Agency Partnerships to Maximize Groundwater Recharge

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The Orange County Water District was formed by the State in 1933 to protect and manage Orange County’s groundwater supplies.

Why?

- Declining flow of Santa Ana River
- Basin overdraft
- Seawater intrusion
- Attempts by LA County to obtain water rights in Orange County

First Board of Directors
OCWD encompasses 370 square miles in the lower watershed of the Santa Ana River.

Orange County groundwater basin provides water for over 2.4 million people.

Semi-arid region: 14 inches/year
A diverse portfolio has been created to meet water demands.

Total Water Demands 445,000 afy

- **Imported Water**: 150,000 (34%)
- **Natural Recharge**: 60,000 (14%)
- **GWRS**: 103,000 (23%)
- **Storm flow**: 50,000 (11%)
- **Misc.**: 18,000 (4%)

**Santa Ana River**: 64,000 (14%)
High imported water costs make local resources development attractive.

- **Desalination? $1900**
- **Groundwater**
- **MWD Treated Water**
- **Untreated MWD $660**
- **GWRS $550**
- **Santa Ana River/Storm Flow $20**
- **Natural Recharge $0**
OCWD partnered with Orange County Flood Control District in the 1930s to test recharge in the Santa Ana River channel.
OCWD uses many OC Flood Control facilities for groundwater recharge and conveyance.
Pumps installed in Miller Retarding Basin are used to dewater basin for cleaning but also for pumping out storm flow.
OCWD has worked for decades with the USACE to steadily increase the amount of storm water that can be conserved at Prado Dam.

50,000 acre-feet of storm water = $50M worth of water
Development of local water resources has increased the sustainable yield of the basin.

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Questions?

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Recharge water sources have played different roles at different times.

- **GWRS Source** “Increase Supplies”
- **Imported Source** “Fight Seawater”
- **Base/Storm Flow Sources** “Maximize Capture”

(1936-1990 is Oct-Sept water year, 1991-2014 is July-June Fiscal Year)
With GWRS, recycled water is now a critical component of recharge to the basin.

Recycled Water: 31%

Santa Ana River Base Flow: 35%

Natural Recharge: 8%

Imported Water: 17%

Storm Flow: 8%

Total FY12-13 Recharge: 238,646 af
Recycled water from the upper watershed has been an important source for many years.

Total Recharge in Surface System Over Last 30 yrs (af)

- 2,304,241 (47%)
- 1,451,865 (29%)
- 962,403 (19%)
- 225,661 (5%)

Imported

- Santa Ana River (Non-Wastewater Origin*)
- Santa Ana River (Wastewater Origin*)
- Recycled (GWRS)

*Estimated