Getting the price right

Drinking Water 123

July 23, 2019

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Water Resource Economist

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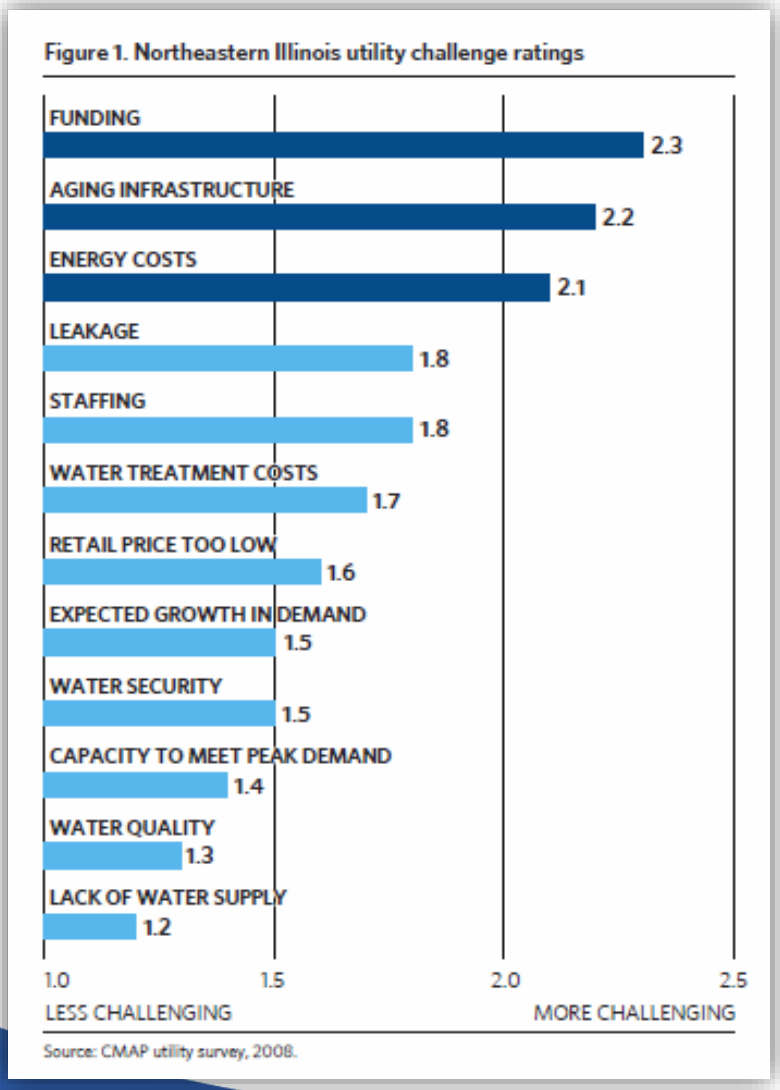
Why is water pricing important



Top Water Industry Issues (2018)

1. Renewal and replacement of aging water infrastructure
2. Financing for capital improvements
3. Public understanding of the value of water systems and services

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What are we paying for?

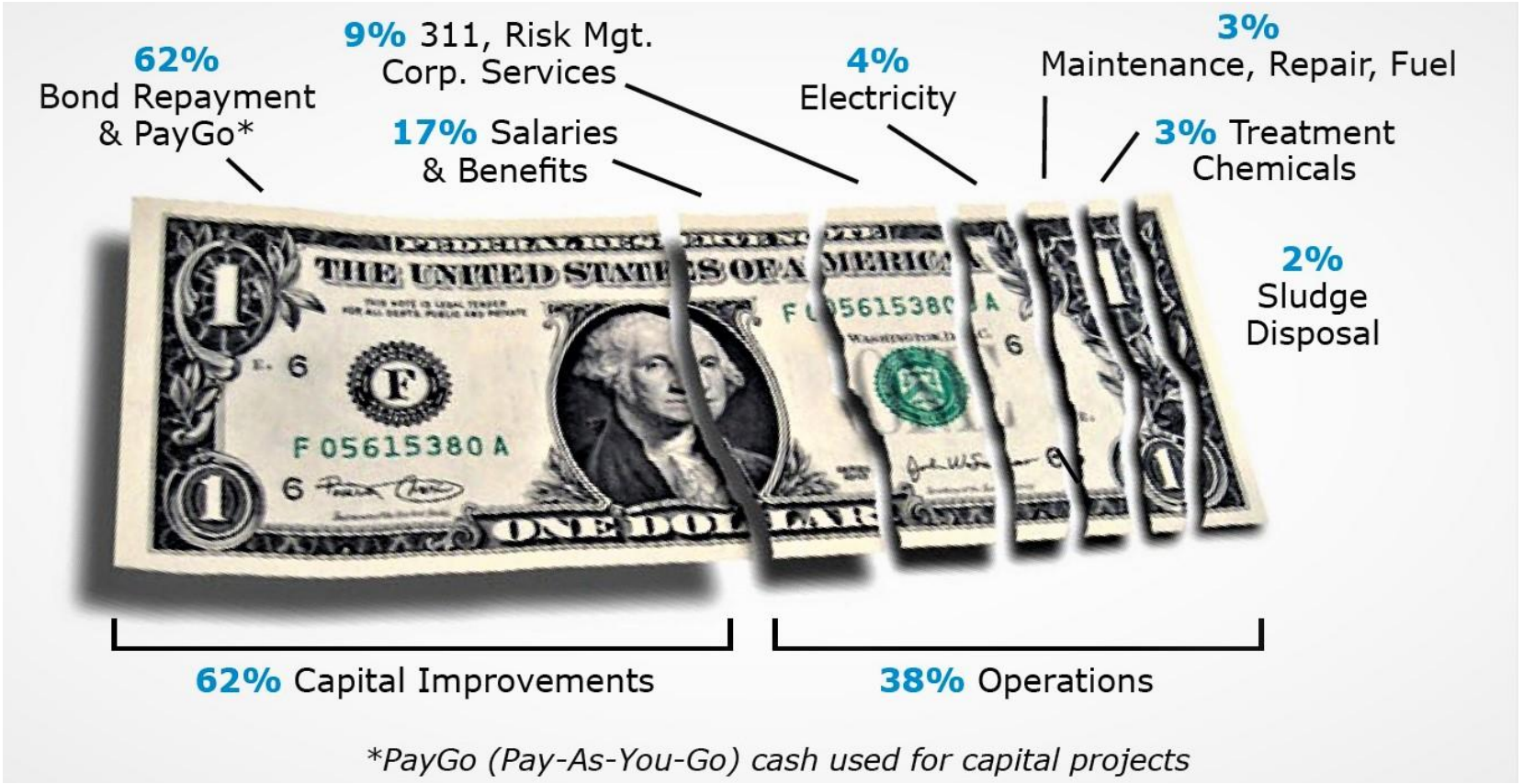
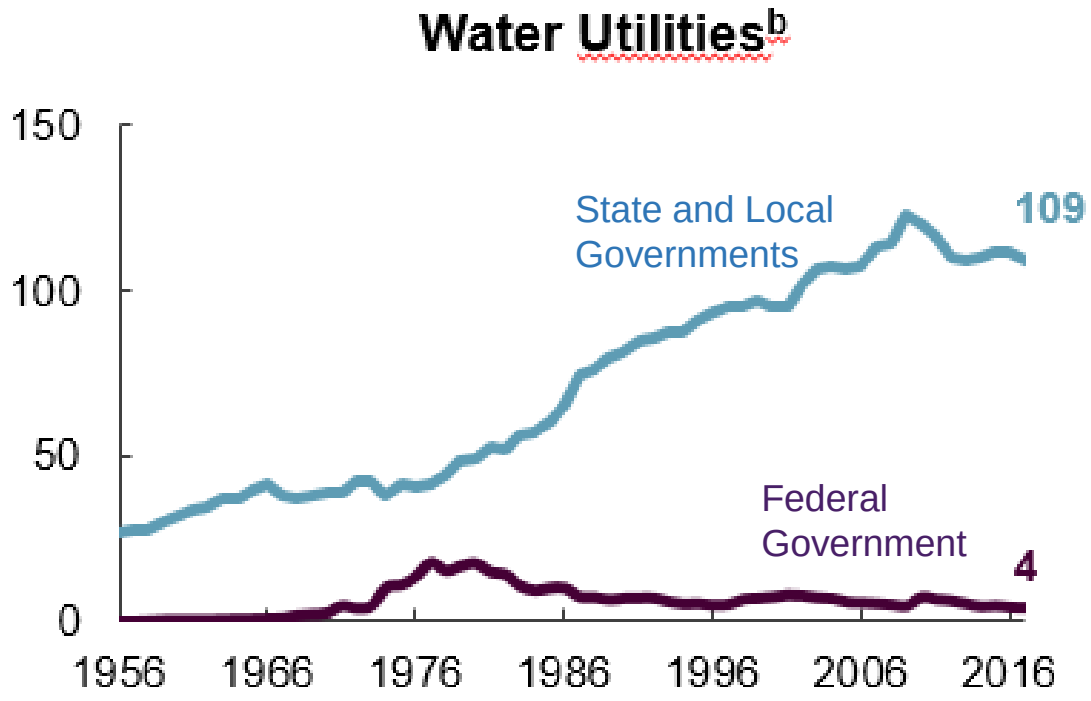


Image: Charlotte-Mecklenburg Utilities. Percentages are for specific utility and for illustrative purposes only.

Who is paying?

The Federal Government's and State and Local Governments' Spending, 1956 to 2017 (Billions of 2017$)



[b] Includes water supply and wastewater treatment facilities

Source: Congressional Budget Office. Public Spending on Transportation and Water Infrastructure, 1956 to 2017. October 2018. Publication 54539.

Communities have a choice to make about how to manage water assets

Avoid the issue and risk…

- emergency repairs
- business interruption
- public health impacts
- regulatory problems
- higher long-term costs

OR…

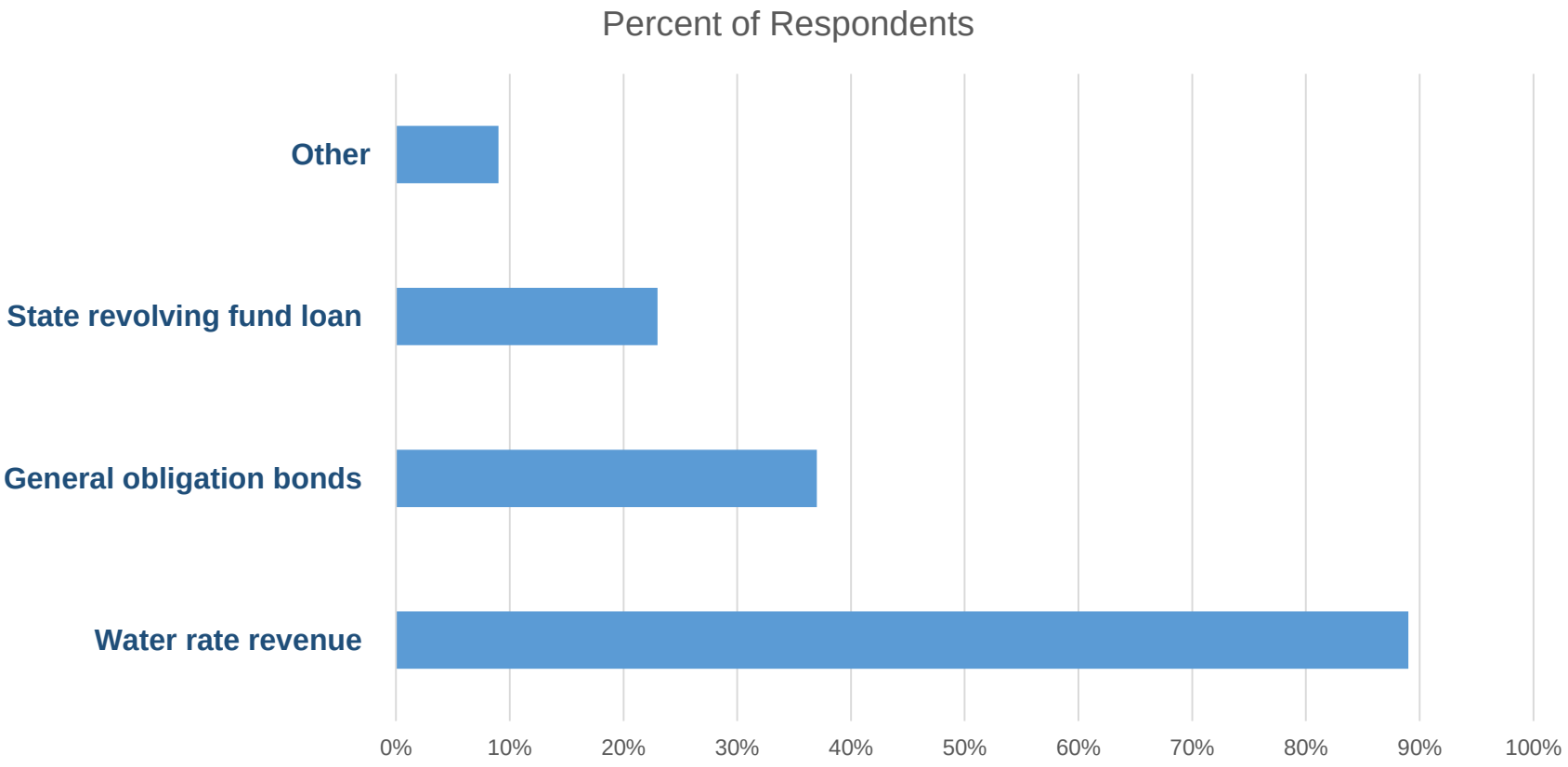
Invest proactively in management of water infrastructure assets to continue providing high-quality, reliable service. (at a lower long-term cost)

Source: RCAP

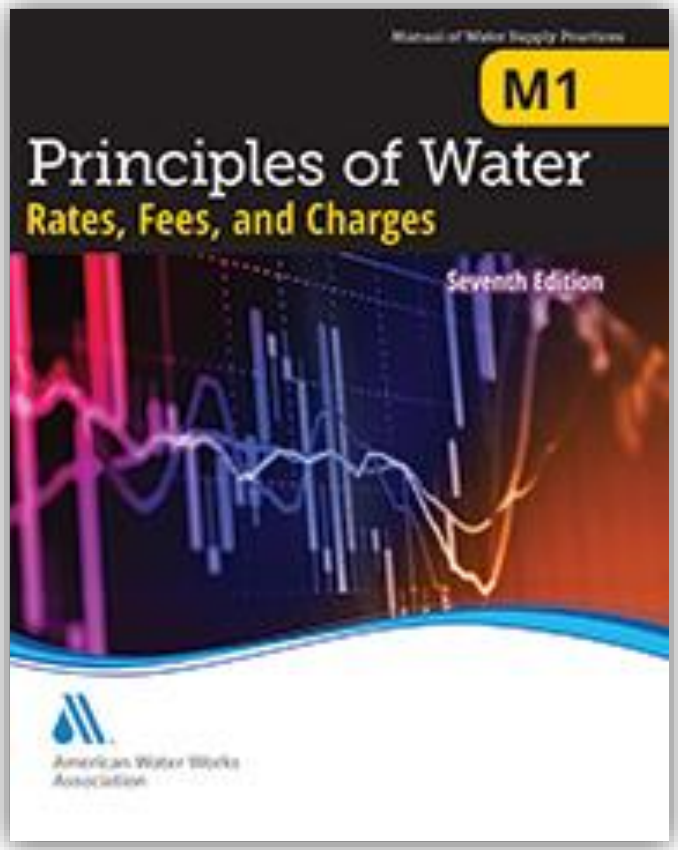
Funding sources and strategies

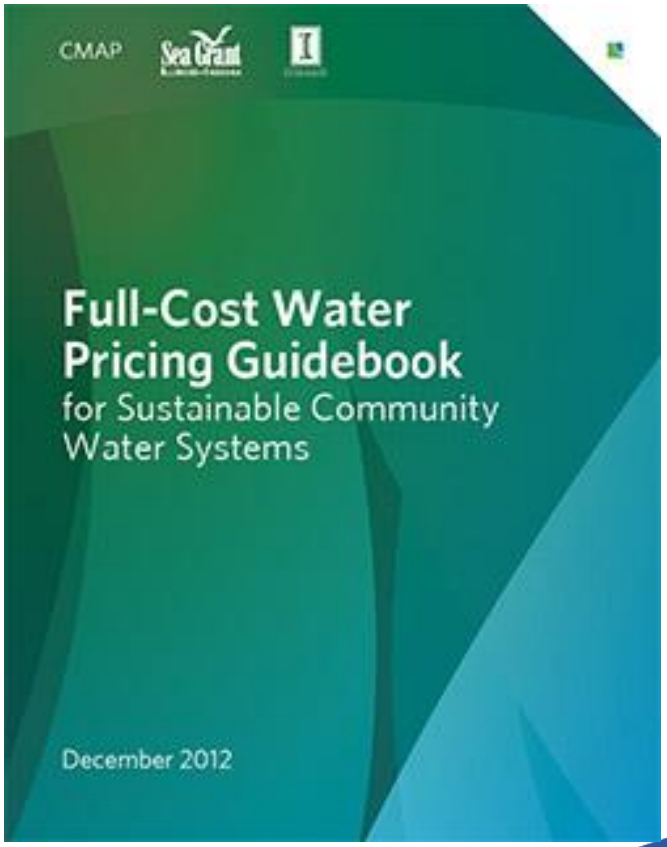
- Save now and spend later
- Spend/pay as you go – spend borrowed funds as you go and pay later
- Spend grant funds and get someone else to pay

Source of funding for drinking water infrastructure, repair, and replacement



Source: Center for Neighborhood Technology and Chicago Metropolitan Agency for Planning Water Loss Survey, 2013.
More than one answer could be selected. n = 79.


M1
Principles of Water
Rates, Fees, and Charges
Seventh Edition
American Water Works Association


CMAP
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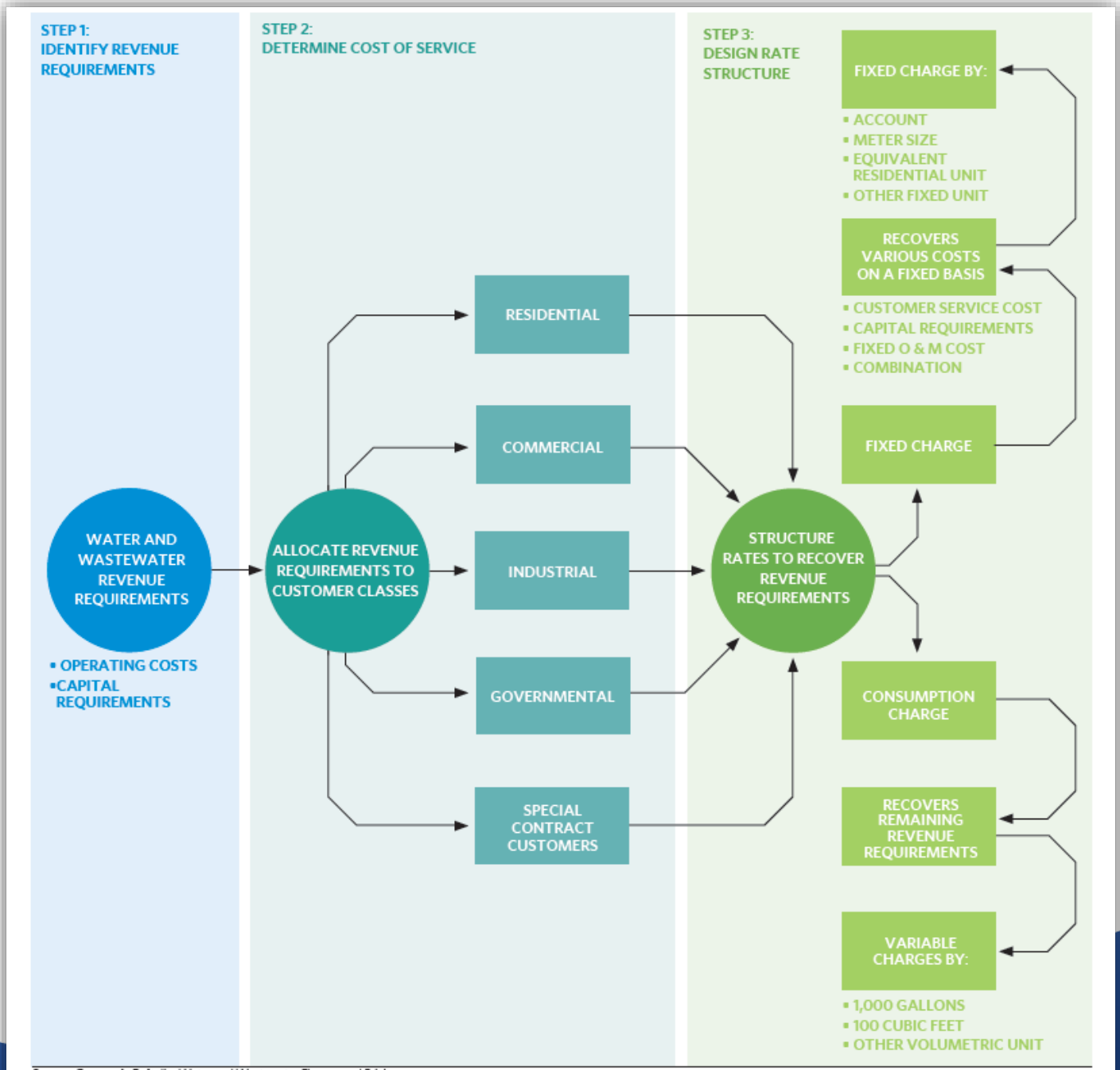
Full-Cost Water Pricing Guidebook
for Sustainable Community Water Systems
December 2012



Source: George A. Raftelis, *Water and Wastewater Finance and Pricing.*

Analogy: what is the full cost of driving?

- Gas
- Maintenance
- Operation
- Financing

- Road Maintenance & Construction

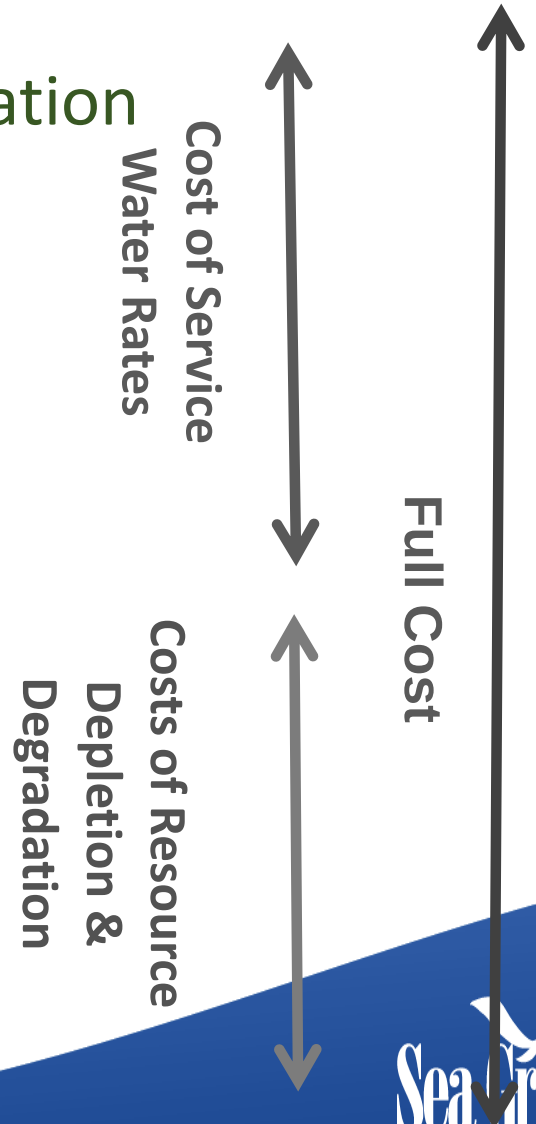
- Traffic Congestion
- Emissions Impacts

Full cost water pricing

- Operations, Maintenance, Administration
- Debt Service
- Reserves
- Infrastructure Renewal and Repair

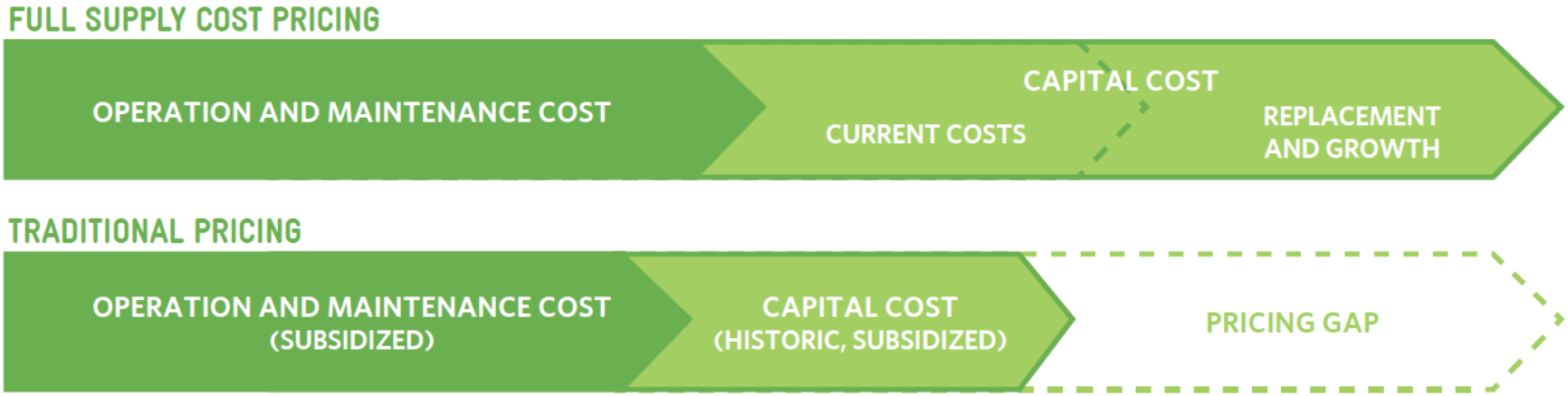
- Infrastructure Replacement

- Planning & Programming
- Water Source Protection



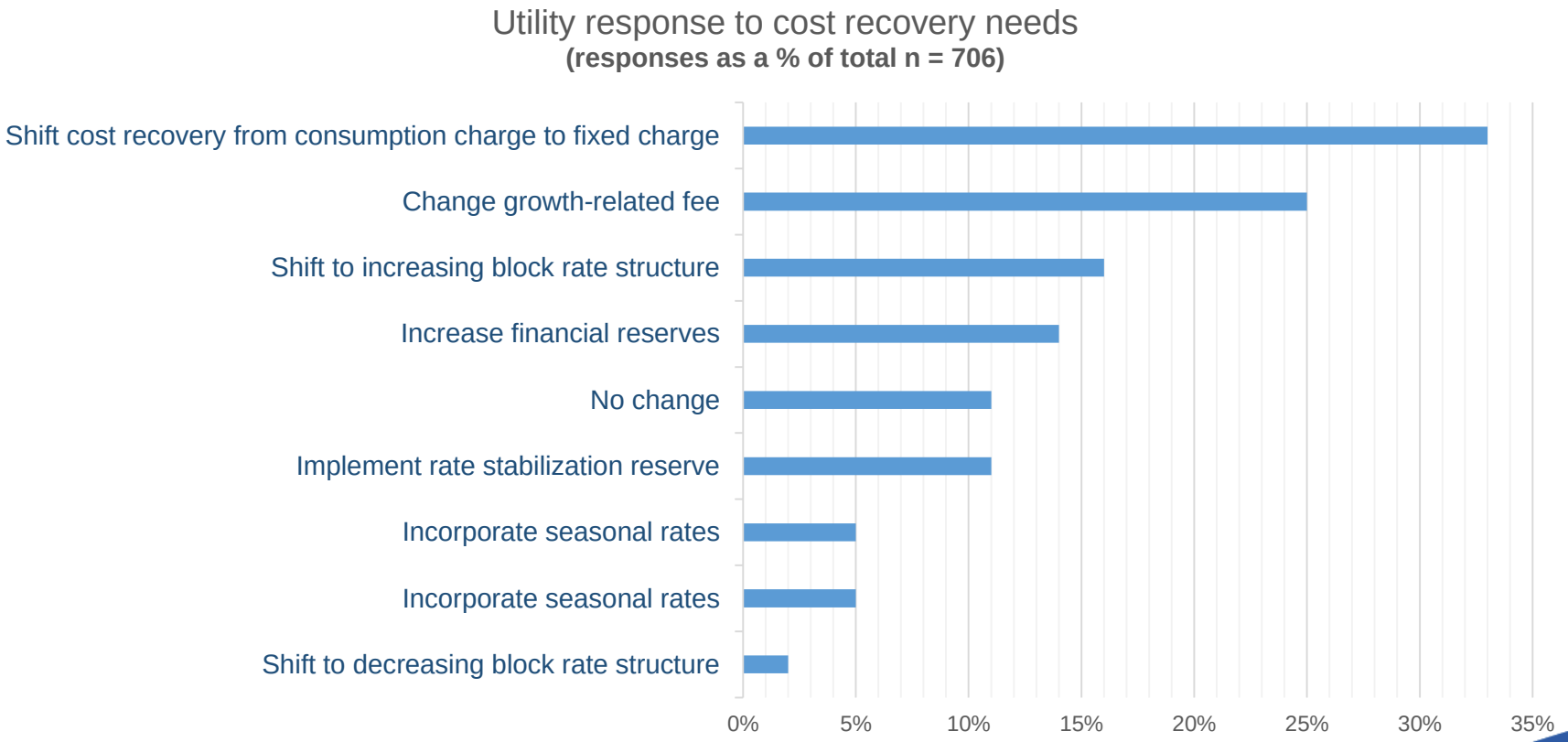
Cost of service rates: the pricing gap

Adjusting price towards full supply cost.



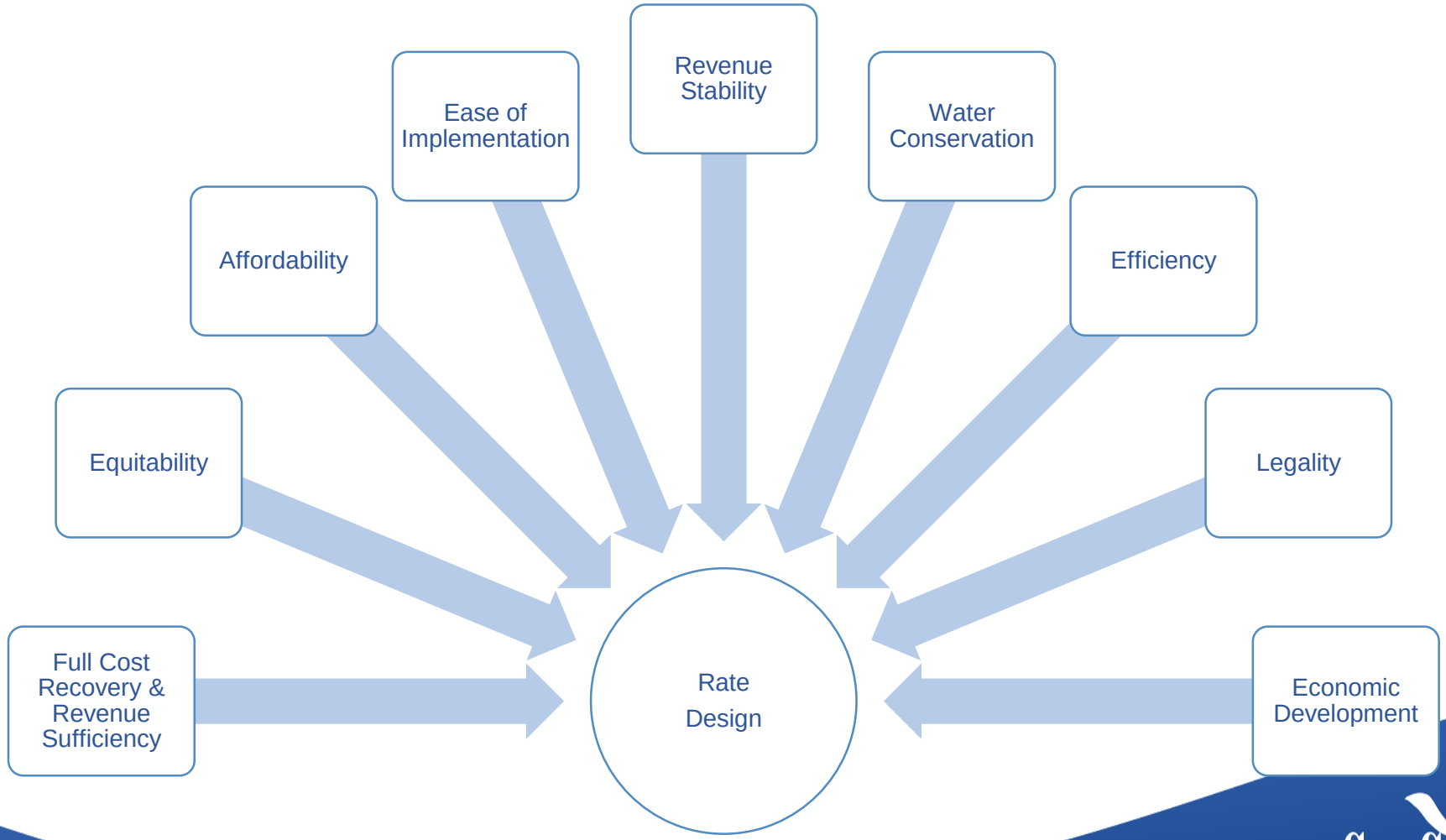
Source: Figure adapted from Rogers, P., R. Bhatia, and A. Huber. 1997. Water as a social and economic good: how to put the principle into practice. Paper prepared for the meeting of the Technical Advisory Committee of the Global Water Partnership in Namibia and Marbek Resource Consultants Analysis of Economic Instruments for Water Conservation Final Report to the Canadian Council of Ministers of the Environment: Water Conservation and Economics Rask Group.

How are utilities responding to the pricing gap?



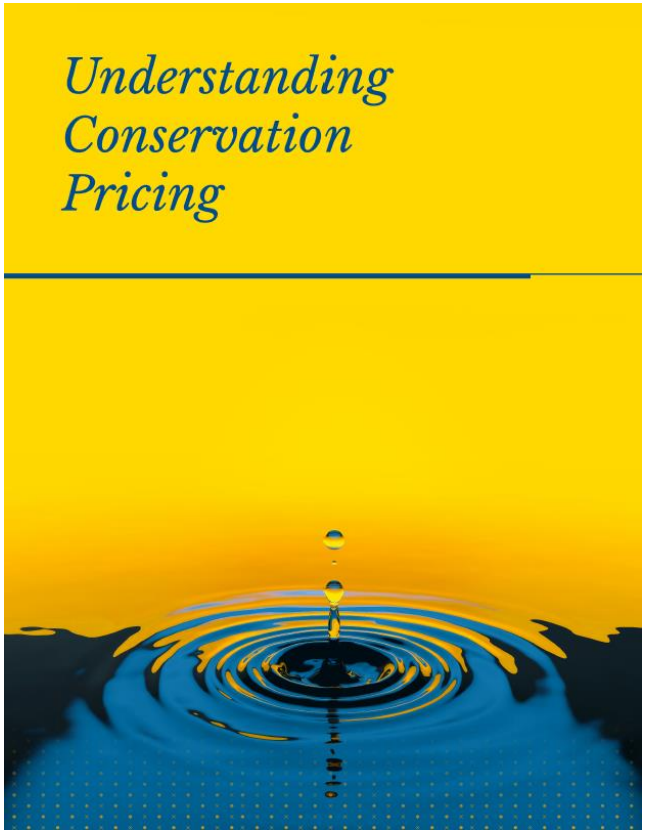
Source: Murphy, M. (2018) 2018 State of the Water Industry: The Challenge of Building Resilience. *Journal AWWA*

Rate design: art, politics, science



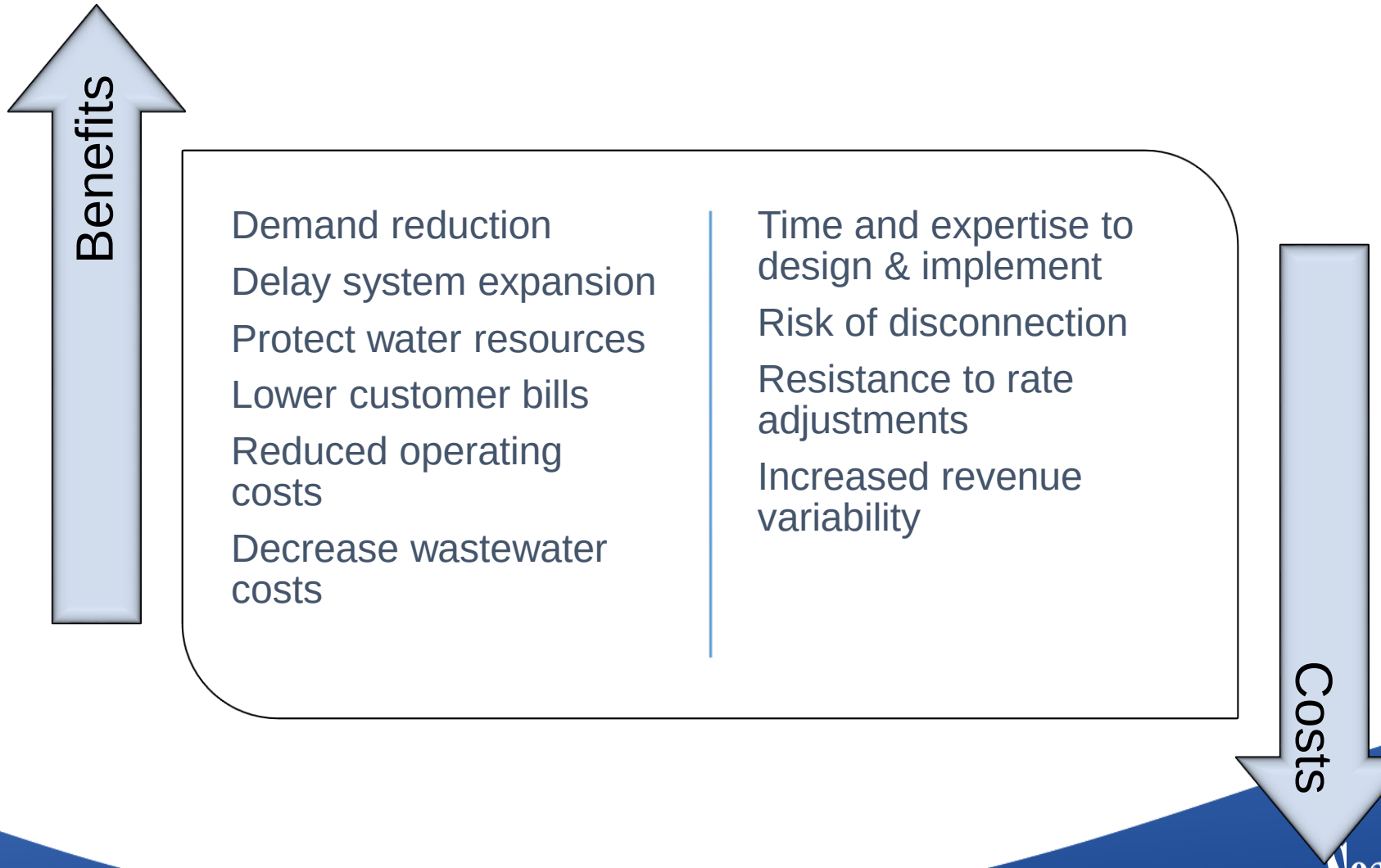
Adapted from Sheard 2009

What is conservation pricing?



- Conservation pricing/rates
  - water rate structures that motivate consumers to use water efficiently.

Why implement conservation pricing?



How can water rates and billing encourage efficient water use?

- Full Cost Pricing
- Price Sensitivity (Price Elasticity)
- Customer Class Price Differentiation
- Billing Frequency and Communication
- Volumetric Charge
- Base/Minimum/Fixed Component of Bill
- Rate Adjustment Frequency
- Direct Metering

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Summary of conservation rate structures

Uniform Rate	Increasing Block	Seasonal
Time-of-Use	Excess Use rate	Water Budget
Scarcity Pricing	Spatial/Zonal rates	Humpback rate

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Conservation pricing in Illinois

- Lack of cost knowledge makes assessing full-cost rate recovery difficult.
- 37 percent of northeastern Illinois water systems have one customer billing class.
- One-third percent of systems bill monthly.
- The majority of systems use a uniform rate structure (88 percent).
- 58 percent of water suppliers include a minimum use allowance with the base charge.
- On average 30 percent of the bill is recovered from the fixed charge.
- Few systems are using seasonal rates.

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Questions?

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