

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

Introduction

In order to insure economic and environmental sustainability, staff from the Central Valley Regional Water Quality Control Board (Central Valley Water Board) is proposing an amendment to the Water Quality Control Plans for the Sacramento River and San Joaquin River and the Tulare Lake Basin (Basin Plans) to incorporate components of a stakeholder developed Central Valley-wide Salt and Nitrate Management Plan (SNMP). Staff will hold four public workshops and California Environmental Quality Act (CEQA) scoping meetings to discuss and solicit comments and suggestions from the public regarding development of the Central Valley SNMP and incorporation of components of the SNMP into the Basin Plans. Components of the SNMP that may be developed and considered for incorporation include:

- Potential beneficial use changes including new beneficial use subcategories and designation of beneficial uses to specific water bodies as well as categories of water bodies. Changes considered may include:
 - Additional named surface and ground water bodies as well as management zones;
 - Refined municipal and domestic supply (MUN) and agricultural irrigation and stock watering supply (AGR) beneficial uses classifications to include limited uses;
 - A process for identifying appropriate beneficial uses in waterbodies not specifically listed in the Basin Plans;
- Potential changes to salinity water quality objectives (WQO) including establishing new numeric and narrative WQOs with guidance on interpreting how a narrative WQO shall be implemented;
- Implementation programs within an adaptive management framework to:
 - Meet WQOs;
 - Assure environmental and economic sustainability of the Central Valley's water resources; and
 - Address water quality concerns in water bodies listed as impaired.

The implementation programs directed at managing salt and nitrates in a sustainable manner through the SNMP may include:

- Designation and implementation of management zones;
- Compliance evaluation methods including identification of Points of Compliance (POC) and data analysis procedures, e.g., averaging periods;

- Variances, compliance schedules, and alternative compliance strategies;
- Options to improve drinking water supplies in areas relying on groundwater impaired with salt and/or nitrate;
- In-basin and out-of-basin salt containment and disposal options;
- Policies to address maximizing water use and promote the use of recycled water use;
- Policies to address climate change and extreme weather conditions, including drought; and/or
- Policies to promote the recharge of stormwater runoff.

Development of an SNMP for the Central Valley is critical since salts are slowly and steadily contaminating water and soil, which are so important to agriculture and water supplies for more than 25 million people across the state. Some areas of the Central Valley are switching to alternative water supplies to comply with salinity regulations and crop salinity requirements. In areas with elevated nitrates, alternative sources of water are being sought to provide safe drinking water to local communities. These conditions can be caused by natural soils/conditions, discharges of waste, irrigation using surface water, groundwater or recycled water and water supply augmentation using surface, ground, or recycled water.

The salinity problem is complex and multi-faceted; therefore a broad group of agriculture, cities, industry, and regulatory agencies joined together in 2006 to form Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative to develop a vision and plan for managing salts and nitrates. CV-SALTS participants, including the Central Valley Water Board, are working together to develop a workable, comprehensive plan to address salinity and nitrate concerns in a comprehensive, consistent, and sustainable manner.

In 2009, the State Water Resources Control Board (State Water Board) adopted a State Recycled Water Policy (SRWP) to support state efforts to move towards more sustainable management of surface waters and groundwater, through enhanced water conservation, water reuse and the use of stormwater. The SRWP requirements primarily focuses on groundwater projects and recognized that salinity and nutrient management on a small, recycled water project scale would not address the larger water quality concerns associated with salts and nutrients. As such, the SRWP requires development of a salt and nutrient management plan for all groundwater basins of the state including those in the Central Valley. Development of a more comprehensive Central Valley Salt and Nitrate Management Plan (SNMP) serves the purpose of the SRWP by establishing a comprehensive approach for managing salt and nitrates from all sources on a regional or watershed basis rather than solely through individual recycled water projects.

Recycled water, which is sufficiently treated so as not to adversely impact public health or the environment and which ideally substitutes for use of potable water, is presumed to have a beneficial impact and supports the sustainable use of surface and ground waters. However, the existing regulatory approach in the Basin Plans limits the Central Valley Water Board's authority to implement innovative salt or nitrate management strategies that are consistent with the intent and purpose of the SRWP. In particular, a comprehensive salinity and nitrate management approach is needed as part of near- and long-term solutions that ensure a sustainable water supply that supports all beneficial uses of water.

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 requirements of the SRWP. Once adopted, implementation of the Central Valley SNMP is expected to be an iterative and adaptive process that involves periodic review and update of the SNMP in the future with associated updates to the Basin Plans as needed.

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 contaminating water and soil, which are so important to agriculture and water supplies for more than 25 million people across the state.

The salinity problem is complex and multi-faceted; therefore a broad group of agriculture, cities, industry, and regulatory agencies joined together in 2006 to form CV-SALTS to develop a vision and plan for managing salts and nitrates. CV-SALTS participants, including the Central Valley Water Board, are working together to develop a workable, comprehensive plan to address salinity and nitrate concerns in a comprehensive, consistent, and sustainable manner. The CV-SALTS Executive Committee is the decision making body with 30 voting members representing diverse stakeholder groups including 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 entered into a Memorandum of Agreement with the State Water Board and Central Valley Water Board to formalize the 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 urban 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 nitrate.

In 2009, the State Water Board adopted a SRWP to support state efforts to move towards more sustainable management of surface waters and groundwater, through enhanced water conservation, water reuse and the use of stormwater. The SRWP requires 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 SRWP by establishing a comprehensive approach for managing salt and nitrates on a regional or watershed basis and for all sources, rather than solely through individual recycled water projects. Given the close relationship between the goals of CV-SALTS and the SRWP requirement to establish a salt and nutrient management plan for the Central Valley region, CV-SALTS stakeholders are working collaboratively to develop the Central Valley SNMP.

Adoption of an SNMP for the Central Valley requires amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Sacramento/San Joaquin Rivers) and the Water Quality Control Plan for the Tulare Lake Basin (TLB).

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 (California Water Code (CWC) §13000). Each Regional Water Board is required to adopt a Basin Plan, which provides the basis for regulatory actions to protect water quality (CWC §13240 et seq.). A Basin Plan designates beneficial uses of water, water quality objectives (WQO) 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 (CWC §13050(j)). Basin Plans, once adopted, must be periodically reviewed and may be revised (CWC §13240).

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

- *State Recycled Water Policy* (Resolution No. 2009-0011; as amended Resolution No. 2013-0003)

The purpose of the SRWP is to increase the use of recycled water from municipal wastewater sources that meet the definition in CWC §13050(n), 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 SRWP is a requirement for all Regional Water Boards to develop an SNMP that serves the purposes of the SRWP. Pursuant to paragraph 6(b)(1) of the SRWP, the SNMP 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 as identified in the salt and nutrient plans are consistent with applicable water quality objectives. Salts, nutrients, and the constituents identified in paragraph 6(b)(1)(f) shall be monitored. The frequency of monitoring shall be determined in the salt/nutrient management plan and approved by the Regional Water Board pursuant to paragraph 6(b)(2).
 - (i) The monitoring plan must be designed to determine water quality in the basin. The plan 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.
- (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 Sources of Drinking Water Policy* (Resolution No. 88-63)

State Water Board Resolution No. 88-63, commonly known as the Sources of Drinking Water Policy (SDWP), establishes a policy that all waters are considered suitable or potentially suitable to support the MUN beneficial use, with certain exceptions. As recently confirmed through legal review, the Basin Plans implement this policy by assigning MUN to all surface waters and groundwaters in the Central Valley region unless specifically identified as non-MUN in the Basin Plan and/or exempted through a Basin Plan Amendment that satisfies one or more exception criteria established by the SDWP.

- *State Water Board Statement of Policy with Respect to Maintaining High Quality Waters in California* (Resolution No. 68-16)

Also known as the California Antidegradation Policy, Resolution No. 68-16 applies to both surface and ground waters and requires that existing high quality be maintained to the highest quality consistent with the maximum benefit of the people of the State. The policy allows lowering of water quality only if the change is: (1) consistent with the maximum benefit to people of the state and will not unreasonably affect present and potential beneficial uses and will not result in water lower than applicable WQOs; and (2) waste discharge requirements (WDRs) for proposed discharge will result in the best practicable treatment or control of the discharge necessary to assure that no pollution or nuisance will occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

Central Valley Water Board is required by the California Environmental Quality Act (CEQA) to conduct an environmental analysis of proposed amendments to its Basin Plans (Public Resources Code § 21000 et seq). The purpose of the planned public workshop and CEQA scoping meeting is to solicit public input regarding the scope of potential proposed amendments to the Basin Plans along with potential significant environmental impacts, mitigation measures and possible alternatives. Public comments will help the Central Valley Water Board refine the scope of its environmental analysis; no

actual amendments to the Basin Plan will occur without first providing opportunity for the public to comment on the environmental analysis.

Problem Statement

The Central Valley Basin Plans provide the current basis for the regulation of salts and nitrates in the region. The existing regulatory approach limits the Central Valley Water Board's authority to consider implementation of innovative salt or nitrate management strategies that are consistent with the intent and purpose of the SRWP. In particular, a comprehensive salinity and nitrate management approach is needed as part of near- and long-term solutions that ensure a sustainable water supply that supports all beneficial uses of water. Evidence of the ongoing challenge is that many city or regional wastewater facilities cannot meet current Basin Plan WQOs, industry struggles to comply and cannot expand due to salinity limitations, agriculture is limited or has increased costs due to management of saline waters, and drinking water sources throughout the region are contaminated with nitrates and high levels of salts which negatively impact the quality of life and health of people. These conditions have been evident and worsening since the 1970s with nearly a quarter million residents in the Tulare Lake Basin and Salinas Valley impacted by nitrate contamination of groundwater. In addition, to date 1.5 million acres of irrigated land has been identified as salinity impaired with a quarter million acres taken out of production (California Department of Water Resources communication, Jose Faria, Fresno Office). In the future, the potential exists for salt and nitrates to affect an even greater portion of California's economy, environment, and health.

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, alternative sources of water are being sought when available to provide safe drinking water to local communities. These changes are costly and hopefully temporary. Recycled water is an essential new water source for the Central Valley, but it cannot be fully implemented unless its constituent salts and nitrates are carefully managed – a key purpose behind the development of an SNMP to facilitate implementation of the SRWP.

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 SRWP. Once adopted, implementation of the Central Valley SNMP is expected to be an iterative and adaptive process that involves periodic review and update of the SNMP with associated amendments to the Basin Plans as needed.

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 bound by the Sierra Nevada Mountains on the east and the Coast Range on the west. The Region is divided into three basins as described in the Sacramento River and San Joaquin River Basin Plans and Tulare Lake Basin Plan (Central Valley Basin Plans).

Regulatory Scope

The Central Valley Basin Plans include the following key 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 applicable to the Central Valley.

Project Alternatives

The purpose of the scoping meeting is to provide a forum for early public consultation regarding the environmental issues that should be considered in the substitute environmental documentation, as described in section 3777 of the Title 23 of the California Code of Regulation , for potential amendments to the Central Valley Basins Plans to establish an SNMP. 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. This CEQA Scoping meeting will assist the Central Valley Water Board in identifying the range of actions, alternatives, mitigation measures, and significant environmental effects that may require analysis prior to the decision-making process.

Beneficial Uses

California 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" (CWC §13050(f)). Protection and enhancement of existing and potential beneficial uses are recognized as primary goals of water quality planning in both Central Valley Basin Plans.

The Central Valley Basin Plans identify surface waters and groundwater basins by name to varying degrees. Named water bodies are assigned beneficial uses. For water bodies not specifically identified, beneficial uses are designated based on blanket requirements (e.g. MUN) or downstream designated uses. Table II-1 in each of the Central Valley Basin Plans identifies surface waters with assigned beneficial uses. The TLB 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.

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 with regards to the assignment of beneficial uses to surface waters and groundwaters. Part of the process may include identification of additional surface and groundwater bodies. The Central Valley Water Board is considering the following alternatives in the context of how salt and nitrates could be managed 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 TLB 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.

Refine Beneficial Use Designations

As part of the development of the Central Valley SNMP, CV-SALTS is considering alternatives with regards refining beneficial uses applied to surface waters and groundwaters. The Central Valley Water Board is considering the following alternatives in the context of how salt and nitrates could be managed under an SNMP:

Municipal & Domestic Supply (MUN)

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”. Current policy is to designate all surface and ground water bodies with the MUN beneficial use per the SDWP unless already identified as non-MUN in the Basin Plans. Exemption criteria are contained in the SDWP and may be applicable in specific situations such that a water body may be exempted from an MUN designation if the appropriate technical justification can be made and supported through a Basin Plan amendment. Given this existing regulatory framework, the following alternatives are being considered:

- Continue to work within the existing regulatory framework for application of the MUN beneficial use to water bodies (no action alternative).
- Establish a limited or restricted MUN subcategory that recognizes the existence of conditions where municipal and domestic supply may only be achieved with careful management and/or advanced water quality treatment (e.g., denitrification, salt removal, etc.) and a process to modify beneficial uses for water bodies as needed to facilitate implementation of the SNMP.
- Establish a process to consistently utilize exceptions of the SDWP to de-designate MUN from specific water bodies without amending the basin plan.
- Establish a process for designation of MUN or no MUN use in water bodies that are not specifically listed in the Basin without needing to amend the basin plan Plans.

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 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 SDWP be evaluated?
- What impact might refined uses have on existing drinking water supplies?

Agricultural Supply (AGR)

The Basin Plans define 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 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 is considering the following alternatives:

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

Issues:

- What should be some of the key considerations in establishing subcategories for AGR use?
- Can subcategorization be used to promote reuse of agricultural supplies and recycled water?

Water Quality Objectives

The California Porter-Cologne Act defines WQO) 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” (CWC §13050(h)). When establishing WQOs, the Central Valley Water Board must consider, among other things, the following factors (CWC §13241):

- 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;
- The need to develop and use recycled water.

As part of the development of the SNMP, the Central Valley Water Board is considering revisions to the existing Basin Plan WQOs for the beneficial uses described below.

Municipal & Domestic Supply (MUN)

Secondary Maximum Contaminant Levels (SMCLs)

The Basin Plans currently incorporate the SMCLs in CWC §64449 (Tables 64449-A and 64449-B) as WQOs, some of which are salinity-related. The source of the majority of SMCLs is federal regulations promulgated in 1979; their value or purpose is to improve the aesthetics of drinking water (taste and odor) rather than address any particular public health concern. Per CWC §64449, these SMCLs “shall not be exceeded in the water supplied to the public by community water systems”, meaning that SMCLs should be applied to finished drinking water after treatment, before it is delivered to the public.

Because the Basin Plans include SMCLs as WQOs, the Central Valley Water Board is required to consider establishing effluent limits for protection of these WQOs when issuing WDRs including National Pollutant Discharge Elimination System (NPDES) permits. This practice results in the application of SMCLs to waters other than those supplied to a community water system after treatment. The Central Valley Water Board is considering revisions to the Basin Plans that could change how SMCLs are used to manage Central Valley water resources. Specifically, Central Valley Water Board is considering the following alternatives:

- No changes to the Basin Plans with regards to SMCLs, resulting in no change to how SMCLs are applied during development of permits (no action alternative).
- Remove the SMCLs from the Basin Plans and utilize narrative objectives to regulate the discharge of wastes to prevent nuisance conditions including objectionable tastes or odors in drinking water supplies.
- Include implementation language for SMCLs in the Basin Plans that explains how the SMCLs shall be implemented through WDRs.
- Specify that the range provided for continuous use for SMCLs is considered reasonable protection of MUN.
- Specify compliance evaluation methods including identification of points of compliance and procedures for evaluating how compliance with SMCLs will be evaluated, e.g., through use of appropriate averaging periods.
- Specifically recognize that SMCLs are applicable to treated drinking water supplies and develop a translator for raw water supplies.

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 value during development of the SNMP. However, during SNMP development the Central Valley Water Board is evaluating how the WQO is implemented. Accordingly, the Central Valley Water Board is considering 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 in the Central Valley 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.

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 SMCLs (which as noted above are based on taste and odor considerations), or 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 Central Valley Water Board is evaluating the appropriateness of existing salinity-related WQOs established to protect the MUN beneficial use. In addition, 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.

WQOs to Protect a Limited or Restricted MUN Beneficial Use

As noted above, the Central Valley Water Board is considering establishment of a limited or restricted MUN use that recognizes the existence of conditions where an MUN subcategory beneficial use may apply. As part of the consideration of the establishment of this use subcategory, the Central Valley Water Board is considering 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 issuance of WDRs to establishing specific numeric WQOs to protect the use. The Central Valley Water 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.

Agricultural Supply (AGR)

Central Valley Water Board relies on narrative WQOs as a basis for protecting the AGR use in the region. Development of the SNMP provides opportunity to consider alternatives for establishment of 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 account for the protection of different crops with significantly different sensitivity to salt nor management practices that have adapted based on natural soil salinities and source water quality. Existing numeric guidelines are based on dated information. New models and data exist that could support a more region-specific approach to WQO setting and implementation. With regards to stock watering the Basin Plans do not currently have any WQOs specific to the protection of stock watering as a beneficial use. Given this background, the Central Valley Water Board is considering 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 objectives for use in the development of WDRs?
- What level of crop protection is reasonable, especially during drought?
- What should be used as the basis for determining that water quality will not unreasonably affect present and anticipated beneficial use of the water for irrigated agriculture in a given area?
- What are some of the factors that should be considered when establishing stock watering WQOs?

Aquatic Life (WARM or COLD)

The Basin Plans do not currently include salinity-related numeric WQOs for the protection of aquatic communities which are protected by application of a WARM or COLD beneficial use. When developing the SNMP, the Central Valley Water Board may consider establishing salinity related WQOs to protect COLD or WARM aquatic life.

Implementation

The Porter-Cologne Act requires that Basin Plans include a program of implementation for achieving WQOs (CWC §13050(j)). 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 Central Valley Water Board is required to protect the most sensitive beneficial use (40 CFR 131.11(a)(1)). Groundwater is not subject to the CWA; instead it is subject to the state Porter-Cologne Act. Accordingly, as part of the development of the SNMP, the Central Valley Water Board is exploring how to manage groundwater in a manner that balances protection of the multiple uses of this water while providing maximum benefit to the people of California.

State statutes and regulations establish various enforcement authorities and administrative proceedings for managing water quality to meet WQOs. Examples include WDRs (CWC §13370), Time Schedule Orders (TSOs) (CWC §13300), Clean-up and Abatement Orders (CAOs) (CWC §13304), Cease and Desist Orders (CDOs) (CWC §13301–13303), discharge prohibitions (CWC §13243), and others. Federal regulations under the CWA also require the establishment of Total Maximum Daily Loads

(TMDLs) (40 CFR 130.7) for surface waters where a beneficial use has been determined to be impaired by a pollutant. TMDLs, once adopted, 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 tools in the Central Valley, as already authorized.

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 SRWP. 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 a local, watershed or regional scales. These potential alternatives are discussed in the following subsections:

Management Zones

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 SRWP 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 is considering the following alternatives for how 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 resource management?
- What should be 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?

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 SRWP 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 is considering 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).

Salt Management

The Basin Plans already recognize the challenges associated with salt management in the Central Valley and the protection of surface and ground waters. 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.

Each of the Basin Plans in the Central Valley also includes some implementation measures to guide management of salinity impacts. The Sacramento River and San Joaquin River Basin Plan 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 no proven means exist at present that will allow ongoing human activity in the Basin and maintain groundwater salinity at current levels throughout the Basin. 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, salts in waste streams should be processed for reuse to reduce the need to import salt to the extent feasible, salt importation should be reduced by assuring that imported water is of the highest quality possible, and water conveyance systems used to import water into the Basin should not be used to transport water that is of lower quality.

Among other things, the SRWP requires 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 is considering the following alternatives specific to salt management:

- Make no changes to the existing language in the Implementation Section 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 Section 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 Section 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?

Water Quality Compliance Toolbox

Existing water quality compliance tools include both administrative tools, e.g., WDRs, waivers and prohibitions, and enforcement remedies, including TSOs, CAOs, CDOs, and Administrative Civil Liability (ACLs) (CWC §13385). 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 SRWP 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 is considering 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:

Compliance Evaluations

When evaluating compliance with a WQO 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 then considered during development of a WDR. 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 a WDR.

In some instances, no relationship or a limited relationship exists 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 is considering 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).
- Amend the Basin Plans where needed 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 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?

Variance Policy

A variance is a regulatory tool that provides a mechanism by which a discharge permit can be written where compliance with an underlying WQO is demonstrated to be infeasible at the time at which the permit is written. Infeasibility can be caused by a variety of factors ranging from inappropriate designation of beneficial uses and WQOs in the receiving water to technological limitations on what is practical with regards to treatment of the effluent. Variances, which are authorized under the federal CWA for surface water discharges, are allowable under state policy for surface and groundwater. However, the Central Valley Water Board currently does not have authority to grant a variance within the Central Valley Basin Plans.

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 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.

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, development of site-specific WQOs to recognize local differences regarding requirements to protect beneficial uses, and use of translators and compliance schedules when developing effluent limitations in a WDR. The use of these types of compliance strategies and others will continue. However, as part of SNMP development, the Central Valley Water Board is considering modifications to the Basin Plans that will provide additional discretionary authority to allow implementation of alternative compliance strategies when consistent with the goal of managing salt and nitrates in a sustainable manner.

An example of an alternative compliance strategy under consideration is establishing within the Basin Plan the discretionary authority to allow implementation of salt and nitrate management activities that are implemented at a zonal, regional or watershed scale rather than the 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 SRWP. 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 than at a point location, the Central Valley Water Board is considering the following alternatives:

- Continue to rely on the existing discretionary authority within the Basin Plans for ensuring compliance with WDRs, in particular as it pertains to salt and nitrate (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 being 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 SWRP?

Technical and Regulatory Procedures

Preparation of the SNMP requires characterization of salt and nitrate water quality, development of implementation measures to sustainably manage salt/nitrate loading, and completion of 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 is considering changes to how selected beneficial uses are applied to water bodies to facilitate SNMP implementation. 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 is considering 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.

Surveillance and Monitoring

As noted above, the California Porter-Cologne Act requires that Basin Plans include a program of implementation for achieving WQOs (CWC §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 (CWC §13242).

The SRWP 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:

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 is considering 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?

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.

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?
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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

CHICO??

Monday October 21, 2013, 9:00 a.m.

(A Northern CV location will be confirmed at least two weeks prior to meeting date)

FRESNO

Monday October 28, 2013, 1:00 p.m.

Central Valley Regional Water Board
1685 E Street,
Fresno CA 93706

Draft SNMP – May 2014

Draft Staff Report – 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:

Jeanne Chilcott
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95624-6114
jchilcott@waterboards.ca.gov
(916) 464-4788

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 “Central Valley Salinity (CV-SALTS)”)