Getting the price right

*Drinking Water 123*

July 23, 2019

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Why is water pricing important

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

Figure 1. Northeastern Illinois utility challenge ratings

What are we paying for?

62% Bond Repayment & PayGo*
9% 311, Risk Mgt. Corp. Services
17% Salaries & Benefits
4% Electricity
3% Maintenance, Repair, Fuel

3% Treatment Chemicals
2% Sludge Disposal

62% Capital Improvements
38% Operations

*PayGo (Pay-As-You-Go) cash used for capital projects

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$)

Water Utilities

State and Local Governments

Federal Government

b Includes water supply and wastewater treatment facilities

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

- **Water rate revenue**: 90% - 100%
- **General obligation bonds**: 40%
- **State revolving fund loan**: 20%
- **Other**: 10% - 20%

More than one answer could be selected.  n = 79.
STEP 1: IDENTIFY REVENUE REQUIREMENTS

- OPERATING COSTS
- CAPITAL REQUIREMENTS

WATER AND WASTEWATER REVENUE REQUIREMENTS

STEP 2: DETERMINE COST OF SERVICE

ALLOCATE REVENUE REQUIREMENTS TO CUSTOMER CLASSES

RESIDENTIAL
COMMERCIAL
INDUSTRIAL
GOVERNMENTAL
SPECIAL CONTRACT CUSTOMERS

STEP 3: DESIGN RATE STRUCTURE

FIXED CHARGE BY:
- ACCOUNT
- METER SIZE
- EQUIVALENT RESIDENTIAL UNIT
- OTHER FIXED UNIT

RECOVERS VARIOUS COSTS ON A FIXED BASIS
- CUSTOMER SERVICE COST
- CAPITAL REQUIREMENTS
- FIXED O & M COST
- COMBINATION

STRUCTURE RATES TO RECOVER REVENUE REQUIREMENTS

FIXED CHARGE
CONSUMPTION CHARGE
RECOVERS REMAINING REVENUE REQUIREMENTS
VARIABLE CHARGES BY
- 1,000 GALLONS
- 100 CUBIC FEET
- OTHER VOLUMETRIC UNIT

Source: George A. Raffelli, 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.

**FULL SUPPLY COST PRICING**

- Operation and Maintenance Cost
- Capital Cost

**TRADITIONAL PRICING**

- Operation and Maintenance Cost (Subsidized)
- Capital Cost (Historic, Subsidized)

Pricing Gap

How are utilities responding to the pricing gap?

Utility response to cost recovery needs
(responses as a % of total n = 706)

- Shift cost recovery from consumption charge to fixed charge
- Change growth-related fee
- Shift to increasing block rate structure
- Increase financial reserves
- No change
- Implement rate stabilization reserve
- Incorporate seasonal rates
- Incorporate seasonal rates
- Shift to decreasing block rate structure

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?

Benefits:
- Demand reduction
- Delay system expansion
- Protect water resources
- Lower customer bills
- Reduced operating costs
- Decrease wastewater costs

Costs:
- Time and expertise to design & implement
- Risk of disconnection
- Resistance to rate adjustments
- Increased revenue variability
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
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
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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