MAIN SAN GABRIEL GROUNDWATER BASIN SNMP PROJECT SUMMARY

REQUIREMENT FOR A SALT & NUTRIENT MANAGEMENT PLAN

In February 2009, the State Water Resources Control Board (SWRCB) established a statewide Recycled Water Policy to encourage increased use of recycled municipal wastewater as a safe, local, drought proof, and highly reliable source of water supply. The Policy also required local water and wastewater entities (stakeholders) to develop a Salt & Nutrient Management Plan (SNMP) for each groundwater basin in California, including the San Gabriel Valley (Main San Gabriel) groundwater basin.

The purpose of the SNMP is to identify all sources of salts and nutrients in the groundwater basins and manage those salts and nutrients in a manner that preserves and enhances the quality of groundwater for drinking and all other beneficial uses.

AREA COVERED BY THE SALT AND NUTRIENT MANAGEMENT PLAN

The Main San Gabriel Groundwater Basin is a groundwater basin located in Los Angeles County that covers an area of approximately 167 square miles. Groundwater in the Main San Gabriel Groundwater Basin provides approximately 85 percent of the overall water supply needs of nearly 1.4 million residents overlying the basin. The primary stakeholders include Upper San Gabriel Valley Municipal Water District, San Gabriel Valley Municipal Water District, Three Valleys Municipal Water District, the Metropolitan Water District of Southern California, the Los Angeles County Sanitation Districts, and the Los Angeles County Department of Public Works. The regional extent of the SNMP area is shown in Figure 1.

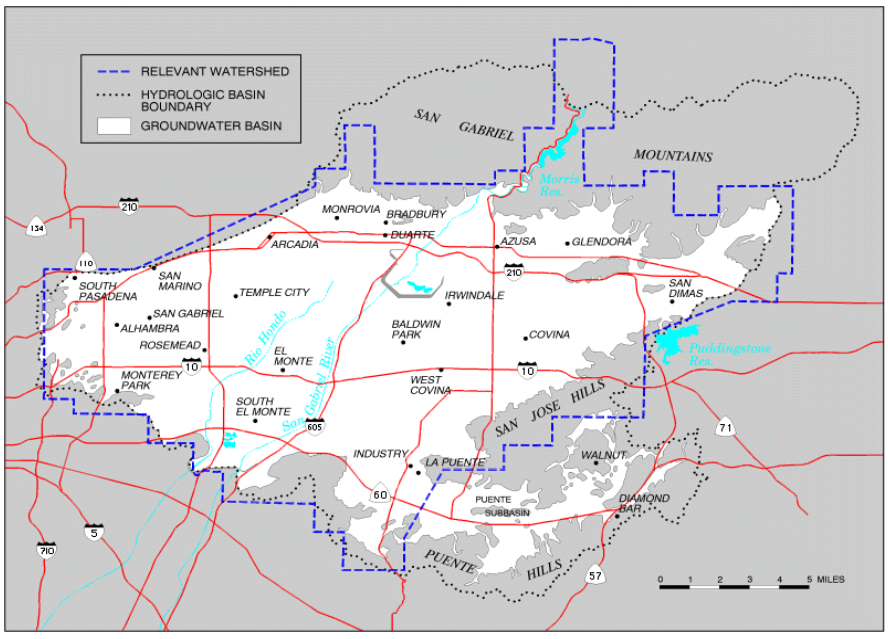

Figure 1. Regional Extent of the Main San Gabriel Basin SNMP

SNMP ANALYSIS – SALT & NUTRIENT SOURCES AND MODELING

As part of the analysis for the SNMP, nitrate, chloride, sulfate, and total dissolved solids (TDS) were determined to be the indicator compounds for salts and nutrients.

In accordance with the Recycled Water Policy, all major sources of salts and nutrients to groundwater and their fate and transport were assessed in the SNMP. To determine the current sources and concentrations of salts and nutrients in the groundwater, all available groundwater quality data were compiled and reviewed. Groundwater data were evaluated for trends, summary statistics were prepared and wells were grouped by subarea for comparison to water quality objectives for each indicator compound.

What are Water Quality Objectives (WQOs)?

WQOs are numerical or narrative objectives established by the California Regional Water Quality Control Board, Los Angeles Region, in the Basin Plan. WQOs must be attained or maintained to protect the beneficial uses designated in the Basin Plan.

All recharge to the groundwater basin typically contributes to salt and nutrient loading including subsurface inflow and percolation from precipitation, direct spreading, and return flow. However, if the salt and nutrient concentrations in the recharge water are less than the average concentrations existing in groundwater, this recharge will reduce salt and nutrient loads and improve groundwater quality. Sources of unloading of salts and nutrients from the groundwater basin includes groundwater extraction through pumping and subsurface outflow.

SNMP RESULTS – SALT & NUTRIENT GROUNDWATER QUALITY

The quality of groundwater in the Main San Gabriel Groundwater Basin has been continuously monitored since the early 1900s. Nitrate concentrations in groundwater, representing nutrients, are below water quality objectives in both the East and West areas of the Main San Gabriel Groundwater Basin. Total dissolved solids (TDS), chloride, and sulfate concentrations in groundwater, representing salts, are also below water quality objectives in both the East and West areas of the Main San Gabriel Groundwater Basin.

What is Assimilative Capacity (AC)?

A groundwater basin has AC when the existing water quality is better than that required to support the most beneficial uses of the basin. AC is calculated as the difference between the WQO of a certain constituent and its existing average concentration in the groundwater.

Based on the water quality analysis, the assimilative capacity of the Main San Gabriel Groundwater Basin was calculated. The assimilative capacity analysis demonstrated

that there is available assimilative capacity for each constituent analyzed.

RECYCLED WATER PROJECT EVALUATION

The Upper San Gabriel Valley Municipal Water District's proposed Indirect Reuse Replenishment Project (IRRP), consisting of 10,000 acre-feet of recycled water recharge, was evaluated to determine the cumulative percentage of the assimilative capacity utilized before equilibrium is reached.

Because other future recycled water projects and groundwater replenishment projects that could be developed in the Main San Gabriel Groundwater Basin are not clearly defined at this time, additional hypothetical project scenarios were developed representing water quality of potential sources of replenishment water. The net loading from these hypothetical project scenarios were compared to the available assimilative capacity to provide an initial assessment of the range of potential projects. Comparison to the available assimilative capacity defines the amount of loading that could be added by future recycled water projects without degradation of groundwater quality.

Although the initial assessment provides a good indication of whether or not a proposed project would meet the SNMP requirements, individual projects will need to be evaluated to determine their feasibility under the SNMP.

IMPLEMENTATION MEASURES

Implementation measures are projects or programs that are established to control salt and nutrient loading on a sustainable basis. As more recycled water is utilized in the Main San Gabriel Groundwater Basin, implementation measures will help protect groundwater and beneficial uses.

Stakeholders in the planning area have a strong commitment to actively protecting the groundwater basins and managing salts and nutrients. A number of management measures have already been implemented in the planning area to manage salts and nutrients and significant reductions in nutrient discharges from wastewater treatment plants have been observed as result of the actions. Key existing measures to manage salts and nutrients in the SNMP, are listed below.

- Maintenance of unlined portions of rivers and streams
- Maintenance of spreading facilities
- Establishment of safe yield
- Use of State Water Project for groundwater replenishment
- Implementation of Judgment provisions
- Supplemental water criteria
- Salinity control programs by Metropolitan Water District
- Water quality monitoring
- Water quality blend plans

If additional management measures are needed to offset loads from a proposed project, additional implementation measures will be developed and implemented. These implementation measures could include developing new replenishment facilities and reducing stormwater runoff in the basin.

NEXT STEPS

A California Environmental Quality Act (CEQA) Scoping Meeting will be held on Tuesday, March 8, 2016 to describe the SNMP findings and implementation measures and elicit public comments on the environmental analysis. A Final SNMP and Substitute Environmental Document (SED) are anticipated to be submitted to Regional Water Board by May 2016.

HOW CAN I GET MORE INFORMATION REGARDING THE SNMP FOR THE MAIN SAN GABRIEL GROUNDWATER BASIN?

Feel free to e-mail Dr. Ginachi Amah at Ginachi.Amah@waterboards.ca.gov. You may also e-mail Ms. Kelly Gardner at kelly@watermaster.org if you have any questions/comments or would like to join our mailing list. We encourage and greatly appreciate public participation in the SNMP development process.