Affordability

“WATER USED TO BE FREE, AND NOW IT’S CHEAP, AND EVERYBODY’S MAD ABOUT IT”
Learning Objectives

View’s will learn:

- How affordability is defined?
- Why affordability is an important industry issue?
- How affordability is measured?
- Challenges associated with median household income.
- Practical Application
- Other available Resources
Affordability – How is it defined?

- Ability to pay water and sewer bill
- Ability to pay for water and sewer and other essential needs (housing, food, medical, other utility services)
- Often, Affordability is reviewed on a “community-wide” basis
- Ability of the average/median household to pay vs. ability of the poorest households to pay
- Ability to pay is not the same as willingness to pay
Affordability - Why is it important?

<table>
<thead>
<tr>
<th>Rank</th>
<th>Category</th>
<th>Score</th>
<th>% Critically Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Renewal and Replacement of Aging Infrastructure</td>
<td>4.53</td>
<td>63%</td>
</tr>
<tr>
<td>2</td>
<td>Financing for Capital Improvements</td>
<td>4.42</td>
<td>59%</td>
</tr>
<tr>
<td>3</td>
<td>Long-Term Water Supply Availability</td>
<td>4.39</td>
<td>57%</td>
</tr>
<tr>
<td>4</td>
<td>Public Understanding of Value of Water Systems and Services</td>
<td>4.34</td>
<td>54%</td>
</tr>
<tr>
<td>5</td>
<td>Public Understanding of Value of Water Resources</td>
<td>4.22</td>
<td>45%</td>
</tr>
<tr>
<td>6</td>
<td>Watershed/ Source Water Protection</td>
<td>4.18</td>
<td>46%</td>
</tr>
<tr>
<td>7</td>
<td>Emergency Preparedness</td>
<td>4.10</td>
<td>37%</td>
</tr>
<tr>
<td>8</td>
<td>Cost Recovery (pricing to Accurately Reflect True Cost of Service)</td>
<td>4.04</td>
<td>35%</td>
</tr>
<tr>
<td>9</td>
<td>Public Acceptance of Future Rate Increases</td>
<td>4.01</td>
<td>34%</td>
</tr>
<tr>
<td>10</td>
<td>Water Conservation/ Efficiency</td>
<td>4.00</td>
<td>36%</td>
</tr>
</tbody>
</table>

Six of the top ten 2017 AWWA Water Industry Issues are related to infrastructure funding!
Affordability - Why is it important?

Infrastructure at the end of useful life necessitate rate increases beyond what customers are accustomed to:

- AWWA Report “Buried No Longer”
  - $1 Trillion for potable water pipe networks

- USEPA Drinking Water Infrastructure Needs Survey
  - $137 Billion for water treatment, storage, and source

- USEPA Clean Watersheds Needs Survey
  - $271 Billion for wastewater and stormwater

**TOTAL**... $1,408,000,000,000
Affordability – Why is it important?

Responses from utility personnel regarding their opinions of whether the utilities they work for can cover the full cost of providing service, including infrastructure renewal/replacement and expansion needs, through customer rate and fees currently and in the future.
Affordability – How is it measured?

EPA Guidance on Sewer Affordability – Phase One

Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development

Measures the financial impact of WWT and CSO controls on residential users

- Cost per Household (CPH): \( \frac{\text{residential share of total WWT and CSO costs}}{\text{number of households in service area}} \)

- Median Household Income (MHI): $0…Middle Value…Highest Value

- Residential Indicator (CPH as a % of MHI): \( \frac{\text{CPH}}{\text{MHI}} \times 100 \)

<table>
<thead>
<tr>
<th>Financial Impact</th>
<th>Residential Indicator (CPH as % of MHI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Less than 1.0% of MHI</td>
</tr>
<tr>
<td>Mid-Range</td>
<td>1.0 - 2.0% of MHI</td>
</tr>
<tr>
<td>High</td>
<td>Greater than 2.0% of MHI</td>
</tr>
</tbody>
</table>

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## Affordability – How is it measured?

### EPA Guidance on Sewer Affordability – Phase Two

<table>
<thead>
<tr>
<th>Indicator Category</th>
<th>Indicator</th>
<th>Strong (3 points)</th>
<th>Mid-Range (2 points)</th>
<th>Weak (1 point)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt</td>
<td>Bond Rates</td>
<td>AAA-A (S&amp;P)</td>
<td>BBB (S&amp;P)</td>
<td>BB-D (S&amp;P)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aaa-A (Moody's)</td>
<td>Baa (Moody's)</td>
<td>Ba-C (Moody's)</td>
</tr>
<tr>
<td></td>
<td>Overall Net Debt as a Percent of Full Market Property</td>
<td>Below 2%</td>
<td>2% - 5%</td>
<td>Above 5%</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td>Unemployment Rate</td>
<td>More than 1 Percentage Point Below the National Average</td>
<td>± 1 Percentage Point of National Average</td>
<td>More than 1 Percentage Point Above the National Average</td>
</tr>
<tr>
<td></td>
<td>Median Household Income</td>
<td>More than 25% Above Adjusted National MHI</td>
<td>± 25% of Adjusted National MHI</td>
<td>More than 25% Below Adjusted National MHI</td>
</tr>
<tr>
<td>Financial Management</td>
<td>Property Tax Revenues as a Percentage of Full Market Property</td>
<td>Below 2%</td>
<td>2% - 4%</td>
<td>Above 4%</td>
</tr>
<tr>
<td></td>
<td>Property Tax Collection Rate</td>
<td>Above 98%</td>
<td>94% - 98%</td>
<td>Below 94%</td>
</tr>
</tbody>
</table>
Affordability – How is it measured?

EPA Guidance on Sewer Affordability – Financial Capability Matrix

<table>
<thead>
<tr>
<th>Financial Capability Indicator Score</th>
<th>Residential Indicator</th>
<th>Low (&lt; 1.0%)</th>
<th>Mid-Range (≥ 1.0% and ≤ 2.0%)</th>
<th>High (&gt; 2.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weak (&lt; 1.5)</td>
<td>Medium Burden</td>
<td>High Burden</td>
<td>High Burden</td>
<td></td>
</tr>
<tr>
<td>Mid-Range (≥ 1.5 and ≤ 2.5)</td>
<td>Low Burden</td>
<td>Medium Burden</td>
<td>High Burden</td>
<td></td>
</tr>
<tr>
<td>Strong (&gt; 2.5)</td>
<td>Low Burden</td>
<td>Low Burden</td>
<td>Medium Burden</td>
<td></td>
</tr>
</tbody>
</table>

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Affordability – How is it measured?

EPA Guidance on Water Affordability

Variance Technology Findings for Contaminants Regulated Before 1996

• Goal of guidance: identify affordable compliance technologies that smaller water systems could use to satisfy the contaminant regulations identified before the 1996 Safe Drinking Water (SDWA) amendments

• National-level affordability criteria threshold for water: 2.5% of MHI
Affordability – How is it measured?

EPA Guidance Affordability Thresholds:

- Wastewater and Stormwater: 2.0% of MHI
- Water: 2.5% of MHI
- **Combined: 4.5% of MHI**
Affordability – Rating agencies

Rating agencies take varied approaches to affordability assessments:

<table>
<thead>
<tr>
<th>Rating Agency</th>
<th>Affordability Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitch</td>
<td>Rates over 3% of MHI for water, sewer and stormwater service are considered burdensome and can negatively impact ratings. Projected costs, regional comparisons and fixed rate components are all considered as well.</td>
</tr>
</tbody>
</table>
| Moody’s       | No one quantitative measure is offered for affordability criteria, which include;  
|               | • Customer ability-to-pay as measured by the level of delinquencies  
|               | • Utility ability to recover costs in a timely manner  
|               | • Rate flexibility is encouraged over any subsidization  
|               | • Perceived regulator adeptness at balancing system risk and cost recovery  
|               | • For stability, fixed charges are preferred to volume associations  
|               | • Customer diversity is encouraged over large shares for any sector or individual |
| Standard & Poors | Annual utility cost burden as a percent of median household effective buying income (MHHEBI) as well as the percent of a county’s population living in poverty are charted on a matrix with rating scores applied. Cost projections and regional comparisons are also made. Fixed rate components are not considered. |

*(MHHEBI) = A taxpayer's income from wages, interest, and other forms of income less taxes and other deductions such as FICA.
## Affordability – Rating agencies

### S&P Affordability Matrix:

**Table 10**

<table>
<thead>
<tr>
<th>Percent of county’s population living in poverty</th>
<th>Annual Utility Bill As A Percent Of Median Household Effective Buying Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 2.25%</td>
</tr>
<tr>
<td>Less than 10%</td>
<td>1</td>
</tr>
<tr>
<td>10% to 20%</td>
<td>2</td>
</tr>
<tr>
<td>20% to 30%</td>
<td>3</td>
</tr>
<tr>
<td>More than 30%</td>
<td>4</td>
</tr>
</tbody>
</table>

For utilities with an anchor assessment of 5 or 6 that have recently completed or achieved substantial completion of a historically capital-intensive period, the anchor assessment may improve by one point (see paragraph 68).
Affordability – How is it measured?

At Risk MHI = $45,120
High Risk MHI = $32,000

Source: [http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0169488#pone-0169488-g001](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0169488#pone-0169488-g001)
Affordability – Challenges with MHI

• No correlation between MHI and poverty, or ability to pay

• MHI does not consider income distribution

• What about landlords and public housing authorities
  - Many renters do not pay water and wastewater bills

• Community area does not match utility service area

• Bills for low income households reach thresholds before median income households
MHI Example

> 4.5% of MHI - Unaffordable
Utility Overview- Philadelphia Water Dept.

The Philadelphia Water Department (PWD) serves the Greater Philadelphia region by providing integrated water, wastewater and stormwater services.

- 1.7 million water customers
- 2.2 million wastewater customers
- 26.4% is the poverty rate in the city of Philadelphia
- 20% of customers have had their water shut off since April 2012.
- 10 Utility Assistance Programs have been established
## Philadelphia Assistance Programs

- Low-income Payment Agreements
- Standard Payment Agreements
- Senior Citizen Water Bill Discount
- Tiered Assistance Program (TAP)
- Water Revenue Assistance Program
- Utility Emergency Services Fund (UESF)
- Conservation Assistance Program
- Charitable Organization Discount
- Homeowner’s Emergency Loan Program (HELP)
- Payment Agreements

*The country’s first water rate based on income*
Tiered Assistance Program and Eligibility

- This program considers a customer’s income and “caps” the water and sewer bill at an established percent of monthly income.
- Recipients' income is compared to federal poverty guidelines and is the basis for qualification. Tax returns or pay stubs can be provided.

<table>
<thead>
<tr>
<th>Income Tier</th>
<th>Bill amount as % of monthly income</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% to 50% of poverty level</td>
<td>2.0%</td>
</tr>
<tr>
<td>&gt;50% to 100% of poverty level</td>
<td>2.5%</td>
</tr>
<tr>
<td>&gt;100% to 150% of poverty level</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

- Recipients will not be charged based on consumption.
- A minimum fee of $12 is in place and pricing covers water, sewer and stormwater services.
- The pricing percentages are lower than the EPA’s 4.5% as a threshold for affordability.
Affordability – Resources

  • https://www.epa.gov/sustainable-water-infrastructure/pricing-and-affordability-water-services


• November 30, 2016, Fitch, U.S. Water and Sewer Revenue Bond Rating Criteria

• December 22, 2015, Moody’s, Rating Methodology: Regulated Water Utilities

• January 19, 2016, Standard & Poor’s, Criteria | Governments | U.S. Public Finance: U.S. Public Finance Waterworks, Sanitary Sewer, And Drainage Utility Systems: Rating Methodology And Assumptions
QUESTIONS