

# This presentation premiered at WaterSmart Innovations

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# WATER PRICING AND REVENUE LOSS:

## Is Consumer Conservation Really the Culprit?



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Alliance for Water Efficiency



# The Good, the Bad and the Ugly

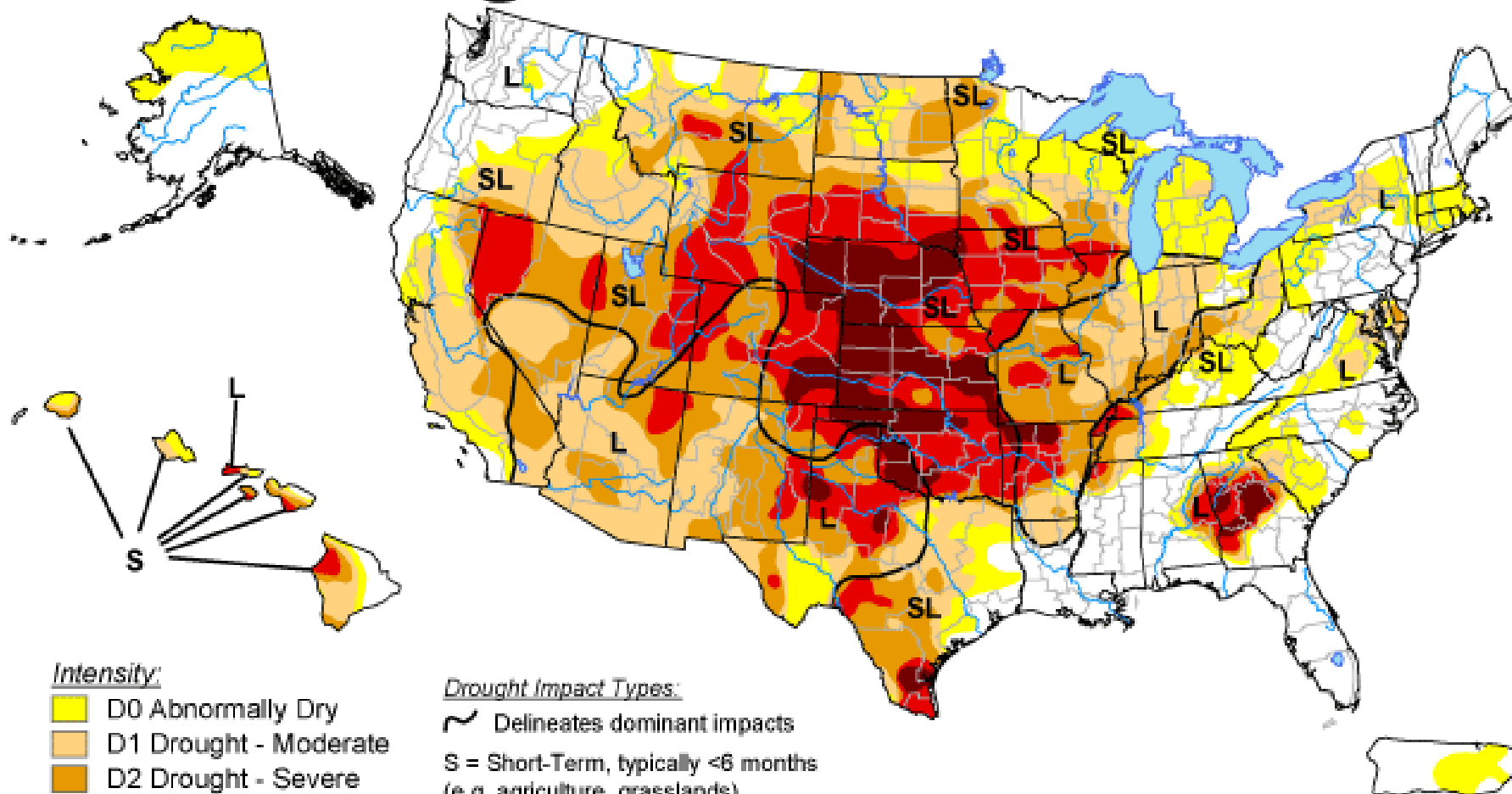
# The “Good”



# U.S. Drought Monitor

September 11, 2012

Valid 7 a.m. EDT



## Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

## Drought Impact Types:

- Delineates dominant impacts
- S = Short-Term, typically <6 months  
(e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months  
(e.g. hydrology, ecology)

*The Drought Monitor focuses on broad-scale conditions.  
Local conditions may vary. See accompanying text summary  
for forecast statements.*

<http://droughtmonitor.unl.edu/>



**Released Thursday, September 13, 2012**

**Author: David Simeral, Western Regional Climate Center**



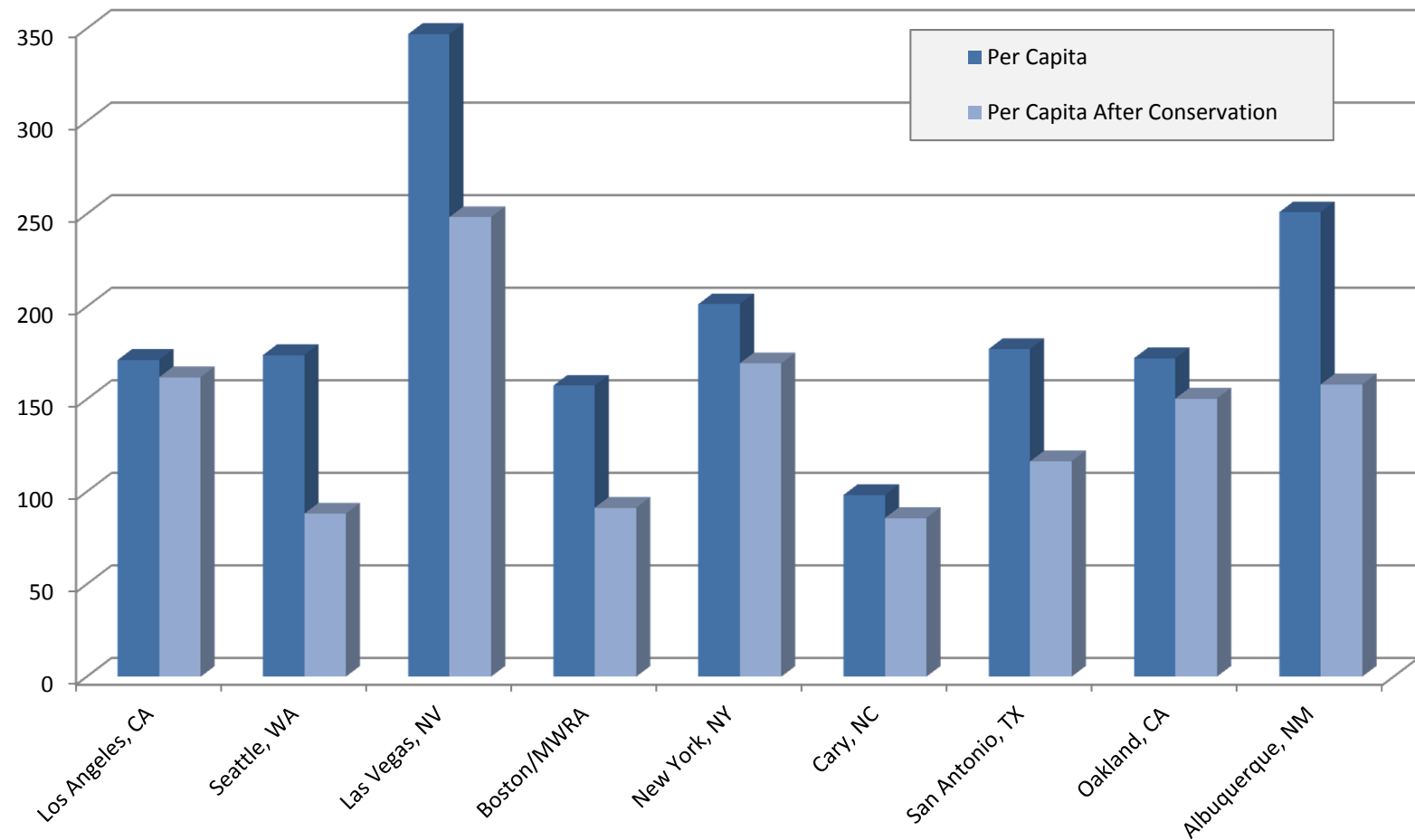


*Photo Credit: Stephen Payer, California Department of Water Resources*





# Reductions in per capita use





# The “Good”



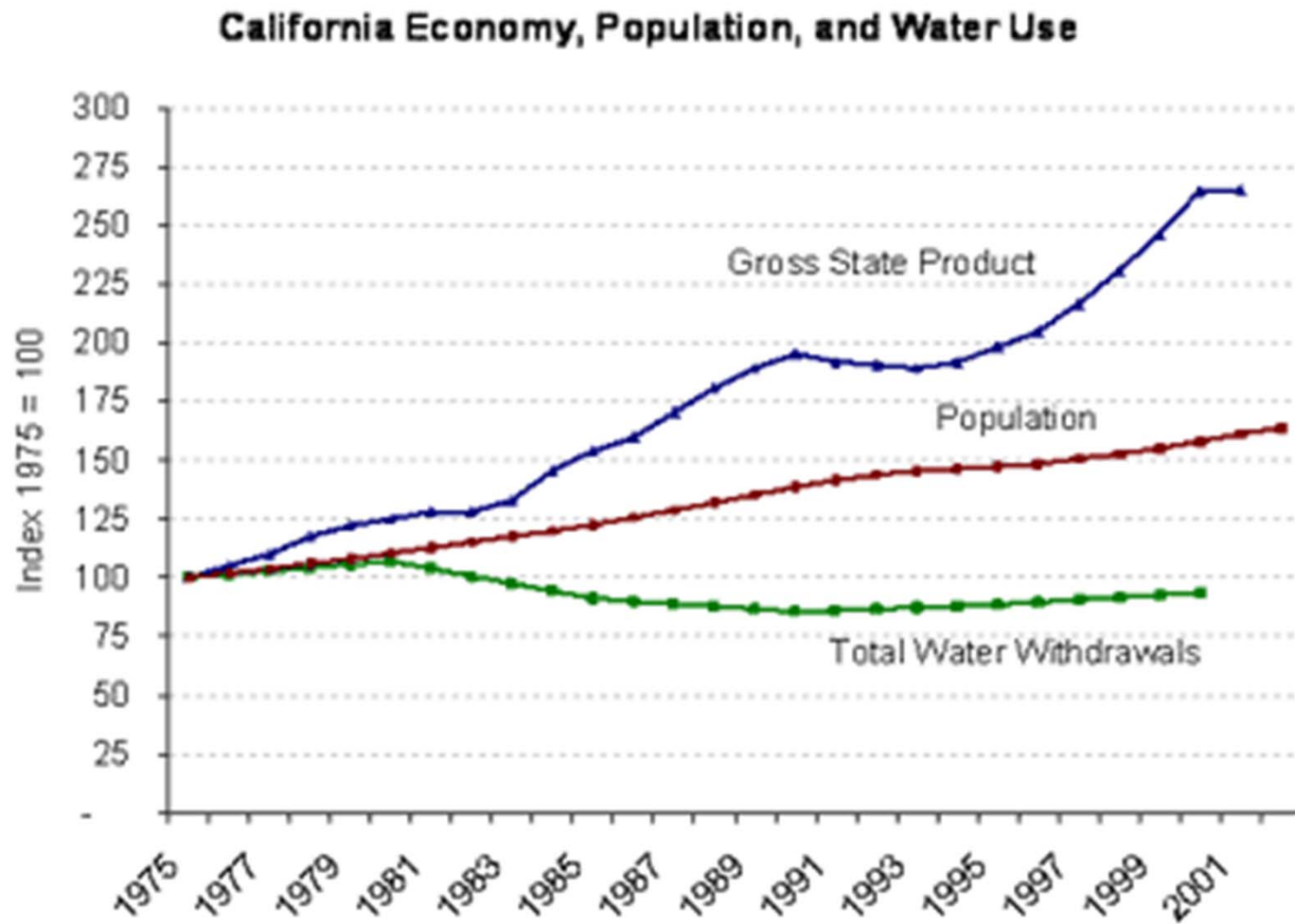
1. We are responding to shortages with documented demand reductions.
2. New plumbing fixtures and appliances are using less.
3. Consumers are using less.
4. We are reducing drought and climate change impacts.
5. The savings are helping to defer the need for new capacity infrastructure.
6. The savings also mean savings of energy and green house gas emissions.

# The “Bad”





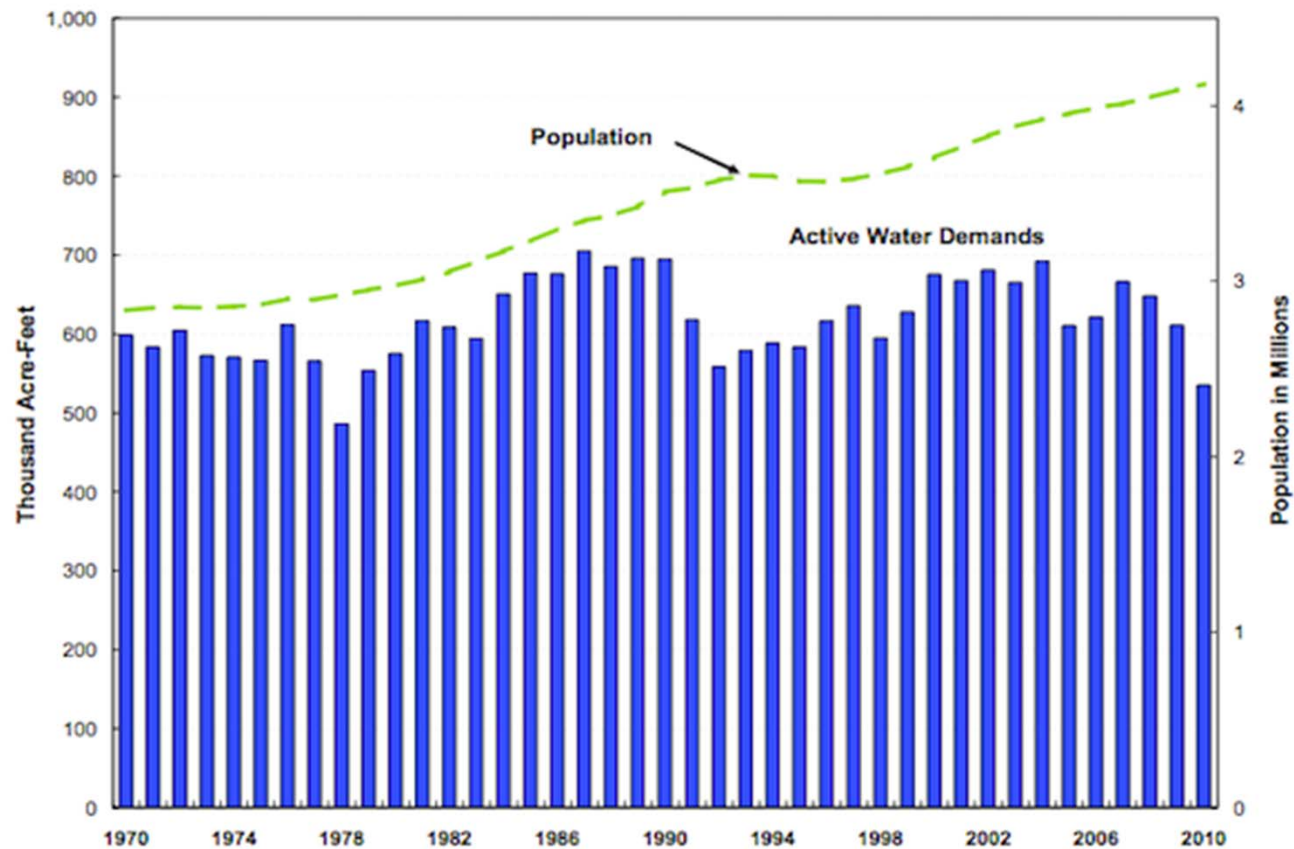
# California trends



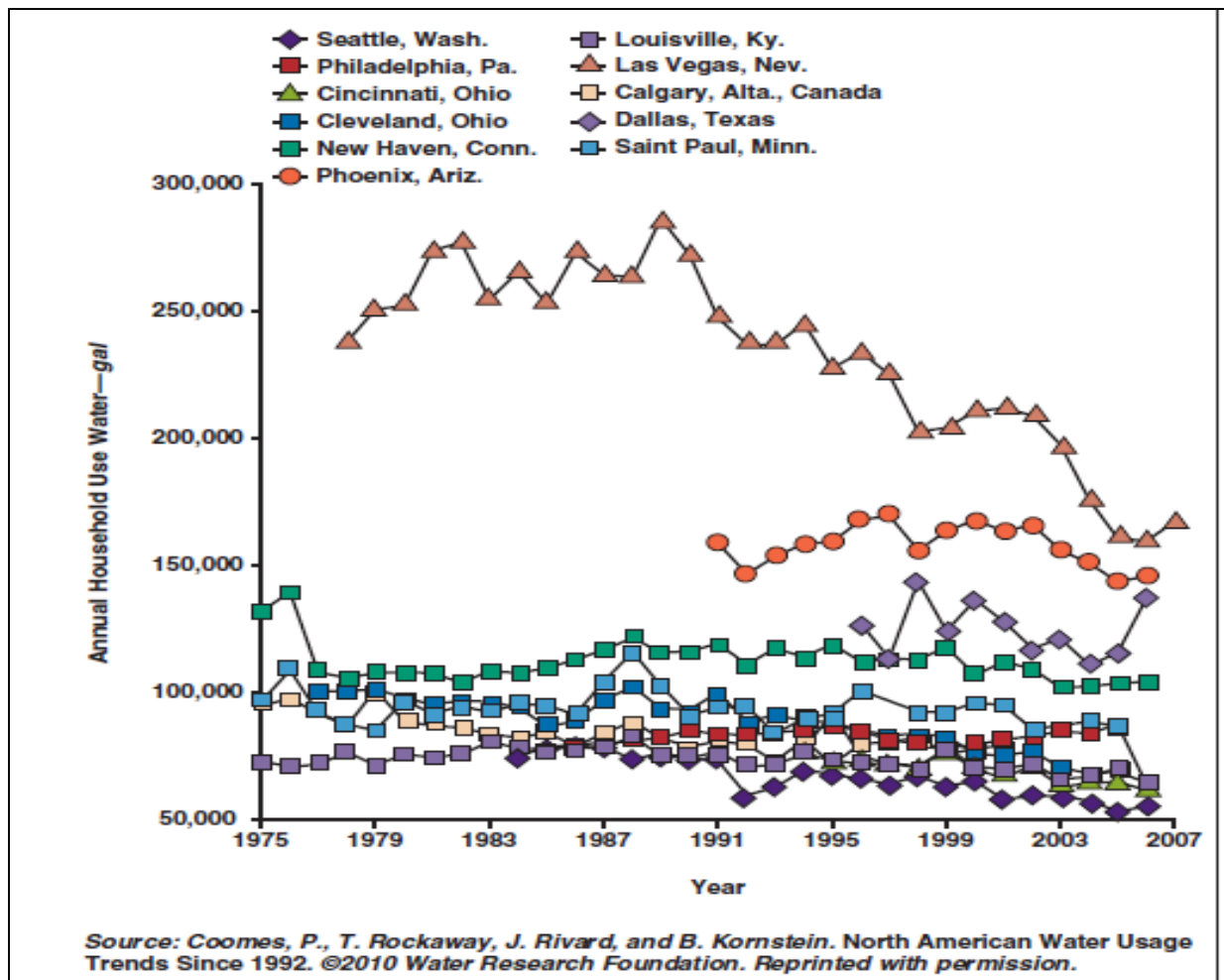


# California trends

**Exhibit ES-E**  
**Historical Total Water Demand in LADWP's Service Area**

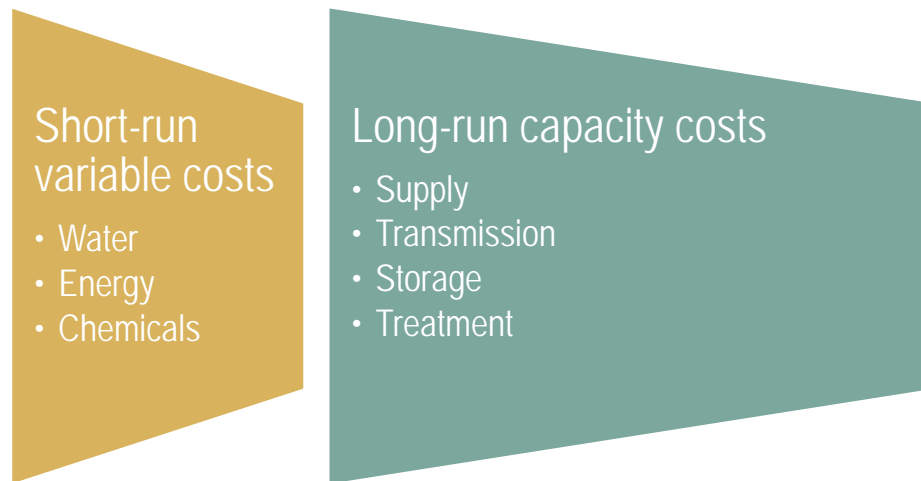


# Water usage in U.S. cities



# A significant success story

- *But we don't like it.*
- Lowered demand means reduced revenue for the water utility.
- Reduced revenue can mean uncollected fixed costs.



# The “Bad”



1. The extent of this reduced demand is actually catching utilities by surprise.
2. Second problem: water costs are rising faster than for other utilities like energy, telephone, and cable.
3. The “bundling” of municipal services into “the water bill” makes the rise in the customer bill even worse.



### Long-term trends in consumer prices (CPI) for utilities (1983=100)

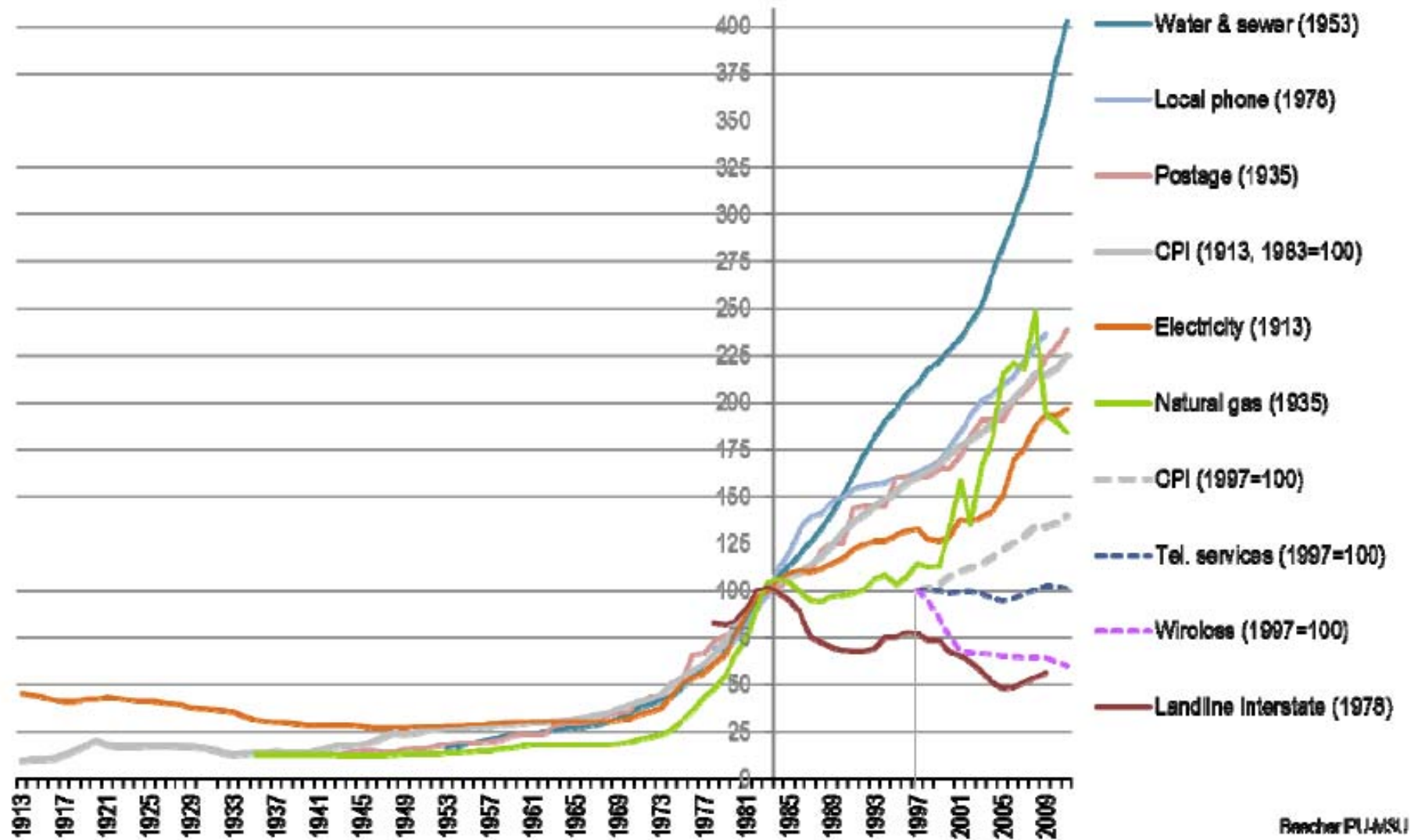


Exhibit 1. Long-term trends in the Consumer Price Index (CPI) for utilities (1913-2011).

The index is set to 100 for 1982-1984 except for telephone and wireless services, where the index is set to 100 for 1997.

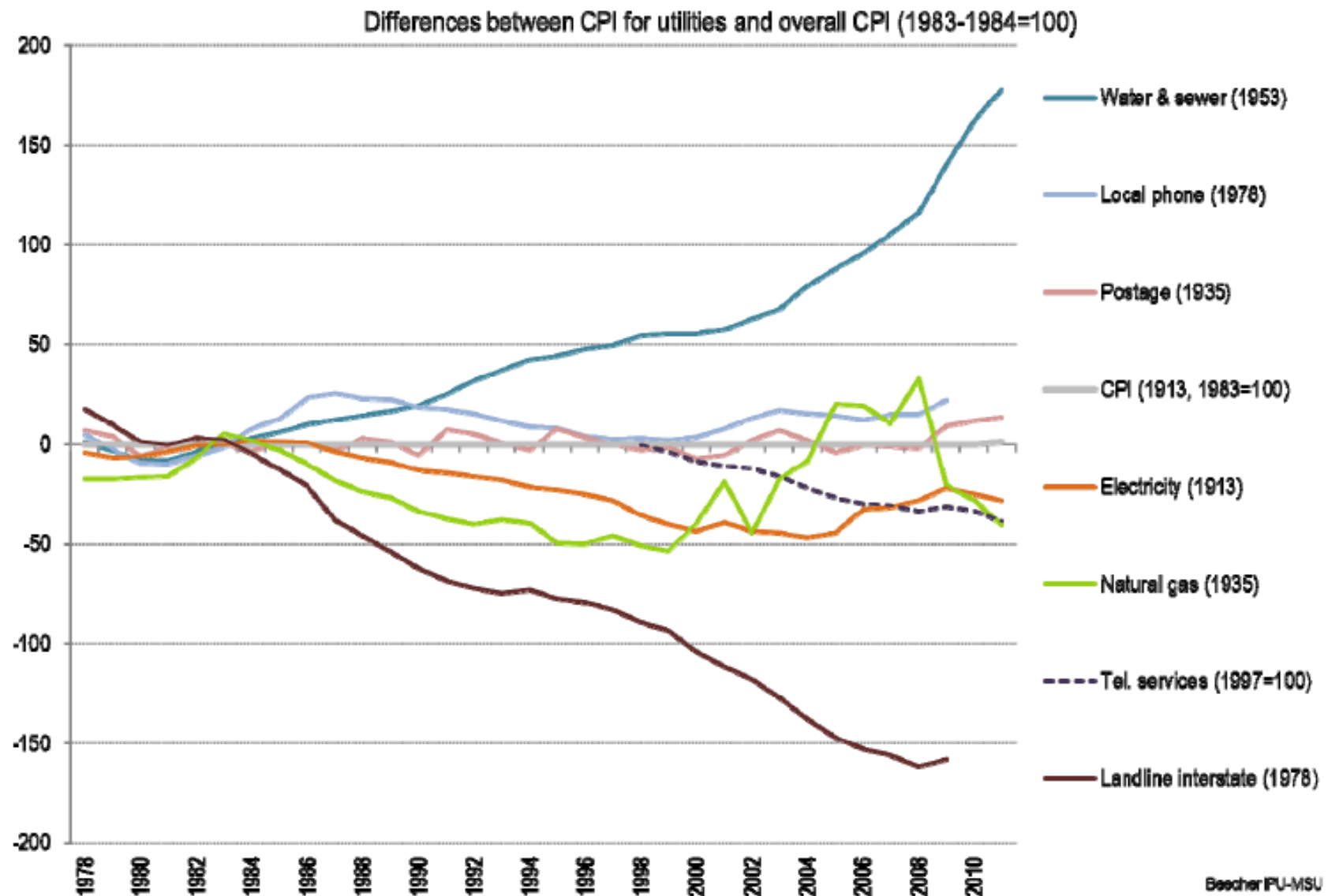


Exhibit 4. Trends in the difference between the overall CPI and the CPI for utilities (1978-2011).  
The index is set to 100 for 1982-1984 except for internet and wireless services, where the index is set to 100 for 1997.

# The “Ugly”

Revenue Loss!



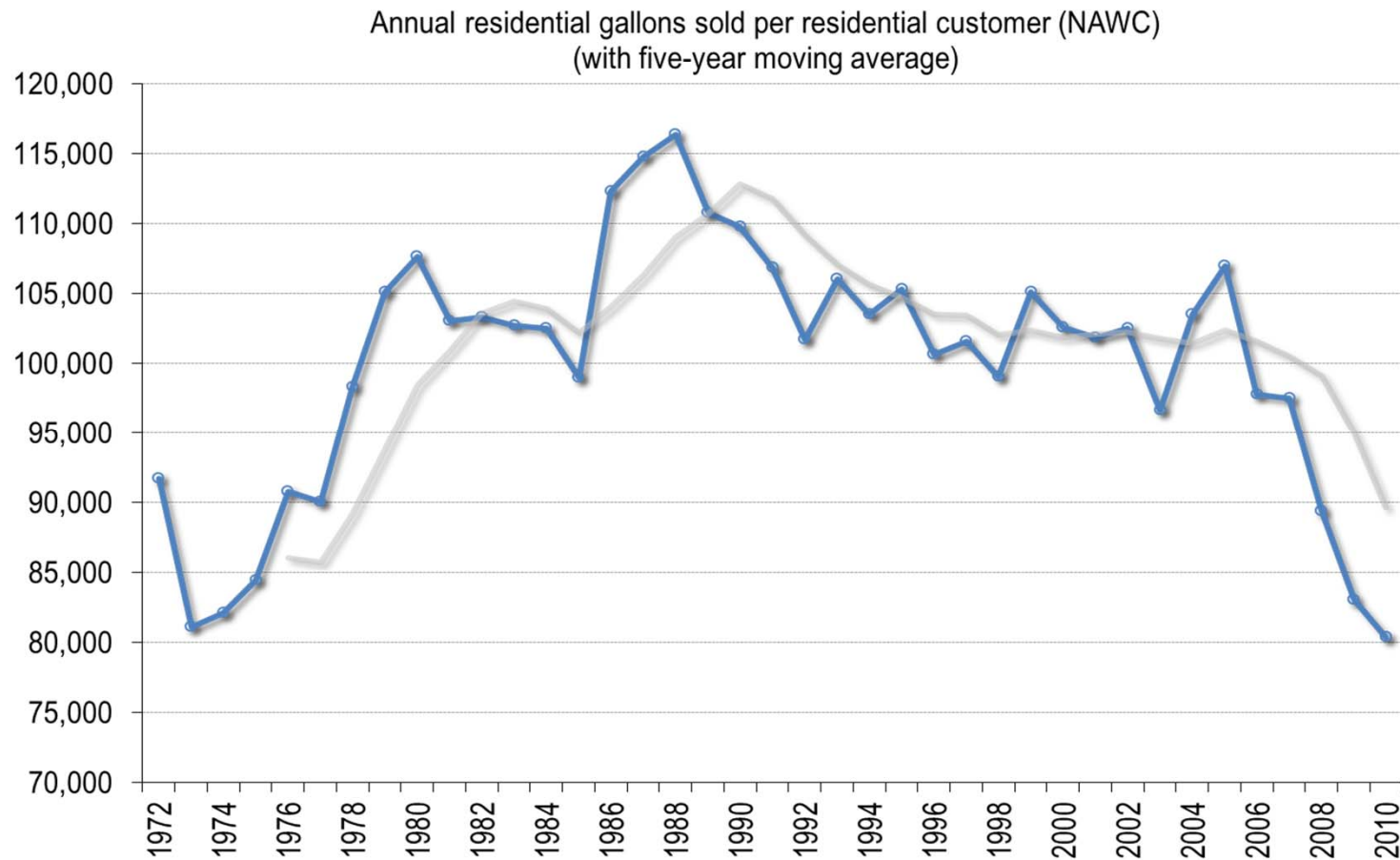
# When not in drought



- ❑ Water utilities complain about not selling enough water to meet fixed costs.
- ❑ Massive revenue losses (\$240 million at one California utility last year).
- ❑ Yet consumers expect the water bill to go **down** not **up** when supplies are available.
- ❑ The costs avoided by the utility from conservation get forgotten in the drive to sell excess capacity.



# Residential water sales (NAWC)



# What causes revenue loss?

- ❑ Reduced demand from efficient fixture replacement under the plumbing and appliance codes.
- ❑ Reduced demand from active conservation programs.
- ❑ Reduced demand from the recession: industrial shift layoffs, home foreclosures.
- ❑ Reduced peak demand because of wet weather.
- ❑ Increased costs to maintain/renovate infrastructure.
- ❑ **Continuing Inflation.**
- ❑ **Rise in fixed costs.**



## The “Ugly”

**Water rates rise, consumers get angry!**

# The Anomaly



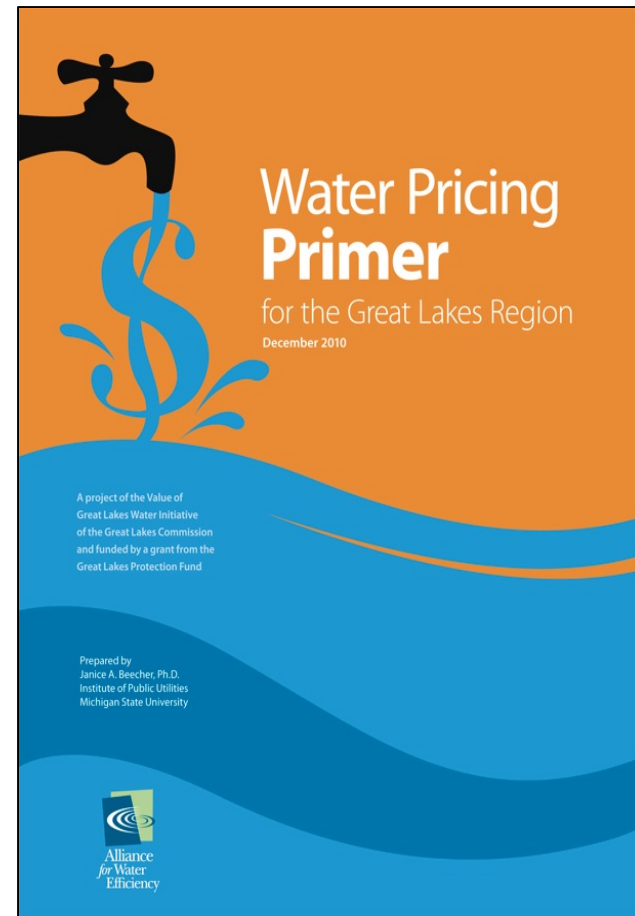
## **Water is still a bargain for the consumer in the US**

- A 30% rate “hike” often no more than a \$10 per month increase in the average customer bill.
- The same angry consumer is willing to pay thousands of times more for it in a plastic bottle.
- This perception is our fault – US water managers crave to be the “silent provider”.



# Water Pricing

- We are still designing water rates as we did 50 years ago.
- It is time to examine newer methods (e.g. budget-based rates, cell phone rates).
- Much work going on right now on this issue.





## The “Ugly”

**Water efficiency programs get cut.**

# Conservation means a rate increase



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## Larkfield water rates increase

by Matthew Hall  
Times Editor  
[matthew@sonomawest.com](mailto:matthew@sonomawest.com)

Published: Wednesday, January 26, 2011 2:39 PM PST

Mark West residents are facing another round of rate increases for water service due to a proposal by their water provider to raise rates by 43 percent over the next three years.

California American Water, the company responsible for providing water service to the Larkfield area, has proposed increasing rates by 37 percent in 2012, 1.9 percent in 2013 and 4.2 percent in 2014.

Evan Jacobs, Manager of External Affairs for the company said the bulk of the increase is needed to help offset declining revenues caused by customer conservation.

"Unfortunately, we have a very high ration of fixed costs to variables," he said. "When revenue goes down, we need to increase revenue to meet those fixed costs."

According to California American's application, about 44 percent of the 2012 increase would be used to offset reduced water sales. Additional costs include maintenance of the water system. "We have \$2.3 million slated to refurbish all of our wells, clean and refurbish equipment, as well as making treatment plant improvements."

According to calculations by the Sonoma County Water Agency, from whom California American purchases some of its water supply, the average Larkfield customer would see their monthly bill increase from \$68.56 to \$99.4 by 2014. Larkfield customers would pay 191 percent more than Windsor customers and 102 percent more than Santa Rosa residents.

Jacobs said comparisons to neighboring water districts was misleading because the Larkfield area didn't have access to the same revenue sources as a municipality. He said municipalities could charge developers additional fees to help subsidize the cost of water service while private companies could only recoup costs through rates. He said the small size of the Larkfield

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# Water Efficiency Disincentives



- ❑ When revenues are down, active conservation programs get cut in desperation to close the gap.
- ❑ Even despite demonstrated long term benefits of avoided infrastructure.
- ❑ Short term anxiety over revenue loss is a key driver & water efficiency programs are usually cut.
- ❑ When water rates rise, consumers rebel, particularly in wet years.
- ❑ Most water rates set by publicly-elected officials.

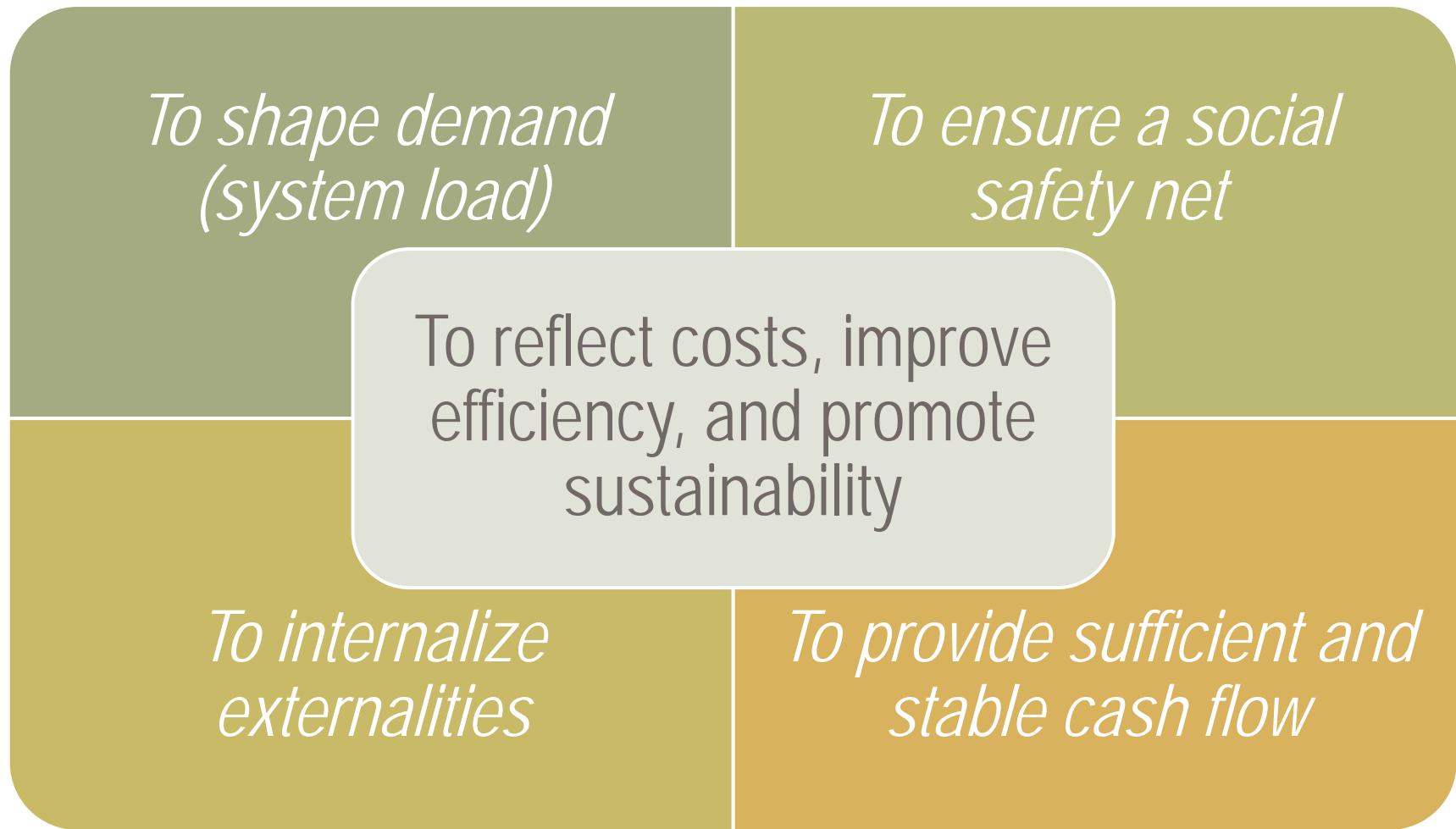


## The “Ugly”

**Elected water officials are nervous.**



# The goal of water pricing



# The goal of the elected official



- Primary goal: **Getting re-elected.**
- The water board often their first elected position.
- There is an overriding desire to please the public and thus garner future voting loyalty.
- Raising rates is clearly politically unpopular; an elected official who doesn't care about political popularity is a short-term elected official.
- *“Water will get you elected and water will get you fired.”*
- Even rate increases for inflation are getting rejected.

# The “Ugly” Recap



1. We are experiencing deep unexpected revenue losses where utilities don't sell enough water to meet fixed and variable costs.
2. Water rates rise and consumers get angry!
3. Water efficiency programs thus get cut and water conservation is no longer encouraged.
4. Elected officials don't vote the rate increases that are needed.



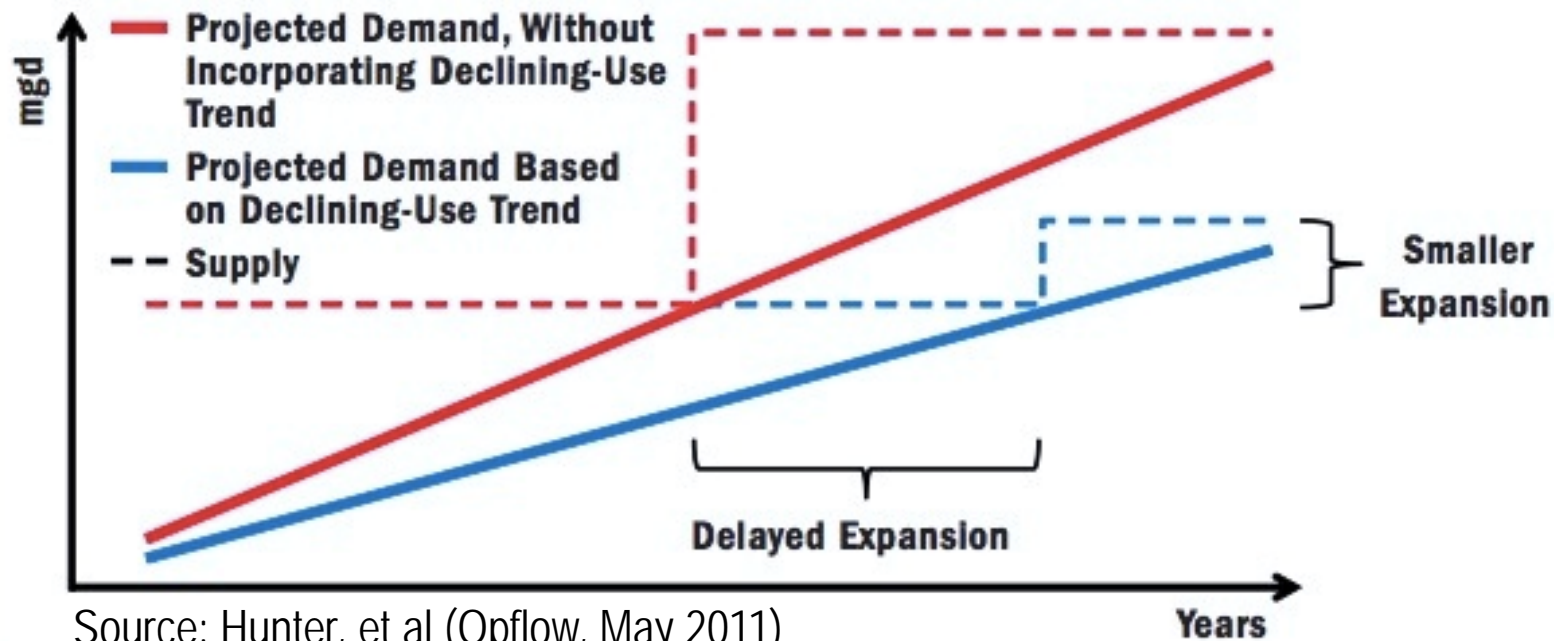
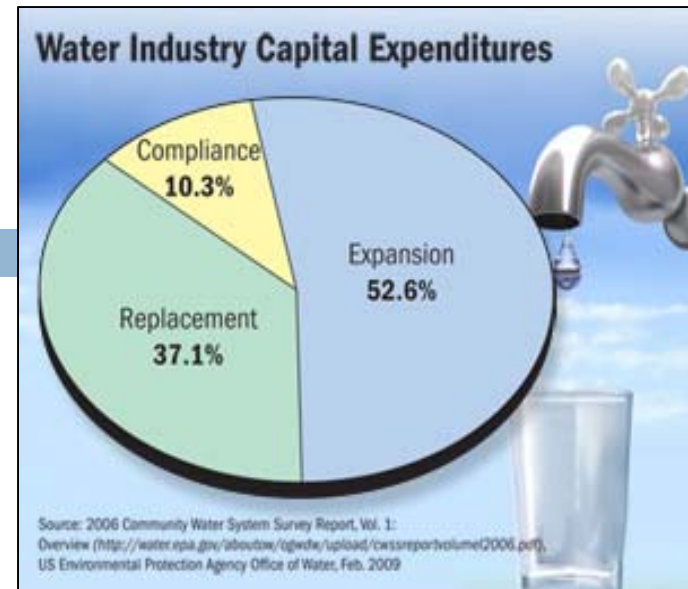
How do we fix this?

# Better demand forecasting

- A forecast of the *level* of future water demand
- A forecast of the *shape* of future water demand
- A quantification of the *uncertainty* surrounding future water demand
- A quantification of the *response* of water demand to changes in rates
- An accounting of the *water savings achieved* by demand-side management
- An estimate of the potential *water savings achievable* through demand-side management



# Assess benefit



Source: Hunter, et al (Opflow, May 2011)

# AWE CONSERVATION TRACKING TOOL: UTILITY REVENUES & RATES WORKSHEET

Last Loaded Scenario: "Sample Scenario (English Units)" loaded on 10/25/2010 1:39:40 PM

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## Utility Revenue Requirement and Rate Impacts

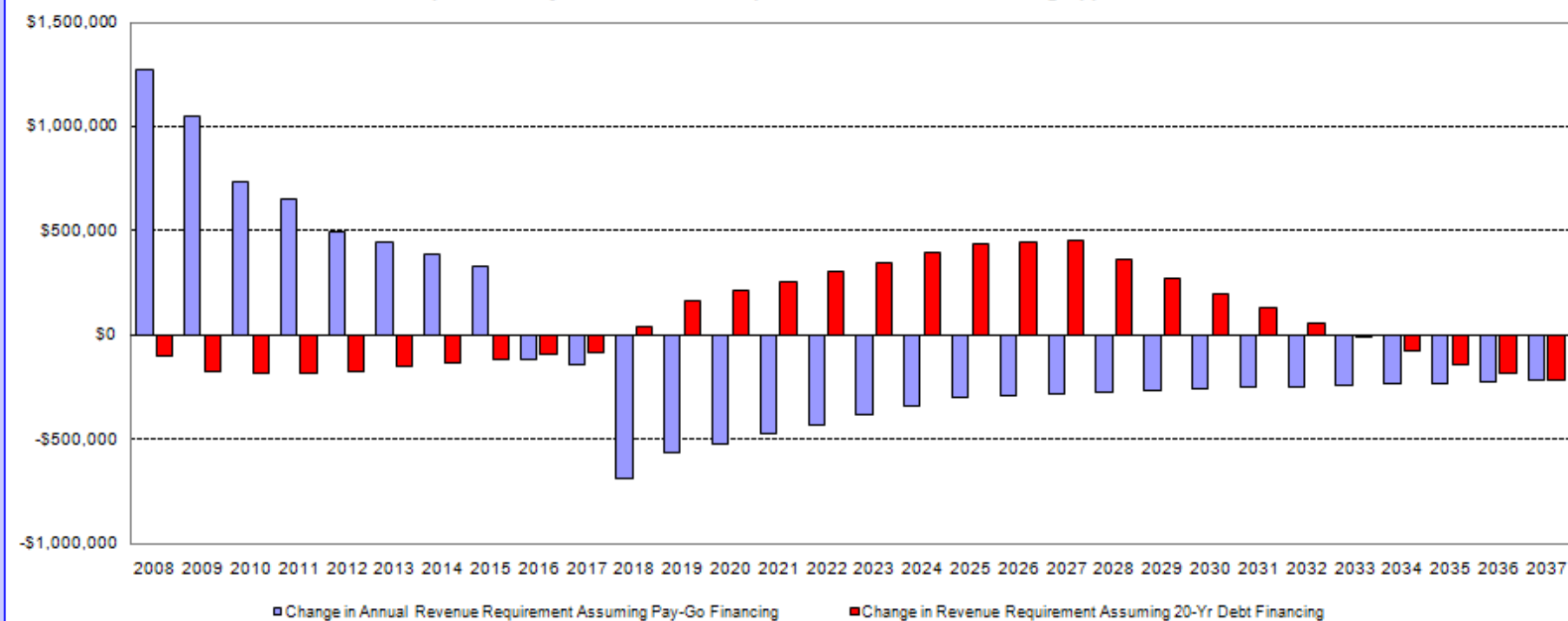
Program Impact on...	Baseline	With Conserv.	Change to Baseline
Water Utility Annual Sales Revenue Requirement	49,742,591	\$49,714,663	(\$27,927)
% change from baseline			-0.06%
Avg. Water Rate (\$/Thou Gal)	\$2.17	\$2.30	\$0.13
% change from baseline			6.05%
Annualized Bill Impact (\$/Mo.)	46.86	\$46.84	(\$0.01)
% change from baseline			-0.03%

## Select Impact Chart to View

Revenue Requirement

[Chart Explanations](#)

## Impact to Utility Sales Revenue Requirement Under Two Financing Approaches



# Steps to address the revenue shortfall



- ❑ Rate adjustments
- ❑ Improved cost forecasting
- ❑ Improved demand forecasting
- ❑ Weather normalization
- ❑ Cost-adjustment mechanisms
- ❑ Cost indexed rates
- ❑ Demand-repression adjustment
- ❑ Revenue-stable rate design
- ❑ Property-based fire-protection charge

# Steps to address the revenue shortfall



- ❑ Three-part tariff (customer, capacity, commodity)
- ❑ Straight fixed-variable pricing
- ❑ Water-budget rates
- ❑ Rate stabilization fund
- ❑ Public-benefit surcharge
- ❑ Lost-revenue adjustment or statistical recoupling
- ❑ Revenue cap, assurance or decoupling
- ❑ Earnings adjustment mechanism



# The Good, the Bad and the Ugly





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