

Salt and Nutrient Management Planning

Stakeholder Workshop No. 2 Draft Workplan Development

Presenters
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September 26, 2012

*Innovative Solutions for
Water and the Environment*

Agenda

- IRWMP Background
- Why Salt Nutrient Management Plans?
- Progress to Date
- SNMP Workplan Elements
- Next Steps

Key Questions to be Covered/Discussed

- What type / level of model is needed?
- Correct approach on salt/nutrient loading analysis?
- Do we need to supplement data now to proceed?
- What future projects to include in workplan?
- What current or potential future implementation strategies should be considered in workplan?

IRWMP Background

- Update of Integrated Regional Water Management (IRWM) Plan
- Technical Tasks
 - DAC Water Quality
 - Integrated flood planning
 - Groundwater elevation monitoring
 - Salt and Nutrient Planning

Why Salt Nutrient Management Plans?

- Original Recycled Water Policy rejected
- Stakeholders prepared proposed policy
- State Adopted 2009 Recycled Water Policy
- Implementation
 - Review Report by State Board EO
 - Schedule through 2014
 - Stakeholder driven plans
 - Some will amend Basin Plans
- Lack of compliance could mean lack of funding

State Board Recommended Timeline

Milestone	Target Date
Identification and notification of stakeholders	October 2010
Regional Water Board meeting or workshop with stakeholders	November 2010
Identification and prioritization of basins/sub-basins	January 2011
Identification of salt/nutrient sources	June 2013
Compilation of existing basin specific data, including groundwater monitoring data	June 2013
Collection of additional data necessary to complete the develop the plan	June 2013
Completion of draft salt/nutrient management plan	December 2013
Completion of draft CEQA documents	December 2013
Anti-degradation analysis	December 2013
Opportunities for public comment	
Submittal of the completed salt/nutrient management plan to the Regional Water Board	By May 2014
Regional Water Board adopts plan	By May 2015
Regional Water Board submits administrative record to the State Water Board	Within 2 months of adoption
State Water Board approves BPA	Within 4 months of receipt
State Water Board submits administrative record to Office Of Administrative Law	With 2 months of adoption
Office of Administrative Law approves BPA	30 working days after State Water Board submittal

Progress to Date

- Initial discussions on approach/direction held with CVRWMG
 - Layout of workplan
 - Initial questions and key considerations discussed
- Met with RWQCB to gain their perspective
 - Scale of SNMP
 - Process
- Initial Stakeholder workshop held on August 22nd
 - Review background, purpose, and key elements of SNMP
 - Discuss local water setting and key concerns
 - Review draft workplan and discussion on key topics

SNMP Planning Phases

Public Scoping

**Currently
Contracted**

Work Plan Development

Regional Board Approval

SNMP Technical Studies/Plan

SNMP Documentation/Approvals

Implementation/Monitoring

Future Work

Elements of Salt Nutrient Management Plans



Elements of Salt Nutrient Management Plans



Stakeholder Process

- Who is missing?

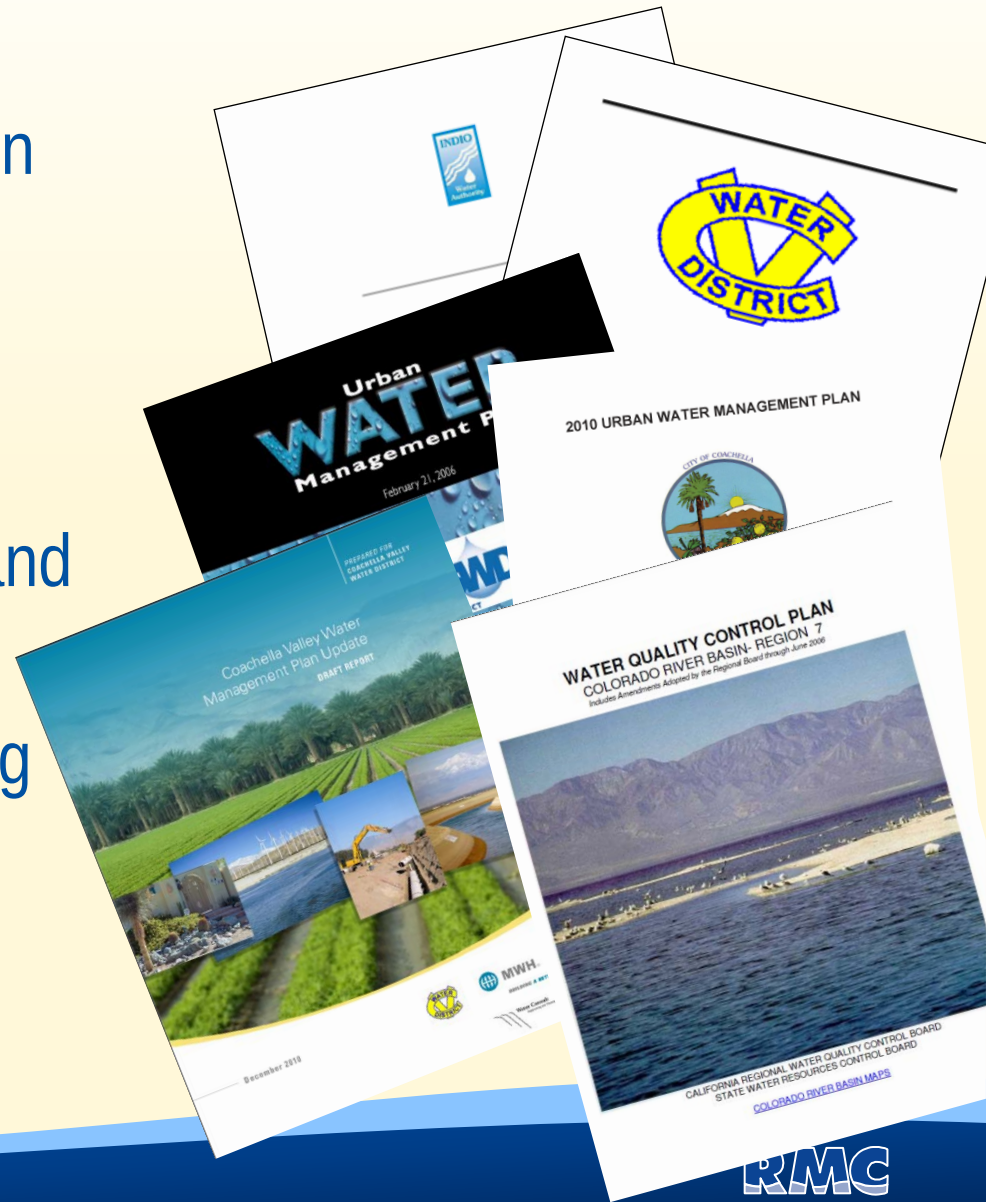
Affiliation	Contact Name
29 Palms Tribe	Marshall Cheung
Agricultural Sector	Peter Nelson
Agua Caliente Tribe	Margaret Park
Augustine Tribe	
Cabazon Tribe	
City of Palm Springs	David Barakian
Coachella Valley Water District	Steve Bigley
Coachella Valley Water District	Olivia Bennet
Coachella Water Authority / Sanitation District	Jerry Jimenez
Consultant Team	Daniel Cozad
Consultant Team	Scott Lynch
Desert Water Agency	Mark Krause
Friends of the Desert Mountains	Buford Crites
Hi-Lo Desert Golf Course Superintendent's Association	Stu Rowland
Indio Water Authority	
Mission Springs Water District	Mike Thornton
Morongo Tribe	
Myoma Dunes Mutual Water Company	Mark Meeler
NGOs??	
Regional Water Quality Control Board	Jon Rokke
Regional Water Quality Control Board	Abdi Haile
Riverside County Executive Office	Mike Shetler
Riverside County Flood Control and Water Conservation District	Jason Uhley
Riverside County Flood Control and Water Conservation District	Scott Bruckner
Salton Community Services District	Rosa Reagles
Torres-Martinez Tribe	Debi Livesay
Valley Sanitary District	Joe Glowitz

Elements of Salt Nutrient Management Plans



Conduct Basin Characterization

- Identify and delineate basin
- Collect data and previous studies
- Document beneficial uses
- Characterize GW quality and supplies
- Review/summarize existing monitoring programs



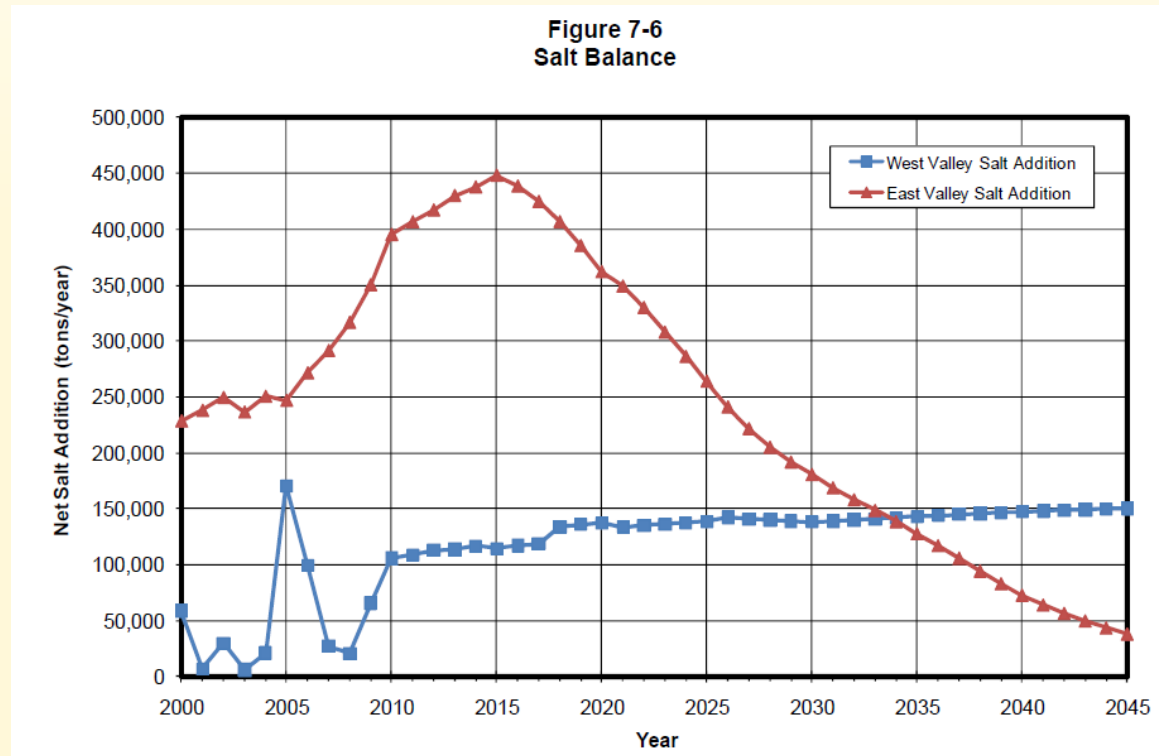
Conduct Basin Characterization

- Review water quality objectives and narrative standards (Review here, establish later...)
- Identify salinity, nutrients, and other constituents of concern
- Identify potential data gaps

Question: Other constituents of concern?

Salt and Nutrients

- Recharge activities & human uses are contributing to long-term increase in salinity
- Nutrients:
 - Narrative
 - Location specific



Basin Characterization – How?

- Basin model(s):
 - Establish current conditions
 - Later
 - Project current plans/projects
 - Conduct anti-degradation analysis
 - Confirm implementation strategies
 - Help identify future monitoring needs

Basin Characterization – How?

Questions:

- What type / level of model is needed?
 - Mass balance and fate-transport models?
 - Will mass balance model alone suffice?
- Depends on:
 - What questions are being answered?
 - What is the level of effort required?
 - Basin-wide vs. sub-basin level needs
 - Nature and Extent of the potential degradation: How bad will it get?

Keep in mind: Circle back to this topic later.

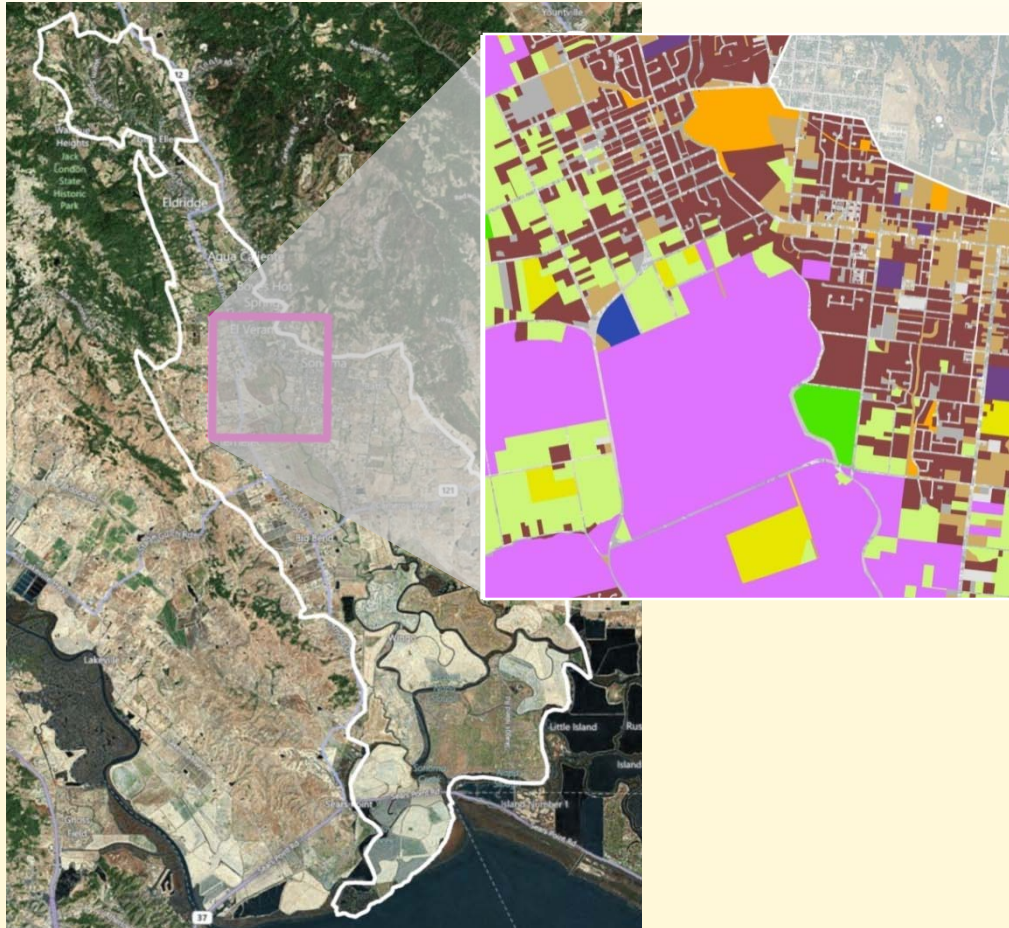
Elements of Salt Nutrient Management Plans



Identify Salt / Nutrient Loading and Trends

- Conduct source identification
- Quantify salt/nutrient inputs to basin
- Land use based
- Consider current and future landuses and projects
- Conduct loading and assimilative capacity analyses
 - What is common approach?
 - Spatial relationship model: GIS and/or Excel tools

Loading Approach Utilizes Land Uses



List of Landuse

- Agricultural Commodities
- Apartments

Loading Landuse

- Dairy
- Golf
- Irrigated Agriculture
- Irrigated Vine
- Non-Residential Urban
- Non-irrigated Agriculture
- Parks and Camps
- Residential
- Rural Residential
- Schools
- Vacant Commercial/Industrial
- Vacant Residential
- Water

- Mineral Processing
- Miscellaneous Commercial Spaces
- Miscellaneous Industrial
- Motels
- Non-irrigated Vineyards
- Nurseries
- Office Buildings
- Orchards
- Orphanages
- Outdoor Recreational Facilities (Private)

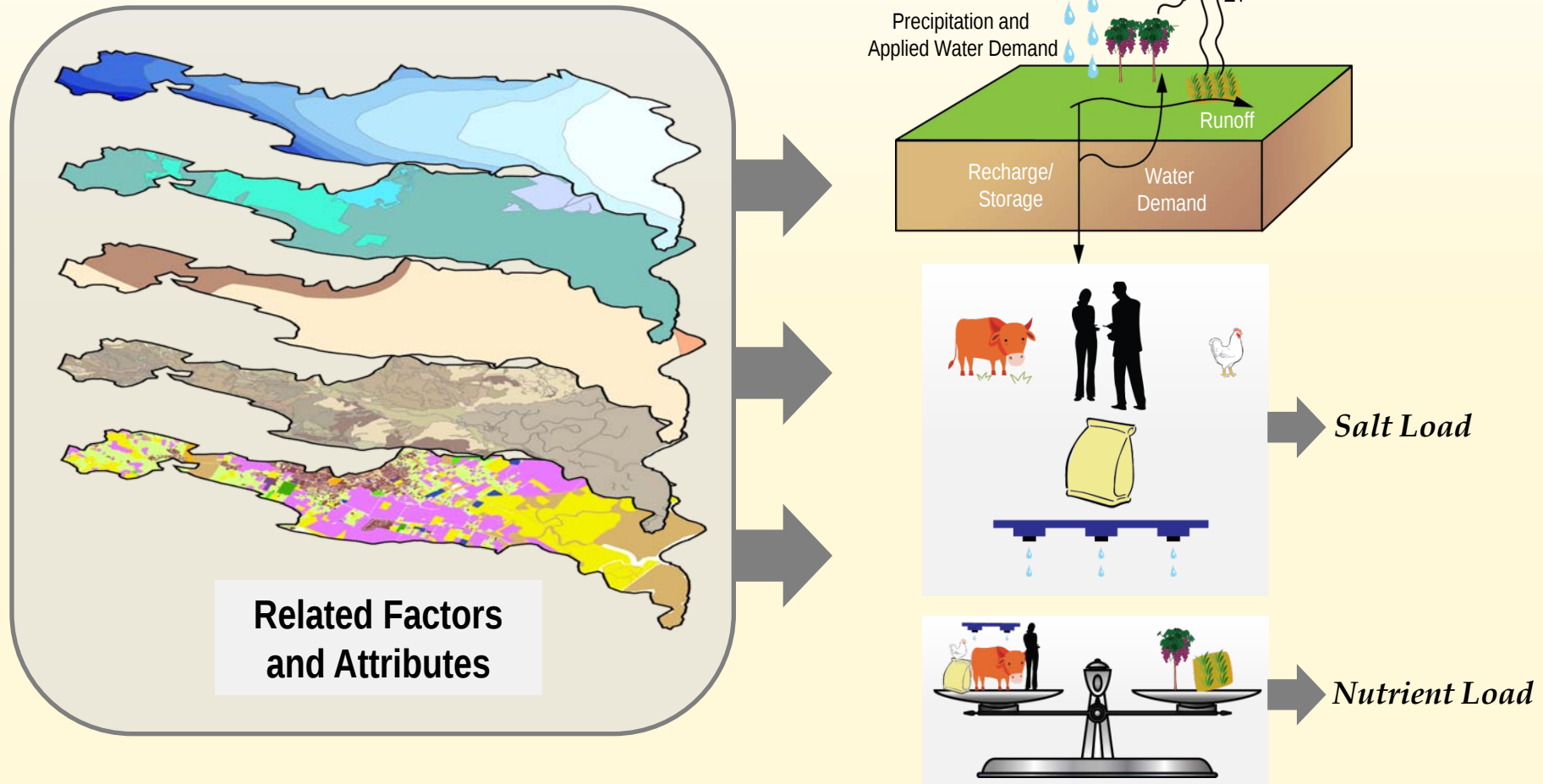
- Park (Private)
- Park/Other Recreational Facility (City)

Landuse Factors

- Crop Coefficient
- Irrigation
- Fertilizer/Amendment (Salts)
- Livestock (Salts)
- Fertilizer/Amendment (Nutrients)
- Livestock (Nutrients)
- Uptake/Offtake (Nutrients)
- Other losses (Nutrients)
- Municipal Inputs (Salts)
- Municipal Inputs (Nutrients)

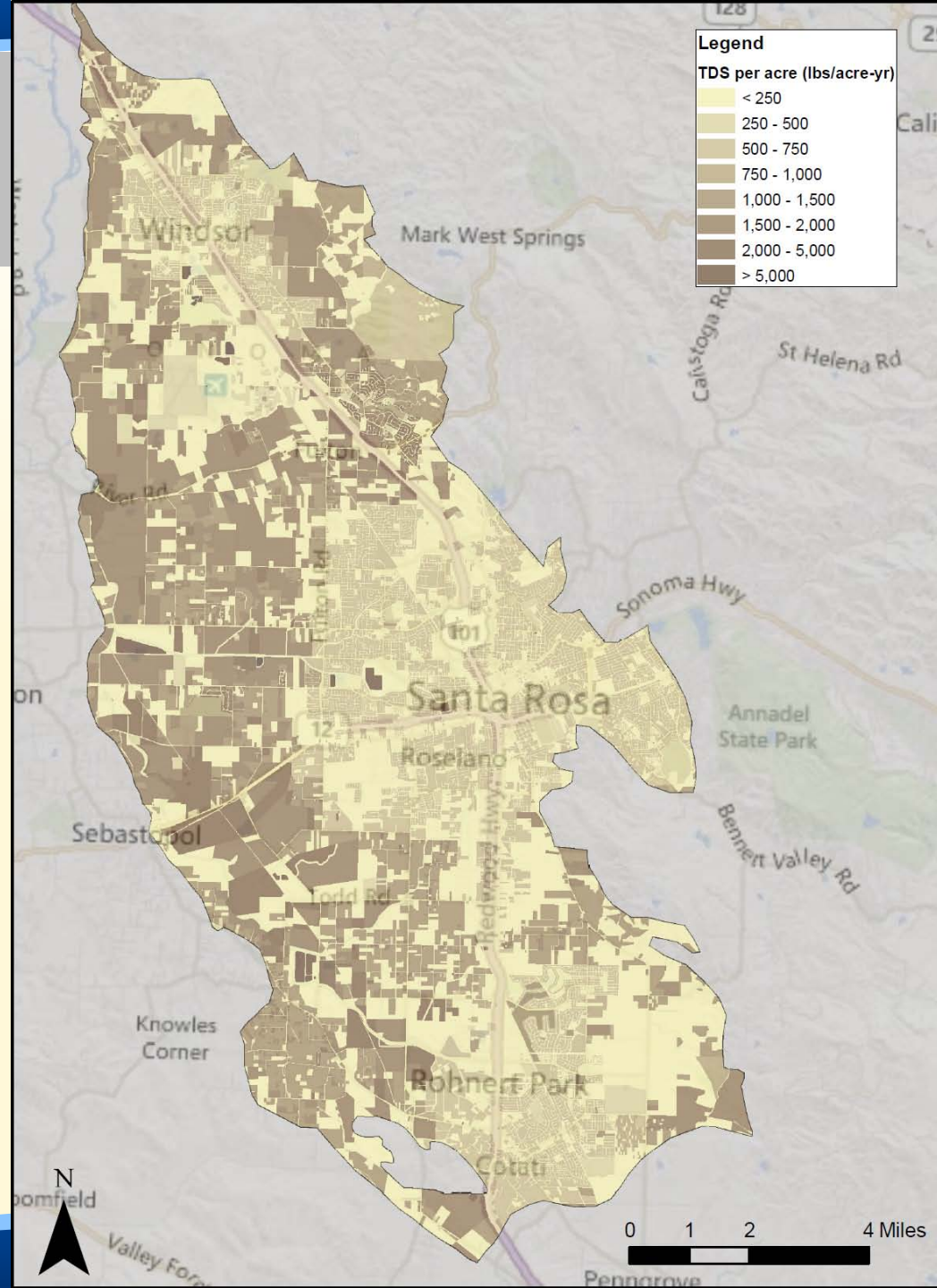
- Transitional Use
- Utilities
- Vacant Commercial Land
- Vacant Industrial Land
- Vacant Residential Land
- Volunteer Fire Departments
- Warehouses
- Wastelands
- Water Sources

Basin Characteristics Are Analyzed to Yield Load Estimates



Outcome:
Relative loading on a
parcel basis - TDS

Question:
Is this the right approach?



Elements of Salt Nutrient Management Plans



Efforts to date may indicate potential gaps.

Question: Do we need to supplement data now to proceed?

Recommendation: Assume we don't and move forward.

Elements of Salt Nutrient Management Plans



Identify Goals and Objectives of SNMP

- Goals & Objectives will establish framework for antidegradation analysis
- What are existing agency goals/objectives?
- Water supply goals
 - Regional
 - Agency specific

Basin Plan and SNMP Linkages

IV. GROUND WATER OBJECTIVES

Establishment of numerical objectives for ground water involves complex considerations since the quality of ground water varies significantly with depth of well perforations, existing water levels, geology, hydrology and several other factors. Unavailability of adequate historical data compounds this problem. The Regional Board believes that detailed investigation of the ground water basins should be conducted before establishing specific ground water quality objectives.

Basin Plan and SNMP Linkages

IV. GROUND WATER OBJECTIVES

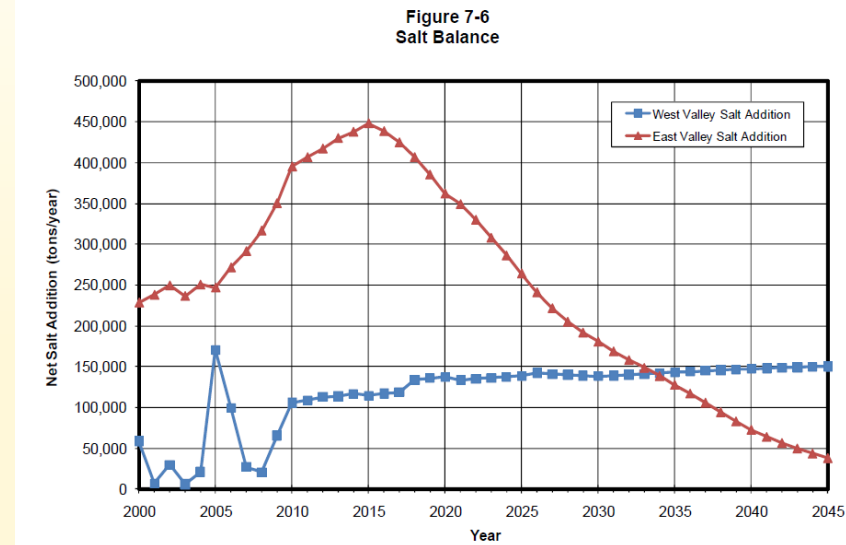
However, in most cases ground water that is pumped generally returns to the basin after use with an increase in mineral concentrations such as total dissolved solids (TDS), nitrate etc., that are picked up by water during its use. Under these circumstances, *the Regional Board's objective is to minimize the quantities of contaminants reaching any ground water basin.* This could be achieved by establishing management practices for major discharges to land. Until the Regional Board can complete investigations for the establishment of management practices, the objective will be to maintain the existing water quality where feasible.

Basin Plan and SNMP Linkages

- Recharge activities & human uses are contributing to long-term increase in salinity

A. REGIONAL BOARD GOALS AND MANAGEMENT PRINCIPALS

- Encourage reclamation of wastewaters ... to preserve freshwater supplies and to protect water quality to the maximum extent possible.
- Ground water recharge with water of adequate quality is encouraged, wherever feasible.
- Controllable water quality factors will be regulated to ensure preservation of the integrity of usable ground water basins.
- Source control and pretreatment of wastes will be required wherever necessary to minimize degradation of water quality.



Basin Plan and SNMP Linkages

VI. ACTIONS OF OTHER AUTHORITIES

... The recharge lessens the Valley's overdraft problem, although the total dissolved solids (TDS) concentration of Colorado River water is significantly higher than that of the native ground water in the greater portion of Coachella Valley.

Basin Plan and SNMP Linkages

...The water resources of the Coachella Valley are limited, and the demands on those resources have increased considerably. Every effort must be made to optimize the use of available water resources. The quantity of treated wastewaters produced by community sewerage systems is appreciable, and the TDS concentrations of the treated wastewaters is less than that of the Colorado River water which is purchased and spread for recharge in the upper valley areas. In recognition of this, the Regional Board supports the reuse of community wastewaters, wherever economically and socially feasible (See page 4-2).

Identify Goals and Objectives of SNMP

- Water quality goals
 - Stem from current basin plan
 - Identify different objectives for aquifers and for sub-basins (Aug, 2012 mtg)
 - TDS, nutrients, others constituents?
- Stakeholder's decision on what goes into SNMP
- Basin-wide and/or sub-basin level goals can be applied

Homework:

- Need to identify initial G & Os for water management and water quality to include in workplan.

Elements of Salt Nutrient Management Plans



Evaluate Future Projects

- Follow on to previous analyses, but add on:
 - Proposed projects and implementation strategies
- Existing and future projects considered
 - Groundwater/stormwater recharge
 - Septic to sewer conversions
 - Recycled water (Title 22 or IPR)
 - Other salt loading or salt management projects

Homework:

- Identify specific projects to include.
- Identify sources/studies (inc. data base, 2007 Basin Workplan)

Antidegradation Analysis Considerations

- Will projects and strategies meet objectives?
- Per previous discussion: What is appropriate level of analysis (model)?
 - Mass balance and fate-transport models?
 - Will mass balance model alone suffice?

Anti-degradation ‘Value’ Questions

In-depth modeling may be warranted if:

- Site-specific recharge and/or recovery management strategies are proposed
- Recycled water is proposed as a source of GW recharge
- Location-specific GW quality issues or Basin Plan compliance problems are known to exist and require analyses
 - Problems beyond a few bad “hot spots”?
 - Are pockets isolated?
 - Is GW replenishment and pumping causing movement of salts, nutrients, or other CECs?

What is Best Approach for SNMP?

- Existing MODFLOW model
 - Fate and Transport model
 - Cover entire basin?
 - Have water quality info/predictability functions?
 - Would require some level of investment to make fully functional
 - Need F&T model for SNMP today or in future?
- Recommendation:
 - Start with mass balance model (GIS/spreadsheet)
 - Use Fate and Transport model only if needed
 - Entire basin or specific sub-basins as necessary

Elements of Salt Nutrient Management Plans



Develop Implementation Strategies

- Include current and proposed future projects (or options)

- IPR/Recycled water
- Additional septic to sewer conversions
- Pull list from current data base of projects
- Other?

- Considerations:

- How will they be accomplished?
- By whom?

- General strategies

- Stem from current basin plan and amendments
- Salt management (brineline)
- Others??

- Homework?

- List of future projects to include in workplan?
- List of current or potential future implementation strategies?

Develop Monitoring Plan

- Considerations:
 - What needs to be monitored?
 - Where do we need to monitor?
 - Incorporation and adjustment of current monitoring into plan
 - Who will do monitoring?
 - Schedule
 - Data Management
 - Where will data be stored?
 - How will it be retrieved?
 - Who will lead effort(s)

Elements of Salt Nutrient Management Plans



Finalizing the SNMP – Path 1

- RWQCB to consider and determine if BPA is needed
- Path 1
 - Draft documentation of SNMP
 - Final documentation of SNMP
 - Submit to RWQCB
 - RWQCB adopts SNMP

Finalizing the SNMP – Path 2

- Path 2
 - Draft documentation of SNMP
 - Final documentation of SNMP
 - Submit to RWQCB
 - RWQCB requests BPA
 - Develop BPA documentation
 - Develop Staff report

...

Finalizing the SNMP – Path 2

...

- Develop CEQA level documentation
 - BPAs are a Certified State Regulatory Program
 - BPAs are exempt from Initial study, Neg. Dec. or EIRs
 - Must prepare Substitute Env. Documentation (SED)
 - Evaluate environmental impacts
 - If significant adverse impacts, adopt feasible alternatives or mitigation measures
 - Comply with noticing requirements
- RWQCB approval
- SWRCB approval
- State Office of Administrative Law approval

Homework Summary

- Identify initial Goals & Objectives for water management and water quality to include in workplan
- Identify specific projects to include in workplan
 - Certain projects
 - Potential projects
- Identify data sources/studies needing to be assembled
- List of current or potential future implementation strategies

Next Steps

- Feedback on workplan outline
- Follow-up meetings?
- Identify additional contacts (stakeholders)
- Next workshop
 - Date: **October 24th**
 - Time: **1:00 – 3:00 pm**
 - Location: **CVWD Training Room**
 - Purpose: **Review and comment on Draft Workplan**
(More details!)