SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS
UTILITIES DIVISION

• County Government Center, Room 207 • San Luis Obispo CA 93408 •
Phone: (805) 781-5252 • Fax: (805) 788-2182 • email: pwd@co.slo.ca.us

MEMORANDUM

December 31, 2014

TO: San Luis Obispo County IRWM Region Interested Stakeholders

FROM: Carolyn Berg, P.E., Water Resources Staff Engineer
Cherie Du, E.I.T., Water Resources Student Intern

VIA: Courtney Howard, P.E., Senior Water Resources Engineer

SUBJECT: **Identification & Prioritization of Groundwater Basins Requiring a Salt and Nutrient Management Plan (SNMP) and SNMP Development Resources**

Purpose

The Department of Water Resources (DWR) awarded Proposition 84 Integrated Regional Water Management (IRWM) Round 2 Planning Grant funding towards a series of focused planning studies developed to improve the IRWM Plan. A portion of this funding was awarded to the San Luis Obispo County Flood Control and Water Conservation District (District) to identify and prioritize groundwater basins within San Luis Obispo County (county or region) which require Salt and Nutrient Management Plans (SNMP).

There is a general lack of awareness of the Regional Water Quality Control Board's (RWQCB) Recycled Water Policy (RWP) which requires the creation and implementation of an SNMP. The degree of organized basin management in the region varies widely. Because of a lack of resources, smaller, unorganized basins may be at a disadvantage for complying with the RWP. In addition, since the original development of this Memorandum, the Sustainable Groundwater Management Act (SGMA) was passed by the State Legislature (effective January 1, 2015). It is anticipated that the requirements of the RWP will have a relationship to the requirements of the SGMA associated with managing groundwater quality, and that it may be advisable to address both in one plan.

The purpose of this memorandum is to identify the basin study areas where SNMPs are needed, relevant stakeholders who may be appropriate to lead the development of each, and regional priorities. The memo consolidates information to assist stakeholders with developing and implementing the SNMPs. Finally, the memo offers an opportunity to raise awareness of SNMP requirements and to gain feedback from stakeholders.

Grant-Funded Study Scope

The following three grant funded tasks guide development of this study:

> Task 5.1.1 Identify Study Areas for Salt and Nutrient Management Planning
>
> Meet with the RWQCB and local stakeholders to identify appropriate study areas for SNMPs and the relevant stakeholders who may be appropriate to lead the development of each SNMP. Relevant Stakeholders are those whose activities and operations may impact salt and nutrient management in the study area, such as agricultural interests, wastewater dischargers, recycled water producers, private well owners, environmental groups, regulatory staff, and the general public.
>
> Task 5.1.2 Develop and Distribute Salt and Nutrient Management Planning Information Packages
>
> Compile example SNMP and related scopes of work, regulatory information or other information to inform stakeholders in each study area about SNMP requirements and how to develop one.
>
> Task 5.1.3 Prioritize the Development of Salt and Nutrient Management Plan per Study Area
>
> Develop criteria for prioritizing the development of SNMPs and prioritizing the study areas.

Task 5.1.1 Identify Study Areas for Salt and Nutrient Management Planning

In February 2009, the State Water Resources Control Board (SWRCB) adopted the RWP. Its intent is to promote sustainable water supplies (e.g. recycled water, conservation, stormwater recharge/use), establish basin goals, streamline recycled water permitting, and develop SNMPs. The SWRCB has a stated requirement to implement an SNMP for every DWR Bulletin 118 basin by 2014 to monitor and protect groundwater resources. However, in practice, the RWQCBs are *focusing on high priority basins* for SNMP development, rather than on *every* DWR Bulletin 118 basin.

Per Bulletin 118, there are 63 DWR-defined groundwater basins and sub-basins in the Central Coast Hydrologic Region. There are 22 basins and sub-basins within the county that require SNMPs. Because there are many basins, most of which do not have an actively engaged stakeholder group, resources may be better focused after establishing and prioritizing study areas (i.e. groups of basins).

Study areas offer an opportunity to bring stakeholders together and initiate collaboration on basin monitoring and management plans. Study areas were created based on DWR Bulletin 118 boundaries, geographic proximity, land use, hydrology, and existing management efforts underway. Further described in Task 5.1.3, Priority 1 basins and basins shared by neighboring counties have their own study areas. The following study areas are proposed for stakeholder consideration (**Table 1, Figure 1**).

Exhibit A provides an initial list of stakeholders in each study area. Stakeholders are those whose activities and operations may impact salt and nutrient management in the study area, such as agricultural interests, wastewater dischargers, recycled water producers, private well owners, environmental groups, regulatory staff, and the general public.

Table 1. Groundwater Basins and Proposed Study Areas

Study Area	DWR Bulletin 118 Basin #	Basin Name
Paso Robles	3-4.06	Salinas Valley - Paso Robles Area
Los Osos Valley	3-8	Los Osos Valley
Santa Maria Valley	3-12	Santa Maria Valley
San Luis Obispo Valley	3-9	San Luis Obispo Valley
Area 1[1]	3-33	San Carpoforo Valley
	3-34	Arroyo De La Cruz Valley
Area 2	3-35	San Simeon Valley
	3-36	Santa Rosa Valley
Area 3	3-37	Villa Valley
	3-38	Cayucos Valley
	3-39	Old Valley
	3-40	Toro Valley
	3-41	Morro Valley
	3-42	Chorro Valley
Area 4	3-43	Rinconada Valley
	3-44	Pozo Valley
Area 5	3-45	Huasna Valley
Area 6	3-19	Carrizo Plain
	3-46	Rafael Valley
	3-47	Big Spring Area
Area 7	3-13	Cuyama Valley
Area 8	3-5	Cholame Valley

[1] Pico Creek is not a listed Bulletin 118 Basin, therefore is not listed in Area 1.

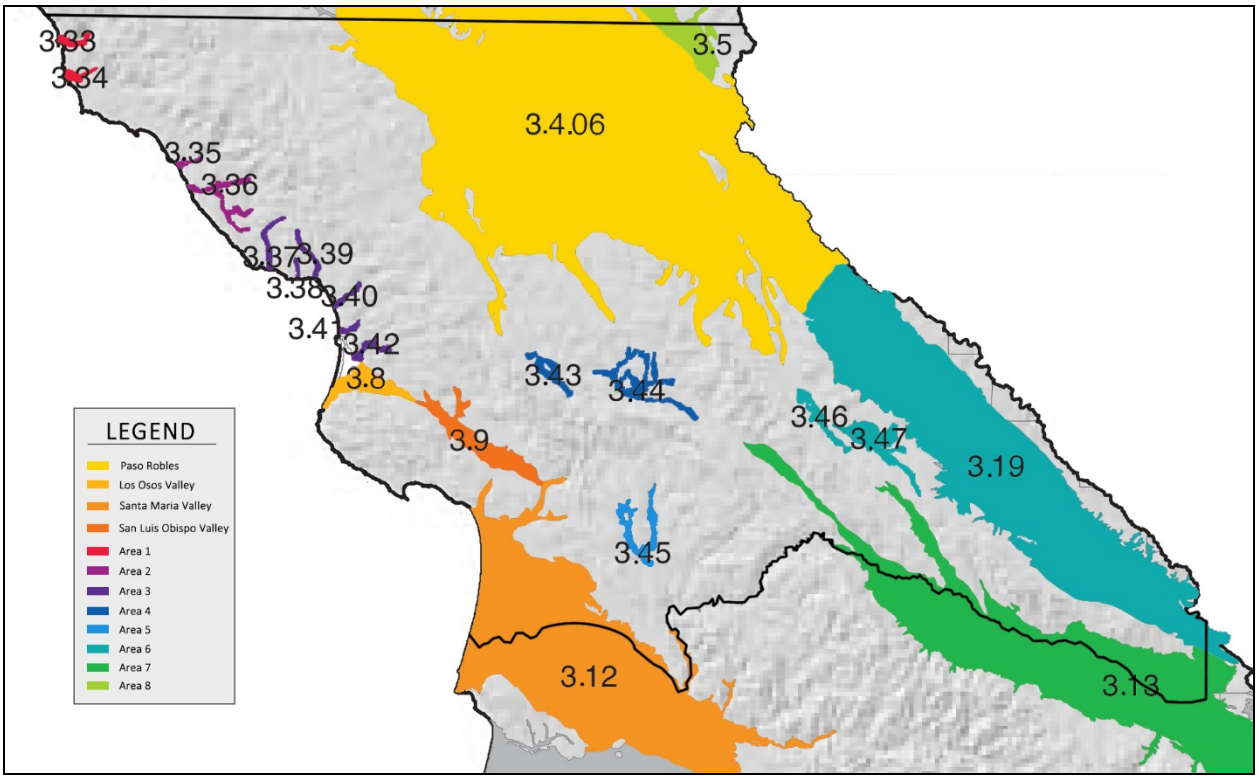


Figure 1. Map of Bulletin 118-Groundwater Basins within Proposed SNMP Study Areas

Task 5.1.2 Develop and Distribute Salt and Nutrient Management Planning Information Packages

This task will be completed upon completion of stakeholder outreach process and consensus on study areas. The RWP requires SNMPs to contain the following main components:

- Salt and nutrient source identification, assimilative capacity and loading estimate
- Fate and transport analysis of salt and nutrients
- Basin-wide monitoring plan (including an appropriate network of monitoring locations)
- Annual monitoring of Constituents of Emerging Concern (CEC)
- Water recycling and stormwater recharge/use goals and objectives
- Implementation measures to manage salt and nutrient loading on sustainable basis
- Anti-degradation analysis demonstrating projects collectively satisfy RWP

The Central Coast RWQCB published a Salt and Nutrient Management Plan Elements paper (**Exhibit B**), which provides additional detail on each of the components listed above. In addition, DWR awarded grant funding to develop an SNMP for the Paso Robles Groundwater Basin. The final SNMP is to serve as a template and resource to other groundwater basins throughout the region (see SNMP Table of Contents in **Exhibit B**).

Task 5.1.3 Prioritize the Development of Salt and Nutrient Management Plan (SNMP) per Study Area

Consistent with the SWRCB's Discussion Draft Groundwater Work Plan Concept Paper, the objective of this study is to provide information to assist stakeholders with addressing the groundwater challenges that have the greatest potential to impact beneficial uses, focus limited resources on the current critical groundwater basins, and facilitate more efficient local and regional groundwater management.

Prioritizing basins may be valuable in helping to evaluate, focus, and align limited resources for effective groundwater management. This will help the region to move towards reliable and sustainable groundwater resources in an efficient and strategic way.

To guide local basin/study area prioritization for SNMP development, District Staff considered existing program and management priority lists and processes including:

Statewide:

1. Groundwater Ambient Monitoring and Assessment Program (GAMA)
2. California Statewide Groundwater Elevation Monitoring (CASGEM)

Local/ Regional:

3. County of San Luis Obispo Resource Management System Level of Severity (LOS) III designations
4. Groundwater Basin Adjudications
5. Groundwater Management Plans

Each of these are briefly described below as "Priority Factors".

Priority Factor 1 - Groundwater Ambient Monitoring and Assessment Program (GAMA) Prioritization

This factor relates to basins deemed priority for water quality monitoring by the SWRCB. The GAMA priority basin project monitors groundwater in high use basins for a dozen chemicals, including contaminants of emerging concern, at very low detection limits. There are three GAMA priority basins in the county:

- Salinas Valley (Paso Robles Area)
- Santa Maria Valley
- Cuyama Valley

Priority Factor 2 - California Statewide Groundwater Elevation Monitoring (CASGEM) Prioritization

This factor relates to basins deemed priority for groundwater level monitoring by the State Department of Water Resources.

The DWR website offers the following description of CASGEM: On November 4, 2009 the State Legislature amended the Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. To achieve that goal, the amendment requires collaboration between local monitoring entities and DWR to collect groundwater elevation data. Collection and evaluation of such data on a statewide scale is an important fundamental step toward improving management of California's groundwater resources.

In accordance with this amendment to the Water Code, DWR developed the CASGEM program. The intent of the CASGEM program is to establish a permanent, locally-managed program of regular and systematic monitoring in all of California's alluvial groundwater basins. The CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. DWR's role is to coordinate the CASGEM program, to work cooperatively with local entities, and to maintain the collected elevation data in a readily and widely available public database. DWR will also continue its current network of groundwater monitoring as funding allows.

Senate Bill 7x6 requires, as part of the CASGEM program, DWR to prioritize groundwater basins to help identify, evaluate, and determine the need for additional groundwater level monitoring by considering available data listed below:

1. The population overlying the basin
2. The rate of current and projected growth of the population overlying the basin
3. The number of public supply wells that draw from the basin
4. The total number of wells that draw from the basin
5. The irrigated acreage overlying the basin
6. The degree to which persons overlying the basin rely on groundwater as primary water source
7. Any documented impacts on the groundwater within the basin, including overdraft, subsidence, saline intrusion, and other water quality degradation
8. Any other information determined to be relevant by DWR

DWR finalized the CASGEM Basin prioritization in May 2014. The following are the medium and high priority basins within San Luis Obispo County:

- High Priority: Los Osos Valley, Santa Maria Valley, and Salinas Valley (Paso Robles Area)
- Medium Priority: San Luis Obispo Valley and Cuyama Valley

The remaining groundwater basins within the county are proposed to be low or very low priority.

Priority Factor 3 - Level of Severity (LOS) III Designation

This factor relates to groundwater resources supplies deemed to be deficient compared to demand.

Per the County of San Luis Obispo's Land Use and Circulation Element, the Resource Management System (RMS), assists county decision-makers in anticipating increasing needs for resources created by growth. The RMS assesses capacities of existing critical resources, and the timing for providing or upgrading resources and related facilities. The RMS is intended to support timely addition to a resource, or growth rate adjustment where a resource shortage would require longer to correct than remaining capacity allows.

The RMS uses three levels of alert (called levels of severity, LOS) to identify potential and progressively more immediate resource deficiencies. LOS I applies to a less severe/ less immediate resource deficiency, while LOS III applies to the most severe/ immediate resource deficiency. LOS III is designated when projected water demand equals or exceeds the estimated dependable supply. A basin is recommended LOS III by County Planning and Building Department Staff based on information provided by various water agencies. Typically upon direction from the Board of Supervisors, a Resource Capacity Study (RCS) will be developed and reviewed at public hearings by the Planning Commission and the Board of Supervisors. A basin can be certified LOS III by the Board of Supervisors upon completion of a RCS.

The following groundwater basins' water supply were either certified (C) or recommended (R) as a LOS III designation in the 2010 – 2012 RMS Biennial Summary Report.

- Los Osos (C)
- Paso Robles (C)
- Nipomo Mesa (NMWCA) (C)
- Cuyama Valley (R)

- Morro-Chorro (R)
- North Coast (R)

Priority Factor 4 - Adjudication

This factor relates to basins that have undergone legal proceedings and are under the jurisdiction of the court system.

Another form of groundwater management in California is through a court-led adjudication. In basins where a lawsuit is brought to adjudicate the basin, the groundwater rights of all the overliers and appropriators are determined by the court. This study considers basins that have been or are currently being adjudicated as an additional factor in the final basin prioritization. The following basins are adjudicated basins:

- Santa Maria Valley
- Los Osos Valley [2]

Basins that have that have legal proceedings underway or completed already have a high level of focus on them. And inherent to the process, they have highly engaged decision makers and stakeholders.

Priority Factor 5 – Groundwater Management Plan

This factor relates to stakeholder-led groundwater management planning and implementation.

In 1992, the State Legislature provided an opportunity for more formal groundwater management with the passage of AB 3030 (Water Code § 10750 et seq.), which can include development of groundwater management plans. Typically groundwater management plans include components such as:

- Basin management objectives
- Monitoring and management of groundwater levels, quality, etc.
- Monitoring protocols, especially those relating to the basin management objectives
- Collaborative and cooperative stakeholder approach
- Basin mapping as defined by Bulletin 118

This management activity aligns well with SNMP development and implementation. Basins which have a groundwater management plan under development or adopted likely have engaged stakeholders and a foundation of data and basin objectives developed.

Priority Factor 6 – Basins with known Seawater Intrusion and/or Nitrate Contamination

This factor relates to the target constituents an SNMP seeks to address – salt and nitrates.

The following basins are known to have seawater intrusion and/or nitrate issues:

- Morro and Chorro Valley
- Los Osos Valley
- North Coast (Santa Rosa and San Simeon Valley)

[2] The Final Stipulated Judgment is expected in Summer/ Fall 2015.

Prioritization of Basins/ Study Areas for SNMP Implementation

The Priority Factors were used for the SLO County regional SNMP prioritization methodology to result in a prioritization that considers basins already deemed critical or priority under other local or state processes. Basins considered priorities under these various Priority Factors already have:

- Groundwater basin analysis underway
- Identified and engaged stakeholders
- The focus of decision-makers, whether locally or at a state level
- Better potential for funding assistance through grant programs for basin management efforts

The proposed regional prioritization approach raises a basin's priority for SNMP development in direct proportion to the number of existing priorities already set on that basin. Using check marks, **Table 2** shows basins within the county where Priority Factors apply. The proposed local prioritization is then based on number of check marks:

- Priority 1 (4-6 check marks) – Priority 1 basins have a good foundation for beginning the process of developing an SNMP and/or are considered a critical basin for beginning basin management. These basins are considered the highest priority for developing and implementing an SNMP.
- Priority 2 (1-3 check marks) – Priority 2 basins meet fewer of the criteria for prioritization, and moving forward on an SNMP would depend on changing conditions over time, stakeholder engagement and RWQCB input.
- Priority 3 (0 check marks) – Priority 3 basins did not meet any prioritization criteria and include all other Bulletin 118 basins. A basic groundwater or watershed monitoring program for these basins would facilitate the development of an SNMP in the future should doing so become a priority.

Table 2. Groundwater Basins with Existing Priorities and Management Activities

Basin Name	GAMA Priority Basin	CASGEM Priority Basin	LOS III *(County of SLO 2010-2012 Resource Summary Report)*		Adjudication	Groundwater Management Plan	Nitrate and/or Seawater
			Certified	Recommended			
Cuyama Valley	✔	✔ (med.)		✔			
Los Osos Valley		✔ (high)	✔		✔ [3]	✔	✔
Morro and Chorro Valley				✔			✔
North Coast (Santa Rosa and San Simeon Valley)				✔			✔
Salinas Valley (Paso Robles Area)	✔	✔ (high)	✔		(Lawsuits filed)	✔	

[3] The Final Stipulated Judgment is expected in Summer/ Fall 2015.

Basin Name	GAMA Priority Basin	CASGEM Priority Basin	LOS III *(County of SLO 2010-2012 Resource Summary Report)*		Adjudication	Groundwater Management Plan	Nitrate and/or Seawater
San Luis Obispo Valley		✔ (med.)					
Santa Maria Valley (Nipomo-Mesa)	✔	✔ (high)	✔		✔		

A list and map of the different basins and their priorities are shown below (**Table 3 and Figure 2**).

Table 3. Basin Prioritization for SNMP Implementation

Priority	DWR Basin #	Basin Name
1	3-4.06	Salinas Valley (Paso Robles Area)
	3-8	Los Osos Valley
	3-12	Santa Maria Valley
2	3-9	San Luis Obispo Valley
	3-13	Cuyama Valley
	3-35 & 3-36	North Coast (San Simeon Valley and Santa Rosa)
	3-41 & 3-42	Morro-Chorro (Morro and Chorro Valley)
3	3-5	Cholame Valley
	3-19	Carrizo Plain
	3-33	San Carpoforo Valley
	3-34	Arroyo De La Cruz
	3-37	Villa Valley
	3-38	Cayucos Valley
	3-39	Old Valley
	3-40	Toro Valley
	3-43	Rinconada Valley
	3-44	Pozo Valley
	3-45	Huasna Valley
	3-46	Rafael Valley
	3-47	Big Spring

The prioritized basins relate to the Study Areas proposed and named in Task 5.1.3 as follows:

- Priority 1 (high) for SNMP Development – Study Areas: Salinas Valley (Paso Robles Area), Los Osos Valley, Santa Maria Valley
- Priority 2 (medium) for SNMP Development - Study Areas: San Luis Obispo Valley, 2, 3, 7
- Priority 3 (low) for SNMP Development - Study Areas 1, 4, 5, 6, 8

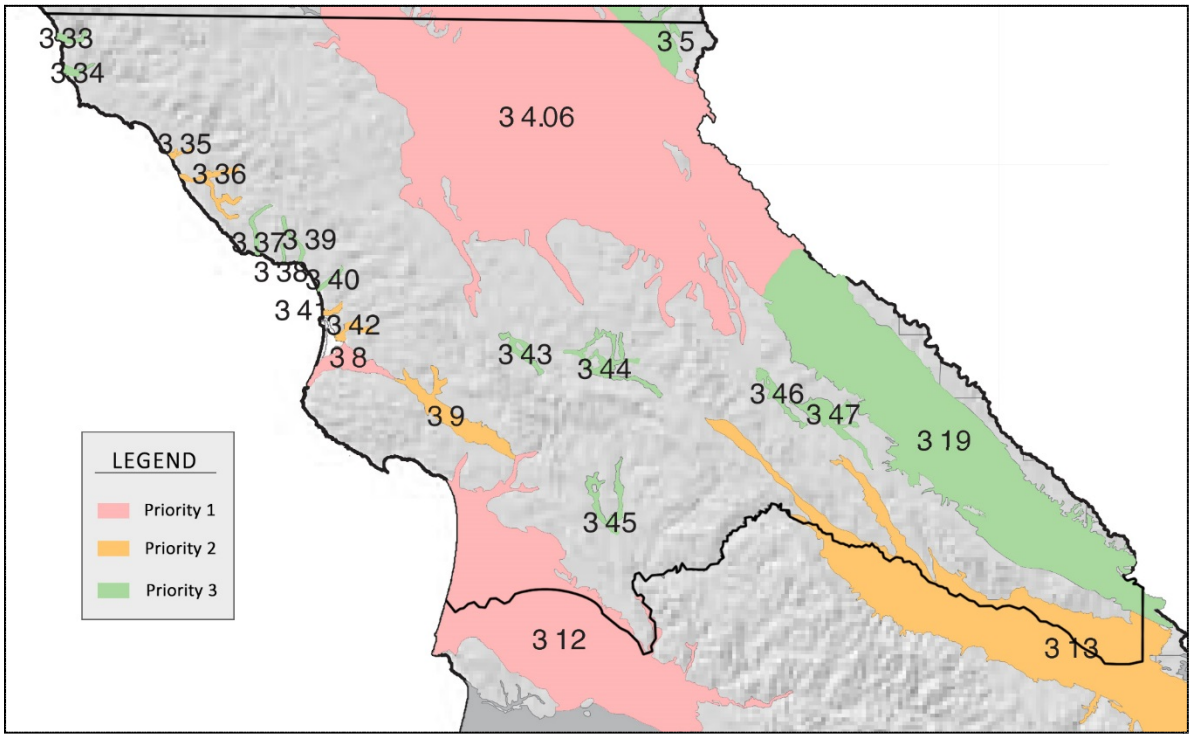


Figure 2. Map of Prioritized Basins

Next Steps

SNMP development and implementation offers local benefits and opportunities such as:

- Local control of proposed strategies, objectives and goals
- Relative source identification
- Leveraging other programs and projects
- Streamlined permitting (e.g. landscape irrigation general permit)
- Access to future funding (e.g. implementation of projects identified within adopted SNMPs)

However, the RWQCB noted challenges to SNMP development such as stakeholder engagement, lack of data or resources to develop data and/or an assimilative capacity analysis or reluctance and uncertainty on conducting CEQA. Despite these challenges, stakeholders in the Salinas Valley (Paso Robles Area) have completed a SNMP. And stakeholders in the Los Osos Valley and Santa Maria Valley basins have initiated SNMP development. The resulting SNMPs can serve as templates for other basins and local study areas.

As resources become available or a motivated stakeholder base emerges, SNMPs or similar management planning can be pursued in the medium to low priority basins. Many of the low priority basins lack an urban driver to initiate the SNMP process. However there are initial steps stakeholders can take to implement collaborative groundwater management. These could include:

- Forming a watershed or groundwater basin stakeholder group
- Initiating or expanding a cooperative monitoring network
- Collecting and reporting additional well level information and data
- Collecting and reporting water quality information and data

This could come about in the form of a stakeholder-driven groundwater management or watershed management planning structure. Such structures could help to find watershed based approaches and solutions to other requirements such as the Agricultural Order.

Overall, SNMPs will facilitate a collaborative and cooperative approach to local groundwater management. Local SNMPs will in-turn inform amendments to the Central Coast RWQCB Basin Plan.

Works Cited

"California Statewide Groundwater Elevation Monitoring (CASGEM)." California Department of Water Resources, Web. 15 Dec. 2014. <http://www.water.ca.gov/groundwater/casgem/>.

"GAMA – Groundwater Ambient Monitoring & Assessment Program." State Water Resources Control Board, Web. 25 Oct. 2013. <http://www.waterboards.ca.gov/water_issues/programs/gama/>.

"Hydrologic Regions of California: Central Coast." California Department of Water Resources, Web. 25 Oct. 2013. <http://www.water.ca.gov/groundwater/bulletin118/central_coast.cfm>.

California Department of Water Resources. *California Water Plan Update 2013 - Central Coast Regional Report*. 23 Oct. 2013. Web. 1 Nov. 2013. <http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol2_CentralCoast_RR_PRD_Sept25_FG_Final_JW_wo.pdf>.

County of San Luis Obispo - Planning and Building. *Resource Summary Report*. 12 Mar. 2013; Web. 25 Oct. 2013. <http://www.slocounty.ca.gov/Assets/PL/RMS/2010-2012_RMS.pdf>.

Regional Water Quality Control Board. Central Coast Office. By Matt Keeling, P.E., 13 Sept. 2013. Web. 13 Sept. 2013. <http://www.waterplan.water.ca.gov/docs/meeting_materials/regional/2013-09-13/SaltNutrientPlans.pdf>.

Regional Water Quality Control Board. Los Angeles Region Office. *Regional Water Board Assistance in Guiding Salt and Nutrient Management Plan Development in the Los Angeles Region*. 28 June 2012. Web. 30 Aug. 2013. <http://www.waterboards.ca.gov/losangeles/water_issues/programs/salt_and_nutrient_management/Stakeholder_Outreach/Regional%20Water%20Board%20SNMP%20Assistance%20Document.PDF>.

Attachments

Exhibit A – Initial List of Stakeholders by Study Area
Exhibit B – Information Packet including:

- RWQCB Salt and Nutrient Management Plan Elements
- RWQCB SNMP Informational Packet
- RWQCB Presentation “Regional Salt and Nutrient Planning – Doing the Work”
- Paso Robles SNMP Table of Contents
- Online Resources and Information

Exhibit A - SNMP Study Areas and Initial List of Corresponding Stakeholders

Study Area	Stakeholders
NORTH COAST SUBREGION	
Area 1 *San Carpoforo Valley, Arroyo De La Cruz Valley*	District & County of San Luis Obispo San Simeon CSD Hearst Ranch State Parks U.S. Forest Service Overlying agriculture & overlying residential/ businesses on septic systems
Area 2 *San Simeon Valley, Santa Rosa Valley*	District & County of San Luis Obispo Cambria CSD Community of Harmony State Parks Overlying agriculture & overlying residential/ businesses on septic systems
Area 3 *Villa Valley, Cayucos Valley, Old Valley, Toro Valley, Morro Valley, Chorro Valley*	District & County of San Luis Obispo U.S. Forest Service County Service Area No. 10A California Men's Colony Cuesta College Camp San Luis Obispo County Operations Center/ Office of Education City of Morro Bay City of San Luis Obispo Overlying agriculture & overlying residential/ businesses on septic systems
Los Osos Valley	District & County of San Luis Obispo Los Osos CSD Golden State Water Company S&T MWC State Parks Overlying agriculture & overlying residential/ businesses on septic systems
SOUTH COUNTY SUBREGION	
Area 5 *Huasna Valley*	District & County of San Luis Obispo Twitchell Reservoir users Santa Maria Valley Water Conservation District Twitchell Management Authority Overlying agriculture & overlying residential/ businesses on septic systems
Area 7 *Cuyama Valley*	District & County of San Luis Obispo U.S. Forest Services Cuyama CSD Kern County Water Agency Santa Barbara County Water Agency Ventura County Department of Water Resources Overlying agriculture & overlying residential/ businesses on septic systems
San Luis Obispo Valley *(includes Edna Valley)*	District & County of San Luis Obispo City of San Luis Obispo California Polytechnic University San Luis Obispo Diablo Canyon Power Plant (PG&E) Port San Luis Harbor District Overlying agriculture & overlying residential/ businesses on septic systems

Study Area	Stakeholders
Santa Maria Valley	District & County of San Luis Obispo County of San Luis Obispo – CSA 1, Lopez Lake Park City of Arroyo Grande City of Guadalupe City of Pismo Beach Oceano CSD Nipomo CSD ConocoPhillips City of Santa Maria Santa Barbara County Water Agency U.S. Forest Service South San Luis Obispo County Sanitation District State Parks Casmalia CSD Overlying agriculture & overlying residential/ businesses on septic systems
NORTH COUNTY SUBREGION	
Area 4 *Riconada Valley, Pozo Valley*	District & County of San Luis Obispo U.S. Army Corps of Engineers U.S. Forest Service Bureau of Land Management U.S. Forest Services Overlying agriculture & overlying residential/ businesses on septic systems
Area 6 *Carrizo Plain, Rafael Valley, Big Spring Area*	District & County of San Luis Obispo Bureau of Land Management California Department of Fish and Wildlife California Valley Solar Ranch Project Community of California Valley Topaz Farms SunPower Overlying agriculture & overlying residential/ businesses on septic systems
Area 8 *Cholame Valley*	District & County of San Luis Obispo U.S. Geological Survey Central Coast Water Authority Small public water systems Overlying agriculture & overlying residential/ businesses on septic systems
Paso Robles	District & County of San Luis Obispo U.S. Forest Service City of Atascadero City of Paso Robles Templeton CSD San Miguel CSD Whitley Gardens U.S. Army - Camp Roberts Monterey County Parks Department Monterey County Water Resources Agency Heritage Ranch Oak Shores Overlying agriculture & overlying residential/ businesses on septic systems

EXHIBIT B – RWQCB Salt and Nutrient Management Plan Elements

Central Coast Regional Water Quality Control Board

Salt and Nutrient Management Plan Elements:

Paragraph 6.b.(3) of the Recycled Water Policy[1] states the following:

(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.

[1] http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/recycledwaterpolicy_approved.pdf

(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.

The following is an expanded list of Central Coast Regional Water Quality Control Board recommended elements:

(Note: clarification/definitions provided at end of document for elements marked with an asterisk.)

- **Background**
  - Recycled water policy overview
  - Existing related plans and projects (IRWMs, GMPs – AB3030, etc.)
  - Regulatory setting (303(d) listings, TMDLs, WDRs, local controls/ordinances, etc.)
  - Stakeholder list, roles and responsibilities

- **Groundwater Basin Description/Environmental Setting**
  - Climate (existing and forecast, i.e. climate change)
  - Geology
  - Hydrogeology/hydrology
  - Landcover and landuse evaluation/mapping
  - Existing/background groundwater and surface water quality conditions (inclusive of all groundwater/aquifers; i.e. shallow groundwater and domestic well water quality)
  - Beneficial uses
  - Recharge area identification/mapping/ranking

- **Source Analysis**
  - *Conceptual model
  - Water Balance (existing and forecast)
  - Salt and nutrient balance (source identification and loading/concentration analysis; existing and forecast based on future growth)

- Fate and transport analysis (integrated surface water/groundwater modeling)
- Assimilative capacity analysis

- **Regional (basin/sub-basin) Monitoring Plan**
  - (see Recycled Water Policy paragraph 6.b.(3) for specifics)
  - *Quality Assurance Project Plan (QAPP)
  - Data management and reporting (GAMA GeoTracker)
  - Water balance monitoring (in addition to water quality monitoring)
  - Monitoring parameters/constituents
  - Salt and nutrient balance and source loading monitoring (documentation of loading [reduction] by source)
  - Constituents of Emerging Concern (CEC) monitoring
  - Trend analysis
  - Monitoring plan implementation schedule

- **Goals and Objectives**
  - Recommended Water Quality Objectives (WQO) and goals
  - Beneficial use protection
  - Institutional controls, general plan amendments, local ordinances, etc.
  - Landuse planning
  - Management Practices (MPs); to reduce salt and nutrient loading
  - Sustainable water balance plan
  - Load allocations
  - Load reduction goals
  - Water conservation goals
  - Water recycling goals
  - Storm water retention/recharge goals
  - Recharge area protection/restoration
  - Wellhead protection

- **Implementation**
  - *Performance measures
  - Implementation plan and schedule
  - *Adaptive Management Plan; tied to regional monitoring
  - Public outreach and education
  - Cost analysis
  - Funding opportunities
  - *Antidegradation Analysis
  - CEQA
  - Institutional agreements (between stakeholders for plan implementation)
  - Organizational structure or groups (technical advisory committees etc.)

Clarification/Definitions

Conceptual model: a simple two dimensional drawing of the groundwater basin identifying all groundwater zones/aquifers and showing salt/nutrient and water quantity inputs and outputs from known sources such as adjacent groundwater basins, recharge, point and non-point sources, water purveyors, etc.

Quality Assurance Project Plan (QAPP): A Quality Assurance Project Plan documents the planning, implementation, and assessment procedures for a particular project, as well as any specific quality assurance and quality control activities. See following EPA website for more information:

http://www.epa.gov/QUALITY/qapps.html

Performance measures: Indicators of results or measures of effectiveness that provide qualitative and/or quantitative information needed to measure the extent to which a project is achieving its intended outcomes, objectives or goals.

Performance Measures are metrics used to provide an analytical basis for decision making and to focus attention on what matters most. Performance Measures answer the question, 'How is an organization or project doing at the job of meeting its objectives or goals?' Examples could include number of facilities implementing salt/nutrient management plans or the reduction of salt/nutrient loading from individual facilities/entities.

Adaptive Management Plan: Adaptive Management (AM), also known as Adaptive Resource Management (ARM), is a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals; increases scientific knowledge; and reduces tensions among stakeholders

Alternatively, adaptive management is a structured, iterative process of optimal decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. In this way, decision making simultaneously maximizes one or more resource objectives and, either passively or actively, accrues information needed to improve future management. Adaptive management is often characterized as "learning by doing."

Typical steps in the process of Adaptive Management could include:

START: Clarify organization or project mission
STEP A: Design a conceptual model based on known conditions
STEP B: Develop a management plan: goals, objectives, and activities
STEP C: Develop a monitoring plan
STEP D: Implement management and monitoring plans
STEP E: Analyze data and communicate results
ITERATE: Use results to adapt and learn

Antidegradation Analysis: 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. An antidegradation analysis needs to be conducted demonstrating that the projects included within the plan will, collectively, satisfy the requirements of Resolution No. 68-16.

EXHIBIT B – RWQCB SNMP Informational Packet

March 3, 2014

Brian Lockwood
Pajaro Valley Groundwater Basin SNMP
lockwood@pvwater.org

Steve Kahn
Santa Maria Valley IRWM SNMP
skahn@ci.santa-maria.ca.us

Behzad Ahmadi
Llagas Subbasin SNMP
BAhmadi@valleywater.org

Raymond Dienzo
Los Osos Valley BMP/SNMP
rdienzo@co.slo.ca.us

Jeff Cattaneo
Northern San Benito County SNMP
jcattaneo@sbcwd.com

Teresa McClish
Northern Cities & Nipomo Mgt. Areas SNMP
tmcclish@arroyogrande.org

Matt Thompson
Paso Robles Groundwater Basin SNMP
MThompson@prcity.com

Jonathan Lear
Seaside Groundwater Basin SNMP
jlear@mpwmd.net

Brook Welch
Goleta Water District
BWelch@goletawater.com

Dear Coordinators/Stakeholders:

WATER BOARD SUPPORT OF REGIONAL SALT & NUTRIENT MANAGEMENT PLANNING EFFORTS; TRANSMITTAL OF INFORMATIONAL DOCUMENT

We commend you for taking a lead role in the development of salt and nutrient management plans (SNMP) and your ongoing groundwater management efforts. We acknowledge that each of the regional SNMP groups within the Central Coast Region consists of diverse stakeholders that are trying to address a unique set of land use, hydrogeological, and geochemical conditions within their given groundwater basins and watersheds. It is our understanding that the pending plans are in various stages of development and need to be tailored to those unique conditions.

The attached document provides information regarding the development and implementation of SNMPs in the Central Coast Region. More specifically, it provides background information regarding the underlying basis of and requirements applicable to SNMPs, guidance regarding assimilative capacity and antidegradation analyses and identifies the minimum elements of and Regional Water Board expectations associated with acceptable SNMPs. It also discusses opportunities associated with streamlining waste discharge monitoring requirements to help fund the SNMP regional groundwater monitoring programs. The latter is intended to foster the development of integrated and consistent SNMP regional monitoring programs and waste

discharge monitoring requirements by groundwater basin/sub-basin and incentivize stakeholder participation in SNMP efforts via potential monitoring cost savings or off-sets.

Please forward this letter and attached informational document to salt and nutrient loading stakeholders within your planning geographic area as appropriate.

Our staff will be available on request to discuss this letter and other SNMP issues at regularly scheduled SNMP stakeholder meetings or other agreed upon times. Please contact Matthew Keeling at (805) 549-3685, or Matt.Keeling@waterboards.ca.gov, or Harvey Packard at (805) 542-4639, or Harvey.Packard@waterboards.ca.gov, if you have any questions or would like to schedule a meeting.

Sincerely,

Kenneth A. Harris Jr.
Executive Officer

Attachment:

Central Coast Water Board Informational Document: Salt and Nutrient Management Plan Development, February 2014

cc:

Courtney Howard
San Luis Obispo County IRWM
choward@co.slo.ca.us

Aaron Floyd
City of San Luis Obispo
afloyd@slocity.org

Susan Robinson
Greater Monterey County IRWM
srobinsongs@verizon.net

Matt Naftaly
Santa Barbara County IRWM
mnaftal@cosbpw.net

Linda Spencer
Water Strategies
lindageo@earthlink.net

Sally McCraven
Todd Engineers
smccraven@toddengineers.com

Leslie Dumas
RMC Water and Environment
LDumas@rmcwater.com

Nicole Beck
2nd Nature
nbeck@2ndnaturellc.com

Rob Almy
GEI Consultants Inc.
ralmy@geiconsultants.com

Diane Barclay, SWRCB
Diane.Barclay@waterboards.ca.gov

Harvey Packard, CCRWQCB
Harvey.Packard@waterboards.ca.gov

Lisa McCann, CCRWQCB
Lisa.McCann@waterboards.ca.gov

Peter Meertens, CCRWQCB
Peter.Meertens@waterboards.ca.gov

Cecile DeMartini, CCRWQCB
Cecile.DeMartini@waterboards.ca.gov

Katie McNeill, CCRWQCB
Katie.McNeill@waterboards.ca.gov
Dean Thomas, CCRWQCB
Dean.Thomas@waterboards.ca.gov

Dominic Roques, CCRWQCB
Dominic.Roques@waterboards.ca.gov

Hector Hernandez, CCRWQCB
Hector.Hernandez@waterboards.ca.gov

p:\salt-nutrient management plans\guidance docs\final docs\snmp_info_doc_trans_022414.doc

CALIFORNIA Water Boards

Edmund G. Brown Jr.
GOVERNOR

Matthew Rodriquez
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Coast Regional Water Quality Control Board

Informational Document:

Salt and Nutrient Management Plan Development

February 2014

Table of Contents

Background

This document provides information to stakeholders developing salt and nutrient management plans (SNMPs) within the Central Coast Region. It contains background information regarding the underlying basis of and requirements applicable to SNMPs along with guidance addressing specific issues and challenges that are somewhat unique to the Central Coast Region. In particular, a number of stakeholders have requested clarification about the basis for determining available assimilative capacity. This document addresses this question for a number of water quality scenarios with potential supporting strategies and provides additional guidance regarding the use of assimilative capacity for water recycling projects and the implementation of the Antidegradation Policy associated with the development and implementation of salt and nutrient management plans. The latter part of this document also discusses the required technical and basin planning process elements of acceptable plans.

Recycled Water Policy - Salt and Nutrient Management Plans

The State Water Resources Control Board (State Water Board) adopted the Recycled Water Policy in February 2009. The purpose of the Policy is to support sustainable local water supplies by increasing the use of recycled water consistent with state and federal water quality laws. When recycled water is used in compliance with the Policy, Title 22, and all applicable state and federal water quality laws, the State Water Board and Central Coast Regional Water Quality Control Board (Regional Water Board) strongly support its use as a safe alternative for approved uses.

The Policy establishes a framework and schedule for developing basin-wide or watershed-wide SNMPs by 2014. Although the Policy emphasizes recycled water irrigation and groundwater recharge reuse projects, it requires stakeholders to develop SNMPs to manage salts and nutrients from all sources to meet water quality objectives (WQOs) and protect beneficial uses. The Regional Water Board will then consider the SNMPs for incorporation into its water quality control plan (basin plan). The adopted SNMP implementation plans will be used to streamline permitting of individual recycled water projects. Regional Water Board staff is available to provide guidance during the stakeholder-led development of these plans.

Beneficial Uses

The Water Quality Control Plan for the Central Coastal Basin (Basin Plan) designates beneficial uses of surface water and groundwater. The Basin Plan identifies all groundwater throughout the Central Coast Region, with the exception of the Soda Lake Sub-basin, as having beneficial uses of agricultural supply (AGR), municipal and domestic supply (MUN), and industrial supply (IND). The Regional Water Board may remove individual MUN beneficial use designations for groundwater by amending the Basin Plan, consistent with the State Water Board's "Sources of Drinking Water Policy" (Resolution No. 88-63). Basin Plan Table 2-1 assigns one or more of 24 standard beneficial uses to specific inland surface waters. Surface water bodies within the

Central Coast Region that do not have beneficial uses designated for them in Table 2-1 are assigned MUN and protection of both recreation and aquatic life related beneficial uses.

Water Quality Objectives

Water quality objectives (WQOs) are within the Basin Plan to protect present and future beneficial uses, prevent nuisance conditions, and protect historical or existing water quality conditions. Controllable water quality[1] must conform to the WQOs; waste discharges may not cause or contribute to water quality degradation. The WQOs are used to develop effluent and receiving water limitations in waste discharge or water reclamation requirements (i.e., discharge permits) and cleanup levels in enforcement orders such as cleanup and abatement orders.

The Basin Plan contains WQOs for both surface water and groundwater. WQOs can be numeric or narrative. A numeric WQO is expressed as a concentration limit/threshold or other numeric range. Numeric WQOs can either be associated with specific receiving waters (e.g., Basin Plan Tables 3-7 and 3-8) or with all receiving waters that have a particular beneficial use (e.g., Basin Plan Tables 3-1 through 3-6). Narrative WQOs can be interpreted as numeric equivalents (e.g., primary and secondary maximum contaminant levels [MCLs] associated with municipal and domestic drinking water supply) or physical/chemical/biological conditions or thresholds that cause a nuisance condition or otherwise adversely affect beneficial uses.

The Basin Plan does not contain specific WQOs for all waters in the Central Coast Region. Where they apply, the WQOs within Tables 3-7 and 3-8 represent gross areas only and were intended to represent the actual water quality naturally present. The objectives are median[2] values intended to preserve existing water quality or water quality enhancement believed attainable by controllable sources.

Regardless of whether numeric objectives apply, receiving water quality must also meet all applicable narrative objectives. As with numeric objectives, discharges cannot cause or contribute to an exceedance of narrative objectives. For example, discharges to basins with a MUN designation cannot cause groundwater to contain taste or odor producing substances that impair municipal or domestic uses. For waters with a MUN designation, the Water Boards implement the narrative objectives with reference to applicable maximum contaminant levels or other applicable criteria. Similarly, discharges to basins with an AGR designation cannot make groundwater unsuitable for livestock watering or irrigating crop types that are likely to be grown in the basin (e.g., Basin Plan Tables 3-3 and 3-4).

Antidegradation Policy

State Water Board Resolution No. 68-16, "Statement of Policy with respect to Maintaining High Quality of Waters in California," also known as the State Antidegradation Policy, requires that:

[1] "Controllable water quality conditions are those actions or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled." Basin Plan Chapter 3, Section II.

[2] The median values represent the [spatial] medians of the [temporal] average concentrations of wells within the study area over a given study period.

> *Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*
>
> *Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.*

The intent of Resolution No. 68-16 is to preserve the State's high quality waters. A receiving water is a high quality water if the baseline water quality is better than applicable WQOs. For purposes of the Antidegradation Policy, "baseline" water quality is the highest water quality conditions that existed at any time since 1968, or since post-1968 applicable objectives were established. This determination is made on a pollutant-by-pollutant basis. The Regional Water Board cannot authorize any degradation, or lowering of the baseline water quality, without first finding that the degradation complies with Resolution No. 68-16.

Determining compliance with Resolution No. 68-16 requires a two-step analysis. The first step is if a discharge will degrade high quality water, the discharge may be allowed only if any change in water quality will 1) be consistent with maximum benefit to the people of the State, 2) not unreasonably affect present and anticipated beneficial uses of such water, and 3) not result in water quality less than that prescribed in state policies (e.g., WQOs in the Basin Plan). The second step is that any activities that result in discharges to such high quality waters are required to use the best practicable treatment or control of the discharge necessary to avoid pollution or nuisance and to maintain the highest water quality consistent with the maximum benefit to the people of the State.

It is the responsibility of the discharger to document compliance with Resolution No. 68-16 and to provide all information that the Regional Water Board needs to make the necessary findings.

Best Practicable Treatment or Control

Activities involving the disposal of waste, including the application of recycled water, that could impact high quality waters must implement best practicable treatment or control (BPTC).

To evaluate what constitutes BPTC, the discharger should compare the proposed method to existing proven technology; evaluate performance data, e.g., through treatability studies; compare alternative methods of treatment or control; and consider the method currently used by the discharger or similarly situated dischargers. Promulgated requirements such as federal best available technology economically achievable (BAT) or other promulgated technologies may be

appropriate for groundwater discharges and would apply to surface water discharges. In certain situations, BAT would be considered BPTC under Resolution No. 68–16. The costs of alternative treatment or control technologies must also be considered. When cost savings to the discharger are part of the justification for allowing degradation, the antidegradation analysis must demonstrate how the cost savings are necessary to accommodate important social and economic development. The analysis must consider costs to the affected public, such as additional costs to treat drinking water supplies.

What constitutes BPTC can vary in different situations involving the same type of discharge. For example, higher levels of wastewater reclamation treatment might be necessary if an irrigation project is located near existing supply wells. BPTC may also vary based on soil or climate conditions and the pollutants of concern in a particular discharge or recycled water supply.

Non-High Quality Waters and Best Efforts

Discharges to waters that are not high quality must attain the best effluent quality that can be achieved using reasonable control methods, or the "best efforts" of the discharger. Relevant factors in a "best efforts" analysis include supply water quality, past effluent quality, the effluent quality achieved by other similarly situated dischargers, good faith efforts to limit pollutant discharges, and available alternatives to achieve compliance. The best efforts approach involves the same considerations as a BPTC determination. At a minimum, "best efforts" requires discharges to achieve all WQOs, after taking into account available assimilative capacity.

SNMP Development and Implementation

Application of WQOs to SNMPs

The SNMP needs to consider all applicable salinity and nutrient WQOs contained in the Basin Plan. These include both numeric and narrative WQOs for all beneficial uses. For receiving waters or areas that do not have specific numeric water quality objectives within Tables 3-7 and 3-8, all other applicable WQOs within the Basin Plan will apply. In addition, the SNMPs need to consider groundwater and surface water interactions as necessary to protect the beneficial uses of both groundwater and surface water. If there is direct hydrologic connectivity between groundwater and surface water (i.e., a gaining stream or other natural discharge of groundwater to surface water), the SNMP needs to consider the impacts on surface water (including surface water WQOs) as necessary to protect beneficial uses. The recharge of groundwater from surface water needs to be considered as part of the overall basin water balance and loading evaluations. The SNMP must consider any direct or indirect discharges of recycled water to surface water that may affect groundwater conditions via recharge. Point source discharges to waters of the United States are subject to NPDES requirements.

The SNMP may include pollutants other than salts and nutrients that could degrade water quality. The Regional Water Board must consider all pollutants of concern when permitting

projects. Including an analysis of all relevant pollutants in SNMP development will streamline later basin planning and/or permitting actions.

Protection of Beneficial Uses and Existing High Quality Waters

Individual recycling projects generally have to comply with all applicable requirements (e.g., WQOs and the Antidegradation Policy) on an individual basis. The Recycled Water Policy allows the Regional Water Board and other stakeholders to address the protection of the beneficial uses and high quality waters present on a basin/sub-basin-scale via the development of a SNMP for a suite of projects. Basin-scale management strategies must protect the most sensitive beneficial uses within a basin or sub-basin. Therefore, the most stringent WQOs and sensitive beneficial uses, along with the existing water quality, must be used as the basis for the SNMP assimilative capacity analysis.

The Recycled Water Policy recognizes that groundwater recharge and landscape irrigation projects are to the benefit of the people of the state, despite having the potential to degrade water quality within a basin. The Recycled Water Policy allows for some degradation to occur for projects covered by the SNMP via the use of assimilative capacity on a regional scale as long as present and anticipated beneficial uses are protected and the degradation is consistent with the Antidegradation Policy. As such, the use of assimilative capacity, or portion thereof, will only be allowable if doing so maintains the baseline water quality water unless the project proponent can demonstrate that any decrease in water quality 1) will be consistent with the maximum benefit of the people of the State, 2) will not unreasonably affect present and anticipated beneficial uses, and 3) will not result in water quality less than prescribed standards (i.e., WQOs). A detailed review of historical water quality data and a systematic water quality impact assessment will be required to inform decisions about the availability and use of assimilative capacity and document compliance with the Antidegradation Policy.

Assimilative Capacity Analysis & Strategies

Assimilative capacity can be calculated by comparing the most stringent WQOs with the existing water quality conditions of the basin/sub-basin[3], either over the most recent five years of data available or using a data set approved by the Regional Water Board. Though the Recycled Water Policy expresses assimilative capacity in units of concentration, the Regional Water Board recognizes that, depending on the complexity of the basin, it may also be appropriate to evaluate and express assimilative capacity as a mass load. In determining whether the assimilative capacity will be exceeded by the SNMP, the Regional Water Board will consider the impacts of the plan, based on an analysis of the impacts, and other relevant data and information provided by the project proponent.

[3] To facilitate a representative comparison, the basin/sub-basin concentration should be estimated via a temporal and spatial statistical approach consistent with the WQOs governing the analysis. For example, if the Table 3-8 WQOs are the most protective (i.e., they govern the assimilative capacity analysis), the spatial median basin/sub-basin concentration should be calculated using the temporal average of well concentrations over the study period. The Water Board may consider the application of other statistical methods on a case-by-case basis provided the SNMP includes sufficient technical justification indicating the methods are representative of the WQOs and receiving water quality, and the resulting assimilative capacity analysis is protective of the receiving water beneficial uses.

If current water quality is meeting the most stringent WQO for a particular pollutant, assimilative capacity exists for that pollutant. For cases where current water quality does not meet the most stringent WQO, assimilative capacity does not exist for the pollutant. However, the latter case doesn't necessarily preclude the implementation of recycled water projects either as part of an SNMP or of individual projects that are not part of an SNMP. Where no assimilative capacity exists for pollutant within a basin/sub-basin, stakeholders may apply various strategies for creating assimilative capacity, or otherwise comply with applicable requirements, as described below. The following strategies may be applied for various assimilative capacity scenarios, particularly when there is limited or no assimilative capacity:

Scenario 1 – Basin-specific WQOs are the most stringent WQOs and are less than the current water quality conditions (i.e., water quality is already exceeding WQOs), and the WQOs are more stringent than necessary to protect beneficial uses (i.e., basin-specific WQOs are more stringent than beneficial use WQOs)[4]:

Strategies:

1. Propose revised WQOs for Regional Water Board consideration that create assimilative capacity. The new/revised WQOs must protect beneficial uses and not lead to unreasonably degraded water quality, but they would be based on beneficial use protection rather than historic water quality.[5]
2. Develop a loading analysis showing that SNMP-related projects will not cause increases in pollutant concentrations on a regional scale while also protecting beneficial uses on both localized and regional scales. This approach requires a comprehensive loading analysis considering all sources within the planning area and the identification of existing and anticipated beneficial uses.
    a. This may entail creating assimilative or loading capacity by reducing loading from other existing sources or by importing/recharging higher quality water in amounts sufficient to offset water quality conditions within the basin.[6] This would require monitoring to document loading balances and project-specific water quality monitoring in addition to regional water quality monitoring.
3. Evaluate water quality conditions and assimilative capacity for distinct subareas, or management areas, within a given basin/sub-basin.[7] The use of subareas to evaluate and apportion assimilative capacity should be based on distinct water quality, land use and loading patterns, along with institutional, geologic and hydrogeologic boundaries. Although this approach will require assimilative capacity and antidegradation analyses,

[4] For example: Table 3-8 of the Basin Plan prescribes a numeric WQO for nitrate of 5 mg/L as N for a groundwater basin with an average or median nitrate concentration of 8 mg/L as N. The MUN beneficial use WQO is 10 mg/L as N (i.e., the primary drinking water standard).
[5] Resolution R8-2004-0001 provides one way to implement this strategy.
[6] Offsets need to be realized prior to implementing recycled water or other project related discharges with the potential to degrade water quality and impair beneficial uses.
[7] Subareas can be used to differentiate between areas with distinctly different water quality and land use characteristic within a given basin such that recycled water projects could be facilitated in a subarea - where assimilative capacity exists - when the basin-wide analysis indicates there is limited or no assimilative capacity.

implementation measures, and monitoring for each subarea, the overall basin water quality still needs to be considered in the context of any subarea management strategy. A subarea management strategy may be appropriate and desirable to target specific implementation measures addressing areas where both poor and high quality waters are present within a given basin/sub-basin even if there is assimilative capacity within the basin as a whole. Strategies 1 and 2 above could be applied to subareas.

4. Propose and implement a SNMP or individual projects for which the discharges meet the lowest applicable WQOs.

Scenario 2 – Numeric or narrative WQOs associated with beneficial uses are the most stringent WQOs and are less than the existing water quality conditions (i.e., beneficial uses are already impaired):

Strategies:

1. Strategies 2, 3 and 4 above for Scenario 1 also apply here. Projects must comply with applicable WQOs on an individual or aggregate basis.
2. Remove the beneficial use associated with the limiting WQO, if the use no longer exists and is not a potential or probable future use. This strategy is essentially a non-starter given the most sensitive beneficial uses of municipal and domestic supply (MUN) and agricultural supply (AGR) currently exist within almost all of the Central Coast basins.
3. Develop a site-specific objective (SSO) for the WQO in question. This would only be applicable to mineral-related WQOs in areas where elevated concentrations of minerals are caused by natural conditions (i.e., sources are not controllable).

Scenario 3 – Assimilative Capacity Exists

For projects or pollutants where assimilative capacity exists based on a representative comparative analysis of applicable WQOs and current water quality conditions, the SNMP and individual recycling projects not covered by the SNMP still need to comply with the Antidegradation Policy and protect beneficial uses.

Special Consideration for Nitrate

Regional Water Board staff recommends limiting the use of available assimilative capacity for nitrate, as well as other parameters with primary maximum contaminant levels (MCLs) (i.e., public health-based drinking water standards), to the maximum extent practicable. The State Water Board places a high priority on water recycling because it preserves and protects scarce freshwater sources for other beneficial uses such as municipal and domestic supply (i.e., MUN). However, the need to preserve scarce freshwater supplies does not justify allowing recycled water or other discharges to pollute available drinking water sources. The Regional Water Board is recommending a more protective approach for nitrate given 1) the applicable WQO for nitrate is based on a public health-based drinking water standard, 2) localized and basin-scale nitrate impacts and associated MUN beneficial use impairments are already significant within

many Central Coast groundwater basins, and 3) nitrate loading from recycling projects is generally more controllable as compared to salts.

Residents of the Central Coast Region and the state are already incurring significant social and economic costs associated with nitrate pollution and people within many disadvantaged communities are shouldering a disproportionately higher share of these costs. In addition to the significant drinking water system monitoring requirements and treatment or replacement supply cost associated with drinking water wells that exceed the MCL for nitrate, water purveyors and users incur increased monitoring and reporting costs when nitrate concentrations are greater than or equal to one-half of the MCL for nitrate.[8] Whereas these costs are more readily absorbed by public water systems (i.e., systems with 15 or more service connections), the costs associated with addressing a polluted water supply can be a significant burden to smaller water systems and individual well owners. Funding is generally not available for unregulated water systems below the public water system threshold, including private domestic wells. Moreover, many of the unregulated systems are not sampled on a regular basis to determine whether the produced water meets drinking water standards. The antidegradation analysis for the use of assimilative capacity within basins/sub-basins with existing nitrate impairment approaching or greater than 50 percent of the MCL will need to consider these costs for all existing and probable MUN beneficial uses (i.e., drinking water systems/wells), including unregulated systems. In addition, ongoing monitoring will be needed to document that individual projects covered by the SNMP will be protective of regional and localized beneficial uses (e.g., sampling of unregulated water systems/wells may be required).

Nitrate and total nitrogen loading from recycled water projects will be controlled using BPTC associated with wastewater treatment, the agronomic application of recycled water and/or other approved strategies. A growing number of wastewater/reclamation facilities within the Central Coast Region and state produce effluent with total nitrogen concentrations as low as 5 mg/L. Consistent with the criteria for streamlined permitting of landscape irrigation projects contained within section 7 of the Recycled Water Policy, recycled water should be applied at agronomic rates that also account for the use of fertilizers within the application areas. That is, the timing, amount, and rate of recycled water application, along with supplemental fertilizer application, must be managed to minimize nitrate leaching to groundwater and incidental surface runoff (i.e., maximize water and nutrient uptake by vegetation). Complete uptake of nitrate contained within applied recycled water by vegetation is unlikely. Therefore, conservative estimates of nitrate uptake and denitrification within the root zone and soil column should be used to determine the relative leaching fraction of nitrate (i.e., loading) and the utilization of assimilative capacity. The agronomic application and leaching fraction analyses need to consider the subsurface soil characteristic and the nitrogen speciation of the produced recycled water given the fate and transport of the different forms of nitrogen varies depending on their physical and chemical properties and the soil conditions.

[8] Title 22, section 64432.1, of the California Code or Regulations requires increased monitoring for nitrate for public water systems when the nitrate concentration is greater than or equal to 50 percent of the MCL.

Antidegradation Policy Compliance

As part of the SNMP development, the Recycled Water Policy requires stakeholders to conduct an antidegradation analysis documenting that implementation projects within the SNMP comply with Resolution No. 68-16, individually or in the aggregate. Proponents of the plan must provide sufficient information for the Regional Water Board to document compliance with Resolution No. 68-16. This analysis will be part of the supporting documentation required for the consideration of the amendment incorporating the SNMP into the Basin Plan as an implementation plan.

SNMP compliance with Resolution No. 68-16 may be demonstrated as follows:

> In addition to verifying the availability and use of assimilative capacity, the antidegradation analysis needs to show:
>
> a) That the SNMP is necessary to accommodate important economic or social development;
> b) Any degradation of water quality will be consistent with maximum benefit to people of the State;
> c) Degradation of water quality will not unreasonably degrade actual or potential beneficial uses; and
> d) Water quality will not fall below WQOs set to protect beneficial uses.
>
> Factors that should be considered when determining whether an implementation plan is necessary to accommodate social or economic development and is consistent with maximum benefit to the people of the State include:
>
> a) Past, present, and probable beneficial uses of the water. Consideration will be given to providing buffers for varying environmental conditions such as droughts, as well as the needs of future generations. The analysis should address any beneficial use impacts on other water bodies that may result from reducing demands on water supplies through the use of recycled water.
> b) Economic and social costs and benefits, tangible and intangible, of the proposed plan. Costs to the dischargers and to the affected community must be considered. For example, affected drinking water users may incur increased costs, or the inability to use recycled water may cause increased demands on surface waters, causing an indirect effect on recreational or aquatic uses. The economic impacts to be considered may include the cost of alternative actions in lieu of the proposed plan, as well as the cost of any mitigation necessary to address degradation resulting from the proposed plan. Examples of social and economic parameters that could be considered are employment, housing, community services, income, tax revenues, and land value.
> c) The environmental aspects of the proposed discharge must be evaluated. For example, the proposed discharge, while degrading water quality in a given water body, may be simultaneously improving water quality in a more environmentally sensitive body of water from which the discharge in question is being diverted.

d) Feasible alternative treatment or control measures that might reduce, eliminate, or compensate for negative impacts of the proposed plan.

Regional Water Board staff recommends that appropriate stakeholders be consulted early in the antidegradation analysis process to provide input on the "maximum benefit" component to make sure that the economic and social costs and benefits are accurately identified and evaluated.[9] This will help ensure that sufficient information is provided to the Regional Water Board to meet all applicable requirements.

The Regional Water Board will ultimately make the decision as to whether or not the SNMP complies with the Antidegradation Policy. The Regional Water Board has considerable discretion in determining whether to approve degradation.

The Recycled Water Policy includes a reference to an example of an approved method for conducting an antidegradation analysis based on a numeric groundwater model. It was used by the State Water Board in connection with Resolution No. 2004-0060 and the Santa Ana Water Board in connection with Resolution No. R8-2004-0001. However, stakeholders have the flexibility to use other methods acceptable to the Regional Water Board. SNMP proponents should vet any such other methods with Regional Water Board staff prior to embarking on an analysis using the method. The Recycled Water Policy also encourages an integrated approach (e.g., using surface water, groundwater, recycled water, stormwater, pollution prevention, water conservation, etc.) to comply with Resolution No. 68-16.

Acceptable SNMPs

The following sections discuss required components of an acceptable SNMP based on issues identified during the development of various plans within the Central Coast Region to date. For the most part these issues are relevant to the development of meaningful plans that effectively identify, evaluate, manage and monitor all controllable sources of salts and nutrients to sustainably manage water resources on a regional scale.

Minimum Required Elements

Paragraph 6.b.(3) of the Recycled Water Policy[10] outlines the minimum elements that need to be included within SNMPs. SNMPs that do not sufficiently address these elements will be incomplete and will not be considered for inclusion in the Basin Plan as implementation plans.

In addition, the SNMP must address the following factors with respect to any new or revised WQOs:[11]

[9] This includes the identification of and outreach to disadvantaged communities (DACs) and environmental justice groups representing them that are potentially affected by the SNMP or individual projects. Reasonable accommodation, such as translation services, should be provided to DACs and their representatives to ensure their informed participation in the process.

[10] http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/recycledwaterpolicy_approved.pdf

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

The SNMP should also provide adequate information to support the Regional Water Board's consideration of these factors when permitting the projects covered or contemplated by the SNMP, either individually or in the aggregate.

The Regional Water Board created an expanded list of recommended elements to help guide the development of SNMPs that is located at:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/nutrient_mgmt/docs/R3_SNMP_%20Elements_030310.pdf

Agricultural Component

The Central Coast Water Board understands that the predominantly municipal stakeholders actively involved in the development of SNMPs have limited control over the participation of and loading associated with other salt/nutrient loading stakeholders, or groups of stakeholders. In the Central Coast Region, the agricultural sector is a significant source of salt and/or nutrient loading within various groundwater basins/sub-basins. This is particularly true in areas of intensive irrigated agricultural land use. The Recycled Water Policy requires SNMPs to address and implement provisions, as appropriate for all sources of salt and nutrient loading. Thus, the SNMPs need to include an evaluation of agricultural loading along with goals and objectives and associated implementation measures addressing agricultural loading as appropriate to sustainably manage the basin/sub-basin. The focus of the analysis should be on the contribution of agricultural discharges to salt and nutrient loading in the basin/sub-basin, whether additional agricultural controls are necessary to ensure adequate assimilative capacity is available for the projects included in the SNMP, and a timeframe for implementing any recommendations. Regional Water Board staff expects that the Central Coast Water Board Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands will be the primary mechanism for reducing agricultural salt and nutrient loading. As such, the SNMPs should include the following or equivalent information acceptable to staff:

1. Estimates of salt and nutrient loading from agricultural sources as part of the required source identification, assimilative capacity and loading evaluations based on best available information.[12]

[11] Pursuant to Water Code Section 13241
[12] The sources of the data/information relied upon and related assumptions must be clearly referenced within the SNMP.

2. Identification of areas within the groundwater basin/sub-basin where agricultural loading has contributed to and continues to contribute to water quality degradation, and a demonstration that any projects described in the SNMP will not cause or contribute to any impairment.
3. Basic implementation measures as follows:
    a. The implementation of best management practices for agricultural irrigation and nutrient management to control and document loading.
    b. Enrollment in and compliance with the Central Coast Water Board Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Agricultural Order RB3-2012-0011). With an emphasis on:
        i. the development and implementation of farm water quality management plans (Farm Plan) and Irrigation and Nutrient Management Plans.
4. A regional water quality monitoring program that addresses all identified sources, including agriculture, on a basin/sub-basin scale.

Including the required agricultural elements within the SNMP as listed above will not create any responsibility on the behalf of the non-agricultural stakeholders developing SNMPs to carry out the implementation measures in an attempt to achieve the prescribed goals and objectives and will not change the agricultural stakeholders' obligations under the Agricultural Regulatory Program. The level of detail necessary to analyze goals, objectives, and implementation measures will depend upon the range of projects in the SNMP. This will be the responsibility of the agricultural stakeholders under the oversight of the Regional Water Board. The Regional Water Board will continue to address agricultural loading via the implementation of the Agricultural Regulatory Program.

For some basins/sub-basins it may be desirable and beneficial to postpone completion of the SNMPs pending the collection of at least two years' worth of monitoring and reporting data associated with the implementation of the Central Coast Water Board's Agricultural Oder and a sufficient level of participation in the SNMP process by agricultural stakeholders. Allowing more time to capture and evaluate pending water quality and loading data associated with agricultural activities and to better engage appropriate stakeholders will result in the development and implementation of more meaningful and effective plans. Although the Agricultural Order already contains findings recommending growers participate in the SNMP process, the Regional Water Board will continue outreach to agricultural stakeholders in an effort to better inform them about and engage them in the process.

Salt and Nutrient Constituents/Parameters

The SNMPs need to clearly describe the technical basis for the use, or lack thereof, of salt and nutrient constituents and parameters used to conduct the loading and assimilative capacity evaluations and regional monitoring program. The chosen salt and nutrient constituents/parameters need to be relevant to the basin/sub-basin water quality and loading conditions, as well as the Basin Plan. As the initial baseline, the SNMPs must consider all salt and nutrient constituents/parameters contained within the Basin Plan with prescribed WQOs.

This generally includes total dissolved solids (TDS) or electrical conductivity (EC), chloride, sulfate, boron, sodium (including sodium adsorption ratio), and nitrogen (with an emphasis on nitrate and ammonia), as contained within Basin Plan Tables 3-3, 3-7 and 3-8. The following represents the minimum questions that should be considered as the basis for the selection of appropriate constituents/parameters:

1. Is the constituent subject to a numeric or narrative WQO?
2. How should compliance with narrative WQOs be assessed?
3. Is the constituent exceeding any applicable WQOs or other triggers?
4. Is the constituent regularly monitored and detected in source water (e.g., discharges or natural recharge)?
5. Is the constituent found in source waters at concentrations above those found in ambient groundwater and surface water?
6. Is the constituent a known pollutant in either groundwater or surface water in the study area?
7. Is the concentration of the constituent increasing in groundwater or surface water in the study area?
8. Is the constituent a human health threat, toxic to aquatic life, or does it otherwise threaten beneficial uses?
9. Is the constituent conservative (i.e., it does not readily breakdown to harmless products) and mobile in the environment?
10. Is the constituent representative of other salts and nutrients?

In some cases it may be appropriate to use TDS as a surrogate or indicator for other salt constituents such as sodium, chloride, sulfate, etc. Consistent with question number 10 above, an analysis will be required documenting how the chosen surrogate is representative of the other constituents in both the applied or discharged water and the receiving water. For the TDS example, this analysis would generally include the identification of the relative contributions of the salt constituents or minerals making up TDS to facilitate the development and application of mass balance relationships between TDS and individual constituents.

Additional constituents/parameters must also be considered as necessary to address the water quality conditions within the basin/sub-basin associated with salts and nutrients. Although it may not be appropriate to focus on specific constituents/parameters within a basin/sub-basin that do not pose a relative concern due to existing water quality and loading conditions, all constituents/parameters with numeric or narrative WQOs should be represented within the regional monitoring program. However, the sampling frequencies and densities for “low priority” constituents/parameters can be scaled accordingly. Monitoring programs must include monitoring of constituents of emerging concern (CEC) as appropriate pursuant to paragraph 10(b) of the Recycled Water Policy.[13]

[13] See section 6.b.(3)(b) of the Recycled Water Policy

Surface Water & Groundwater Interaction

The SNMPs need to clearly define and address the interrelationships between surface water and groundwater quality and quantity as part of the source loading, fate and transport, and antidegradation analyses such that the beneficial uses of both surface water and groundwater are considered and protected. In addition, consistent with section 6.b.(3)(a)(i) of the Recycled Water Policy, regional monitoring must also consider and be representative of surface water and groundwater connectivity (i.e., surface water and groundwater with significant connectivity must be targeted for monitoring as appropriate to document loading either to or from surface water).

Regional Monitoring Program

One of the primary components of the required SNMPs is the development and implementation of groundwater basin/sub-basin (i.e., regional) monitoring programs.[14] The Recycled Water Policy indicates salt/nutrient contributing stakeholders are responsible for conducting monitoring activities and compiling and reporting the resulting data for the regional groundwater monitoring programs. The Regional Water Board supports the development and implementation of sustainable, consistent, integrated, and coordinated regional groundwater monitoring programs in the Central Coast Region.

Compliance Monitoring Integration

Discharge compliance monitoring requirements should be integrated with ambient monitoring activities to effectively evaluate source (supply), discharge, and receiving water relationships. In many cases, participating SNMP stakeholders consist of local agencies or private entities that are subject to compliance monitoring requirements pursuant to Regional Water Board waste discharge requirements (WDRs or permits, including reclamation requirements and NPDES permits) for municipal or industrial discharges. Consequently, the Regional Water Board encourages participating SNMP stakeholders subject to WDRs to collectively propose modifications to their existing monitoring and reporting programs as part of the regional monitoring component of the pending SNMPs. Individual WDR-related monitoring programs can and should be modified to facilitate consistent, scientifically defensible, and cost-effective regional groundwater monitoring programs while also maintaining a sufficient level of individual discharger monitoring to document compliance with applicable WDRs.

Allowable modifications will generally be restricted to the following:

1. Development of basin/sub-basin consistent compliance monitoring requirements (i.e., monitoring parameters/constituents and frequencies for water supply, influent, effluent, and receiving water [groundwater and surface water]) for participating stakeholders

[14] Paragraph 6.b.(3)(a) of the Recycled Water Policy (http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/index.shtml)

subject to WDRs for similar types of discharges that are consistent with the regional groundwater monitoring program.

2. Elimination of groundwater sampling locations that provide redundant data or data of little scientific value with regard to compliance monitoring or regional monitoring (e.g., multiple monitoring wells within berms of treatment or disposal ponds that are essentially monitoring effluent conditions).
3. Reduction of sampling frequencies to levels commensurate with hydrogeological response times within groundwater while also sufficient enough to provide timely and ongoing compliance evaluations for applicable water quality objectives (e.g., reduction of sampling frequencies for deeper wells to annually or once every several years versus semiannual wet and dry season monitoring for shallow wells).

It is the Regional Water Board's intent that participating stakeholders utilize the potential cost savings associated with streamlining and integrating individual WDR-related compliance monitoring programs to help fund the regional monitoring programs. As such, consideration will be given to modified individual WDR monitoring programs that are integrated and consistent with and fund regional monitoring programs via regional cost sharing agreements while also facilitating a sufficient level of compliance monitoring for individual dischargers. Proposed modifications shall clearly identify and substantiate appropriate points of compliance (sampling locations) for individual discharges.

This effort is applicable to individual agricultural dischargers subject to the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R3-2012-0011, or Ag Order) that coordinate with a salt and nutrient planning stakeholder group via an approved cooperative monitoring and reporting program as allowed by the Ag Order. Finding number 13 of the Ag Order encourages agricultural dischargers to participate in regional or local groundwater monitoring efforts (e.g., SNMPs, IRWMPs, GAMA Program, etc.).

In addition, reductions in compliance monitoring requirements for participating stakeholders subject to NPDES permits will generally be restricted to groundwater monitoring and various influent, effluent, and surface water monitoring parameters and frequencies as allowable pursuant to applicable statutes and may be subject to EPA approval.

In some cases, landscape irrigation projects included within the SNMP that qualify for streamlined permitting per the Recycled Water Policy may not be subject to project/discharge specific groundwater monitoring requirements. However, the regional monitoring program must be designed to characterize water quality in the basin as a whole with an emphasis on areas of salt and nutrient loading or other critical areas.

Quality Assurance

The SNMP regional monitoring programs shall be accompanied by a sampling and analysis plan (SAP) and a quality assurance project plan (QAPP). The regional monitoring program and discharge-specific monitoring requirements shall be representative of basin/sub-basin specific hydrogeological and geochemical conditions and land use and recycled water use practices.

The parameters to be monitored should be reflective of the water quality conditions and applicable water quality objectives within a given basin or sub-basin. Per the Recycled Water Policy, monitoring for salt, nutrients and other constituents of concern identified in the SNMP will be required in all basins.[15] In addition, the regional monitoring program should consist of spatially distributed and depth discrete monitoring well networks as feasible to evaluate overall basin/sub-basin water quality and loading conditions. This includes an emphasis on shallow or first encountered groundwater to characterize more recent loading conditions.

Electronic Reporting

Consistent with an August 28, 2009 State Water Board Executive memorandum, Regional Water Board approval of SNMPs as implementation plans will be contingent in part on the electronic submittal of regional monitoring program data into the State Water Board's Groundwater Ambient Monitoring and Assessment (GAMA) Program GeoTracker information system via Electronic Deliverable Format (EDF). Although it may be required in the future, electronic reporting of data associated with individual WDR monitoring and reporting programs into GeoTracker is currently not required.

OWTS Policy Coordination

The *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Policy) was adopted by the State Water Board on June 19, 2012. The OWTS Policy includes some monitoring requirements, which should be considered in conjunction with the pending SNMPs to maximize the efficiency and coordination of sampling activities in areas affected by both policies.

CCAMP-GAP

The Regional Water Board recently approved the development and implementation of the Groundwater Assessment and Protection (GAP) module of the Central Coast Ambient Monitoring Program (CCAMP). One of the primary goals of GAP is to coordinate with local efforts to build on and develop regional monitoring programs. The SNMP process is one of those efforts and future funding may be available through GAP to help support and build on the SNMP regional groundwater monitoring programs.

Monitoring Program Submittal

Regional Water Board staff will be reviewing the regional groundwater monitoring programs as part of the SNMPs in preparation of the Regional Water Board's consideration of revised implementation plans based on the SNMPs. Please submit the proposed monitoring and reporting program modifications for individual facilities, or groups of facilities, as part of the pending SNMP regional monitoring program. In an effort to facilitate the timely review, Regional Water Board staff recommend you submit the proposed regional monitoring program and associated individual monitoring and reporting program modifications for review at least six months prior to submitting the complete SNMPs.

[15] Monitoring for contaminants of emerging concern (CEC) is required for recycled water groundwater recharge reuse (indirect potable reuse) projects pursuant to paragraph 10(b) of the Recycled Water Policy.

Basin Planning Process Considerations

The Recycled Water Policy indicates the Regional Water Board will consider SNMPs for incorporation into the Basin Plan by adopting them as implementation plans. The basin planning process associated with adopting a SNMP as implementation plans is a very time-consuming technical and public process with a high bar that requires an external scientific peer review and the stepwise review and approval by multiple agencies. In addition to meeting the criteria for an acceptable SNMP listed above and compliance with the Antidegradation Policy, CEQA and external scientific peer review requirements will need to be met for the Regional Water Board to consider individual SNMPs for adoption as implementation plans. Moreover, the SNMP will need to provide tangible regional-scale water quality benefits to warrant pursuing it as an implementation plan.

CEQA Requirements

The Recycled Water Policy requires that SNMPs comply with the applicable California Environmental Quality Act (CEQA) requirements. Additionally, the Policy specifies that stakeholders will fund SNMP development including any necessary analysis and documentation to comply with CEQA.

The Regional Water Boards' basin planning program is a certified regulatory program that requires the preparation of substitute environmental documents in lieu of negative declarations, mitigated negative declarations or environmental impact reports. The basin planning regulations are available at:

http://www.waterboards.ca.gov/laws_regulations/docs/regs011911.pdf.

Stakeholders should coordinate closely with Regional Water Board staff when developing CEQA documentation for the board's use.

Scientific Peer Review

Section 57004 of the California Health and Safety Code requires all Cal/EPA organizations to submit for external scientific review the scientific basis and scientific portion of all proposed policies, plans and regulations. The peer reviewer's responsibility is to determine whether the scientific findings, conclusions, and assumptions are based upon sound scientific knowledge, methods, and practices.

Three additional documents will be required as attachments to the SNMP to facilitate the external scientific review process. They include:

> Attachment 1 – A plain English summary of the SNMP.
>
> Attachment 2 – A description of the scientific portions of the SNMP, including a statement of the scientific findings, conclusions, and assumptions on which the scientific portions of the SNMP are based and the scientific data, studies, and other appropriate materials. This includes direct electronic links to all reference documents, or reference

document files and materials on CDs. Hard copies of documents containing complex maps and tables may also be required.

Attachment 3 - A list of all project participants, including Regional Water Board staff, academicians, consultants, and stakeholders.

Additional information regarding the Water Board's peer review process is available at:

http://www.swrcb.ca.gov/water_issues/programs/peer_review/.

Water Quality Benefit

Regional Water Board staff will consider the potential water quality benefits associated with adopting SNMPs as implementation plans relative to the significant effort and associated resources needed to adopt them. Subsequently, the Regional Water Board may not pursue the adoption of implementation plans via Basin Plan amendments for SNMPs that do not sufficiently address the most significant controllable sources of salt and nutrient loading within the SNMP area. Moreover, for areas where water quality has been degraded by controllable sources, the implementation plans should include feasible actions or projects to improve water quality to levels that protect present and anticipated beneficial uses (i.e., meet narrative or numeric WQOs associated with beneficial uses). The Regional Water Board will use the SNMPs to inform and streamline recycled water project permitting consistent with the intent of the Recycled Water Policy regardless of whether they are adopted as implementation plans.

Available Guidance Documents

There are a number of useful reference and guidance documents available via the following hyperlinks:

- State Water Resources Control Board – Recycled Water Policy
- Regional Water Board Assistance in Guiding Salt and Nutrient Management Plan Development in the Los Angeles Region – June 28, 2012
- Central Coast Regional Water Quality Control Board – Salt and Nutrient Management Planning
- U.S. Geological Survey, Water-Resources Investigations Report 03-4166; Framework for a Ground-Water Quality Monitoring and Assessment Program for California

In particular, Regional Water Board staff encourages the use of the U.S. Geological Survey report, "Framework for a Ground-Water Quality and Assessment Program for California," as a resource when developing the regional monitoring program.

EXHIBIT B – RWQCB Presentation – "Regional Salt and Nutrient Planning - Doing the Work"

Regional Salt and Nutrient Planning

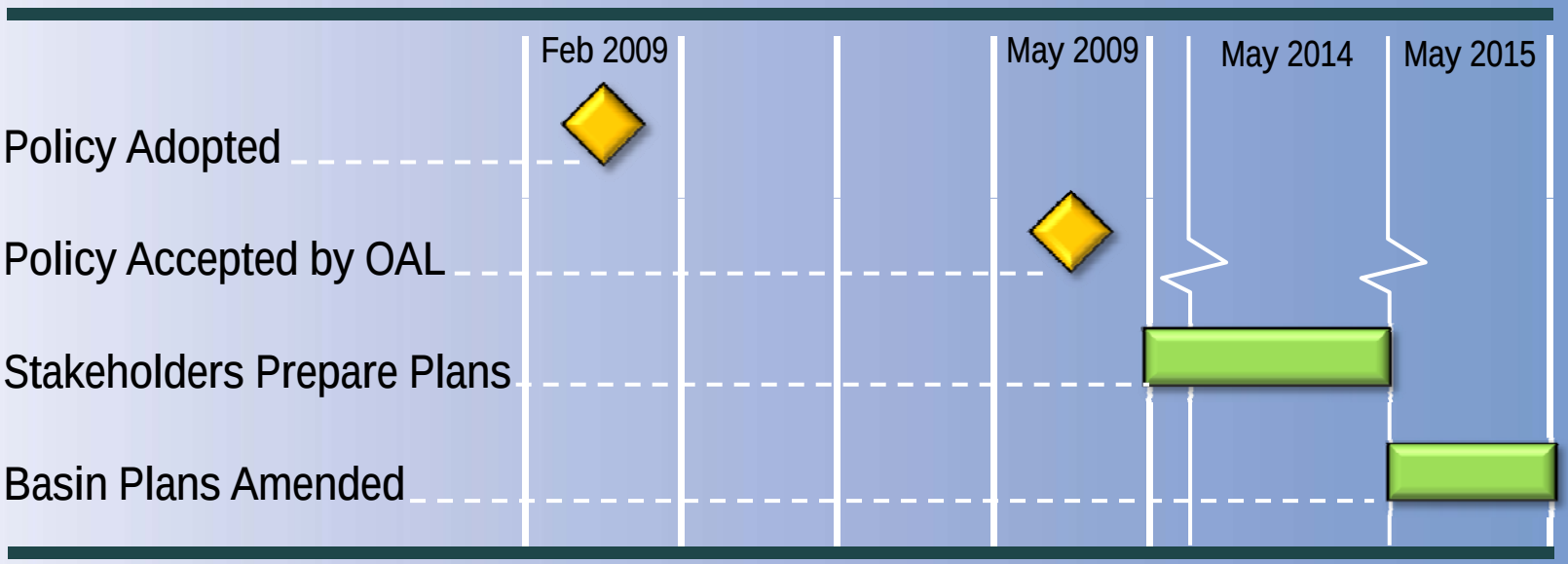
Doing the Work

The Recycled Water Policy outlined a structure that balanced water quality and water supply

Intent	How it Manifested
Stakeholders committed to quality & quantity	Develop shared goals & mandates for recycled water supply
Water Boards responsible for water quality	Require Water Quality Impact Analysis for Basin or Sub-basin
CDPH responsible for public health	Convene expert panel on CECs to propose recommendations

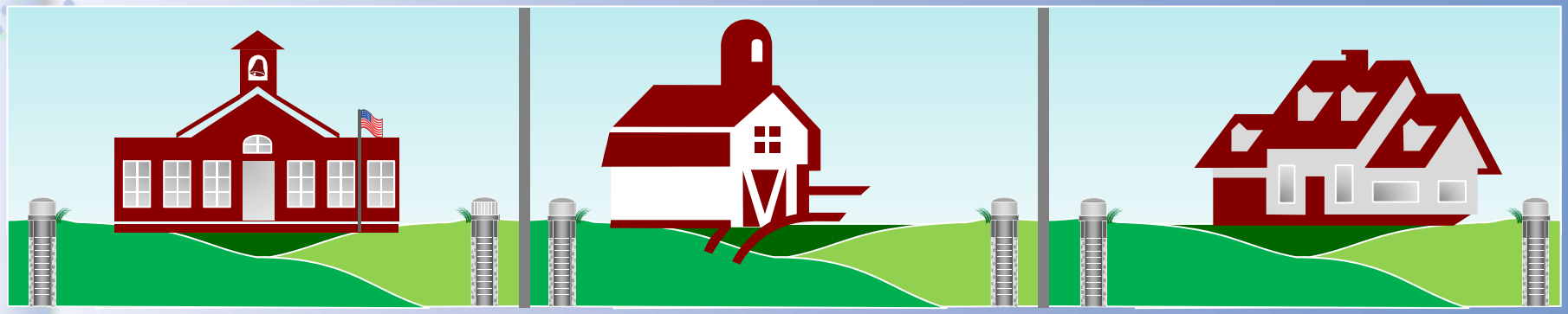
The Policy anticipated adaptive-management through regional salt and nutrient plans

“Stakeholders” have 5 to 7 years to prepare these plans

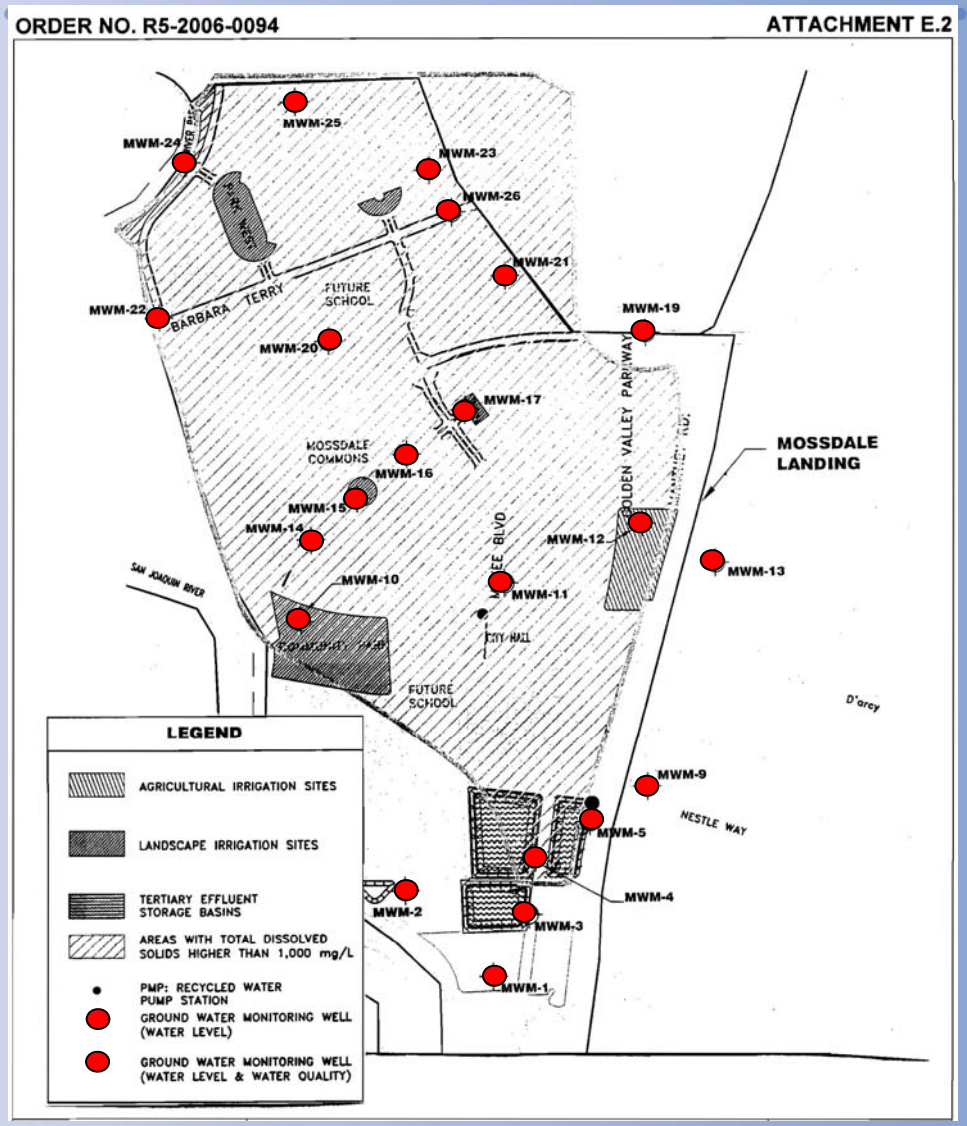


What happens if we don't do this?

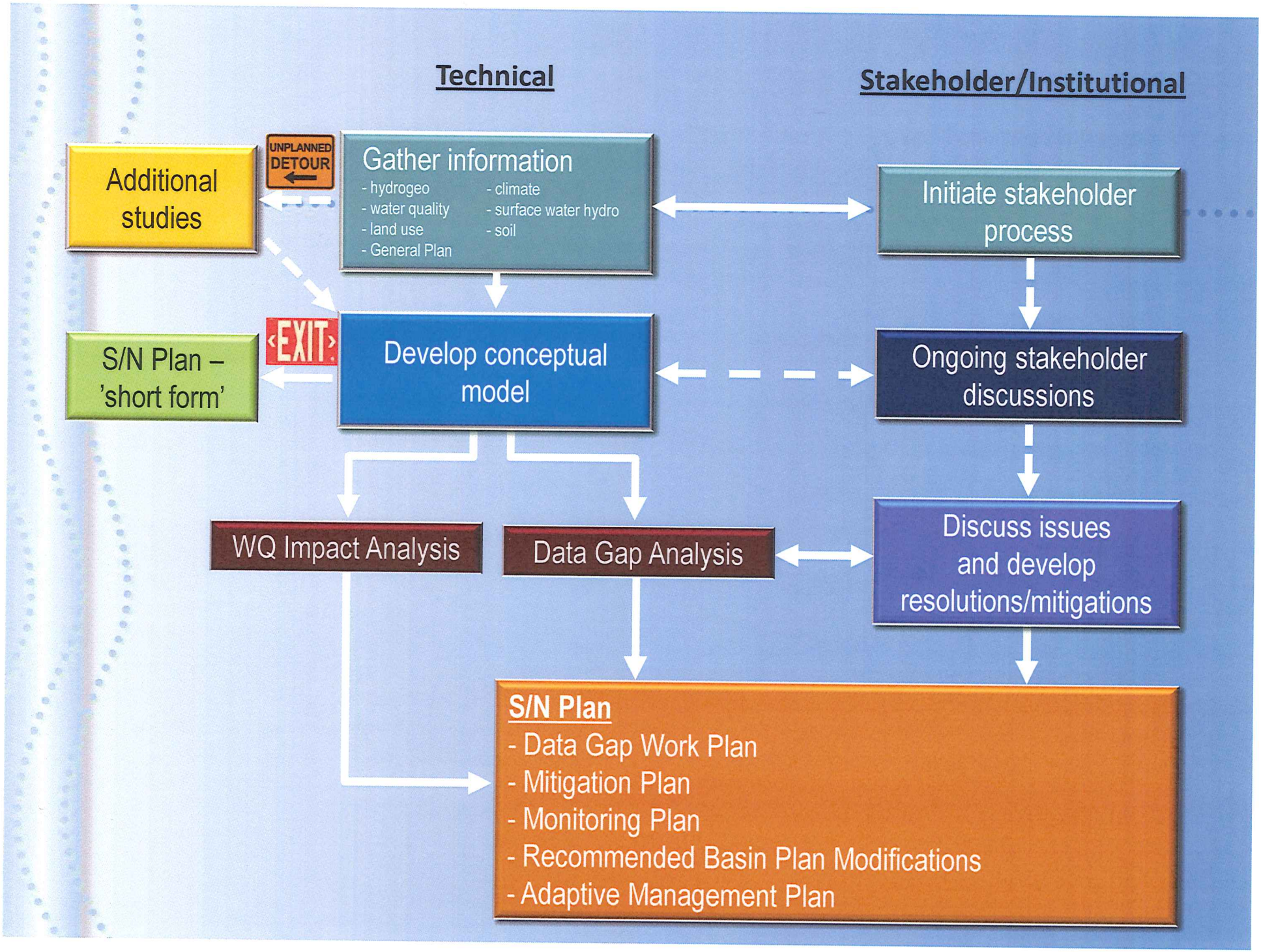
- Back to 'Square 1'
  - Each individual project separately permitted
  - Individual monitoring programs
  - Sole mitigation requirements
- Lose opportunity for regional salinity management
- Lose link between recycled water and sustainability



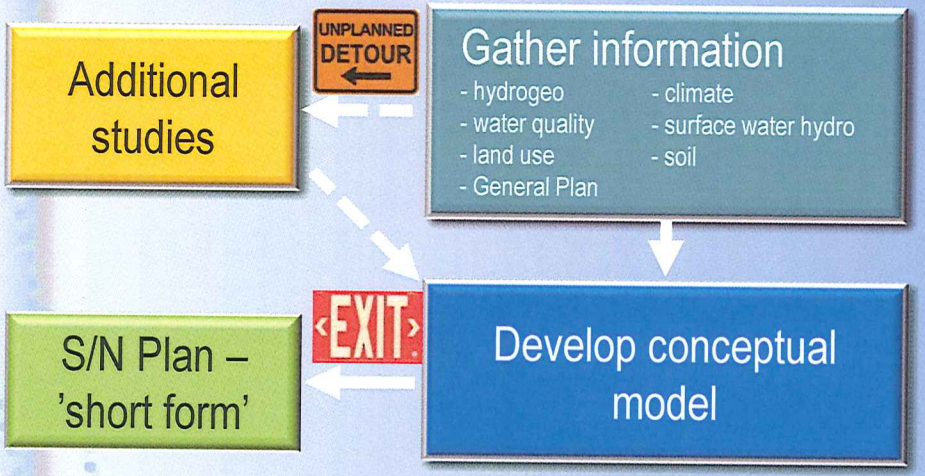
Here's an example of 'monitoring well madness'



So, What Do We Do Next?


Technical
Stakeholder/Institutional
Additional studies
UNPLANNED DETOUR
Gather information
- hydrogeo
- water quality
- land use
- General Plan
- climate
- surface water hydro
- soil
Initiate stakeholder process
S/N Plan – 'short form'
EXIT
Develop conceptual model
Ongoing stakeholder discussions
WQ Impact Analysis
Data Gap Analysis
Discuss issues and develop resolutions/mitigations
S/N Plan
- Data Gap Work Plan
- Mitigation Plan
- Monitoring Plan
- Recommended Basin Plan Modifications
- Adaptive Management Plan

The First Step – Conceptual Model Development



- Understand the regulatory context
- Understand your basin
- Understand all current and potential future basin uses
- Be prepared to adjust basin management strategy and regulatory context to work better together

Understand the Regulatory Context

- Basin Plan
  - Defined Beneficial Uses
  - Numeric Objectives (if any)
  - Narrative Objectives (why these matter)
- Other special requirements
  - Habitat Plans
  - Special basin needs

Understand the Basin

- Hydrogeology/Aquifer Uses
- Soil Types
- Climate
- Land Uses
- Water Balance
- Water Quality
- Salt & Nutrient Balances
- Dominant Transport Pathways

Understand Current and Future Basin Uses

- Current land uses contributing to salt and/or nutrient loading
- Foreseen changes in land use
- Proposed future development/industries that could contribute to salt and/or nutrient loading
- Economic and political implications of changing proposed future projects
- Proposed or possible recycled water projects

Tools for Defining the Basin

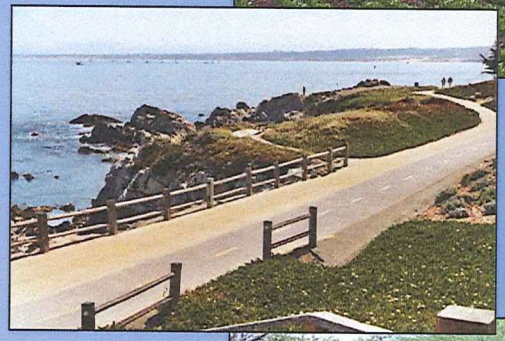
- Your Basin Plan,
- DWR Bulletin 118
- Watershed lines
- USGS and CDMG Reports
- Groundwater Management Plans
- Soil Reports
- Consumer Confidence Reports (water quality)
- Annual drinking water quality reports
- Other local documents

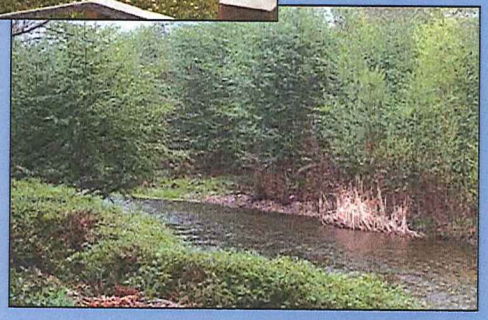
Case Study of Additional Data Gathering – San Ramon Valley Groundwater Basin

- East Bay valley with groundwater-bearing alluvial deposits
- Little groundwater use in the basin
- No published data available on water quantity, quality, or use/production
- No Groundwater Management Plan
- Solution: Collect data necessary to prepare basin-wide water, salt and nutrient balances

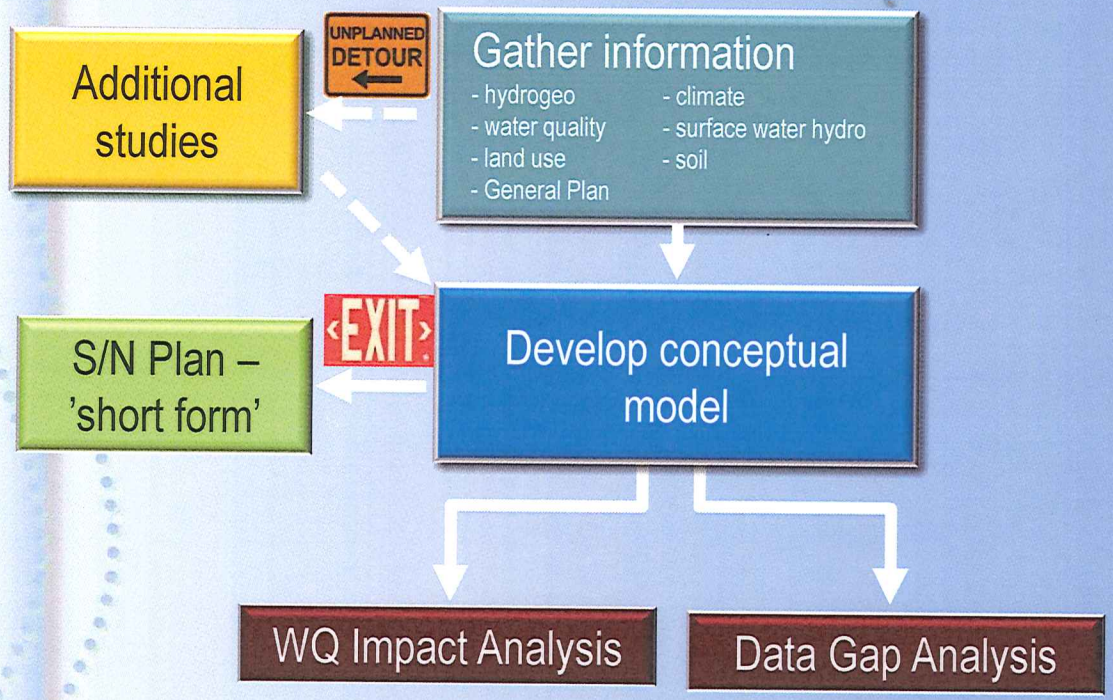
Case Study of an Early Exit Strategy - Marina, California

- Salinas Valley Groundwater Basin
  - A Aquifer – unused due to water quality and quantity
  - Salinas Valley Aquitard
  - 180-Foot Pressure Aquifer
  - 400-Foot Pressure Aquifer
  - Deep Aquifer
- Basin designated as municipal supply
- Potential Solution: Obtain variance/letter of concurrence regarding no anticipated impacts





The Second Step – Water Quality Impact Analysis and Data Gap Analysis



- Part of State Policy for water quality control
- Applies to high quality waters only
- Requires existing high quality be maintained to maximum extent possible
- Allows lowering if consistent with maximum benefit to people of the state

Factors that matter in a Water Quality Impact Analysis

- Constituent-by-constituent analysis
- Requires determination of groundwater as 'high quality'
- Determine if activity will lower existing high water quality

Preparing a Water Quality Impact Analysis and Data Gap Analysis

- Prepare Water and Constituent Balances
  - Salt
  - Nutrients
  - Other
- Compare against regulatory objectives
- Evaluate land use impacts on current and future groundwater quality
- Identify areas where more information is needed

What about CEQA?

- S/N Plan would amend the Basin Plan
- Basin Plan Amendments are a Certified State Regulatory Program - exempt from preparing a Negative Declaration or EIR [Guidelines Section 15251(g)]
- Proposed Basin Plan Amendment must still:
  - Evaluate environmental impacts
  - If significant adverse impacts, then adopt feasible alternatives or mitigation measures to reduce impacts
  - Comply with noticing requirements (PRC 21080.5)

Case Study: Salt Management Plan – Chino Basin

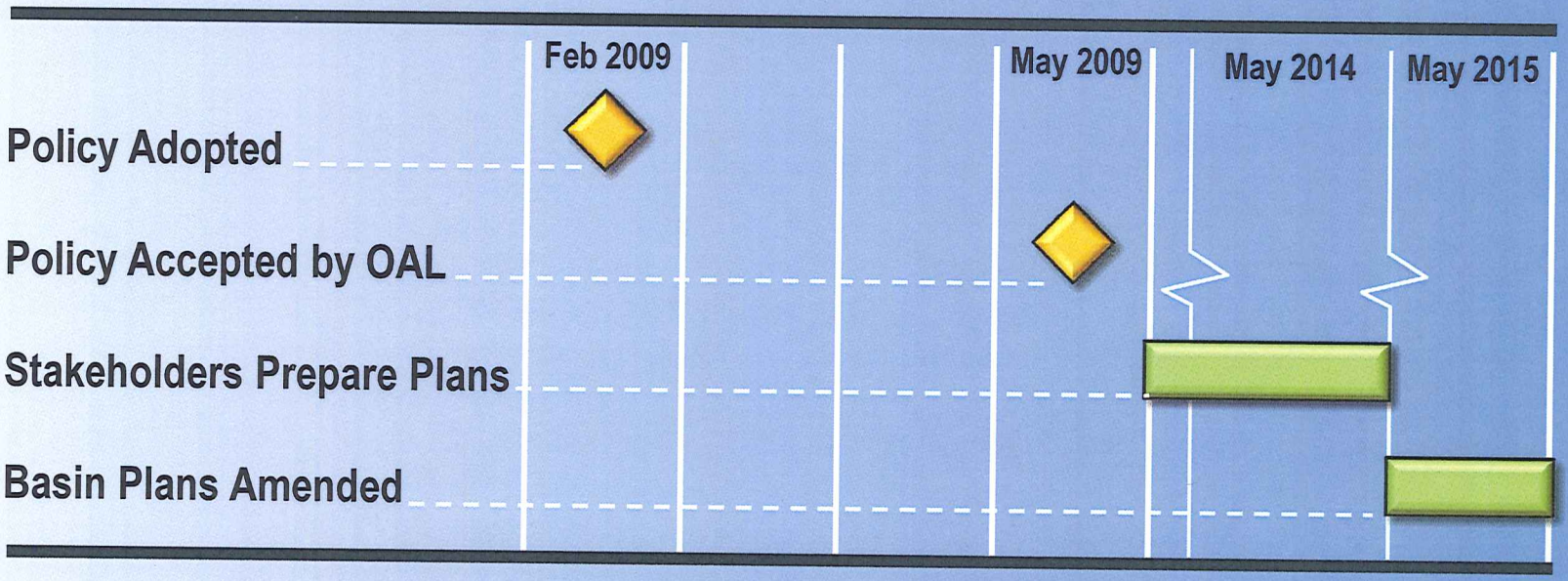
- Developing Optimum Basin Management Program (OBMP)
- Managed by Water Master
- Elements included in plan:
  - Comprehensive groundwater monitoring program
  - Groundwater Management Plan
  - Salt Management Program
    - Cooperative effort with Santa Ana RWQCB
    - Investigating/remediating legacy plumes
    - Includes TDS and nitrogen monitoring of both groundwater and surface water pursuant to 2004 Basin Plan Amendment
    - Actively desalting groundwater and stormwater

And there's still this side of the chart

Tools for gathering stakeholders:

- Existing interest groups
- UWMP coordination process
- AB 3030 (GWMP) process
- Let the Regional Board do it

"Stakeholders" have 5 to 7 years to prepare these plans



So What Should that Schedule Really Look Like?

- Gather Data and Stakeholders – 6 to 9 months
- Define Purpose and Need – 2 additional months
- Analyze Data – 3 to 4 months
- Early Exits – within 1 year
- Additional Data Gathering and Analysis – 9 months to 2 years
- Refine Conceptual Model – 6 months
- 68-16 Analysis – 6 months
- Complete Plan – 6 to 18 months
- Total Time – 3 to 6 years

EXHIBIT B – Paso Robles SNMP

This is an example of an SNMP Table of Contents for the Paso Robles Groundwater Basin. Interested Stakeholders are encouraged to review the final SNMP as an example of process taken and final plan: http://pr.saltnutrient.com/

Salt/Nutrient Management Plan for the Paso Robles Groundwater Basin

Final Report

Prepared by:

May 2015

This page intentionally left blank.

Table of Contents

List of Tables

List of Figures

Appendices

List of Abbreviations

Act	Sustainable Groundwater Management Act
AF	Acre-feet
AFY	Acre-feet per year
AMWC	Atascadero Mutual Water Company
Basin	Paso Robles Groundwater Basin
Basin Plan	Water Quality Control Plan for the Central Coastal Basin
Basin Study	Paso Robles Groundwater Basin Study
bgs	Below ground surface
BMO	Basin management objectives
BMP	Best Management Practice
CCGC	Central Coast Groundwater Coalition
CCRs	California Code of Regulations
CCRWWCB	Central Coast Regional Water Quality Control Board
CEC	Constituents of emerging concern
CIMIS	California Irrigation Management Information System
CSA	County Service Area
CSD	Community Service District
DDW	Department of Drinking Water
DWR	Department of Water Resources
ETo	Evapotranspiration
GAMA	Groundwater Ambient Monitoring & Assessment Program
GIS	Geographical Information System
gpd	Gallons per day
gpm	Gallons per minute
GSAs	Groundwater Sustainability Agencies
GSPs	Groundwater Sustainability Plans
GWMP	Groundwater Management Plan
IRWM	Integrated Regional Water Management
LID	Low impact development
MCLs	Maximum contaminant levels
mg/L	Milligram per liter
mgd	Million gallons per day
N	Nitrogen
NPDES	National Pollutant Discharge Elimination System
NWP	Nacimiento Water Project
PRGMP	Paso Robles Groundwater Management Plan
RWMP	Recycled Water Master Plan
RWQCB	Regional Water Quality Control Board
S/Ns	Salt and nutrients
Selby Ponds	Selby Percolation Pond Site
SNMP	Salt and Nutrient Management Plan
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TM	Technical Memoranda
USGS	United States Geological Survey
VOC	Volatile organic compounds
WQO	Water Quality Objective

EXHIBIT B – Online Resources and Information

Recycled Water Policy and Other Documents
http://www.swrcb.ca.gov/water_issues/programs/water_recycling_policy/index.shtml

Policy Intent
http://www.waterboards.ca.gov/rwqcb3/water_issues/programs/nutrient_mgmt/docs/policy_intent.pdf

Implementing an SNMP
http://www.waterboards.ca.gov/centralcoast/water_issues/programs/nutrient_mgmt/docs/sn_plan_do_the_work.pdf

Example of a Completed SNMP – Paso Robles Groundwater Basin
http://pr.saltnutrient.com/