Building Bay Area Drought Resilience

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Supported with funding from California Water Service, the S. D. Bechtel, Jr. Foundation, and the US Environmental Protection Agency
What is urban drought resilience?

- Ability to weather droughts without significant social and economic disruptions
- Two components:
  - Supply investments that reduce risk of extreme shortages
  - Short-term demand management
Key takeaways from the latest drought

- Urban suppliers were generally well prepared, and economy remained robust
- State conservation mandate showed Californians can respond quickly to call for rationing
- But mandate disrupted local programs, created uncertainties about future state and local roles
- State, locals need to align policies and expectations to build resilience for future droughts
Outline

- Lead-up to the latest drought
- State action and local responses during this drought
- Lessons for the future
Many lessons learned from past droughts

Supply emergencies were wake-up call for urban suppliers. Their response:

- Invested heavily in drought preparation (e.g., storage, interties)
- Launched long-term conservation programs
- State actions supported local drought resilience

Emergency pipeline, San Rafael Bridge (1977 drought)
Outline

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- Lessons for the future
Concern over drought severity prompted unprecedented mandate

- State assumed suppliers weren’t doing enough
- Main reasons given for conservation mandate:
  - Insuring against longer drought
  - Helping those in need
  - Changing social norms on water use

Governor Brown announces mandate
April 1, 2015
Californians responded immediately to governor’s call

Water use per capita

- Governor's mandate declared
- Governor’s mandate entered into effect
- Self certification period started

Gallons per capita per day (moving annual average)

- San Joaquin Valley
- Northern California
- Statewide
- Southern California
- Central Coast
- San Francisco Bay

PPIC WATER POLICY CENTER
But the mandate posed challenges for many utilities

- Disconnect between mandate levels and local conditions
- Compliance challenges for suppliers with high targets
- Scaled-back use of drought supplies
- Intensified financial impacts

Suppliers’ opinion of mandate targets

- 44% Much more than necessary
- 27% Somewhat more than necessary
- 26% Right amount
- 2% Somewhat less than necessary
- 1% Much less than necessary
State relaxed mandate in 2016, let suppliers pass a “stress test”

- Most utilities (83%) were prepared for extended drought without mandatory conservation
- Central Coast remained most vulnerable
- Water savings remained high

Average statewide water savings (compared to 2013)

- State-promoted conservation: 10%
- State-mandated conservation: 24%
- Self-certification: 20%
Outline

- Lead-up to the latest drought
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- Lessons for the future
1. Coordinate drought contingency planning and implementation

- **Issue**: The disconnect between state and local views on local preparedness reflects an information gap

- **Actions**: Improve quality and transparency of information
  - Switch from “better safe than sorry” mandate to “trust but verify” stress test approach
  - Make monthly water use reporting permanent
2. Foster water system flexibility and integration

- **Issue:** Continued efforts needed to improve supply side

- **Actions:**
  - Support regional integration
  - Lower regulatory hurdles to water trading, non-traditional supplies
  - Reduce uncertainties about state policies affecting local supply investments

Water recycling facility, El Segundo
3. Improve utilities’ fiscal resilience during drought

- **Issue**: Widespread fiscal vulnerability among public agency suppliers

- **Actions**:
  - Locals need more proactive drought pricing and communication strategies
  - State can help address Prop. 218 cost-of-service issues
4. Address shortages in vulnerable communities and ecosystems

- **Issue**: Simply saving water in cities does not address hardships elsewhere

- **Actions**: State must lead, cities and farms can help
  - Improve small community water supplies
  - Promote watershed health

East Porterville residents get connected to safe tap water
5. Balance long-term water use efficiency and drought resilience

- **Issue**: Long-term savings have benefits, but can make it harder to cut use quickly during droughts

- **Actions**: Address the tradeoffs
  - Allocate some savings to a “reliability reserve”
  - Update water shortage contingency plan requirements
  - Incorporate reliability goals into long-range plans
Cooperative efforts can help protect Bay Area from severe drought impacts

- Because conditions vary greatly, local suppliers are best placed to prepare for and manage droughts with:
  - Supply portfolios
  - Short-term demand management

- State and regional cooperation should focus on areas that require leadership:
  - Incentives, support for local action
  - Flexibility to reallocate scarce supplies
  - Protection of vulnerable communities, ecosystems
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These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.