Towards water sustainability in the Santa Ana River watershed?

Pushing the limits of Reuse & Recycle


Sustainable Water Resources

*Use of water in a manner that can be maintained for an indefinite time without causing unacceptable environmental, economic, or social consequences.*

*United States Geological Survey*
Objectives for Sustainable Mgmt

- Reduce Dependence on Imported Water
- Increase
  - Water Use Efficiency
  - Storage (Recharge)
  - Water Reuse
- Improve Water Quality to meet objectives
- Flood Protection
- Improve Wetlands, Environment & Habitat
- Increase Recreational Use of river

Stakeholders

Water Districts
Orange County Water District
Big Bear Water District
Inland Empire Utilities Agency
Western Municipal Water District
Eastvale Municipal Water District
Irvine Ranch Water District

Government Agencies
California Resources Agency
San Bernardino County
Los Angeles County
Orange County
Riverside County
Orange County Sanitation District
LACoe
U.S. Bureau of Reclamation

Non-Profit
Surfrider Foundation
Riverside Lands Conservancy
Sierra Club
Audubon Society
Santa Ana River Watershed Group

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Current Water Sources

- Water Demand (2000): 1.4 million acre-feet/yr

Baseflow at Prado Dam

Demand Drivers

- SARW Region Population Growth % Projections 2000-2025
- 2000 to 2005: 25% increase
- 2005 to 2010: 10% increase
- 2010 to 2015: 5% increase
- 2015 to 2020: 3% increase
- 2020 to 2025: 2% increase

- SARW River Basin: 20% increase
- SARW Basin: 15% increase
- SARW: 10% increase

Current Water Sources

<table>
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<tr>
<th>Year</th>
<th>Impacted Water</th>
<th>Coastal</th>
<th>SARW</th>
<th>Recharged Water for Groundwater Storage</th>
<th>Directly Applied Water</th>
<th>Natural Recharge</th>
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Current Water Use

Water Storage (Recharge)

Water Storage (Recharge)

Geologic Effects on Travel Time

Water Reuse
**Water Reuse/Recycling**

Supply Options - Reuse

- **Non-potable reuse**
  - Landscape irrigation
  - Agricultural irrigation
  - Industrial cooling
  - Toilet flushing
  - Wetlands & stream enhancement

- **Indirect potable reuse**
  - Recharge groundwater aquifers
  - Surface water reservoir augmentation

**Reuse in the Chino Basin**

Water Use Efficiency

- Xeroscaping
- Reduced “Turf” landscaping
- Water-efficient cooling towers
- Waterless urinals & dual flush toilets
- ET controllers (based on evapotranspiration)
- High efficiency washers
- Tiered rate structures

**Water Use Efficiency**

Water Demand Projections

CALscape Demand Scenario in 2025 results in:
- Reduction from baseline = 525,132 AF or 27%
Supply Scenario Results

Comparison of Alternative Supply Scenarios to Baseline Supply Scenario - Normal Year -

Baseline Scenario
75% Max Recycling + Baseline Recharge Scenario
75% Max Recycling + Max Recharge Scenario
Max Local Supplies Scenario

Recreation

Benefits
- Reliability
- $1B in avoided costs
- Enhancement of local ecosystems
- Improvement in local and coastal water quality
- Reduction of impacts to the Colorado River & SF Bay Delta

Conclusions
- Coordinated Planning Efforts are under way
- High Potential for Reducing Water Imports
- Technologic breakthroughs to reduce cost of reusing water will make it easier
- See you in 2025!