The Magnitude of Managing San Diego County’s Water

November 10, 2022
San Diego Farm & Nursery Expo

Dan Denham
Deputy General Manager
Serving a Vibrant Region

Established in 1944
24 member agencies
3.3 million people
$240 billion economy
FY 2021 Water Use by Sector

FY 2021 Composition of Water Use by Sector

- Residential (329,744 AF)
- Commercial & Industrial (80,916 AF)
- Agricultural (41,834 AF)
- Public & Other (50,666 AF)

Note: Figures are rounded. (AF = Acre-Feet)
A Diversified Water Supply
Reducing Dependence on Imported Water

31%
Local Water Supply

69%
Colorado River

<1%
State Water Project
Started Preparing in Early 1990’s

Companies cringe at 50 percent cut in water
Firms offer conservation plans to mayor; some say cutbacks could cripple growth

State to Shut Off
Water Delivery
to Southland

Water Dependence Bodes a Dry San Diego Future

By VIRGINIA ELLIS
and TEO ROHRILCH
TIMES STAFF WRITERS

SACRAMENTO — Gov. Pete Wilson on Monday announced new and unprecedented cutbacks of state water deliveries so drastic that Southern California will be cut off from this traditional source of water by mid-March.

Wilson said that heightened drought conditions had forced the state to notify cities and industry

50% Water-Delivery Cut
Will Be Blow to San Diego

Drought: Metropolitan Water District directors also vote a 90% cut in allocation for agricultural users.

Grim water outlook
is getting
even worse

State Water Project cuts off water to farms; urban slash expected
Strategic Investments in Supply Reliability

- Local Surface Water Storage: $1 billion
- Carlsbad Seawater Desalination: $1 billion
- QSA Water Transfer & Canal Linings: Hundreds of Millions $
- Pipeline Relining: $493 million
- Potable Water Reuse & Purple Pipe: Hundreds of Millions $
- Twin Oaks Valley Water Treatment Plant: $179 million
- Water Use-Efficiency Investments: Hundreds of Millions $

San Diego County Water Authority
And its 24 Member Agencies
Conserved Water Supplies
Quantification Settlement Agreement

All-American and Coachella Canal lining projects

Conserved Agricultural runoff and water transfer agreements
The Carlsbad Desalination Plant is the largest seawater desalination plant in the nation.
Potable Reuse Projects

pure water
ceanside

East County
Advanced Water Purification

Pure Water
San Diego
Results of Supply Diversification

1991 Water Supply Sources
Total = 552 TAF/YR

2021 Water Supply Sources
Total = 503 TAF/YR

2045 Water Supply Sources
Total = 631 TAF/YR
Drought Response
State Actions by Governor

• July 2021 – Issued Executive Order N-10-21 – Voluntary 15% reduction in water use from 2020 levels

• March 2022 – Issued Executive Order N-7-22 – Bans irrigation of “non-functional” turf in commercial, institutional, and industrial sectors

• Aug 2022 - Released long-term strategy document – Lists actions needed to address 10% loss of water supplies by 2040
Drought Response
Federal Actions by Department of Interior

• Aug 2021 – Bureau of Reclamation Declares First Ever Shortage on CO River for 2022
  • Reductions to AZ, NV, and Mexico
• Aug 2022 – Dep. of Interior announced actions to reduce demands on CO River by 2-4 million acre-feet.
  • Shortage continues for 2023
2022 SoCal Drought Headlines

Emergency Drought Restrictions Go Into Effect For Six Million Southern Californians
June 1, 2022
Select communities in Los Angeles, San Bernardino, Ventura counties under outdoor watering limits, monthly water budgets

Amid drought, California declares war on lush lawns
by Venetia Dupont

Los Angeles Times
State refuses request for more water in communities with high wildfire risk

The Metropolitan Water District of Southern California
NEWS RELEASE

EMERGENCY PIPELINE REPAIR REQUIRES 4 MILLION PEOPLE ACROSS LA COUNTY TO SUSPEND OUTDOOR WATERING FOR 15 DAYS, SEPT. 6-20
Important water delivery pipeline must be repaired to ensure water reliability for region

SoCal water district installing flow restrictors in homes of customers who use too much water
Water Savings Continue into Current Drought

Per capita water use in San Diego region has declined 43% since 1990
Permanent Special Agricultural Water Rate (PSAWR) Program

- Voluntary program offered to Water Authority member/retail agencies
- Participants pay agricultural water rate in exchange for reduced supply reliability - CY 2022 estimated cost benefit is $461 per AF
- Adopted by Board of Directors in 2019
- Implemented January 1, 2021
  - 13 participating agencies
  - FY 22 water use = 24,600 acre-feet
County of San Diego
Irrigation Efficiency Opportunity

• Provides technical assistance and cost-sharing for recommended irrigation system equipment retrofits

• Offers reimbursement up to $550 per acre or $5,000 per property
Agricultural Water-Use Efficiency Opportunities

- Irrigation System Evaluation Efficiency Program
  - Free for one acre or more of trees or crops
  - On-site evaluation
  - Provides system information and recommendations

- Soil Moisture Sensor System Rebate Program
  - Cost share program
  - Up to $5,000 per property
Recognition for the San Diego Strategy

The New York Times

Despite a Punishing Drought, San Diego Has Water. It Wasn’t Easy.

The Wall Street Journal

California’s Drought Leads to Cutbacks in Marin County but Not in San Diego

Southern California was better prepared for dry conditions than the rainier North, where home car washing has been banned.
Regulations:
1. All non-storm water must stay on your property
2. Only rain down the storm drain

Reduction Runoff:

When and how long to irrigate:
1. Know your soil or your substrate. Available water is % of volume that you refill with one irrigation. You convert it to depth, for example 0.2 inch.
2. Measure the application rate of your irrigation system, for example 0.4 in/hr.
3. Knowledge of 1 and 2 will tell you how long to irrigate. For example, 30 min.
4. Understand evapotranspiration from CIMIS station or weight your pots, for example 0.1 inch/day.
5. This will tell you how often you need to irrigate, for example every other day.
6. If you don’t understand 1, 2, 3, 4 or 5, talk to Gerry

Improving distribution uniformity (DU)
1. Generally, sprinklers show DU = 0.7 to 0.8 while drip shows DU = 0.8 to 0.95.
2. Measure pressure in your irrigation system, generally sprinkler require about 50 psi and drip requires 10 psi.
3. Install pressure compensating emitters and pressure regulators at the blocks.
4. Flush your mains, laterals, submain, hoses and manifolds regularly to prevent plugging.
5. Fix leaks.
6. Do not mix different emitters/sprinkler heads. They are color coded!
7. Measure your distribution uniformity, the RCDs offer this service, or ask Gerry

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