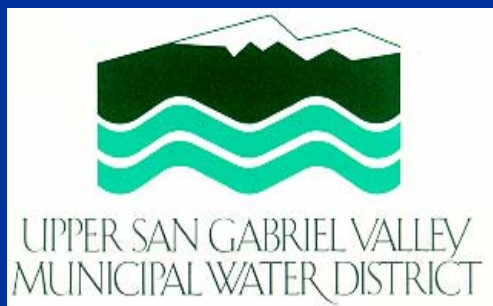


San Gabriel Basin Recycled Water Replenishment Project

Upper San Gabriel Valley
Municipal Water District

SGVCOG Governing Board Special Meeting
September 18, 2008



Recycled Water Replenishment Project

Introduction

Construction of Advanced Tertiary Treatment for Recycled Water at Los Angeles County Sanitation Districts (LACSD) San Jose Creek Water Reclamation Plant (SJCWRP)

****NEW SOURCE OF GROUNDWATER
REPLENISHMENT FOR THE MAIN SAN
GABRIEL BASIN****

Recycled Water Replenishment Project

Parties Involved

- **Joint Study (MOU)**
 - Upper District
 - Water Replenishment District (WRD)
 - LACSD
 - San Gabriel Valley MWD
- **Regulatory Agencies**
 - **California Department of Public Health (CDPH)**
 - Groundwater Recharge and Reuse Regulation (GWRRR)
 - **Regional Water Quality Control Board (RWQCB)**
 - Basin Plan
 - NPDES Permit (Discharge of Waste Regulated Under the National Pollutant Discharge Elimination System (NPDES))

Recycled Water Replenishment Project

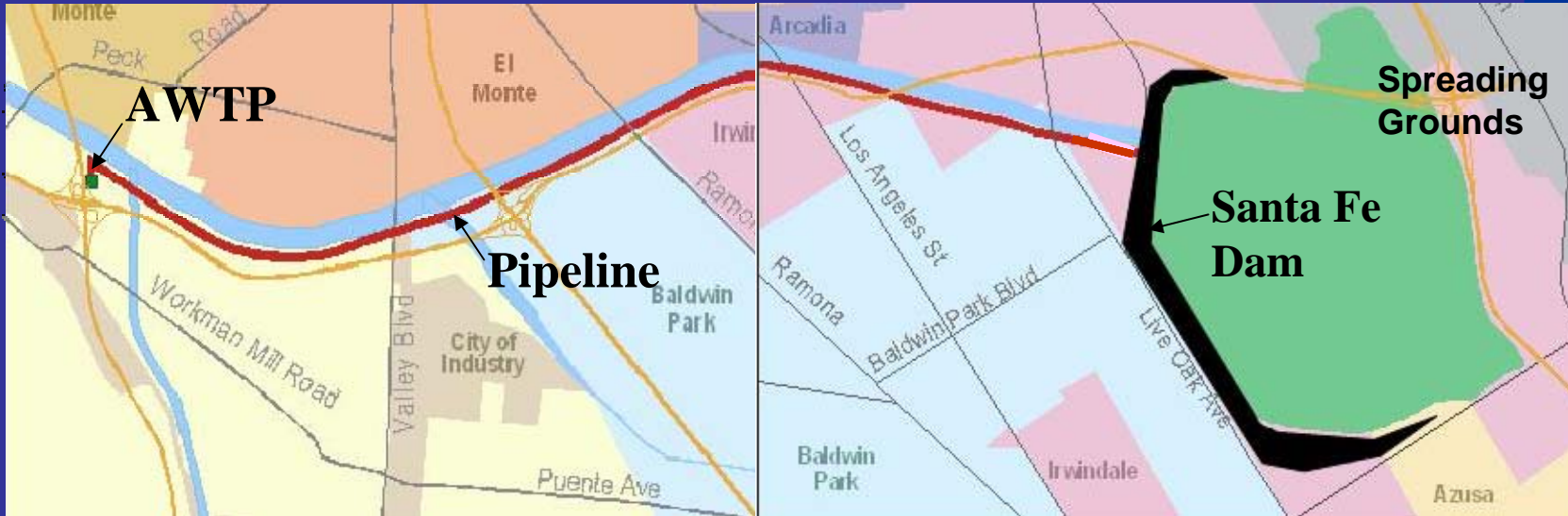
Basic Project Concept

- **Expanded Role for LACSD**
 - Tertiary water supplied by LACSD from SJCWRP will be treated by the Advanced Water Treatment Plant
 - LACSD will operate and maintain the new AWTP under contract with the water districts
- **Key Components of the New AWTP**
 - Tertiary recycled water will undergo additional Advanced Treatment
 - Microfiltration
 - Reverse Osmosis
 - Ultraviolet Light and Hydrogen Peroxide

Recycled Water Replenishment Project

Basic Concept (Continued)

- **Conveyance to Main Basin Replenishment Facilities**
 - The new pipeline to be constructed along the San Gabriel River right of way from SJCWRP to the spreading grounds near the Santa Fe Dam
 - Estimated distance is about 6 miles along the San Gabriel River
 - Series of replenishment discharge locations along the pipeline
- **Financial and Allocation Agreement**
 - Each party will pay its proportionate share of project capital costs
 - Any grant monies received for the project will be allocated to participating water districts proportionate to their ownership



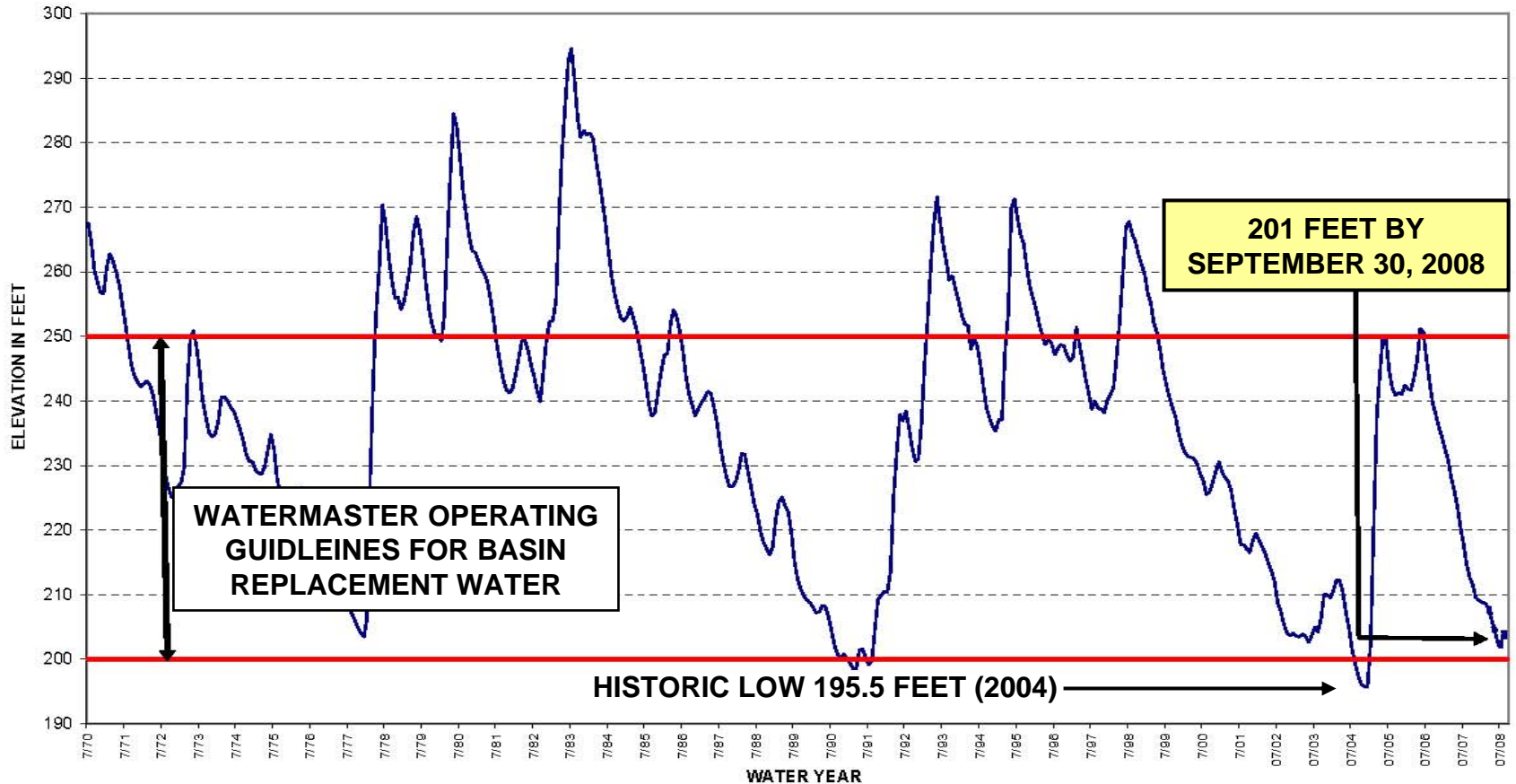
Source of Slide : MWH

Recycled Water Replenishment Project

Main San Gabriel Judgment

- **Section 10 (dd)**
 - **Responsible agencies to purchase supplemental water for replacement purposes**
 - Upper District
 - San Gabriel District
 - Three Valleys District
- **Section F (Physical Solution)**
 - **Watermaster is in control of Basin Management (OSY)**
 - **Parties fund replacement water purchases if they produce more than water right**
 - **Basin Operating Criteria – Key Well (200 to 250 Feet)**
- **Amended Section 34(h)**
 - **A maximum of 30,000 AFY of “Reclaimed Water” for replenishment**

Historic and Projected Groundwater Elevation



STETSON ENGINEERS INC.

Covina San Rafael Mesa, Arizona

WATER RESOURCE ENGINEERS

**Main San Gabriel Basin
Baldwin Key Well Elevation**

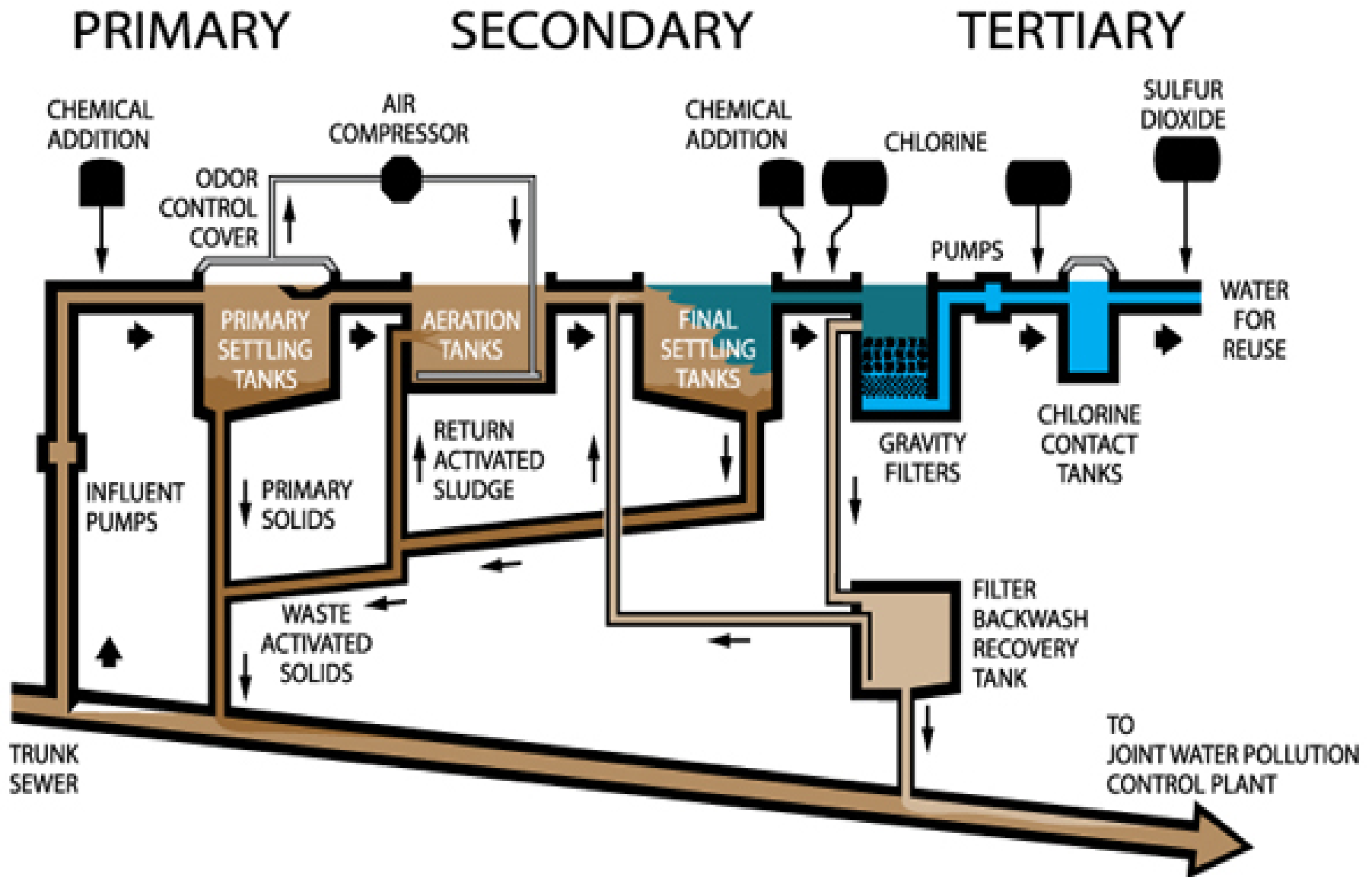
HISTORIC HIGH: 325.5 FEET IN 1944 (Not Shown)

Recycled Water Replenishment Project

Current Water Supply/Drought Conditions

- **Wanger Decision**
 - Reductions in historic supplies from Delta (Northern California)
 - Court-Ordered water diversion curtailment
 - SWP 2008 Allocation – 35%
- **SWP**
 - Initial allocation (current) – 20% to 30% with low initial storage
 - Under median conditions – 50 % of entitlement available
 - Available 80% of time **without** Wanger Decision
 - Available 60% to 70% of time **with** Wanger Decision
- **Colorado River Historic Drought**
- **Metropolitan Water District (MWD)**
 - Surplus water
 - Primarily to MWD accounts (possibly not available for Basin replenishment)
 - Available 3 out of 10 years
- **Water Conservation Being Implemented**
 - Governor's Decision for immediate action
 - Upper District's Declaration

LACSD CURRENT OPERATIONS



Recycled Water Replenishment Project

Conceptual San Gabriel Basin Recycled Water Replenishment Project

- **Advanced Tertiary Treatment**
 - **Microfiltration**
 - Low-pressure membrane process
 - Removes bacteria, protozoa and viruses
 - **Reverse Osmosis (RO)**
 - High-pressure membrane process
 - Membrane provides additional filtration
 - Removes all remaining microbes and other impurities
 - **Ultraviolet light and Hydrogen Peroxide**
 - Expose water to ultraviolet light and Hydrogen Peroxide
 - Removes and destroys disinfection by-products and renders the finished water completely sterilized

Recycled Water Replenishment Project

Conceptual San Gabriel Basin Recycled Water Replenishment Project (Continued)

- **Modular Phases**

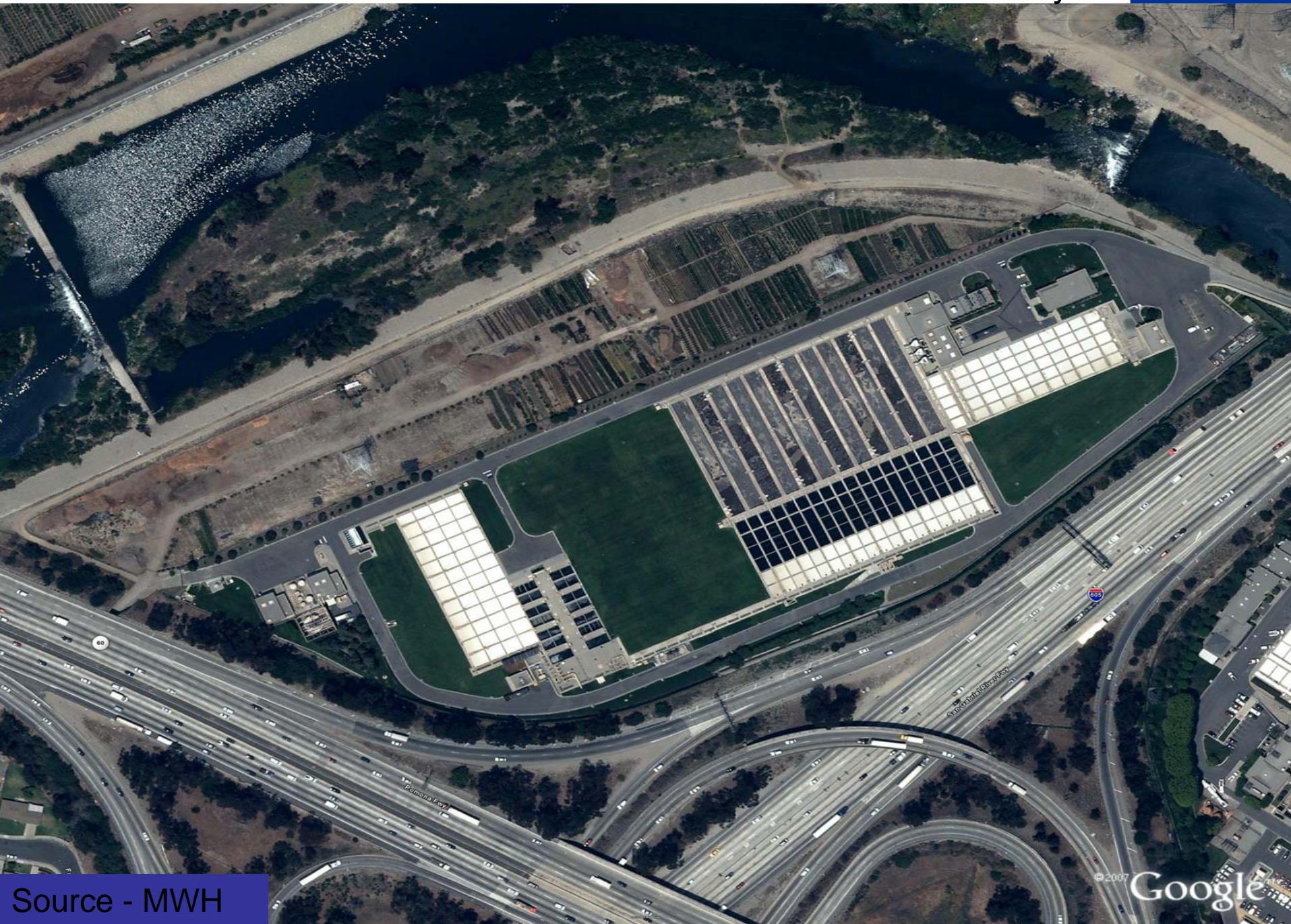
- **Initial Phase: 18,000 AFY (net)**

- 9,000 AFY for Upper District and San Gabriel District (80/20)
- 9,000 AFY for WRD

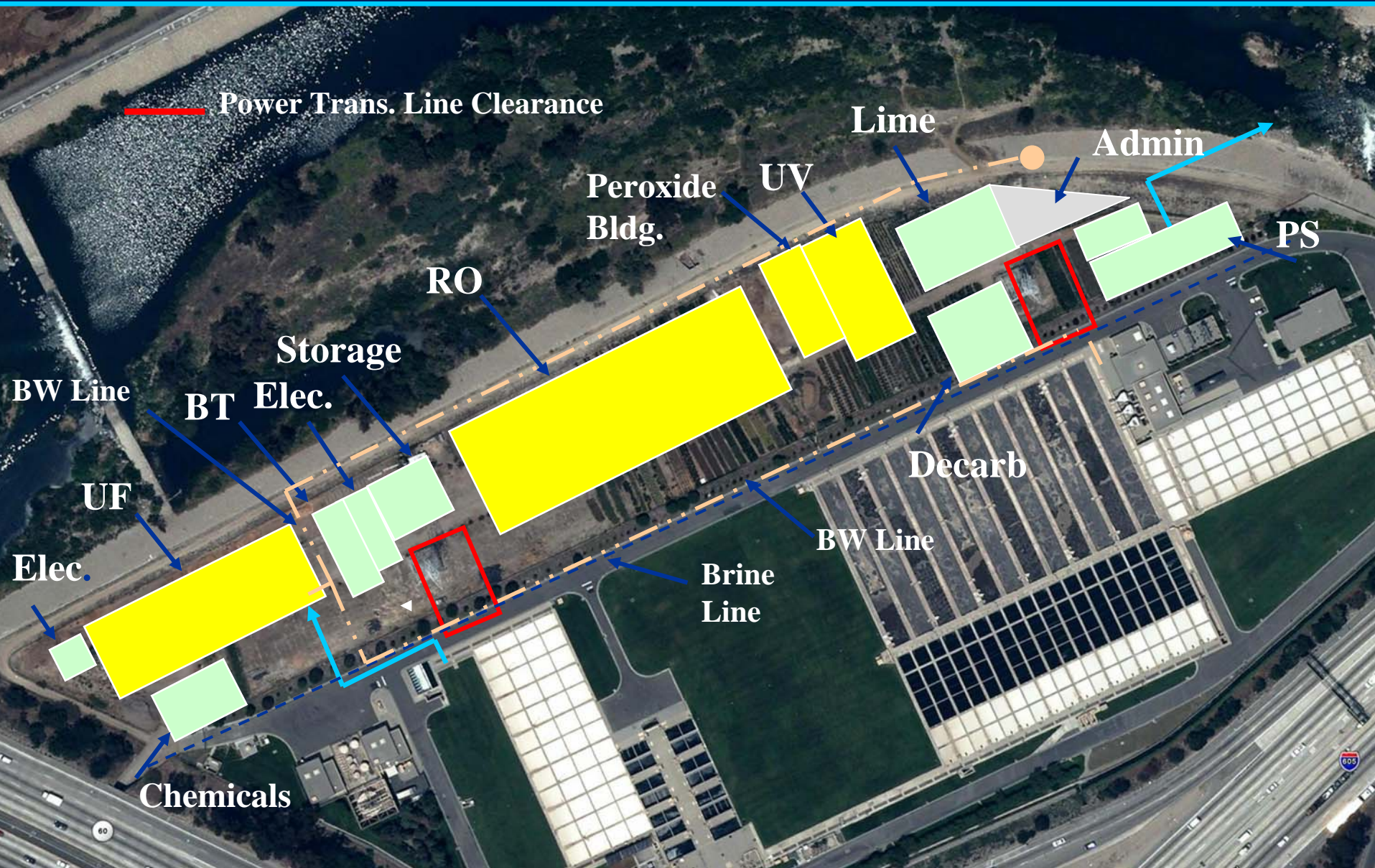
- **Ultimate Phase: 46,000 AFY (net)**

- 25,000 AFY for Upper District and San Gabriel District (80/20)
- 21,000 AFY for WRD

Aerial of LACSD and Potential Site of Advanced Treatment Facility



General Layout (46000 AFY)



Recycled Water Replenishment Project

Costs

- **MWH Capital and O&M Estimates**
 - **Estimated at 31,000 AFY (30 MGD)**
 - Total Capital About \$92,000,000
 - O&M About \$14,000,000/ year
 - Recycled Water Replenishment Project Ultimate – 46,000 AFY (40 MGD)
- **Unit Cost**
 - **Advanced Treated Water**
 - About \$450.00/AF (O&M)
 - About \$300.00/AF (Capital)
 - **MWD Tier 2 Untreated Water**
 - About \$475.00/AF (Current – 2008)
 - About \$595.00 (Projected – 2013)

Recycled Water Replenishment Project

Project Planning Work Tasks

- Secure Firm Water Supply from LACSD
- Preliminary Design Report – Treatment (Costs)
- Public Outreach
- Financing Plan
- Watermaster – Judgment (Replacement Water or New)
- Permitting (CEQA)
- Address Land and ROW Requirements
- Final Design – Treatment and Pipeline
- Project Construction

We are coordinating tours of the Orange County Water District Groundwater Replenishment Project. This project has been in operation for about two years and is very similar to the proposed San Gabriel Basin project.

If you are interested in one of these half-day tours, please contact the Upper District office at 626-443-2297 or email Peter Rodriguez at peter@usgvmwd.org.