Maximizing Groundwater and Surface Water Availability in a Highly-Urbanized Southern California Groundwater Basin

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CVWD

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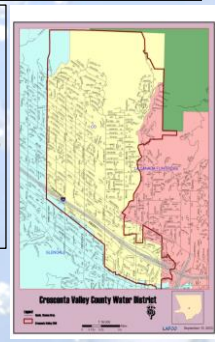
CVWD Facts

- CVWD formed in 1950 as "County" Water District
- Provides water & sewer service to 32,000 residents with 8,000 connections
- Serves La Crescenta & portions of La Canada Flintridge, Glendale & Montrose
- 95 miles of pipelines
- 11 Pressure Zones



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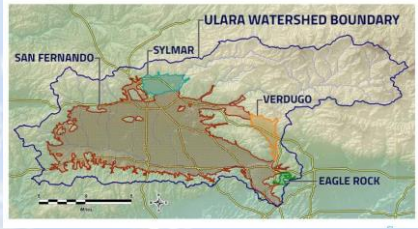
Verdugo Groundwater Basin

- Upper Los Angeles River Area (ULARA) is the San Fernando Valley Basin –
- Court Appointed Watermaster
- Adjudicated in 1979
- 5 Parties within ULARA:
  - City of Los Angeles
  - City of Burbank
  - City of Glendale
  - City of San Fernando
  - CVWD

CVWD

Verdugo Groundwater Basin



Verdugo Basin - a sub-basin of the San Fernando Basin

Verdugo Basin Water Rights -	CVWD	3,294 ac-ft
	Glendale	3,856 ac-ft
	Safe Yield	7,150 ac-ft

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Water Supply Sources

Local Groundwater –

- 11 GW wells
- Drilled between 1930 - 1955
- Provides 3.8 MGD max
- Today – 60% of water demand
- Dry Years – 50% of water demand

Imported Water –

Provides 5.9 MGD max

- Today - 40% of water demand
- Dry Years – 50% of water demand

Groundwater Cost - $450/ac-ft
Imported Water Cost - $1,500/ac-ft

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Verdugo Basin - History

- Existing Wells drilled between 1927 - 1955
- No work done in Basin from 1955 – 2000
- 1994 – started rehabilitation of existing wells, but need to replace old & inefficient wells
- 1999 – Water Well Replacement Study
- 2000 – Drilled Well 15 – design at 110 gpm; Out of Service
- 2001 – Drilled Well 17 - >20 gpm, not completed

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Verdugo Basin – Study History

California Department of Water Resources (DWR) Local Groundwater Assistance Grant

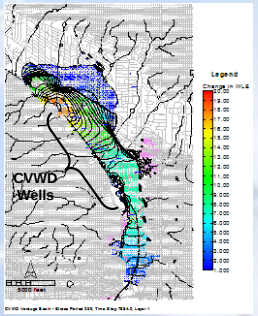
2003 –Groundwater Evaluation and Monitoring Study
- Additional information on geology of Verdugo Basin

2005 –Recharge & Conjunctive Use Study
- Conjunctive Use – Water Sources
- Groundwater Model

2006 – Basin Geophysical Study
- Gravity Survey
- Depth to Bedrock

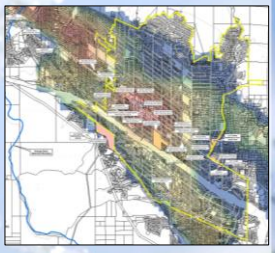
Verdugo Basin Recharge & Conjunctive Use Study

- **Evaluate basin Hydrogeology**
- **Focus on recharge at Crescenta Valley County Park:**
  - **Prepared GW Model**
  - **Reviewed water sources for recharge**
  - **Modeled recharge of 340 AF/Yr**
    - GWL increased by 20 feet in recharge area
    - GWL increased from 5 to 18 feet in well field area



Groundwater Contamination

- **2006 - Methyl tert-butyl ether (MTBE) detected in Verdugo Basin**
- **2007 – 2009 - 2 wells shutdown due to MTBE**
- **2007 – 2011 - UGST clean-up at 10 sites**
- **2006 – 2013 - Litigation with Oil Companies**



Crescenta Valley County Park Stormwater Recharge Facility Study

- **2012 – Local GW Assistance Grant**
- **Goals for the Study:**
  - **Evaluate the feasibility of using CVC Park**
    - Capture stormwater
    - Reduce dry weather runoff
    - Reduce surface water pollution
  - **Recharge of stormwater runoff**
    - Improve groundwater quality
    - Increase water-supply reliability
    - Improve surface water quality in downstream receiving waters.

Crescenta Valley County Park Stormwater Recharge Facility Study

PROJECT LOCATION MAP

Crescenta Valley County Park Stormwater Recharge Facility Study

Dunsmuir Channel

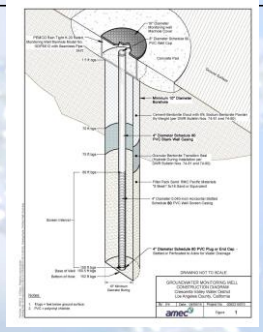
Verdugo Wash

Crescenta Valley County Park Stormwater Recharge Facility Study

- **Monitor and sample storm water runoff**
  - Evaluate water quality
  - Determined amount of storm water runoff available for recharge
- **Test & evaluate the recharge capacity of soils**
- **Install two (2) groundwater monitoring wells**
- **Groundwater modeling to evaluate the amount of recharge storage capacity beneath and near CVC Park,**
- **Establish a collaborative Task Force**

Flow Monitoring Stations

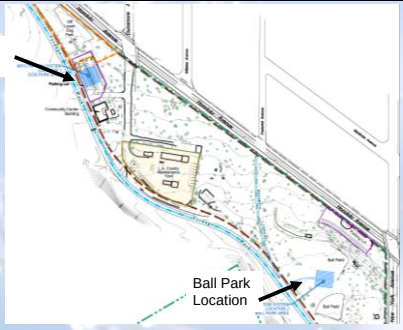
GW Monitoring Wells



Diversion Structure Examples

Infiltration Gallery Examples

Infiltration Gallery Locations



Crescenta Valley County Park Stormwater Recharge Facility Study

Study Conclusions:

- Surface water diversion and recharge system is viable
- Potential to recharge 500+ acre-feet/year
- No adverse impacts to trees
- Benefits to surface water and groundwater
- Adds to available groundwater supplies
- Helps improve water system reliability
- More local groundwater
- Less reliance on imported water

Next Step for CVWD

- Continue data collection and evaluation
- Complete a conceptual plan and preliminary construction cost estimate
- Environmental permitting
- Apply for State grant funding
- Develop partnerships with local stakeholders
- Complete project by 2021

Stakeholders

- City of Glendale
- LA County, Department of Parks & Recreation
- LA County, Department of Public Works, Flood Control
- LA County, Department of Public Works, Watershed Division
- ULARA Watermaster's Office
- Council for Watershed Health
- CV Town Council
- Los Angeles County, Supervisor Antonovich Office
- Southern California Water Committee
- Foothill Municipal Water District
- Glendale-Crescenta Volunteers Organized in Conserving the Environment
- Arroyo Seco Foundation

Questions & Comments

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