. The Central Valley Water Board is soliciting comment on the benefits of developing these types of procedures as part of development of the SNMP.

Project Schedule

Four CEQA Scoping Meetings are scheduled for the following locations:

MODESTO Thursday October 10, 2013, 9:00 a.m Stanislaus County Ag Center (Rooms D/E) 3800 Cornucopia Way Modesto, CA 95358	RANCHO CORDOVA Wednesday October 16, 2013, 1:00 p.m. Central Valley Regional Water Board 11020 Sun Center Drive, St. 200, Board Room Rancho Cordova, CA 95670
COLUSA Monday October 21, 2013, 9:00 a.m. Colusa County Fairground (Atwood Hall) 1303 – 10 th Street (HWY20) Colusa, CA 95932	FRESNO Monday October 28, 2013, 1:00 p.m. Central Valley Regional Water Board 1685 E Street, Fresno CA 93706

Draft SNMP – May 2014

Final SNMP – May 2016

Final Staff Report & Basin Plan Amendments– December 2017

Contact Information

Written comments regarding the proposed project may be submitted by email or mail to:

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For more information, please see:

http://www.swrcb.ca.gov/rwqcb5/water_issues/salinity/; or

<http://www.cvsalinity.org>

To sign up on our e-mail subscription list, please go to:

http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml

(NOTE: Check the box titled “Salinity (CV-SALTS)”