

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**MEETING OF JANUARY 11 AND 12, 2012  
APPLE VALLEY, CALIFORNIA**

- ITEM:** 11
- SUBJECT:** **PROPOSED SCOPE OF WORK AND DEVELOPMENT OF A SALT AND NUTRIENT MANAGEMENT PLAN FOR THE MOJAVE INTEGRATED REGIONAL WATER MANAGEMENT GROUP, SAN BERNARDINO COUNTY**
- CHRONOLOGY:** February 2009 Recycled Water Policy Adopted by State Water Resources Control Board (State Water Board)
- ISSUE:** To provide the Water Board an opportunity to provide input on the content and development of a regional Salt and Nutrient Management Plan (SNMP) to manage salts and nutrients within the groundwaters of the Mojave watershed (Enclosure 1). The final SNMP will likely be adopted as a Basin Plan amendment at a later date.
- DISCUSSION:** The Mojave Water Agency (MWA) was formed in 1959 by an act of the California Legislature and was activated by a vote of the residents in 1960 to manage groundwater resources in the Mojave, El Mirage, and Lucerne Valley basins. The Morongo and Johnson Valley basins were later annexed in 1965. The MWA service area is within the boundaries of two Regional Water Boards, the Lahontan and Colorado River Water Boards. The Mojave and El Mirage basins (collectively referred to as “Mojave basin”) are located in the Lahontan Region. The Lucerne Valley, Johnson Valley, and Morongo groundwater basins are located in the Colorado River Region.
- Since 1994, MWA has been proactive in the development of a comprehensive water resources plan and worked closely with stakeholders to develop an Integrated Regional Water Management Plan (IRWMP) in 2004. The IRWMP addresses components of groundwater management, urban water management, agricultural water use, environmental habitat protection and restoration, and water quality throughout the MWA service area. In 2009, the California Department of Water Resources (DWR) approved the Mojave IRWM Region as the MWA service area boundary.
- The Recycled Water Policy, State Water Board Resolution No. 2009-0011 (Enclosure 2), establishes goals to manage a

sustainable water supply through increased use of recycled water, enhanced stormwater management, and improved water conservation efforts. The Water Boards have determined that regulating individual waste discharges in a groundwater basin may not be effective or efficient at ensuring long-term protection of groundwater resources and its beneficial uses without some overall evaluation of potential salt and nutrient loading. One of the key elements of the Recycled Water Policy is the development of a SNMP for every groundwater basin within California by 2014. The purpose of the SNMP is to evaluate the potential for salt and nutrient increases from all sources and to develop a management plan to protect groundwater from accumulating salts and nutrients at concentrations that would degrade the quality of groundwater and limit its beneficial uses. Waste discharges could then be regulated in a manner consistent with the SNMP. Potential sources of salts and nutrients include naturally occurring salts and minerals in soils and bedrock, irrigation water (which could originate from surface water, groundwater, and/or recycled water), water banking projects, and discharges of waste to land from activities such as agricultural, industrial, commercial, and/or residential. The development of the SNMP is to be driven, controlled, and funded by local stakeholders, such as the Mojave IRWM Group, with participation by the regional water boards. Once developed, a SNMP will provide a roadmap for water agencies to manage salt and nutrient loading within a basin. Ultimately, the regional water boards will incorporate the various SNMPs into the Basin Plans. To offset the costs of developing and implementing a SNMP, grant funds are available through Proposition 84, which is administered by DWR.

The Mojave IRWM Group is in the process of updating its IRWMP and intends to incorporate the SNMP as an appendix to the updated plan. The objectives of the SNMP are: 1) gather available water quality data to evaluate the quality of surface water and groundwater at the watershed and sub-basin level; 2) identify potential sources of salt and nutrients and quantify loads for those sources; 3) determine assimilative capacity of the groundwater based on hydrologic/geologic characteristics and source water quality for individual sub-basins; 4) develop a water quality monitoring and reporting plan that is designed to evaluate and track the long-term impacts to groundwater quality resulting from past, current, and future land uses; 5) identify and recommend most appropriate methods and best management practices for reducing and/or maintaining salt and nutrient loadings; and 6) demonstrate that implementation of the SMP will satisfy the requirements of the State Antidegradation Policy, State Water Board Resolution No. 68-16 and the Recycled Water Policy. The scope of work for the Mojave SNMP follows draft guidance provided by the State Water Board (Enclosure 3). A timeline for tasks associated with the development of the SNMP is outlined in Enclosure 4.

Lahontan Water Board staff has provided comments to the Mojave IRWM Group on the draft scope of work dated November 2011 (Enclosure 5). Technical comments were made in an effort to clarify the purpose and goals of the SNMP as well as to guide the Mojave IRWM Group toward developing a comprehensive and defensible SNMP based on a reliable dataset. In essence, the intent of the SNMP is to serve as a long-term planning tool. Staff comments included: 1) stakeholder participation is critical to identify potential sources of salts and nutrients, to compile available water quality data, and to encourage successful implementation of the plan; 2) the model chosen to evaluate assimilative capacity needs to be adaptable and capable of integrating source loading from future projects; 3) the effects of importation of water and transferring recycled water sources between sub-basins should be considered; 4) long-term monitoring should continue until steady state conditions within the basin have been achieved; and 5) identify which agencies are responsible for managing current and future anthropogenic loads and what actions these agencies must take to provide the Water Board with assurances that local entities will manage the groundwater basin using their authorities or by other means to achieve the water quality specified in the plan. Based on the actual conditions over time, planning time scales may need to be adjusted. It is anticipated that the Mojave IRWM Group will submit a revised scope of work incorporating staff comments by December 23, 2011. The Mojave IRWM Group will present its revised scope of work at the Water Board meeting.

Water Board staff has solicited comments from the Mojave IRWM Group and interested parties regarding this agenda item.

**RECOMMENDATION:**

This is an informational item only. Water Board members may provide direction and input on the proposed scope of work and content of the SNMP for the groundwaters within the Mojave basin.

<b>ENCLOSURE:</b>	<b>ITEM:</b>	<b>BATES NUMBER:</b>
<b>1</b>	Proposed Scope of Work, November 2011 (Revised Scope of Work to be submitted to Water Board members prior to the Board meeting)	<b>11-7</b>
<b>2</b>	Recycled Water Policy	<b>11-13</b>
<b>3</b>	Suggested Elements of a SNMP (State Water Board Draft Guidance)	<b>11-33</b>
<b>4</b>	Timeline of Tasks	<b>11-39</b>
<b>5</b>	Staff Comments on Draft Scope of Work, December 2011	<b>11-43</b>

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# ENCLOSURE 1

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**DRAFT SCOPE OF WORK**  
**Salt/Nutrient Management Plan**  
**Prepared by the Mojave IRWM Group**

**PURPOSE**

To develop a regional Salt/Nutrient Management Plan (SMP) for the Mojave Water Agency Integrated Regional Water Management (IRWM) Region that will identify and manage, on a regional basis, salts and nutrients from sources within the region, for the purpose of maintaining regional water quality objectives and supporting beneficial uses. The intention is to involve surface water users, groundwater users and wastewater dischargers in the Mojave IRWM Region, as appropriate, to participate in efforts to protect these waters from accumulating concentrations of salt and nutrients that would degrade the quality of water supplies in the Mojave IRWM Region to the extent that it may limit their use.

**BACKGROUND**

On February 3, 2009, the State Water Resources Control Board (SWRCB) adopted a Recycled Water Policy (Policy) that addresses the concern for protecting the quality of California's groundwater basins. In response to this Policy, the Mojave Water Agency (MWA) and Victor Valley Wastewater Reclamation Authority (VWVRA), with support from Lahontan Regional Water Quality Control Board (Lahontan Water Board) and Colorado River Regional Water Quality Control Board (Colorado Water Board) staff, initiated efforts to organize a group to develop a regional SMP for the Mojave IRWM Region.

MWA will soon begin preparation of an update to its IRWM Plan and has proposed including the SMP within the IRWMP update. In 2009, MWA completed a "Region Acceptance Process" with the CA Department of Water Resources (DWR), and DWR approved the Mojave IRWM Region as submitted. The Mojave IRWM Region follows MWA boundaries and includes the Mojave River Groundwater Basin and its subareas, as well as the Morongo Basin Area and its groundwater basins. A majority of the Region falls within the South Lahontan Hydrologic Region and a portion in the Colorado River Hydrologic Region.

Per the Policy, the SMP shall be completed and proposed to the Lahontan and Colorado Water Boards by May 14, 2014. If the Water Boards find that the stakeholders are making substantial progress toward completion of the plan, the deadline, at the discretion of the Water Boards may extend the deadline till May 14, 2016. In no case shall the period for the completion of the plan exceed seven years from the date of the Policy.

## GOALS

1. Manage salts and nutrients on a regional basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses.
2. Prepare a Salt/Nutrient Management Plan, in a collaborative effort with stakeholders, which meets the requirements for a SMP as described in the SWRCB Policy.
3. Audit and leverage existing information and studies conducted within the Mojave IRWM Region in order to avoid duplication of efforts in preparing the SMP.
4. Develop the Plan to be consistent with and incorporated into the IRWMP ultimately adopted by the MWA.

## WORK PLAN

### Task 1: Stakeholder Participation

Collaborate with Lahontan and Colorado Water Board staff and other stakeholders, receive and review stakeholder input. It is anticipated that most of the stakeholder participation will occur during meetings of the Technical Advisory Committee to the MWA, in the context of the IRWMP update. A primary initial outcome of this task will be to reach consensus regarding the stakeholder participants appropriate for this planning effort and to identify ways to effectively involve as many of those stakeholders with the TAC as is practical.

### Task 2: Review/Assemble Existing Data & Research

Evaluate existing data and previously completed water quality management efforts to prepare an adequate SMP. An extensive amount of research and data collection has already occurred with respect to salts and nutrients in the Mojave IRWM Region. A Groundwater Quality Analysis<sup>1</sup> and associated Salt Model was developed in 2007 that identified contributors to salt within the Region, evaluated current and past trends in water quality, and modeled potential changes over time due to loading from various existing and anticipated sources under different scenarios. Existing information and research may need to be updated, but to the extent possible, new research should be minimized and existing information should be leveraged for inclusion within the SMP. At a minimum, the following sources should be reviewed:

- The 2007 Groundwater Quality Analysis
- Groundwater Quality Planning Model (Salt Model) developed for the 2007 Groundwater Quality Analysis
- MWA's groundwater monitoring program and associated water quality database
- MWA's 2004 RWMP, which includes a Groundwater Management Planning component, and associated EIR

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<sup>1</sup> Groundwater Quality Analysis Technical Memorandum/Phase 1 Between Mojave Water Agency and Schlumberger Water Services. May 7, 2007

- Potential for Ground-Water Contamination from Movement of Wastewater Through the Unsaturated Zone, Upper Mojave River Basin, California, 1993
- Technical Study to Evaluate a Long-Term Water Management Program Between MWA and Metropolitan Water District, and associated EIR, December 2005
- July 29, 2004 MOU between MWA, Lahontan Water Board, and High Desert Power Project, LLC.
- Antidegradation Studies for Discharges to Surface and Groundwater, VVWRA 2009
- Mojave River Characterization Study, VVWRA 2010
- Cumulative Impact Analysis, VVWRA 2011
- Various USGS studies

### **Task 3: Salt/Nutrient Characterization**

Characterize salt and nutrients within the Mojave IRWM Region and groundwater basins, utilizing to the extent possible, existing information identified in Task 2.

Leverage work already completed in the existing 2007 Groundwater Quality Analysis and Salt Model to compile the following information into the SMP:

- Existing and background water quality.
- Current and projected sources of salts/nutrients. Review/update existing planning scenarios, including a map and database of current land uses contributing to salt/nutrients. Include the quality and quantity of existing and projected wastewater/recycled water discharges to basins, imported water recharge, septic discharges, return flow from applied agricultural and dairy water, and other sources of salt/nutrients.
- The basins' assimilative capacity of salts/nutrients, to the extent possible with the current body of knowledge.
- The regional effects and loading estimates of salt/nutrients from existing and projected land uses and water management practices identified, to the extent possible with the current body of knowledge.
- Update and refine existing model to serve as a tool to identify potential short and long-term regional water quality impacts associated with implementing projects identified in the accompanying IRWMP consistent with the State Antidegradation Policy (Resolution No. 68-16).
- Prepare a draft report to the stakeholders including data collected and results found in the Salt/Nutrient characterization.

### **Task 4: Monitoring & Reporting Plan**

Review existing monitoring programs, identify data gaps, and recommend changes if needed, in order to comply with SMP requirements. Include in the SMP a Monitoring Plan that provides a reasonable means of determining whether the concentrations of salts, nutrients, and other constituents of concern are consistent with applicable water quality objectives. The monitoring plan should be designed to evaluate the long-term regional impacts to groundwater quality resulting from current and future land uses, as well as localized impacts in critical areas where appropriate, and should include the following:

- Recommendations for additional appropriate monitoring locations and frequencies that collectively would represent the regional-level water quality and changes in water quality for basins within the SMP. In addition, the monitoring program should identify critical localized areas where additional monitoring should be concentrated near water supply wells and areas proximate to large water recycling projects and groundwater recharge projects.
- Include a provision for identifying and monitoring Constituents of Emerging Concern.
- List stakeholders responsible for development of new monitoring sites/facilities, conducting, compiling, and reporting the monitoring data.
- Determine the cost of additional monitoring and possible funding sources.
- Data from the Monitoring Plan will be reported to the Lahontan and Colorado Water Boards every 3 years by the appropriate collecting parties.

**Task 5: Implementation Measures**

Identify and recommend methods and regional Best Management Practices (BMP's) to manage salt and nutrient loadings on a sustainable basis. Development of implementation measure recommendations and BMP's should be of a regional nature and through a collaborative process with the stakeholders.

**Task 6: Recycled Water & Stormwater Use/Recharge**

Identify recycled water and stormwater use/recharge goals and objectives.

**Task 7: Prepare Plan for Submittal to Water Boards**

The SMP shall be completed and proposed to the Lahontan and Colorado Water Boards by May 14, 2014, unless the Water Boards find that the stakeholders are making substantial progress toward completion of the plan. In no case shall the period for the completion of the plan exceed seven years. The SMP will be included within the IRWMP update, and CEQA compliance will be conducted at the IRWMP level; therefore, CEQA was not included as a task within SMP preparation.

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# ENCLOSURE 2

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**STATE WATER RESOURCES CONTROL BOARD  
RESOLUTION NO. 2009-0011**

**ADOPTION OF A POLICY FOR  
WATER QUALITY CONTROL FOR RECYCLED WATER**

**WHEREAS:**

1. The Strategic Plan Update 2008-2012 for the Water Boards includes a priority to increase sustainable local water supplies available for meeting existing and future beneficial uses by 1,725,000 acre-feet per year, in excess of 2002 levels, by 2015, and ensure adequate water flows for fish and wildlife habitat. This Recycled Water Policy (Policy) is intended to support the Strategic Plan priority to Promote Sustainable Local Water Supplies. Increasing the acceptance and promoting the use of recycled water is a means towards achieving sustainable local water supplies and can result in reduction in greenhouse gases, a significant driver of climate change. The Policy is also intended to encourage beneficial use of, rather than solely disposal of, recycled water.
2. California Water Code section 13140 authorizes the State Water Resources Control Board (State Water Board) to adopt state policy for water quality control.
3. On March 20, 2007, the State Water Board conducted a public workshop on recycled water.
4. On September 28, 2007, staff circulated a draft Recycled Water Policy and a draft staff report/certified regulatory program environmental analysis/California Environmental Quality Act (CEQA) checklist for public comment.
5. On October 2, 2007, the State Water Board conducted a public workshop on the draft Recycled Water Policy.
6. On February 15, 2008, the State Water Board circulated an updated version of the draft Policy and the draft staff report/certified regulatory program environmental analysis/CEQA checklist.
7. On November 21, 2008, the State Water Board circulated another updated version of the draft Policy and the draft staff report/certified regulatory program environmental analysis/CEQA checklist.
8. Staff has responded to significant verbal and written comments received from the public and made revisions to the draft Policy in response to the comments.
9. On January 6, 2009, the State Water Board conducted a public hearing on the draft Policy. In response, staff has revised the draft Policy, which is available at [http://www.waterboards.ca.gov/water\\_issues/programs/water\\_recycling\\_policy/docs/draft\\_recycled\\_water\\_policy\\_011609.pdf](http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/draft_recycled_water_policy_011609.pdf). Staff has also revised the draft staff report, which is available at [http://www.swrcb.ca.gov/water\\_issues/programs/water\\_recycling\\_policy/docs/020309\\_draft\\_staffreport\\_checklist\\_01162009.pdf](http://www.swrcb.ca.gov/water_issues/programs/water_recycling_policy/docs/020309_draft_staffreport_checklist_01162009.pdf).
10. The Policy includes findings, including findings related to compliance with State Water Board Resolution No. 68-16, that are hereby incorporated by reference.

11. The State Water Board received a letter from statewide water and wastewater entities dated December 19, 2008, strongly urging their member agencies to commit funding and in-kind resources to facilitate development of salt/nutrient management plans within the five-year timeframe established by the State Water Board in the Policy.
12. The Resources Agency has approved the State Water Board's and the Regional Water Quality Control Boards' water quality control planning process as a "certified regulatory program" that adequately satisfies the CEQA requirements for preparing environmental documents. State Water Board staff has prepared a "substitute environmental document" for this project that contains the required environmental documentation under the State Water Board's CEQA regulations. (California Code of Regulations, title 23, section 3777.) The substitute environmental documents include the "Draft Staff Report and Certified Regulatory Program Environmental Analysis Recycled Water Policy," which includes an environmental checklist, the comments and responses to comments, the Policy itself, and this resolution. The project is the adoption of a Recycled Water Policy.
13. In preparing the substitute environmental documents, the State Water Board has considered the requirements of Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and intends these documents to serve as a Tier 1 environmental review. The State Water Board has considered the reasonably foreseeable consequences of adoption of the draft Policy; however, potential site-specific recycled water project impacts may need to be considered in any subsequent environmental analysis performed by lead agencies, pursuant to Public Resources Code section 21159.1.
14. Consistent with CEQA, the substitute environmental documents do not engage in speculation or conjecture but, rather, analyze the reasonably foreseeable environmental impacts related to methods of compliance with the draft Policy, reasonably foreseeable mitigation measures to reduce those impacts, and reasonably feasible alternative means of compliance that would avoid or reduce the identified impacts.
15. The draft Policy incorporates mitigation that reduces to a level that is insignificant any adverse effects on the environment. From a program-level perspective, incorporation of the mitigation measures described in the substitute environmental document will foreseeably reduce impacts to less than significant levels.
16. A policy for water quality control does not become effective until adopted by the State Water Board and until the regulatory provisions are approved by the Office of Administrative Law (OAL).
17. If, during the OAL approval process, OAL determines that minor, non-substantive modifications to the language of the Policy are needed for clarity or consistency, the Executive Director or designee may make such changes consistent with the State Water Board's intent in adopting this Policy, and shall inform the State Water Board of any such changes.

**THEREFORE BE IT RESOLVED THAT:**

**The State Water Board:**

1. Approves and adopts the CEQA substitute environmental documentation, which includes the staff report/certified regulatory program environmental analysis/CEQA checklist, and the response to comments, which was prepared in accordance with the requirements of the State Water Board's certified regulatory CEQA process (as set forth in California Code of Regulations, title 23, section 3775, et seq.), Public Resources Code section 21159, and California Code of Regulations, title 14, section 15187, and directs the Executive Director or designee to sign the environmental checklist.
2. After considering the entire record, including oral testimony at the public hearing, adopts the Recycled Water Policy.
3. Authorizes the Executive Director or designee to submit the Recycled Water Policy to OAL for review and approval.
4. If, during the OAL approval process, OAL determines that minor, non-substantive modifications to the language of the Policy are needed for clarity or consistency, directs the Executive Director or designee to make such changes and inform the State Water Board of any such changes.

**CERTIFICATION**

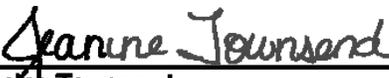
The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on February 3, 2009.

**AYE:** Chair Tam M. Doduc  
Charles R. Hoppin  
Frances Spivy-Weber

**NAY:** None

**ABSENT:** Arthur G. Baggett, Jr.

**ABSTAIN:** None

  
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Jeanine Townsend  
Clerk to the Board

## Recycled Water Policy

### 1. *Preamble*

California is facing an unprecedented water crisis.

The collapse of the Bay-Delta ecosystem, climate change, and continuing population growth have combined with a severe drought on the Colorado River and failing levees in the Delta to create a new reality that challenges California's ability to provide the clean water needed for a healthy environment, a healthy population and a healthy economy, both now and in the future.

These challenges also present an unparalleled opportunity for California to move aggressively towards a sustainable water future. The State Water Resources Control Board (State Water Board) declares that we will achieve our mission to "preserve, enhance and restore the quality of California's water resources to the benefit of present and future generations." To achieve that mission, we support and encourage every region in California to develop a salt/nutrient management plan by 2014 that is sustainable on a long-term basis and that provides California with clean, abundant water. These plans shall be consistent with the Department of Water Resources' Bulletin 160, as appropriate, and shall be locally developed, locally controlled and recognize the variability of California's water supplies and the diversity of its waterways. We strongly encourage local and regional water agencies to move toward clean, abundant, local water for California by emphasizing appropriate water recycling, water conservation, and maintenance of supply infrastructure and the use of stormwater (including dry-weather urban runoff) in these plans; these sources of supply are drought-proof, reliable, and minimize our carbon footprint and can be sustained over the long-term.

We declare our independence from relying on the vagaries of annual precipitation and move towards sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater. To this end, we adopt the following goals for California:

- Increase the use of recycled water over 2002 levels by at least one million acre-foot per year (afy) by 2020 and by at least two million afy by 2030.
- Increase the use of stormwater over use in 2007 by at least 500,000 afy by 2020 and by at least one million afy by 2030.
- Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.
- Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

The purpose of this Policy is to increase the use of recycled water from municipal wastewater sources that meets the definition in Water Code section 13050(n), in a manner that implements state and federal water quality laws. The State Water Board expects to

develop additional policies to encourage the use of stormwater, encourage water conservation, encourage the conjunctive use of surface and groundwater, and improve the use of local water supplies.

When used in compliance with this Policy, Title 22 and all applicable state and federal water quality laws, the State Water Board finds that recycled water is safe for approved uses, and strongly supports recycled water as a safe alternative to potable water for such approved uses.

2. ***Purpose of the Policy***

- a. The purpose of this Policy is to provide direction to the Regional Water Quality Control Boards (Regional Water Boards), proponents of recycled water projects, and the public regarding the appropriate criteria to be used by the State Water Board and the Regional Water Boards in issuing permits for recycled water projects.
- b. It is the intent of the State Water Board that all elements of this Policy are to be interpreted in a manner that fully implements state and federal water quality laws and regulations in order to enhance the environment and put the waters of the state to the fullest use of which they are capable.
- c. This Policy describes permitting criteria that are intended to streamline the permitting of the vast majority of recycled water projects. The intent of this streamlined permit process is to expedite the implementation of recycled water projects in a manner that implements state and federal water quality laws while allowing the Regional Water Boards to focus their limited resources on projects that require substantial regulatory review due to unique site-specific conditions.
- d. By prescribing permitting criteria that apply to the vast majority of recycled water projects, it is the State Water Board's intent to maximize consistency in the permitting of recycled water projects in California while also reserving to the Regional Water Boards sufficient authority and flexibility to address site-specific conditions.
- e. The State Water Board will establish additional policies that are intended to assist the State of California in meeting the goals established in the preamble to this Policy for water conservation and the use of stormwater.
- f. For purposes of this Policy, the term "permit" means an order adopted by a Regional Water Board or the State Water Board prescribing requirements for a recycled water project, including but not limited to water recycling requirements, master reclamation permits, and waste discharge requirements.

3. ***Benefits of Recycled Water***

The State Water Board finds that the use of recycled water in accordance with this Policy, that is, which supports the sustainable use of groundwater and/or surface 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. Other public agencies are encouraged to use this presumption in evaluating the impacts of recycled water projects on the environment as required by the California Environmental Quality Act (CEQA).

4. ***Mandate for the Use of Recycled Water***

- a. **The State Water Board and Regional Water Boards will exercise the authority granted to them by the Legislature to the fullest extent possible to encourage the use of recycled water, consistent with state and federal water quality laws.**
- (1) **The State Water Board hereby establishes a mandate to increase the use of recycled water in California by 200,000 afy by 2020 and by an additional 300,000 afy by 2030. These mandates shall be achieved through the cooperation and collaboration of the State Water Board, the Regional Water Boards, the environmental community, water purveyors and the operators of publicly owned treatment works. The State Water Board will evaluate progress toward these mandates biennially and review and revise as necessary the implementation provisions of this Policy in 2012 and 2016.**
  - (2) **Agencies producing recycled water that is available for reuse and not being put to beneficial use shall make that recycled water available to water purveyors for reuse on reasonable terms and conditions. Such terms and conditions may include payment by the water purveyor of a fair and reasonable share of the cost of the recycled water supply and facilities.**
  - (3) **The State Water Board hereby declares that, pursuant to Water Code sections 13550 *et seq.*, it is a waste and unreasonable use of water for water agencies not to use recycled water when recycled water of adequate quality is available and is not being put to beneficial use, subject to the conditions established in sections 13550 *et seq.* The State Water Board shall exercise its authority pursuant to Water Code section 275 to the fullest extent possible to enforce the mandates of this subparagraph.**
- b. **These mandates are contingent on the availability of sufficient capital funding for the construction of recycled water projects from private, local, state, and federal sources and assume that the Regional Water Boards will effectively implement regulatory streamlining in accordance with this Policy.**
- c. **The water industry and the environmental community have agreed jointly to advocate for \$1 billion in state and federal funds over the next five years to fund projects needed to meet the goals and mandates for the use of recycled water established in this Policy.**

- d. **The State Water Board requests the California Department of Public Health (CDPH), the California Public Utilities Commission (CPUC), and the California Department of Water Resources (CDWR) to use their respective authorities to the fullest extent practicable to assist the State Water Board and the Regional Water Boards in increasing the use of recycled water in California.**

5. ***Roles of the State Water Board, Regional Water Boards, CDPH and CDWR***

**The State Water Board recognizes that it shares jurisdiction over the use of recycled water with the Regional Water Boards and with CDPH. In addition, the State Water Board recognizes that CDWR and the CPUC have important roles to play in encouraging the use of recycled water. The State Water Board believes that it is important to clarify the respective roles of each of these agencies in connection with recycled water projects, as follows:**

- a. **The State Water Board establishes general policies governing the permitting of recycled water projects consistent with its role of protecting water quality and sustaining water supplies. The State Water Board exercises general oversight over recycled water projects, including review of Regional Water Board permitting practices, and shall lead the effort to meet the recycled water use goals set forth in the Preamble to this Policy. The State Water Board is also charged by statute with developing a general permit for irrigation uses of recycled water.**
- b. **The CDPH is charged with protection of public health and drinking water supplies and with the development of uniform water recycling criteria appropriate to particular uses of water. Regional Water Boards shall appropriately rely on the expertise of CDPH for the establishment of permit conditions needed to protect human health.**
- c. **The Regional Water Boards are charged with protection of surface and groundwater resources and with the issuance of permits that implement CDPH recommendations, this Policy, and applicable law and will, pursuant to paragraph 4 of this Policy, use their authority to the fullest extent possible to encourage the use of recycled water.**
- d. **CDWR is charged with reviewing and, every five years, updating the California Water Plan, including evaluating the quantity of recycled water presently being used and planning for the potential for future uses of recycled water. In undertaking these tasks, CDWR may appropriately rely on urban water management plans and may share the data from those plans with the State Water Board and the Regional Water Boards. CDWR also shares with the State Water Board the authority to allocate and distribute bond funding, which can provide incentives for the use of recycled water.**
- e. **The CPUC is charged with approving rates and terms of service for the use of recycled water by investor-owned utilities.**

6. ***Salt/Nutrient Management Plans***

a. ***Introduction.***

- (1) **Some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives established in the applicable Water Quality Control Plans (Basin Plans), and not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. 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 or recycled water. Regulation of recycled water alone will not address these conditions.**
- (2) **It is the intent of this Policy that salts and nutrients from all sources be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The State Water Board finds that the appropriate way to address salt and nutrient issues is through the development of regional or subregional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects.**

b. ***Adoption of Salt/ Nutrient Management Plans.***

- (1) **The State Water Board recognizes that, pursuant to the letter dated December 19, 2008 and attached to the Resolution adopting this Policy, the local water and wastewater entities, together with local salt/nutrient contributing stakeholders, will fund locally driven and controlled, collaborative processes open to all stakeholders that will prepare salt and nutrient management plans for each basin/sub-basin in California, including compliance with CEQA and participation by Regional Water Board staff.**
  - (a) **It is the intent of this Policy for every groundwater basin/sub-basin in California to have a consistent salt/nutrient management plan. The degree of specificity within these plans and the length of these plans will be dependent on a variety of site-specific factors, including but not limited to size and complexity of a basin, source water quality, stormwater recharge, hydrogeology, and aquifer water quality. It is also the intent of the State Water Board that because stormwater is typically lower in nutrients and salts and can augment local water supplies, inclusion of a significant stormwater use and recharge component within the salt/nutrient management plans is critical to the long-term sustainable use of water in California. Inclusion of stormwater recharge is consistent with State Water Board Resolution No. 2005-06, which establishes sustainability as a core value for State Water Board programs and**

also assists in implementing Resolution No. 2008-30, which requires sustainable water resources management and is consistent with Objective 3.2 of the State Water Board Strategic Plan Update dated September 2, 2008.

- (b) Salt and nutrient plans shall be tailored to address the water quality concerns in each basin/sub-basin and may include constituents other than salt and nutrients that impact water quality in the basin/sub-basin. Such plans shall address and implement provisions, as appropriate, for all sources of salt and/or nutrients to groundwater basins, including recycled water irrigation projects and groundwater recharge reuse projects.
  - (c) Such plans may be developed or funded pursuant to the provisions of Water Code sections 10750 *et seq.* or other appropriate authority.
  - (d) Salt and nutrient plans shall be completed and proposed to the Regional Water Board within five years from the date of this Policy unless a Regional Water Board finds that the stakeholders are making substantial progress towards completion of a plan. In no case shall the period for the completion of a plan exceed seven years.
  - (e) The requirements of this paragraph shall not apply to areas that have already completed a Regional Water Board approved salt and nutrient plan for a basin, sub-basin, or other regional planning area that is functionally equivalent to paragraph 6(b)3.
  - (f) The plans may, depending upon the local situation, address constituents other than salt and nutrients that adversely affect groundwater quality.
- (2) Within one year of the receipt of a proposed salt and nutrient management plan, the Regional Water Boards shall consider for adoption revised implementation plans, consistent with Water Code section 13242, for those groundwater basins within their regions where water quality objectives for salts or nutrients are being, or are threatening to be, exceeded. The implementation plans shall be based on the salt and nutrient plans required by this Policy.
- (3) Each salt and nutrient management plan shall include the following components:
- (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 Emerging Constituents/ 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.

- (4) Nothing in this Policy shall prevent stakeholders from developing a plan that is more protective of water quality than applicable standards in the Basin Plan. No Regional Water Board, however, shall seek to modify Basin Plan objectives without full compliance with the process for such modification as established by existing law.

7. *Landscape Irrigation Projects*

- a. *Control of incidental runoff.* Incidental runoff is defined as unintended small amounts (volume) of runoff from recycled water use areas, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence. Incidental runoff may be regulated by waste discharge requirements or, where necessary, waste discharge requirements that serve as a National Pollutant Discharge Elimination System (NPDES) permit, including municipal separate storm water system permits, but regardless of the regulatory instrument, the project shall include, but is not limited to, the following practices:

- (1) Implementation of an operations and management plan that may apply to multiple sites and provides for detection of leaks, (for example, from broken sprinkler heads), and correction either within 72 hours of learning of the runoff, or prior to the release of 1,000 gallons, whichever occurs first,
- (2) Proper design and aim of sprinkler heads,
- (3) Refraining from application during precipitation events, and
- (4) Management of any ponds containing recycled water such that no discharge occurs unless the discharge is a result of a 25-year, 24-hour storm event or greater, and there is notification of the appropriate Regional Water Board Executive Officer of the discharge.

- b. *Streamlined Permitting*

- (1) The Regional Water Boards shall, absent unusual circumstances (i.e., unique, site-specific conditions such as where recycled water is proposed to be used for irrigation over high transmissivity soils over a shallow (5' or less) high quality groundwater aquifer), permit recycled water projects that meet the criteria set forth in this Policy, consistent with the provisions of this paragraph.
- (2) If the Regional Water Board determines that unusual circumstances apply, the Regional Water Board shall make a finding of unusual circumstances based on substantial evidence in the record, after public notice and hearing.

- (3) **Projects meeting the criteria set forth below and eligible for enrollment under requirements established in a general order shall be enrolled by the State or Regional Water Board within 60 days from the date on which an application is deemed complete by the State or Regional Water Board. For projects that are not enrolled in a general order, the Regional Water Board shall consider permit adoption within 120 days from the date on which the application is deemed complete by the Regional Water Board.**
  - (4) **Landscape irrigation projects that qualify for streamlined permitting shall not be required to include a project specific receiving water and groundwater monitoring component unless such project specific monitoring is required under the adopted salt/nutrient management plan. During the interim while the salt management plan is under development, a landscape irrigation project proponent can either perform project specific monitoring, or actively participate in the development and implementation of a salt/nutrient management plan, including basin/sub-basin monitoring. Permits or requirements for landscape irrigation projects shall include, in addition to any other appropriate recycled water monitoring requirements, recycled water monitoring for CECs on an annual basis and priority pollutants on a twice annual basis. Except as requested by CDPH, State and Regional Water Board monitoring requirements for CECs shall not take effect until 18 months after the effective date of this Policy. In addition, any permits shall include a permit reopener to allow incorporation of appropriate monitoring requirements for CECs after State Water Board action under paragraph 10(b)(2).**
  - (5) **It is the intent of the State Water Board that the general permit for landscape irrigation projects be consistent with the terms of this Policy.**
- c. ***Criteria for streamlined permitting.* Irrigation projects using recycled water that meet the following criteria are eligible for streamlined permitting, and, if otherwise in compliance with applicable laws, shall be approved absent unusual circumstances:**
- (1) **Compliance with the requirements for recycled water established in Title 22 of the California Code of Regulations, including the requirements for treatment and use area restrictions, together with any other recommendations by CDPH pursuant to Water Code section 13523.**
  - (2) **Application in amounts and at rates as needed for the landscape (i.e., at agronomic rates and not when the soil is saturated). Each irrigation project shall be subject to an operations and management plan, that may apply to multiple sites, provided to the Regional Water Board that specifies the agronomic rate(s) and describes a set of reasonably practicable measures to ensure compliance with this requirement, which may include the development of water budgets for use areas, site**

supervisor training, periodic inspections, tiered rate structures, the use of smart controllers, or other appropriate measures.

- (3) Compliance with any applicable salt and nutrient management plan.
- (4) Appropriate use of fertilizers that takes into account the nutrient levels in the recycled water. Recycled water producers shall monitor and communicate to the users the nutrient levels in their recycled water.

8. ***Recycled Water Groundwater Recharge Projects***

- a. The State Water Board acknowledges that all recycled water groundwater recharge projects must be reviewed and permitted on a site-specific basis, and so such projects will require project-by-project review.
- b. Approved groundwater recharge projects will meet the following criteria:
  - (1) Compliance with regulations adopted by CDPH for groundwater recharge projects or, in the interim until such regulations are approved, CDPH's recommendations pursuant to Water Code section 13523 for the project (e.g., level of treatment, retention time, setback distance, source control, monitoring program, etc.).
  - (2) Implementation of a monitoring program for constituents of concern and a monitoring program for CECs that is consistent with any actions by the State Water Board taken pursuant to paragraph 10(b) of this Policy and that takes into account site-specific conditions. Groundwater recharge projects shall include monitoring of recycled water for CECs on an annual basis and priority pollutants on a twice annual basis.
- c. Nothing in this paragraph shall be construed to limit the authority of a Regional Water Board to protect designated beneficial uses, *provided* that any proposed limitations for the protection of public health may only be imposed following regular consultation by the Regional Water Board with CDPH, consistent with State Water Board Orders WQ 2005-0007 and 2006-0001.
- d. Nothing in this Policy shall be construed to prevent a Regional Water Board from imposing additional requirements for a proposed recharge project that has a substantial adverse effect on the fate and transport of a contaminant plume or changes the geochemistry of an aquifer thereby causing the dissolution of constituents, such as arsenic, from the geologic formation into groundwater.
- e. Projects that utilize surface spreading to recharge groundwater with recycled water treated by reverse osmosis shall be permitted by a Regional Water Board within one year of receipt of recommendations from CDPH. Furthermore, the Regional Water Board shall give a high priority to review and approval of such projects.

9. ***Antidegradation***

- a. **The State Water Board adopted Resolution No. 68-16 as a policy statement to implement the Legislature's intent that waters of the state shall be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state.**
- b. **Activities involving the disposal of waste that could impact high quality waters are required to implement best practicable treatment or control of the discharge necessary to ensure that pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.**
- c. **Groundwater recharge with recycled water for later extraction and use in accordance with this Policy and state and federal water quality law is to the benefit of the people of the state of California. Nonetheless, the State Water Board finds that groundwater recharge projects using recycled water have the potential to lower water quality within a basin. The proponent of a groundwater recharge project must demonstrate compliance with Resolution No. 68-16. Until such time as a salt/nutrient management plan is in effect, such compliance may be demonstrated as follows:**
  - (1) **A project that utilizes less than 10 percent of the available assimilative capacity in a basin/sub-basin (or multiple projects utilizing less than 20 percent of the available assimilative capacity in a basin/sub-basin) need only conduct an antidegradation analysis verifying the use of the assimilative capacity. For those basins/sub-basins where the Regional Water Boards have not determined the baseline assimilative capacity, the baseline assimilative capacity shall be calculated by the initial project proponent, with review and approval by the Regional Water Board, until such time as the salt/nutrient plan is approved by the Regional Water Board and is in effect. For compliance with this subparagraph, the available assimilative capacity shall be calculated by comparing the mineral water quality objective with the average concentration of the basin/sub-basin, either over the most recent five years of data available or using a data set approved by the Regional Water Board Executive Officer. In determining whether the available assimilative capacity will be exceeded by the project or projects, the Regional Water Board shall calculate the impacts of the project or projects over at least a ten year time frame.**

(2) In the event a project or multiple projects utilize more than the fraction of the assimilative capacity designated in subparagraph (1), then a Regional Water Board-deemed acceptable antidegradation analysis shall be performed to comply with Resolution No. 68-16. The project proponent shall provide sufficient information for the Regional Water Board to make this determination. An example of an approved method is the method used by the State Water Board in connection with Resolution No. 2004-0060 and the Regional Water Board in connection with Resolution No. R8-2004-0001. An integrated approach (using surface water, groundwater, recycled water, stormwater, pollution prevention, water conservation, etc.) to the implementation of Resolution No. 68-16 is encouraged.

d. Landscape irrigation with recycled water in accordance with this Policy is to the benefit of the people of the State of California. Nonetheless, the State Water Board finds that the use of water for irrigation may, regardless of its source, collectively affect groundwater quality over time. The State Water Board intends to address these impacts in part through the development of salt/nutrient management plans described in paragraph 6.

(1) A project that meets the criteria for a streamlined irrigation permit and is within a basin where a salt/nutrient management plan satisfying the provisions of paragraph 6(b) is in place may be approved without further antidegradation analysis, provided that the project is consistent with that plan.

(2) A project that meets the criteria for a streamlined irrigation permit and is within a basin where a salt/nutrient management plan satisfying the provisions of paragraph 6(b) is being prepared may be approved by the Regional Water Board by demonstrating through a salt/nutrient mass balance or similar analysis that the project uses less than 10 percent of the available assimilative capacity as estimated by the project proponent in a basin/sub-basin (or multiple projects using less than 20 percent of the available assimilative capacity as estimated by the project proponent in a groundwater basin).

10. *Emerging Constituents/Chemicals of Emerging Concern*

a. *General Provisions*

(1) Regulatory requirements for recycled water shall be based on the best available peer-reviewed science. In addition, all uses of recycled water must meet conditions set by CDPH.

(2) Knowledge of risks will change over time and recycled water projects must meet legally applicable criteria. However, when standards change, projects should be allowed time to comply through a compliance schedule.

- (3) **The state of knowledge regarding CECs is incomplete. There needs to be additional research and development of analytical methods and surrogates to determine potential environmental and public health impacts. Agencies should minimize the likelihood of CECs impacting human health and the environment by means of source control and/or pollution prevention programs.**
  - (4) **Regulating most CECs will require significant work to develop test methods and more specific determinations as to how and at what level CECs impact public health or our environment.**
- b. ***Research Program.* The State Water Board, in consultation with CDPH and within 90 days of the adoption of this Policy, shall convene a “blue-ribbon” advisory panel to guide future actions relating to constituents of emerging concern.**
- (1) **The panel shall be actively managed by the State Water Board and shall be composed of at least the following: one human health toxicologist, one environmental toxicologist, one epidemiologist, one biochemist, one civil engineer familiar with the design and construction of recycled water treatment facilities, and one chemist familiar with the design and operation of advanced laboratory methods for the detection of emerging constituents. Each of these panelists shall have extensive experience as a principal investigator in their respective areas of expertise.**
  - (2) **The panel shall review the scientific literature and, within one year from its appointment, shall submit a report to the State Water Board and CDPH describing the current state of scientific knowledge regarding the risks of emerging constituents to public health and the environment. Within six months of receipt of the panel’s report the State Water Board, in coordination with CDPH, shall hold a public hearing to consider recommendations from staff and shall endorse the recommendations, as appropriate, after making any necessary modifications. The panel or a similarly constituted panel shall update this report every five years.**
  - (3) **Each report shall recommend actions that the State of California should take to improve our understanding of emerging constituents and, as may be appropriate, to protect public health and the environment.**
  - (4) **The panel report shall answer the following questions: What are the appropriate constituents to be monitored in recycled water, including analytical methods and method detection limits? What is the known toxicological information for the above constituents? Would the above lists change based on level of treatment and use? If so, how? What are possible indicators that represent a suite of CECs? What levels of CECs should trigger enhanced monitoring of CECs in recycled water, groundwater and/or surface waters?**

- c. **Permit Provisions.** Permits for recycled water projects shall be consistent both with any CDPH recommendations to protect public health and with any actions by the State Water Board taken pursuant to paragraph 10(b)(2).

11. ***Incentives for the Use of Recycled Water***

a. ***Funding***

The State Water Board will request CDWR to provide funding (\$20M) for the development of salt and nutrient management plans during the next three years (i.e., before FY 2010/2011). The State Water Board will also request CDWR to provide priority funding for projects that have major recycling components; particularly those that decrease demand on potable water supplies. The State Water Board will also request priority funding for stormwater recharge projects that augment local water supplies. The State Water Board shall promote the use of the State Revolving Fund (SRF) for water purveyor, stormwater agencies, and water recyclers to use for water reuse and stormwater use and recharge projects.

b. ***Stormwater***

The State Water Board strongly encourages all water purveyors to provide financial incentives for water recycling and stormwater recharge and reuse projects. The State Water Board also encourages the Regional Water Boards to require less stringent monitoring and regulatory requirements for stormwater treatment and use projects than for projects involving untreated stormwater discharges.

c. **TMDLs**

Water recycling reduces mass loadings from municipal wastewater sources to impaired waters. As such, waste load allocations shall be assigned as appropriate by the Regional Water Boards in a manner that provides an incentive for greater water recycling.

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# **ENCLOSURE 3**

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SALT/NUTRIENT MANAGEMENT PLANS  
— SUGGESTED ELEMENTS —

<b>I. BACKGROUND</b>
<ul style="list-style-type: none"> <li>• Purpose <ul style="list-style-type: none"> <li>• Protection of Beneficial Use</li> <li>• Sustainability of Water Resources</li> <li>• Problem Statement</li> </ul> </li> <li>• Salt/Nutrient Management Objectives</li> <li>• Regulatory Framework</li> <li>• Groundwater Beneficial Uses</li> <li>• <b>Stakeholder Roles and Responsibilities</b></li> <li>• Process to Develop Salt/Nutrient Management Plan</li> </ul>
<b>II. GROUNDWATER BASIN CHARACTERISTICS</b>
<b>1. GROUNDWATER BASIN OVERVIEW</b>
<ul style="list-style-type: none"> <li>• Physiographic Description</li> <li>• Groundwater Basin and/or Sub-Basin Boundaries</li> <li>• Watershed Boundaries</li> <li>• Geology</li> <li>• Hydrogeology/Hydrology</li> <li>• Aquifers</li> <li>• Recharge Areas</li> <li>• Hydrologic Areas Tributary to the Groundwater Basin</li> <li>• Climate</li> <li>• Land Cover and Land Use</li> <li>• Water Sources</li> </ul>
<b>2. GROUNDWATER INVENTORY</b>
<ul style="list-style-type: none"> <li>• Groundwater Levels <ul style="list-style-type: none"> <li>• Historical, Existing, Regional Changes</li> </ul> </li> <li>• Groundwater Storage <ul style="list-style-type: none"> <li>• Historical, Existing, Changes</li> </ul> </li> <li>• Groundwater Production <ul style="list-style-type: none"> <li>• Historical, Existing, Spatial and Temporal Changes, Safe Yield</li> </ul> </li> <li>• Groundwater Mixing and Movement <ul style="list-style-type: none"> <li>• Subsurface Inflow/Outflow</li> <li>• Horizontal and Vertical Movement and Mixing</li> </ul> </li> </ul>
<b>3. BASIN WATER QUALITY</b>
<ul style="list-style-type: none"> <li>• <b>Groundwater Quality</b> <ul style="list-style-type: none"> <li>• Background, Historical, Existing</li> <li>• Water Quality Objectives</li> </ul> </li> <li>• Surface Water Quality</li> <li>• Delivered Water Quality</li> <li>• Imported Water Quality</li> <li>• Recycled Water Quality</li> </ul>

**Bold** = Required by the Recycled Water Policy

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SALT/NUTRIENT MANAGEMENT PLANS  
— SUGGESTED ELEMENTS —

<b>III. BASIN EVALUATION</b>
<b>1. WATER BALANCE</b>
<ul style="list-style-type: none"> <li>• Conceptual Model</li> <li>• Basin Inflow/Outflow</li> <li>• Groundwater, Surface Water, Imported Water, Water Transfers, Recycled Water Irrigation, Waste Water Discharges, Agricultural Runoff, Stormwater Runoff (Urban, Agriculture, Open Space), Precipitation</li> <li>• Infiltration, Evaporation, Evapotranspiration, Recharge, Surface Water and Groundwater Connectivity</li> </ul>
<b>2. SALT AND NUTRIENT BALANCE</b>
<ul style="list-style-type: none"> <li>• Conceptual Model</li> <li>• <b>Salt and Nutrient Source Identification</b></li> <li>• <b>Salt and Nutrient Loading Estimates</b> <ul style="list-style-type: none"> <li>• Historical, Existing, Projected</li> </ul> </li> <li>• Import/Export</li> <li>• <b>Basin/Sub-Basin Assimilative Capacity for Salt and Nutrients</b></li> <li>• <b>Fate and Transport of Salt and Nutrients</b></li> </ul>
<b>3. CONSTITUENTS OF EMERGING CONCERNS (CECs)*</b>
<p>* - Requirements for monitoring CECs will be determined following State Water Board review of the CEC Advisory Panel's report due in June 2010.</p> <ul style="list-style-type: none"> <li>• Constituents</li> <li>• CEC Source Identification</li> </ul>
<b>4. PROJECTED WATER QUALITY</b>
<b>IV. SALT AND NUTRIENT MANAGEMENT STRATEGIES</b>
<ul style="list-style-type: none"> <li>• Load Reduction Goals</li> <li>• Future Land Development and Use</li> <li>• Salt/Nutrient Management Options</li> <li>• Salt/Nutrient Management Strategies and Modeling <ul style="list-style-type: none"> <li>• Management Strategy Model Results</li> <li>• Feasibility</li> <li>• Cost</li> </ul> </li> </ul>
<b>V. BASIN MANAGEMENT PLAN ELEMENTS</b>
<b>1. GROUNDWATER MANAGEMENT GOALS</b>
<ul style="list-style-type: none"> <li>• Groundwater Management Goals</li> <li>• <b>Recycled Water and Stormwater Use/Recharge Goals and Objectives</b></li> </ul>
<b>2. BASIN MONITORING PROGRAMS</b>
<ul style="list-style-type: none"> <li>• <b>Identify Responsible Stakeholder(s) Implementing the Monitoring</b></li> <li>• Monitoring Program Goals</li> <li>• Sampling Locations</li> <li>• <b>Water Quality Parameters</b></li> <li>• <b>Sampling Frequency</b></li> <li>• Quality Assurance/Quality Control</li> <li>• Database Management</li> </ul>

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SALT/NUTRIENT MANAGEMENT PLANS  
— SUGGESTED ELEMENTS —

<ul style="list-style-type: none"> <li>• Data Analysis and Reporting</li> <li>• Groundwater Level Monitoring</li> <li>• <b>Basin Water Quality Monitoring</b></li> <li>• <b>Groundwater Quality Monitoring</b> <ul style="list-style-type: none"> <li>• <b>Areas of Surface Water and Groundwater Connectivity</b></li> <li>• <b>Areas of Large Recycled Water Projects</b></li> <li>• <b>Recycled Water Recharge Areas</b></li> </ul> </li> <li>• Surface Water Quality Monitoring</li> <li>• Stormwater Monitoring</li> <li>• Wastewater Discharge Monitoring</li> <li>• Recycled Water Quality Monitoring</li> <li>• Salt and Nutrient Source Loading Monitoring</li> <li>• Other Constituents of Concern</li> <li>• Water Balance Monitoring <ul style="list-style-type: none"> <li>• Climatological Monitoring</li> <li>• Surface Water Flow Monitoring</li> <li>• Groundwater Production Monitoring</li> </ul> </li> </ul>
<b>3. SALT AND NUTRIENT LOAD ALLOCATIONS</b>
<b>VI. CEQA ANALYSIS</b>
<b>VII. ANTIDegradation ANALYSIS</b>
<b>VIII. PLAN IMPLEMENTATION</b>
<b>1. SALT AND NUTRIENT MANAGEMENT PROGRAM</b>
<ul style="list-style-type: none"> <li>• Organizational Structure</li> <li>• <b>Stakeholder Responsibilities</b></li> <li>• <b>Implementation Measures to Manage Salt and Nutrient Loading</b></li> <li>• Salt/Nutrient Management <ul style="list-style-type: none"> <li>• Water Supply Quality</li> <li>• Regulations of Salt/Nutrients</li> <li>• Load Allocations</li> <li>• Salt and Nutrient Source Control</li> <li>• CEC Source Control</li> <li>• Site Specific Requirements</li> </ul> </li> <li>• Groundwater Resource Protection</li> <li>• Additional Studies</li> </ul>
<b>2. PERIODIC REVIEW OF SALT/NUTRIENT MANAGEMENT PLAN</b>
<ul style="list-style-type: none"> <li>• Adaptive Management Plan</li> <li>• Performance Measures</li> <li>• Performance Evaluation</li> </ul>
<b>3. COST ANALYSIS</b>
<ul style="list-style-type: none"> <li>• CWC § 13141, "...prior to implementation of any agricultural water quality control program, an estimate of the total cost of such a program, together with an identification of potential sources of funding, shall be indicated in any regional water quality control plan."</li> </ul>
<b>4. IMPLEMENTATION SCHEDULE</b>

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SALT/NUTRIENT MANAGEMENT PLANS  
— SUGGESTED ELEMENTS —

5. PUBLIC HEARING AND ADOPTION

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# ENCLOSURE 4

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**TIMELINE FOR TASKS ASSOCIATED WITH THE DEVELOPMENT OF  
A SALT AND NUTRIENT MANAGEMENT PLAN FOR  
THE MOJAVE INTEGRATED REGIONAL WATER MANAGEMENT GROUP**

**COMPLETED  
TASKS:**

- July 1959                      Davis-Grunsky Act authorized the formation of the Mojave Water Agency (MWA) for the purpose of managing declining groundwater levels in the Mojave, El Mirage, and Lucerne Basins
- June 1960                     MWA, a local water agency, formed by majority public vote
- June 2002                     Settlement agreement reached and full implementation of the Mojave Basin adjudication
- February 2005                Mojave Integrated Regional Water Management Plan (IRWMP) adopted by MWA
- February 2009                Mojave IRWM Region approved by the California Department of Water Resources (DWR)
- February 2009                Recycled Water Policy Adopted by State Water Resources Control Board (State Water Board)

**SCHEDULE FOR  
UPCOMING  
TASKS:**

- February 2012                Submit application to DWR for planning grant funds to update the Mojave IRWMP and offset costs of developing a Salt and Nutrient Management Plan (SNMP)
- 2013                             Draft Mojave SNMP available for review
- 2014                             Final Mojave SNMP presented to Water Board
- 2014/2016                    Compliance with statewide requirement to develop SNMP for all groundwater basins (State Water Board may grant a two-year extension if there is substantial progress towards completion of a plan)

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# **ENCLOSURE 5**

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Matthew Rodriguez  
Secretary for  
Environmental Protection

**California Regional Water Quality Control Board  
Lahontan Region**

**Victorville Office**

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**Enclosure 5**



Edmund G. Brown Jr.  
Governor

December 8, 2011

File: Mojave Basin Planning  
General File

Kirby Brill  
Mojave Water Agency  
22450 Headquarters Drive  
Apple Valley, CA 92307  
Email: [kbrill@mojavewater.org](mailto:kbrill@mojavewater.org)

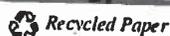
**COMMENTS ON THE DRAFT SCOPE OF WORK FOR DEVELOPMENT OF A  
SALT/NUTRIENT MANAGEMENT PLAN FOR THE MOJAVE INTEGRATED  
REGIONAL WATER MANAGEMENT GROUP, SAN BERNARDINO COUNTY**

California Regional Water Quality Control Board, Lahontan Region (Water Board) staff has reviewed the above-referenced Scope of Work (SOW) dated November 2011. The SOW was prepared by the Mojave Water Agency (MWA) and submitted to the Water Board on behalf of the member agencies and stakeholders of the Mojave Integrated Regional Water Management Group (Mojave Group). It is our understanding that the Mojave Group is in the process of updating the Integrated Regional Water Management Plan (IRWMP) and that the Salt and Nutrient Management Plan (SMP) will be incorporated as an appendix to the updated IRWMP plan. The Mojave IRWMP area encompasses the jurisdiction of two Regional Water Boards, the Lahontan and Colorado River Water Boards. The Mojave and El Mirage basins (collectively referred to here as "Mojave basin") are located in an area under the jurisdiction of the Lahontan Water Board. Water Board staff are providing these comments in an effort to clarify the purpose and goals of the SMP as well as to guide the Mojave Group toward developing a comprehensive and defensible SMP based on a reliable dataset. Our comments are specific to the SMP planning process for those areas of the Lahontan Region and are organized below by heading in the MWA SOW.

**Purpose**

We request that the first sentence of the Purpose statement be revised to read: "To develop a regional Salt/Nutrient Management Plan (SMP) for the Mojave Water Agency Integrated Regional Water Management Plan (IRWMP) Region that will identify, monitor and manage, on a regional basis, salts and nutrients from various sources within the region for the purpose of maintaining high quality waters, where feasible, achieving and maintaining water quality objectives, and supporting beneficial uses."

*California Environmental Protection Agency*



## Background

The SOW should clearly define the SMP area boundaries. For example, the headwaters of the Mojave River are outside the boundaries of MWA jurisdiction, yet these areas contribute to salt and nutrient loading in groundwaters of the Mojave basin. All salt and nutrient sources need to be considered for the SMP to be comprehensive.

Surface water resources are defined using a watershed approach and are categorized based on a hierarchy of hydrologic systems including basins, units, areas, and subareas, which may or may not coincide with groundwater basin nomenclature as defined by the Department of Water Resources. For clarity and consistency, surface water hydrologic areas and subareas should be identified and correlated, to the extent practical, with the groundwater basins identified within the SMP area.

If the SMP subareas of the Mojave basin are defined as Este, Oeste, Alto, Transition, Centro, and Baja subareas, then the results may be too gross-scale to be meaningful or effective. While this effort is intended to evaluate basins on a larger scale, it is also important to understand the variability of constituent levels in a basin or sub-basin as beneficial uses are not just to be protected at a basin level. Smaller sub-basins should be considered (i.e. the George sub-basin, as well as localized conditions related to upper and lower aquifers, perched zones, and structural discontinuities). The planning effort should include an evaluation of all data and existing and proposed sources to determine if more detailed analysis is needed.

## Goals

Goal No. 1 should be revised to read: "Manage salts and nutrients on a sub-regional basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses as defined in the Water Quality Control Plans (Basin Plans) for the Lahontan and Colorado River regions."

Consider including the following additional goals within the SOW.

- Through the development of the SMP, the need to consider changes to specific water quality objectives may be identified.
- The SMP will be considered for adoption by the individual Regional Water Boards and incorporated into their respective Basin Plans.
- The SMP will be used as a tool to allow for planning and implementation of local ordinances.

## Task 1: Stakeholder Participation

Stakeholder participation is critical to identify all potential salt and nutrient sources in order to prepare a complete and comprehensive SMP. Other stakeholders that may

not participate in the Technical Advisory Committee (TAC) should be encouraged to participate including: out-of-basin stakeholders (i.e. Lake Arrowhead Community Services District and Crestline Sanitation District); environmental groups and conservation districts; small domestic wastewater dischargers; and parties conducting groundwater cleanup.

Minor editorial comments are shown as "strike-out, underline" in Enclosure 1.

### **Task 2: Review/Assemble Existing Data & Research**

The SOW should define the salts and nutrients that will be evaluated. Other Constituents of Concern (COCs) that have the potential to be mobilized or concentrated in groundwater as a result of recycle/reuse/recharge projects should also be identified and included in the SMP (i.e. arsenic, fluoride, chromium, boron). Stakeholder participation is critical to identify localized COCs and to compile all available water quality data sources as well as coordinate any needed data collection.

Additional water quality data may be available from the Department of Public Health and San Bernardino County. Water quality data is also available online through the State Water Resource Control Board's (SWRCB) GeoTracker database at [http://www.waterboards.ca.gov/ust/electronic\\_submittal/](http://www.waterboards.ca.gov/ust/electronic_submittal/).

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### **Task 3: Salt/Nutrient Characterization**

Additional/new water quality data may need to be gathered to adequately characterize salts and nutrients and other COCs for the different sub-basins/areas.

Baseline conditions for salts, nutrients, and other COCs in groundwater need to be established on a sub-basin level. Atmospheric deposition should be considered as part of the overall nutrient budget.

Impacts to aquatic life and riparian habitat should be considered, especially in the floodplain aquifer, in connection with potential hyporheic nutrient and mineral cycling processes that may be changed if groundwater recharge changes redox conditions.

Specific areas not currently in compliance with water quality objectives should be identified (spatially and geographically by mass, volume, constituent, and concentration) as related to natural or anthropogenic sources.

Validation methods are critical and may be subject to peer review. It must be established that the chosen model is valid and will effectively correlate historical and observed conditions before reliance can be given to predicted conditions. The model needs to be adaptable and capable of integrating source loading from future projects. How will data collected in Task 4 be incorporated and utilized to update the model?

An analysis of the anticipated groundwater and surface water quality degradation should be listed as a separate task and must address all of State Water Board's Resolution 68-16 requirements. The model may be one tool utilized in the analysis; however, other inputs are needed to evaluate the socio-economic factors required by the policy. The analysis should include both short-term and long-term degradation impacts, all reasonable and foreseeable control measures, anticipated levels of degradation specific to each sub-basin/area, and why the level of degradation should be considered acceptable over the time period.

The effects of importation of water and transferring imported and recycled water sources between sub-basins should be considered. For example, consider the effects of source water derived from the Alto subarea that is recycled and subsequently transferred to the Centro subarea for reuse as irrigation.

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#### **Task 4: Monitoring & Reporting Plan**

The long-term monitoring program should continue until steady state conditions within the basin have been achieved.

We request that the water quality data be combined and synthesized into one reporting document. The data collected should be made available in an electronic format consistent with the SWRCB Groundwater Ambient Monitoring and Assessment Program (GAMA). Related data such as land uses and well screen depths should be noted for each monitoring point.

Minor editorial comments are shown as "strike-out, underline" in Enclosure 1.

#### **Task 5 - Implementation Measures**

Engaging stakeholders throughout the entire SMP development process will encourage successful implementation of Task 5. This section should clearly identify which agencies are responsible for managing current and future anthropogenic loads and what actions these agencies must take to provide the Water Board with assurances that local entities will manage the groundwater basin using their authorities or by other means to achieve the water quality specified in the plan.

#### **Task 6: Recycled Water & Stormwater Use/Recharge**

Please see Enclosure 1 for editorial comments on Task 6.

#### **Task 7: Prepare Plan for Submittal to Water Boards**

Sufficient detail regarding the SMP must be included in the IRWMP CEQA process. The Water Board will utilize this CEQA document in our environmental review for a

December 8, 2011

potential Basin Plan Amendment. Please be advised that external scientific peer review may be required, therefore it is imperative that adequate scientific justification be provided as part of the planning process.

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**Other Comments**

In the revised SOW, please include an executive summary and table of contents, a proposed schedule with estimated completion dates to perform the tasks identified, and a list of acronyms and abbreviations used in the text of the SOW. We support your efforts and look forward to sharing your plan with the Water Board at its January 2012 meeting. Please provide a revised SOW by **December 23, 2011**, along with any justification for not incorporating our comments.

We are happy to discuss any of our comments. Please contact Jan Zimmerman at (760) 241-7376 ([jjzimmerman@waterboards.ca.gov](mailto:jjzimmerman@waterboards.ca.gov)) or Patrice Copeland, Senior Engineering Geologist, at (760) 241-7404 ([pcopeland@waterboards.ca.gov](mailto:pcopeland@waterboards.ca.gov)).



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EXECUTIVE OFFICER

Enclosure: Track-Changes on Scope of Work

cc: Logan Olds, VVWRA  
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**DRAFT SCOPE OF WORK**  
**Salt/Nutrient Management Plan**  
**For Prepared by the Mojave IRWM Group**

**WORK PLAN**

**Task 1: Stakeholder Participation**

Collaborate with Lahontan and Colorado Water Board staff and other stakeholders, receive and review stakeholder input. It is anticipated that most of the stakeholder participation will occur during meetings of the Technical Advisory Committee (TAC) to the MWA, in the context of the IRWMP update. A primary initial outcome of this task will be to reach consensus regarding the stakeholder participants appropriate for this planning effort and to identify ways to effectively involve as many of those stakeholders in addition to -with the TAC members- as is practical.

**Task 2: Review/Assemble Existing Data & Research**

Evaluate existing data and previously completed water quality management efforts to prepare an adequate SMP. An extensive amount of research and data collection has already occurred with respect to salts and nutrients in the Mojave IRWM Region. A Groundwater Quality Analysis<sup>1</sup> and associated Groundwater Quality Planning Model (Salt Model) was developed in 2007 that identified contributors to salt within the Region, evaluated current and past trends in water quality, and modeled potential changes over time due to loading from various existing and anticipated sources under different scenarios. Existing information and research may need to be updated, but to the extent possible, new research should be minimized and existing information should be leveraged for inclusion within the SMP. At a minimum, the following sources should be reviewed:

- The 2007 Groundwater Quality Analysis
- ~~Groundwater Quality Planning Model (Salt Model)~~-developed for the 2007 Groundwater Quality Analysis
- MWA's groundwater monitoring program and associated water quality database
- MWA's 2004 RWMP, which includes a Groundwater Management Planning component, and associated EIR
- Potential for Ground-Water Contamination from Movement of Wastewater Through the Unsaturated Zone, Upper Mojave River Basin, California, 1993
- Technical Study to Evaluate a Long-Term Water Management Program Between MWA and Metropolitan Water District, and associated EIR, December 2005
- July 29, 2004 MOU between MWA, Lahontan Water Board, and High Desert Power Project, LLC.
- Antidegradation Studies for Discharges to Surface and Groundwater, VVWRA 2009
- Mojave River Characterization Study, VVWRA 2010
- Cumulative Impact Analysis, VVWRA 2011

<sup>1</sup> Groundwater Quality Analysis Technical Memorandum/Phase 1 Between Mojave Water Agency and Schlumberger Water Services. May 7, 2007

- Various USGS studies

### **Task 3: Salt/Nutrient Characterization**

Characterize salt and nutrients within the Mojave IRWM Region and groundwater basins, utilizing to the extent possible, existing information identified in Task 2.

Leverage work already completed in the existing 2007 Groundwater Quality Analysis and Salt Model to compile the following information into the SMP:

- Existing and background water quality.
- Current and projected sources of salts/nutrients. Review/update existing planning scenarios, including a map and database of current land uses contributing to salt/nutrients, and tabulate. ~~Include~~ the quality and quantity of existing and projected wastewater/recycled water discharges to basins, imported water recharge, septic discharges, stormwater/flood control recharge, return flow from applied agricultural and dairy water, and other sources of salt/nutrients.
- The basins' assimilative capacity of salts/nutrients, to the extent possible with the current body of knowledge.
- The regional effects and loading estimates of salt/nutrients from existing and projected land uses and water management practices identified, to the extent possible with the current body of knowledge.
- ~~Update and refine existing model to serve as a tool to identify potential short and long-term regional water quality impacts associated with implementing projects identified in the accompanying IRWMP, consistent with the State Antidegradation Policy (Resolution No. 68-16).~~
- Perform a degradation analysis in accordance with the State Water Board's Antidegradation Policy (Resolution No. 68-16)
- Prepare a draft report to the stakeholders including data collected and results found in the Salt/Nutrient characterization.

### **Task 4: Monitoring & Reporting Plan**

Review existing monitoring programs, identify data gaps, and recommend changes if needed, in order to comply with SMP requirements. Include in the SMP a Monitoring Plan that provides a reasonable means of determining whether the concentrations of salts, nutrients, and other constituents of concern are consistent with applicable water quality objectives. The monitoring plan should be designed to evaluate the long-term regional/sub-regional impacts and temporal changes to groundwater quality resulting from current and future land uses, as well as localized impacts in critical areas where appropriate, and should include the following:

- Recommendations for additional appropriate monitoring locations and frequencies that collectively would represent the regional-level water quality and changes in water quality for basins within the SMP. In addition, the monitoring program should identify critical localized areas where additional monitoring should be concentrated near ~~water supply wells~~ current and future water extraction areas and areas proximate to ~~large~~ significant sources of salt and nutrient such as water recycling projects and groundwater recharge projects.
- Include a provision for identifying and monitoring Constituents of Emerging Concern, as specified in the Recycled Water Policy.

- List stakeholders responsible for development of new monitoring sites/facilities, conducting, compiling, and reporting the monitoring data.
- Determine the cost of additional monitoring and identify possible funding sources.
- Data from the Monitoring Plan will be reported to the Lahontan and Colorado Water Boards every 3 years by the appropriate collecting parties.

**Task 5: Implementation Measures**

Identify and recommend methods and regional Best Management Practices (BMP's) to manage salt and nutrient loadings on a sustainable basis. Development of implementation measure recommendations and BMP's should be of a regional nature and through a collaborative process with the stakeholders.

**Task 6: Recycled Water & Stormwater Use/Recharge**

Identify recycled water and stormwater use/recharge goals and objectives for any potential or planned projects.

**Task 7: Prepare Plan for Submittal to Water Boards**

The SMP shall be completed and proposed to the Lahontan and Colorado Water Boards by May 14, 2014. If, unless the Lahontan and Colorado Water Boards find that the stakeholders are making substantial progress toward completion of the plan. These Water Boards may grant an extension until May 14, 2016, to complete the plan. In no case shall the period for the completion of the plan exceed seven years. The SMP will be included within the IRWMP update, and CEQA compliance will be conducted at the IRWMP level; therefore, CEQA was not included as a task within SMP preparation.