San Diego, A Cadillac Desert; Sustainable Strategies for Living in a Desert

Presentation by:
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Water Resources Manager

Green Lunch Bag Series
September 24, 2014
San Diego County Water Authority

- Wholesale water agency created by State Legislature in 1944
  - 24 member agencies
  - 35-member board of directors
  - Serves 3.1 million people and region’s $191 billion economy
  - 97% of county’s population

- Mission is to provide safe and reliable water supply to member agencies
Sources of San Diego County’s Water Supply (2009-13 five-year average)

- Colorado River: 63%
- State Water Project (Bay-Delta): 20%
- Local Supplies: 17%
5 THINGS TO KNOW ABOUT THE DROUGHT

1. It’s one of the worst in California’s history
2. Storage levels are dropping
3. Conservation is key to preserving storage reserves
4. Mandatory water-use restrictions are in place
5. Find out more about the drought, water-saving tips and valuable rebates at whenindrought.org
82 Percent of State is in Extreme or Exceptional Drought

U.S. Drought Monitor
September 16, 2014 – 82% of state remains in extreme or exceptional drought
All Dry on the Western Front
Comparison of Snowpack in the Sierra Nevada

January 2013

January 2014

Dry

CRITICAL

NASA Satellite Images
Lake Oroville - State Water Project Reservoir - July 2011
100% Capacity
Lake Oroville - State Water Project Reservoir - Jan. 2014
36% Capacity
Major State Actions to Manage Drought

- Governor Brown proclaimed a State of Emergency in California due to drought on January 17, 2014

- March 2014, Governor Brown signed drought relief funding package

- Adopted emergency regulations imposing mandatory water-use restrictions statewide
  - Effective August 1, 2014
  - Unprecedented action to increase conservation and preserve state’s water supplies

Lake Oroville, June 2014
Storage Levels are Dropping

Metropolitan Water District Total Storage Reserves

Major Surface Reservoirs in San Diego County (Percent of Capacity)

Approx 35% Drop

Jan 2014 Sept 2014

0 0.5 1 1.5 2 2.5 3

MAF

0% 10% 20% 30% 40% 50% 60% 70%

2011 2012 2013 2014

August, end-of-month
Regional Drought Response Actions
San Diego County Water Authority

• Activated regional Drought Response Plan

• Notified local water agencies of a Drought Alert: Mandatory Conservation

• “Drought Alert” Enhanced Outreach
  • Advertising
  • Business/community outreach
  • Promotional items
  • Promote conservation programs
  • Partnerships

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San Diego County is in a severe drought, and mandatory water restrictions are in place. Go to www.whenindrought.org to learn what is restricted in your area, and for tips on how to save water. Thanks for doing your part to help us through this dry patch. Of course, one way to help is to take fewer showers. — with Pal Pal Panda and Karen Greenlee.
Drought Alert: Focus on Outdoor Water-Use Restrictions

- Eliminate runoff from irrigation systems
- No washing down driveways and sidewalks
- Limit outdoor watering days and times
- Water only during the late evening or early morning hours
- Turn off water fountains and other water features unless they use recycled water
- Use hose with shut-off valve for washing cars

Restrictions may vary, visit www.whenindrought.org to determine your local water agency.
San Diego Region Investments and Conservation Help Buffer Drought Impacts – No Rationing in 2014

Diversification
- Water Authority Colorado River Transfers
- Local Supply Projects

Regional Storage
- Storage reserves in Southern California
- MWD Diamond Valley Lake

Water Conservation
- Water-Use down 20% since 2007
Growth in Reliance on Imported Water (1946-1990)

- **Imported Demand (TAF)**
  - 0.000
  - 0.500
  - 1.000
  - 1.500
  - 2.000
  - 2.500
  - 3.000

- **Population (millions)**
  - 0.00
  - 0.50
  - 1.00
  - 1.50
  - 2.00
  - 2.50
  - 3.00


**Graph Description**
- **Imported Water Use (AF)**: Dashed blue line
- **Population**: Solid green line

**Note**: The graph shows the trend of imported water demand and population over the years from 1946 to 1990.
San Diego Region’s 1991 Water Supply
“All our Eggs in One Basket”

Local Water Supplies
5%

Imported Supplies
(Metropolitan Water District)
95%
1990-92: Bottom of the Basket Falls Out

State to Shut Off Water Delivery to Southland
Limits on tap water use urged
50% Water-Delivery Cut Will Be Blow to San Diego
- Drought: Metropolitan Water District directors also

Community’s Response:
“Never Again!”
“No More Water Shortages!”

L.A. Ready to Battle San Diego Over Water
- Conservation: DWP officials weigh legal action as southern neighbor refuses to impose rationing.

State Water Project cuts off water to farms; urban slash expected

Water: Authority to Vote Today on Mandatory Restrictions
Increasing San Diego County's Supply Reliability through Diversification and Conservation

Total = 578 TAF

1991
5%
95%

2013

11%
13%
4%
3%
7%
46%

Total = 645 TAF

2020

13%
10%
24%
10%
7%
6%
4%
7%
6%
30%

Total = 779 TAF

- Imported Supplies (Metropolitan Water District)
- Imperial Irrigation District Transfer
- All American & Coachella Canal Lining
- Groundwater
- Conservation (existing and additional)
- Local Surface Water
- Recycled Water
- Seawater Desalination

TAF = Thousand Acre-Feet
San Diego County Water Authority
Long-term Colorado River River Transfers

- Imperial Irrigation District Water Conservation and Transfer Program
- All-American and Coachella Canals Lining Projects
- Provides reliable Colorado River supply

Lining the Coachella Canal

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<tr>
<th>IID and Canal Lining Deliveries 2003-2021</th>
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Acres-Foots

- IID Water Transfer
- Canal Lining
Carlsbad Desalination Project

- New, local, drought-proof water supply
- 50 mgd facility located adjacent to Encina Power Station in Carlsbad
- Public-private partnership between Water Authority and Poseidon Resources
- Largest seawater desalination facility in North America
- Expected online in Fall 2015

Construction site of Carlsbad Desalination Facility
Retail Agency Local Supply Projects

Recycled Water (non-potable)
- 17 agencies produce/purvey recycled water
- Drought-proof supply used primarily for landscape irrigation
- 28,000AFY today, potential 44,000AFY by 2020

Groundwater
- 7 agencies with groundwater projects
- 20,000AFY today, potential 27,000AFY by 2020
- Limited yields due to small basins and poor water quality (brackish)

Future increases in local projects
- Indirect/direct potable reuse
Project: San Vicente Dam Raise
Construction Complete: Summer 2014

Benefit: Increase reservoir capacity by 152,000 AF for emergency situations and drought shortage periods
Rebates and Resources for WaterSmart Living

Rebates

WaterSmartSD.org

Turf Replacement Program

Online digital magazine
## Indoor Water Efficiency Tips

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<tr>
<th>Water Efficiency Tip</th>
<th>Estimated Savings</th>
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<tr>
<td>Run the dishwasher only when full</td>
<td>2 - 4.5 gallons/load</td>
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<tr>
<td>Don’t leave water running when rinsing dishes</td>
<td>2.5 gallons/minute</td>
</tr>
<tr>
<td>Turn off water when brushing teeth</td>
<td>2 gallons/minute</td>
</tr>
<tr>
<td>Shorten showers</td>
<td>2.5 gallons/minute</td>
</tr>
<tr>
<td>Wash only full loads of clothes</td>
<td>15-50 gallons/load</td>
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This is Serious
Mandatory water use restrictions are in effect

Severe Drought

Learn more about local restrictions at whenindrought.org

Save every day, every way.

Supported by the San Diego County Water Authority and its 24 member agencies. Partial funding for the When in Drought campaign was provided by a grant from the state Department of Water Resources.