

Exploring Utility Rate Affordability

Presented by:
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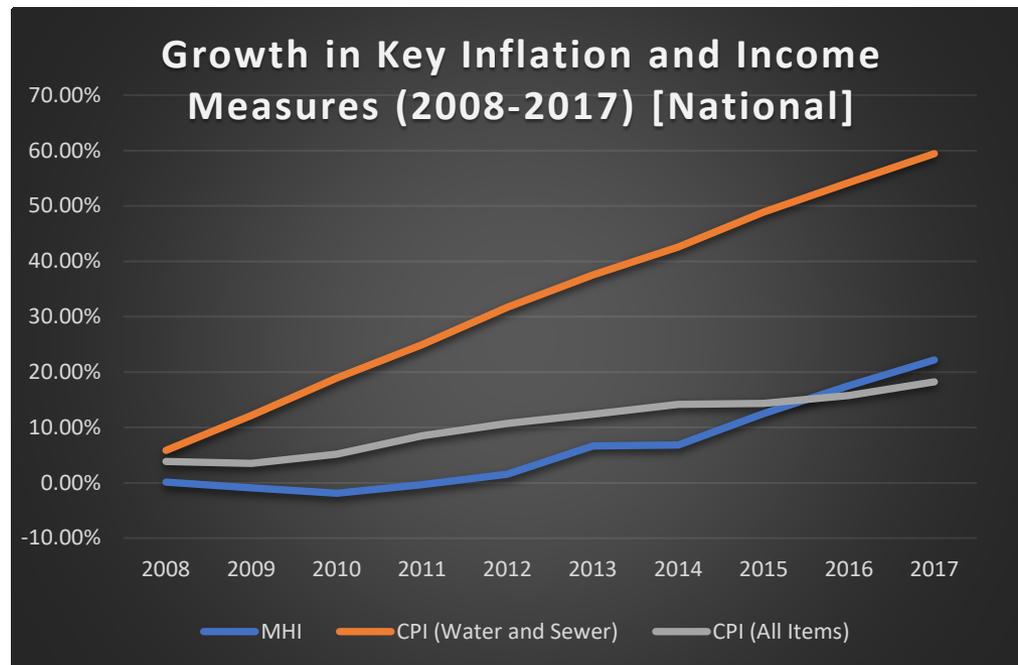
March 7, 2019

Exploring Rate Affordability

- Learning Objectives
 - Why is affordability a concern?
 - Defining affordability
 - Affordability analysis
 - Customer Assistance Programs (CAP's)
 - Legal framework

Why is Affordability a Concern?

- Why are we even talking about affordability?
 - Costs are rising (general inflation)
 - Utility costs are outpacing increases in income levels (2.5 times)



Why is Affordability a Concern?

- Water is currently unaffordable for 11.9% of American households, could grow to 35.6% within the next five years
 - According to researchers at Michigan State University
- Income inequality is growing
 - The middle is shrinking
 - Income is now more polarized
- Scarce water supply in parts of US
- Population shifts in rural and some urban areas (i.e. Detroit)

Why is Affordability a Concern?

- Why are we even talking about affordability? (cont.)
 - Aging infrastructure
 - Water infrastructure built 80-100 years ago are approaching the end of their useful life
 - Wastewater projects constructed in the 70's and 80's were funded with federal grant money (up to 90%)
 - \$25.9 billion – Ohio estimated long-term Water and Wastewater infrastructure needs (2011 Drinking Water Infrastructure Needs Survey, 2012 Clean Watersheds Needs Survey)
 - Utilities have not adequately planned for the future (delayed maintenance)
 - Lack of necessary rate increases in years past
 - Current rates are inadequate to provide for current and future needs
 - Public health crises and environmental concerns

Flint Water Crisis



Figure 1. Flint Water Tower. "Flint water lead amounts improve, below federal limits." Retrieved from Fox 61. <https://tribwtic.files.wordpress.com/2016/01/flint-water.jpg?quality=85&strip=all&w=770>

Figure 2. Rusted Water Pipes. "Flint Water Crisis: Mayor Says 'Lead Pipes Have Got to Go.'" Retrieved from NBC News. http://media2.s-nbcnews.com/i/newscms/2016_04/1394026/160128-flint-drinking-water-pipes-yh-0357p_5ee6bfc6af1099161e690c66b6ba389.nbcnews-fp-360-360.jpg

Figure 3. Flint Bath Tub Fills with Lead Contaminated Water. "Op-ed: Children are the victims in Flint, Michigan's water crisis." Retrieved from Digital Journal. <http://www.digitaljournal.com/life/health/op-ed-children-are-the-victims-in-flint-michigan-s-water-crisis/article/454691>

Algae Blooms in Lake Erie



Figure 1. Fish lays on shore of algae infested Lake Erie. "Lake Erie algae bloom touching shores of Ontario and two U.S. states is the largest in years." Retrieved from *The Star*. <https://www.thestar.com/news/world/2017/10/08/lake-erie-algae-bloom-touching-shores-of-ontario-and-two-us-states-is-the-largest-in-years.html>

Figure 2. Boat going through algae bloom. "Lake Erie Pollution Attributed to Intensive Agriculture." Retrieved from Druwid.org. <http://www.druwid.org/2014/10/lake-erie-pollution-attributed-to.html>

Why is Affordability a Concern?

- Are your rates affordable?



Why is Affordability a Concern?

- The question is difficult to answer
 - Subjective
 - Political
 - Philosophical
 - Depends on who you ask
 - Geography
 - Consumption
 - Income level
 - Family size
 - Willingness to pay
 - Depends on type of customer
 - Depends on person's definition of affordable



Defining Affordability

- Before you determine whether you have an affordability issue, you must first define affordability
- How does one define affordability?
 - 4% of MHI (2% for water + 2% for sewer)
 - This regulatory threshold has been widely misapplied as a threshold for affordability (EPA Financial Capability Guidelines for LTCP)
- Cross-utility comparisons
 - Beware of cross-utility comparisons
 - Comparisons can be useful but not used as a single criteria for determining affordability.
 - Affordability ought to reflect your communities' specific needs and values.
 - A community should measure performance against it's own goals over time

Why is Affordability a Concern?

- Affordable for who?
 - Average residential households?
 - Indoor versus outdoor use
 - Swimming pools and sprinkling customers
 - Average versus essential water use
 - Commercial?
- Answer – Residential subgroups in the population (i.e. Low income households)
 - Essential use

Defining Affordability

- Answer
 - There is no single definition
 - Defined on a case by case basis at the local level
- Definition
 - How much is reasonable to expect households of limited means to pay for these essential services?
 - What economic sacrifices are reasonable to expect low-income households to make in order to pay for water and sewer?

Affordability Analysis

- Are your rates too high?
 - Probably not (system-wide)
- There may be a sector of your customers where rates are unaffordable
- How do you determine if there are affordability concerns?
 - Undergo an Affordability analysis
 - Shut off statistics
 - Enrollees in local social support agencies

Affordability Analysis

- Affordability Analysis
- Many different ways to approach
 - % of MHI
 - May not address the root concern (low-income households), poverty line and below
 - Set affordability threshold based on a percentage of poverty income
 - 50% of poverty
 - 100% of poverty
 - 150% of poverty
 - Affordability Assessment Tool
 - UNC Environmental Finance Center
 - <http://efc.sog.unc.edu>

Example: Affordability Issue (Demonstration Only)

Rates Comparison | Time Series | Characteristics | Links

Select residential bill & monthly consumption amount

Water Bill Sewer Bill Water + Sewer

Monthly Water Bill at 7,756 Gallons: \$71.67

Select comparison group

All Utilities

Comparing to all utilities in the survey

427 rate structures compared

Observe the effects of raising rates by: 0%

Bill Comparison

Water Bill at 7,756 gallons

Min. \$14.00 Max. \$121.75

Affordability

Water Bills as % MHI in 2013

Cost Recovery

Water Operating Ratio excl. Deprec. (FY13)

Debt Service Coverage

Water Debt Serv. Coverage Ratio (FY13)

[Edit Data](#)

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Affordability Analysis

- WARi
 - Weighted average residential index
 1. Gather census tract data to understand median household income (MHI) and income distribution
 2. Calculate actual average bills by tract
 3. Calculate burden by tract using actual average bills
 4. Weight burden by number of households
 5. Sum all census tracts to determine a weighted average residential index (WARi)
 6. Determine financial impact
 - Example
 - Low impact – less than 1.66%
 - Low-Mid – 1.66% to 2.49%
 - Mid – 2.49% to 2.9%
 - Mid-High – 2.9% to 3.32%
 - High – Greater than 3.32%

Affordability Analysis

- AR20 and HM – Dr. Manuel P. Teodoro
 - Measures household level of affordability (rather than the utility's financial capability)
 - Provides for basic water needs (rather than average consumption)
 - Focuses on low-income households (rather than average or median income customers)
 - Accounts for essential costs other than water and sewer (housing, home energy, taxes, food, medicine and basic healthcare)

Affordability Analysis

- AR20
 - Measures the household-level of affordability as the percentage of basic water and sewer costs to disposable household income for low-income customers (i.e. AR reflects the economic trade-offs a customer faces because of the costs of water and sewer)
 - Identifies the 20th percentile as the lower boundary of the middle class.
 - At this income level, “working poor” households have very limited financial resources, but may not qualify for income assistance programs.
 - Rule of thumb – AR20 ratio should not exceed 10%

Affordability Analysis

- HM
 - Represents the number of hours at minimum wage to cover the basic cost of water and sewer service.
 - Rule of thumb – target HM threshold of no more than 8.0 so that a four-person household's basic monthly water and sewer bill requires no more than 8 hours of labor at minimum wage.
- Study of the 25 largest Cities Utilizing AR20 and HM
 - AR20 – 11 of 25 were above the 10% threshold (Columbus was at 12.7%, 9th highest)
 - HM – 17 of 25 were above the 8 hour threshold (Columbus was at 13.1 hours, 3rd highest)

Customer Assistance Programs (CAP's)

- Don't go it alone
 - Not one single solution – multi-faceted approach
 - Partner with other local social services agencies that already have assistance programs set-up
 - Bill discounts based on income (i.e. lifeline rates, income based rates, discounts)
 - Rate funded or funded with other revenues?
 - Voluntary contributions
 - CAP surcharge (subject to annual true-up)
 - Bill roundup
 - Rental income from cell towers and internet providers
 - Service line protection programs

Customer Assistance Programs (CAP's)

- Don't go it alone
 - Payment arrangement programs (i.e. flexible terms)
 - Implement efficiency programs
 - PILOT program – offered up to \$1,000 to do an efficiency audit and cover the costs of needed repairs (i.e. leaky faucets and toilets)
 - Partner with other local agencies to offer personal financial educational support
 - Payment plans for new connection charges
 - One-time emergency bill relief
 - Winter shut-off moratorium
 - Seek out EPA and State grants
 - EPA will be focusing on a wholistic approach to solving water quality and regulatory issues (i.e. water, sewer and stormwater)
 - Impact on low-income customers will be a primary focus

Legal Framework

- Consider legal ramifications
- How are the CAP's funded?
- CAP's supported from rate driven revenues may not be an option in some states (i.e. cost of service principals)

Legal Framework

- Commission Regulated Utilities
 - Public Utilities Commission of Ohio (PUCO)
 - Regulates private water and wastewater companies
 - Should not furnish free service or service for less than actual cost for the purpose of destroying competition
 - Exception; grants free or reduced services “for charitable services”
- Non-Regulated Utilities
 - Government owned or operated water and wastewater utilities
 - Broad rate setting authority
 - Could support the provision of low-income CAP’s funded by rate revenues

Takeaways

- Determine whether there is an affordability concern
- Define affordability at the local level
- Affordability analysis
 - Choose which metrics and methodologies best fit your community
- Establish affordability thresholds
- Develop a CAP that aligns with local needs and values
 - Multi-dimensional approach
 - Partner with local social services agencies
 - Determine how the CAP's will be paid for
 - Determine the possible impact on the Utility's finances
 - Consider legal ramifications

Exploring Rate Affordability

- Acknowledgments
 - UNC Environmental Finance Center website
 - Stacey Isaac Berahzer (UNC Environmental Finance Center) – Determining if there are Affordability Problems in your Community and Funding a Program to Address those Problems
 - LaShell Stratton-Childers (WE&T) – The Climbing Cost of Water
 - Jason Mumm (FCS Group) – The Devil in the Details: Affordability Metrics Based on Micro-data, and a Viable Alternative to the Residential Indicator
 - Dr. Manuel P. Teodoro (Texas A&M University) – Measuring Household Affordability for Water and Sewer Utilities (2018 © American Water Works Association)
 - Benjamin Stewart (Stantec) – WARI: Measuring More to Do More
 - A Burgeoning Crisis? A Nationwide Assessment of the Geography of Water Affordability in the United States (Mack & Wrase 2017)

Comments/Questions?

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