

Saving Water Makes Cents: Water Efficiency as a Strategy for Improving Affordability

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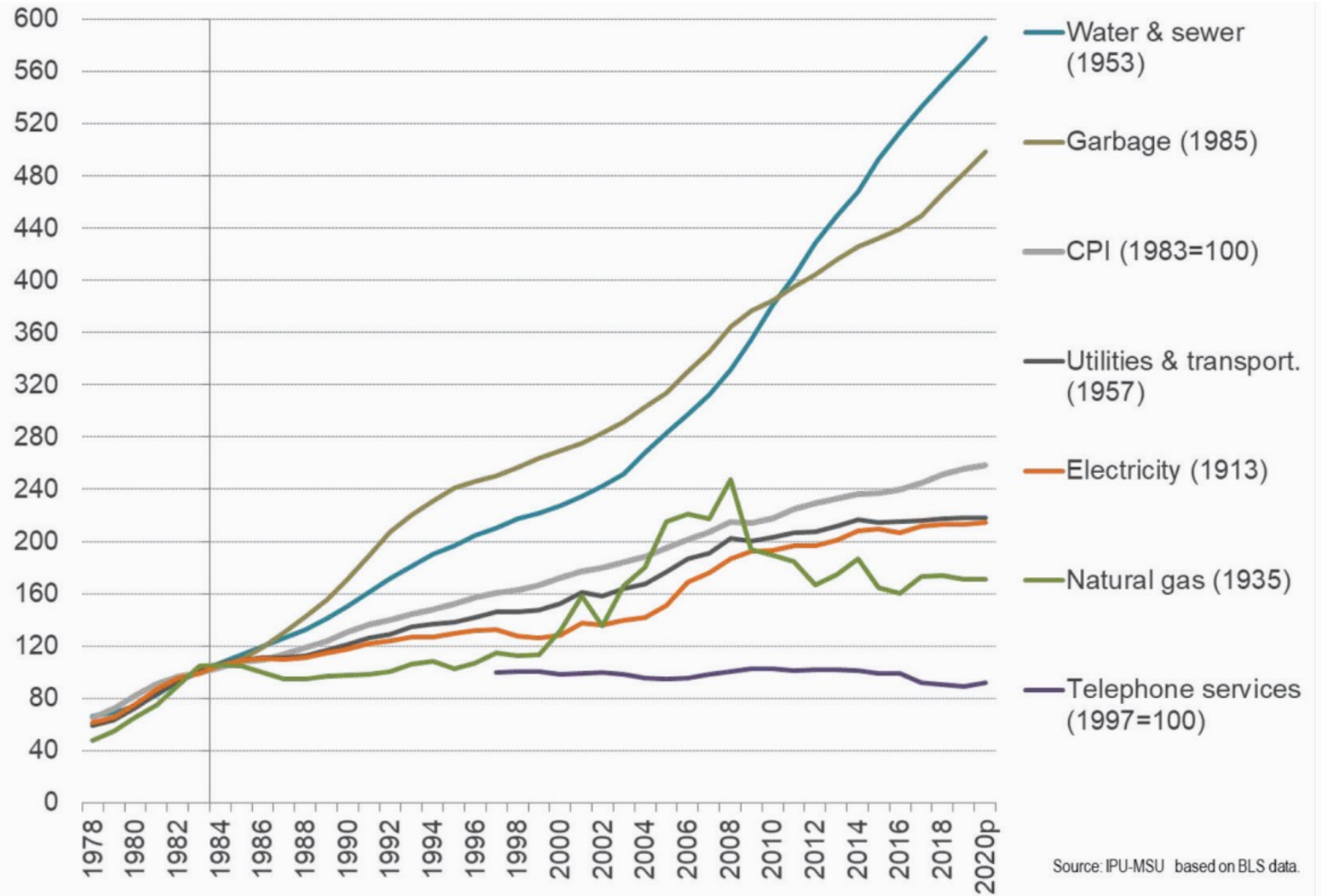




Presentation Overview

- Current trends for water and sewer rates and urban water use
- Immediate effect of water efficiency on water costs for conserving households
- Longer-term effect of water efficiency on water costs
- Equity considerations
- Key takeaways and recommendations

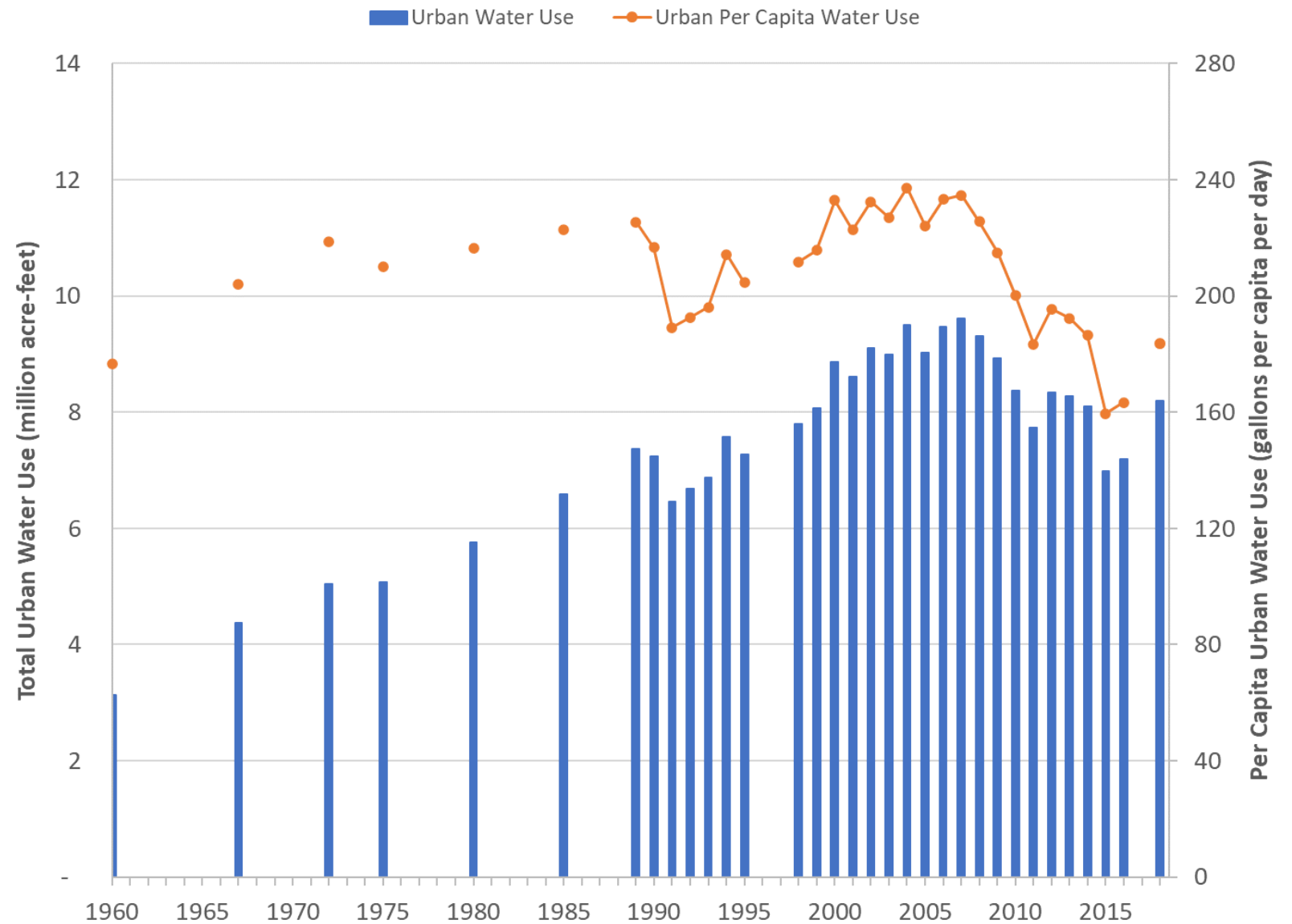
Water and sewer rates are rising faster than inflation and all other utilities.



Source: Beecher 2021



Urban Water Use Trends, 1960-2018



Source: Beecher 2021

What is the immediate effect of water efficiency on water costs for conserving households?

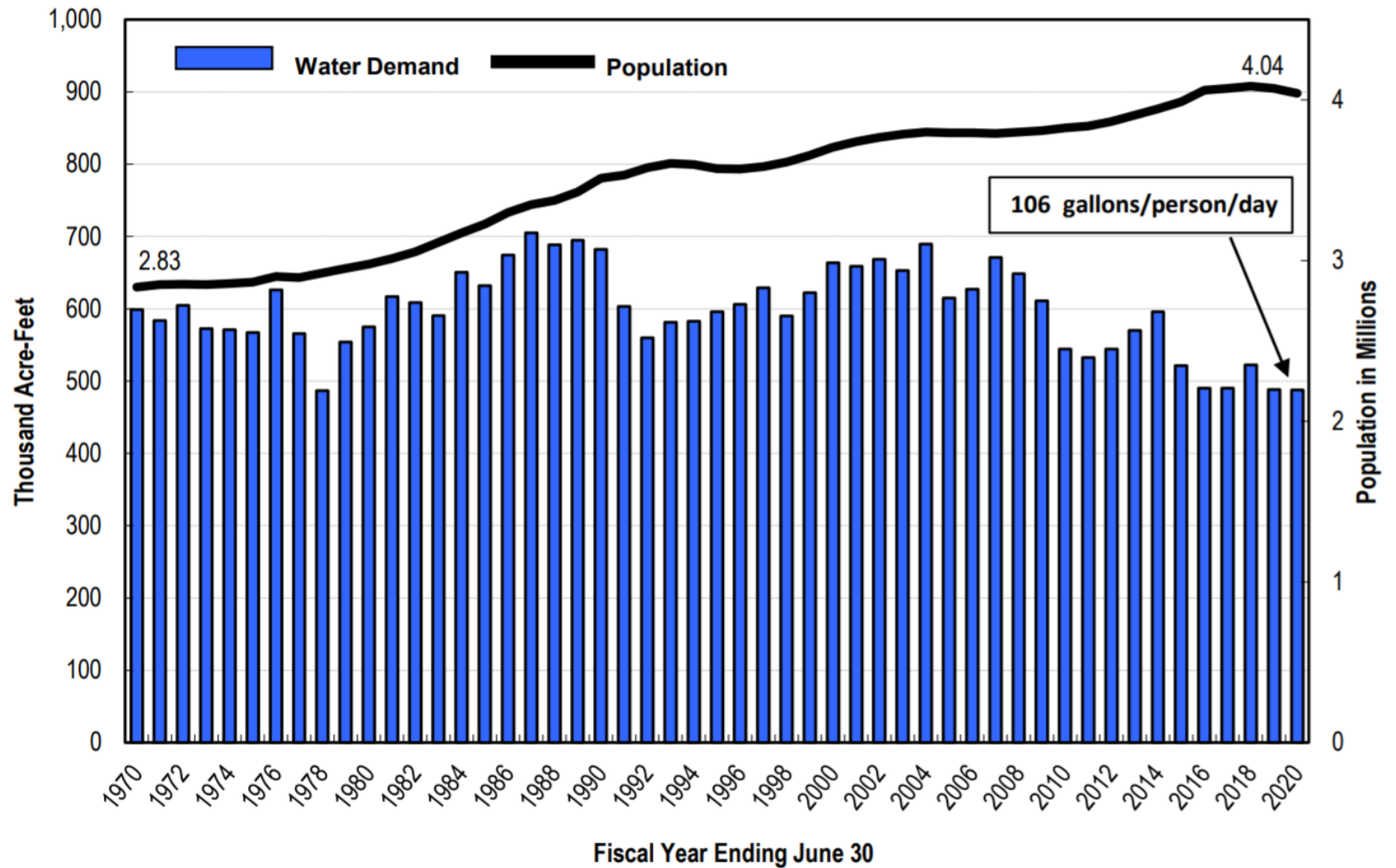
Household Utility Cost Savings

	High-Efficiency Toilet	
	Low Estimate	High Estimate
Annual Water, Wastewater, and Energy Savings		
Water Savings (gallons/yr)	3,400	12,000
Wastewater Savings (gallons/yr)	3,400	12,000
Energy Savings (kWh/yr; therms/yr)	0	0
Annual Utility Bill Savings		
Water Bill (\$/yr)	\$19.89	\$70.20
Wastewater Bill (\$/yr)	\$ 24.24	\$85.56
Energy Bill (\$/yr)	\$-	\$-
Total Utility Bill Savings (\$/yr)	\$44.13	\$155.76

Source: Cooley, Shimabuku, and DeMyers 2022

What is the longer-term effect of water efficiency on water costs?

Los Angeles
uses less
water today
than in 1970.



Case Example: Los Angeles



Per capita water use declined from 180 gallons per person per day (gpcd) in 1990 to 110 gpcd in 2016.



Efficiency improvements avoided \$9.5 billion in capital costs and \$1.6 million in operations and maintenance costs for water systems, a total savings of more than \$11 billion.



If Angelinos had NOT conserved water, water bills would be more than 36% higher.



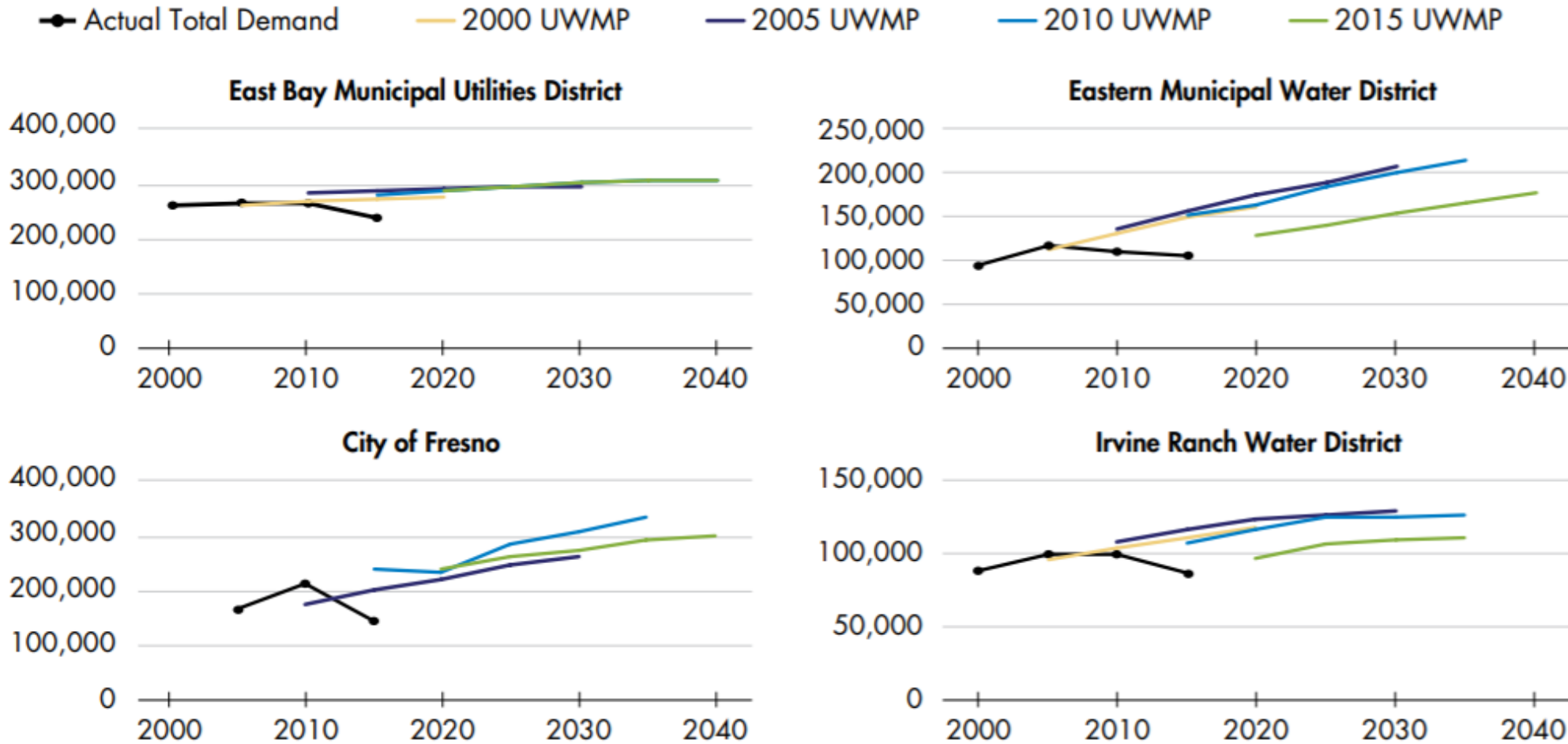
There were comparable savings for wastewater systems.

Summary of Avoided Cost Studies

	City of Westminster (Feinglas, Gray, and Mayer 2013)	
Years Compared	1980	2010
Population	Not Reported	
Water Use (gpcd)	180	149
Costs Avoided by Water Conservation and E		
Avoided Capital Costs	\$591,850,000	
Avoided Operations and Maintenance Costs	\$1,238,000 per year	
Bill Impacts without Conservation		
Additional Charges on Annual Customer Bills	\$596	
% Increase in Customer Bills	91%	
Additional Connection Fees	\$16,952	
% Increase in Connection Fees	80%	

Source: Cooley, Shimabuku, and DeMyers 2022

Water demand forecasts routinely overestimate demand, exacerbating affordability concerns.



Source: Abraham, Diringer, and Cooley (2020)

Who can access efficiency programs?

Most efficiency programs target single-family households and may be unavailable to some multi-family households and renters.

Most efficiency programs provide rebates to customers, making it difficult for low-income households to participate.

Key Takeaways

Water and sewer rates are rising faster than inflation and all other utility rates, adding to the struggle to pay water and sewer bills.

Water efficiency can immediately cut household utility costs by hundreds of dollars annually, reducing the financial burden of rising water, sewer, and energy costs.

Water efficiency reduces the need for expensive new water and wastewater infrastructure, saving communities millions and in some instances billions of dollars in capital and operating costs. Realizing these benefits requires good planning!

A major equity issue remains, as low-income households face barriers to access water efficiency programs.

Recommendations



Increase investments in water efficiency to delay or eliminate the need for new, expensive water supply and treatment infrastructure.



Improve demand forecasting to avoid building unnecessary and costly new water supply and treatment infrastructure.



Improve communications and outreach about the avoided costs of water efficiency improvements.



Target and design water efficiency programs for those in lower income households.

Thank you!

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