Salt & Nutrient Management Plans and Basin Plan Amendments for San Fernando Valley Groundwater Basin

Rebecca Christmann
Water Resources Control Engineer
Regional Water Quality Control Board
Los Angeles Region

September 16, 2010
Introduction

- Need for Salt and Nutrient Management
  - To optimize recycled water use
  - To protect groundwater supply and beneficial uses
  - To protect agricultural beneficial use and
  - To protect human health
Introduction

- Salt & Nutrient Management Plans required by the Recycled Water Policy
  - Basin-wide approach to groundwater management
  - Stakeholders to develop implementation plans for meeting objectives for salts and nutrients.
  - Implementation plans to be adopted by Regional Water Boards as Basin Plan Amendments.
  - Completion by 2014 - 2016
Introduction

- What if basin-wide Salt & Nutrient Management Plans are not completed?
  - Individual monitoring programs for each recycled water project
  - Sole mitigation requirements
  - Lose opportunity for regional salinity management
  - Stakeholders loss opportunity to control regional salinity management
Overview of Presentation

- Elements of Salt & Nutrient Management Plans
- Groundwater Basin Data
- Basin Planning Process
- Funding
Salt & Nutrient Management Plan: Required Elements

- Basin-wide Monitoring Plan
  - Assess basin groundwater quality
  - Constituents and frequency
  - Monitor groundwater and surface water connectivity
  - Identify responsible stakeholders

- Provision for monitoring constituents of emerging concern (CECs) in recycled water
Salt & Nutrient Management Plan: Required Elements

- Water Recycling and Stormwater Recharge/Use Goals and Objectives
- Salt/Nutrient Source Identification, Basin/Sub-Basin Assimilative Capacity, Loading Rates, Fate and Transport of Salt and Nutrients
- Implementation Measures to Manage Salt and Nutrient Loading
- Antidegradation Analysis
Salt & Nutrient Management Plan: Suggested Elements

- Groundwater Basin Overview
  - Physiographic description
  - Groundwater basin identification and boundaries
  - Watershed boundaries
  - Geology
  - Hydrogeology/Hydrology
  - Recharge areas
  - Climate
  - Landcover and landuse
  - Water sources
Salt & Nutrient Management Plan: Suggested Elements

- **Basin Water Quality**
  - Groundwater quality: Past and present
  - Beneficial uses
  - Surface water quality: Effect on groundwater
  - Delivered water, imported water, and recycled water

- **Basin Water Balance**
  - Conceptual model
  - Basin inflow and outflow
Salt & Nutrient Management Plan: Suggested Elements

- Salt and Nutrient Balance
  - Conceptual model
  - Source identification
  - Loading estimates
  - Basin assimilative capacity
  - Fate and transport of salt and nutrients
Salt & Nutrient Management Plan: Suggested Elements

- Salt and Nutrient Management Strategies
  - Load reduction goals
  - Changes in land development and use
  - Salt and Nutrient management options
    - Feasibility analysis
    - Cost analysis
Salt & Nutrient Management Plan: Additional Elements

- The need for additional studies will be dictated by the complexity of the basin
  - Type and number of sources of salts and nutrients
  - Quantity (load) of salts and nutrients discharged
  - Impairments and/or threats to groundwater quality and beneficial uses
  - Data gaps
Next Up...

- Groundwater Basins
Los Angeles Region
Groundwater Basins

- Eleven major basins identified by hydrographic area (Central, West, San Gabriel, San Fernando, Las Posas, Santa Monica, Raymond, Pleasant Valley, Hollywood, Ventura, Santa Clara)
- Thirty three basins and sub-basins within the Los Angeles Region (DWR Bull. 118)
FIGURE 1-9
REGIONAL GROUNDWATER BASINS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION (4)

REGIONAL BOUNDARY

NOTE: THIS FIGURE SHOWS ONLY MAJOR GROUNDWATER BASINS IN THE LOS ANGELES REGION. DESIGNATIONS OF BASINS CONFORM TO CA DEPARTMENT OF WATER RESOURCES DESIGNATIONS (1980)

Miles
0 10 20
Groundwater Beneficial Uses

- **Las Posas Valley**: MUN, IND, PROC, AGR
- **Pleasant Valley**: MUN, IND, PROC, AGR
- **Raymond**: MUN, IND, PROC, AGR
- **San Fernando**: MUN, IND, PROC, AGR
- **San Gabriel**: MUN, IND, PROC, AGR
- **Santa Clara**: MUN, AGR
- **Ventura**: MUN, IND, PROC, AGR
- **West/Central/Hollywood/Santa Monica**: MUN, IND, PROC, AGR
Limitations on Quality

- **Central and West**: Seawater Intrusion
- **San Gabriel**: Nitrate, VOC, Superfund Site
- **San Fernando**: Nitrate, VOC, PCE, Sulfate, Metals, Superfund Site
- **Raymond**: Nitrate, VOC, Superfund Site
- **Santa Clara**: Salts, Nutrients
DRAFT
For Discussion Only

Site Cleanup Program
Case Locations
January 2010
Next Up...

- Basin Plan Amendments
Basin Plans – Brief Overview

- Regional Water Quality Control Plan = Basin Plan
- 10 Regional Water Quality Control Plans
  - 9 Regions in California
  - Central Valley Water Board has 2 Plans
    - Central Valley and Tulare Lake
- Salt and Nutrient Management Plans will be incorporated into the Basin Plan
Basin Plans – Brief Overview

- Basin Plans are adopted as regulations
  - They have the force and effect of law.
- Basin Plans must be reviewed “from time to time”
- Basin Plans may be revised
- Basin Plan Revisions must be done in accordance with State and Federal Laws
- Basin Plans apply to both surface and ground water in California
Basin Plans – Brief Overview

- Basin Plans consist of a designation or establishment for the waters within a specified area of the following:
  1. Beneficial uses to be protected.
  2. Water quality objectives.
  3. A program of implementation needed for achieving water quality objectives – including monitoring and surveillance
Statewide Consistency for Basin Plan Amendments

- Documents designed to accommodate range of Basin and Salt & Nutrient plan complexity
  - Can accommodate additional water quality issues
- Documents include:
  - Standardized basin plan list of ground water basins and associated beneficial uses
  - Basin plan amendment in table format
  - Environment analysis check list
  - Regional Water Board Staff Report format
  - Suggested Salt & Nutrient Plan table of contents
Basin Plan Amendments for Salt and Nutrients

- Envision three types of Basin Plan Amendments, characteristics include:
  - **Big Plan**-basin large in size, complex land-use, heavily used, water quality threatened
  - **Limited Plan**-basins with less extensive water quality limitations not currently used as a source of water
  - **No Threat Plan**-basins with minimal or no known current threat to water quality-address all within a Region with single basin plan amendment
Next Up...

- Funding
Funding

- State Water Board working with DWR on Integrate Regional Water Management Grant-Prop 84 guidelines language
- $870 million implementation, $30 million in planning funds to update 46 IRWM Plans
- State Water Board will send letter to IRWM Regions asking them to support S/N Planning
- S/N Stakeholders need to work with IRWM Regions to update Plans to incorporate S/N Planning Language
Prop 84 Requirements

- Eligible projects must:
  - Implement an IRWM Plan
  - Be consistent with an adopted IRWM Plan or its functional equivalent
  - Provide multiple benefits

- Draft guidelines can be found at:
  - http://www.water.ca.gov/irwm/integregio_new10.cfm
Prop 84 Requirements Related to S/N Plans

- Eligible projects must include one or more of the following project elements:
  - Storm water capture, storage, clean-up, treatment, and management
  - Groundwater recharge and management projects
  - Contaminant and salt removal through reclamation, desalting, and other treatment technologies and conveyance of reclaimed water for distribution to users
Prop 84 Requirements Related to S/N Plans

- Eligible projects must include one or more of the following project elements (cont.):
  - Water banking, exchange, reclamation and improvement of water quality
  - Planning and implementation of multipurpose flood management programs
Questions

- Rebecca Christmann
  - rchristmann@waterboards.ca.gov
  - (213) 576-6756

- DWR Bulletin 118