REGIONAL WATER QUALITY CONTROL BOARD WORKSHOP

PROGRESS ON SALT AND NUTRIENT MANAGEMENT PLANS

December 4, 2015
Salt and Nutrient Management Plan

Topics

- SNMP Overview
  - Goals and Objectives
  - Computer Spreadsheet Model
  - Loading Estimations
  - Assimilative Capacity
- Main San Gabriel Basin SNMP
- Raymond Basin SNMP
SNMP Overview

Goals and Objectives

- Identify and Monitor Sources of Salt/Nutrient Loading for Management Purposes
- Develop Tools to Predict Potential Basin Salt/Nutrient Impacts of Future Projects
- Identify Salt/Nutrient Assimilative Capacity of Groundwater Basins
Main San Gabriel Basin
Salt and Nutrient Management Plan
Salt/Nutrient Loading Balance

Main San Gabriel Basin and Raymond Basin Salt and Nutrient Management Plans
Computer Spreadsheet Model

- Developed as a tool to calculate salt/nutrient loading impacts from various water supply components
- Mass Balance of all salt/nutrient loading and unloading in Basin
Assimilative Capacity

- Defined as the difference between the allowable load and the current load of a constituent
- Based on RWQCB Basin Plan Objectives
Main San Gabriel Basin
SNMP
Primary Stakeholders

- Upper San Gabriel Valley Municipal Water District
- Three Valleys Municipal Water District
- San Gabriel Valley Municipal Water District
- Metropolitan Water District of Southern California
- Los Angeles County Sanitation Districts
- Los Angeles County Department of Public Works
Stakeholder Coordination

- **Stakeholder Workshops**
  - November 2012 through Present

- **RWQCB Staff Coordination**
  - Discussions on approach, outline, and assimilative capacity

- **Received and Incorporated Comments from LACSD and MWD**
### RWQCB Basin Plan Objectives

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Basin Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate</td>
<td>45 mg/L</td>
</tr>
<tr>
<td>Chloride</td>
<td>100 mg/L</td>
</tr>
<tr>
<td>Sulfate</td>
<td>100 mg/L</td>
</tr>
<tr>
<td>TDS</td>
<td>450 mg/L (West Area)</td>
</tr>
<tr>
<td></td>
<td>600 mg/L (East Area)</td>
</tr>
</tbody>
</table>
Allowable TDS load: 7,330.3 M lb (million lbs)

Assimilative Capacity: 1,811 M lb

Current TDS load: 5,518.9 M lb

Puente Basin 1.3 M lb/yr

Main San Gabriel Basin

Central Basin 26.3 M lb/yr

STETSON ENGINEERS INC.
West Covina San Rafael Mesa, Arizona
WATER RESOURCE ENGINEERS

MAIN SAN GABRIEL BASIN WATERMASTER

TDS BALANCE COMPONENTS WITH ASSIMILATIVE CAPACITY,
MEAN OF 1973-74 TO 2010-2011

11/12/2013
Upper District IRRP Project

- Only potential project evaluated in SNMP
- Recycled Water Policy Recommends less than 10% Assimilative Capacity Utilization for single project without approved SNMP
Upper District IRRP Project

Assimilative Capacity Analysis
- TDS is limiting constituent
- Reaches equilibrium at about 7.4% assimilative capacity utilization after about 108 years (Less than 10%)
- 7 mg/L increase in TDS concentration at equilibrium (357 mg/L to 364 mg/L)

Conclusion
- IRRP satisfies most restrictive Recycled Water Policy recommendation (Less than 10% utilization of assimilative capacity for a single project without approved SNMP)
Raymond Basin
SNMP
Primary Stakeholders

- Metropolitan Water District of Southern California
- Los Angeles County Department of Public Works
Stakeholder Coordination

- **Stakeholder Workshops**
  - March 2013 to Present

- **RWQCB Staff Coordination**
  - Discussion on approach, outline, assimilative capacity

Main San Gabriel Basin and Raymond Basin Salt and Nutrient Management Plans
Monk Hill Subarea

<table>
<thead>
<tr>
<th>Salt/Nutrient</th>
<th>Assimilative Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate</td>
<td>10.1 Million Pounds</td>
</tr>
<tr>
<td>Chloride</td>
<td>30.01 Million Pounds</td>
</tr>
<tr>
<td>Sulfate</td>
<td>15.8 Million Pound</td>
</tr>
<tr>
<td>TDS</td>
<td>28.6 Million Pounds</td>
</tr>
</tbody>
</table>

- Similar approach for Pasadena and Santa Anita Subareas
Thank You