

INDIRECT REUSE REPLENISHMENT PROJECT (IRRP) UPDATE

April 8, 2014



WHERE-SOLUTIONS **flow** SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Upper District





- 144 square mile service area
- Population served: 900,000
- Provides supplemental water to San Gabriel Valley communities
- Metropolitan Water District member agency
- Total water demand is about 200,000 acre feet of water annually.
- 2013/14 Budget \$32.1 million



Division 1 Director Dr. Anthony R. Fellow





Division 3 Director Ed Chavez



Division 4 Director Michael Touhey



WHERE SOLUTIONS **flow**

Division 5 Director Bryan Urias





R SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

California's Current Drought

Percent of Average Precipitation (%) 10/1/2013 - 2/15/2014



Governor's emergency declaration

- 0% State Water Project Allocation
- \$1,300 per AF + spot market water transfer prices (typical dry-year price is \$300 - \$350 per AF)
- 17 communities without water in 60 days or less

5 25 50 70 90 100 110 130 150 200 300 Generated 2/16/2014 at WRCC using provisional data. NOAA Regional Climate Centers

AN



GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Project History: Motivation



Renewed Interest



Past Efforts

1991: San Gabriel Valley Water Reclamation Program (16,000 AFY)

1996: San Gabriel Valley Recycled Water Demo Project (8,100 AFY)

2008: Groundwater Reliability Improvement Project (GRIP) (25,000 AFY)



WHERE-SOLUTIONS **for** N GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Alternatives Unit Costs

May 2013



Groundwater Recharge with Recycled Water - "Indirect Reuse"



Current widespread practice

- Lower San Gabriel River
- Orange County
- San Bernardino County
- 3.3 billion gallons per year (20,000) households)
- 8 miles of > 36" diameter pipeline
- Pump station

WHERE SOLUTIONS **flows** er san gabriel valley municipal water district

Identified Spreading Location



ict ER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Developed Project Boundary



Completed **Extensive** Groundwater Modeling

Tentative Regulatory Acceptance

Travel time and boundary defined

WHERE SOLUTIONS **for**

Treatment Optimization



Project Research Grants

Since December 2011, Upper District was selected by WateReuse Research Foundation, USBR, and MWD to perform Pilot Level Testing of Advanced Treatment Technologies:

- WRRF/USBR = \$375K Ozone Treatment Pilot
- WRRF = \$150K for Soil Aquifer Treatment Pilot
- MWD FAF = \$150K BAC Treatment Pilot
 - Suppliers and other agencies = \$700K for Advanced Treatment Pilot Research



WHERE SOLUTIONS **//ON** BRIEL VALLEY MUNICIPAL WATER DISTRICT

Treatment Optimization

Total research = \$1.4M to test advanced water technologies including Ozone, BAC, UV and SAT

Upper District benefits:

- Demonstrate proposed advanced treatment technologies and advance regulatory review by CADPH and Regional Board
- Research will help enhance project cost estimates
- Nationally accepted pilot and research program with CADPH participating every step of the way



WHERE SOLUTIONS **fo**n An gabriel valley municipal water district







Available Diluent Water

ER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

Preliminary Pilot Research Results

Ozone and BAC pilot results show that most CEC's are eliminated while reducing TOC by 30 – 40%

SAT Pilot Research

Research Initiated in September 2013 to Study the natural occurring Soil Aquifer Treatment (SAT) process (WRRF 12-12)

Benefits of the SAT pilot work:

- Establish removal of CECs that should occur in the natural environment for regulators and permitting
- Establish removal of key pathogens that may be of concern for drinking water wells that are close to project boundary
 - Demonstrate effectiveness of ozone versus chlorine to remove additional TOC in natural environment

WHERE SOLUTIONS **flow** Y MUNICIPAL WATER DISTRICT

2014 Revised Project Schedule

Indirect Reuse Replenishment Project

Blue bars represent current schedule for approved tasks.

Green bars represent future tasks and are tetatively scheduled to begin not sooner than indicated.

WHERE SOLUTIONS **flow** . San gabriel valley municipal water district

Diversified Portfolio of Sustainable Water Supplies

Recycled water is 1/3 of our ability to reduce exposure to imported water risks!

The Water Bond is needed to triple the use of Recycled water by 2018!

Figure 7-5

Resource Mix for Alternative 5 Compared to Status Quo in Year 2035 during a Drought

Upper Distri

WHERE SOLUTIONS **flow**

PER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

