

NewGen NEWS

Issue 3, November 2015



Feature Article: The Missing Piece - *The Importance of Measuring Affordability of a Utility's Master Plan*



Next time you go to the grocery store, take a minute, and watch people. There are those who have a written list, clipped coupons, reviewed the store's weekly advertising, and dutifully investigated the per unit price of the items they are buying. Others arrive with no list, no coupons, and engage in a behavior best referred to as "grab and go." Many times these behaviors clearly vary with the size and/or income of the household. Those with a greater number of family members to feed or who are less affluent tend to be smarter shoppers.

While the above is a broad-brushed view of stereotypical consumer behaviors, it is interesting to review these behaviors and apply them to municipal utility systems, particularly with regards to capital planning. Every 5 to 10 years, most utilities go through a master planning process whereby they review the condition of their infrastructure and assess the near- and long-term capital needs. Typically, these needs are determined by the condition of the utility's facilities and the projected demands for service in the future. Often this needs assessment focuses on regulatory compliance and environmental protection. Once complete, the Master Plan contains a listing of prioritized projects necessary for providing adequate service to consumers that complies with all applicable laws and statutes.

However, one key element is often missing from this prioritization process. Very rarely do these plans consider the overall affordability of the prioritized projects and the estimated impact of the plan on ratepayers. While the plans do contain an estimate of probable cost for each project, they rarely go beyond this level of analysis and consider whether the plan is affordable to ratepayers. In addition, the probable cost is stated in current dollars, with no recognition that the ultimate future financial commitment will be greater due to inflation. In effect, the utility has gone to the grocery store, filled the shopping cart, and then stands eagerly in the checkout line without ever considering how it will pay or what the overall financial impact of its purchases will be.

Assessments of affordability for utility systems can vary in their overall level of complexity. The U.S. EPA Guidance for Financial Capability Assessment (EPA Guidance), originally released in 1997, is often cited and applied to measure utility service affordability. Historically, the EPA Guidance is used to evaluate the affordability of the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) compliance. Under the EPA Guidance, affordability of utility services and compliance is primarily measured as the cost of the service to the household as a percent of median household income (MHI). Per the EPA Guidance, water service is affordable if it is less than 2.5% of MHI, and combined water and wastewater service is affordable if it is less than 4.5% MHI. While cost as a percentage of MHI is a useful metric and easily calculated, it does not fully capture the economic conditions of a community.

Critics of this approach state that MHI is a poor indicator of economic condition as it has no direct relationship with the rate of poverty in a community, nor does it recognize the potential extreme diversity of income within a community. MHI is a single indicator taken at one point in time and does not reflect past or future conditions. Further, MHI does not adequately address

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the demand elasticity of goods and services and recognize that, in some communities, the cost of basic household needs could be substantially higher than other communities. Finally, critics also point out that under the MHI metric, the EPA has never found compliance with the CWA or SDWA to be unaffordable - a fact that immediately calls into question the overall usefulness of this factor.

In response to the criticisms of its 1997 approach and the MHI metric, the EPA released a revised Financial Capability Assessment Framework in 2014. Within this revision, the EPA recognized that there is additional information that should be considered when assessing financial capability and affordability beyond the MHI metric. Specifically, the table below lists the new metrics provided for in the revised guidance, along with additional supplemental information that could be considered in the affordability determination.

New Metrics	Additional Supplemental Information
<ul style="list-style-type: none">• the Community’s Bond Rating• the overall net debt as a percentage of full market property value• the Community’s unemployment rate• the current property tax collection rate• the level of property taxes as a percentage of full market property value	<ul style="list-style-type: none">• income distribution• adopted life-line rate structures• poverty rates and trends• projected, current, and historic fees as a percentage of income• water and wastewater usage by customer classes• population trends• financial planning models and rate studies• data or trends on late payments, disconnections, and uncollectible accounts

Most importantly, the revised affordability framework recognizes that the measurement of the ability to pay is unique to each community and cannot be boiled down to a single comparative indicator. A robust analysis of affordability measures better evaluates community impact of compliance and infrastructure investment. When a community is considering the affordability of its infrastructure requirements, it must recognize a variety of qualitative and quantitative indicators to assess the affordability of the overall plan on all strata of the community.

While Master Plans are critical to proper utility management, they are in this author’s opinion, generally incomplete. For a Master Plan to truly be of use to a utility system, it must incorporate a plan for financial prioritization and implementation and assess the overall affordability of the plan on customers. This element of the plan would include an estimate of the funding mechanisms for the plan, the estimated impact this would have on the utility’s long-term financial position, and the overall impact to ratepayers of the chosen funding mechanisms. This includes not only an assessment of the utility’s long-term equity position, but also an assessment of the overall affordability of service to customers. This would consider other increasing demands on a household budget and would include many of the EPA’s recommended indicators, as well as factors that may be unique to the community.

Utilities benefit from being smarter consumers, and this starts as part of the planning process. While maintaining compliance with regulatory mandates is a critical, key driver of project prioritization, utilities must also ensure that their Master Plan include a financial component. This maintains the viability of the plan in concert with the financial stability of the utility and the affordability of service to customers. Besides, what good is a grocery cart full of necessities if you can’t get out of the store?

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Energy Insights

Future of customer generation on the grid

The distributed generation related market issues continue their rapid pace of change. At the APPA Public Power Forward Summit in late October, First Solar stated total installed costs for utility scale solar tracking systems in the Southwest U.S. are forecasted to decline to \$1,000 per kW in just two years. While this includes some contribution of incentives (some reducing or sunset by next year), the forecast reinforces the likely parity solar will achieve in the market, with or without subsidies. In addition, Solar City's lawsuit against Salt River Project's proposed net metering fees in Arizona requests the Arizona Corporation Commission begin regulating the public power utility. The combination of the solar industry's increasing political, and likely public capital, along with the continued decline in costs should accelerate utilities' strategic decisions regarding their role in alternative services such as rooftop solar. In addition to public power's role in or with the solar industry, utilities must further leverage stakeholder engagement to communicate the issues, value, and local benefits of a publicly owned utility rather than have them let others define it for them.

AMI value in market segregation

Unlocking the value in big data remains elusive for many municipal utilities; however, the proper analysis may identify optimized targeting and engagement of customers for demand-side management (DSM) programs and alternative rates. Until advanced metering Infrastructure (AMI) and its wealth of data, most residential or smaller commercial customer classes were assumed to follow a similar load profile. Now, AMI data provides additional insight into the diversity within what was considered a rather homogeneous energy consumption profile. In a recent project, NewGen found that small commercial customer load profiles varied significantly within the class and actually identified discrete customer segmentation in the customer class. Similar studies and programs by OPower found comparable results within residential customer classes. Rather than a single average load profile, there are likely three or more unique profiles with significantly different peaking periods. Using this market segmentation data, utilities can optimize DSM program and TOU rate offerings to targeted customer segments, realizing greater system benefits at a lower cost.

Energy Project Highlight

Power Supply Planning & Launch of a New Energy Agency Kentucky Municipal Energy Agency

NewGen is currently supporting 10 municipal utilities in Kentucky in a strategic evaluation of their power supply alternatives and the formation of the Kentucky Municipal Energy Agency (KyMEA). To date, the project has included power supply planning, evaluating current wholesale power contracts and rates, assisting in power contract negotiations, and assisting in the development of KyMEA. KyMEA is thought to be one of the first power agencies created in the past 10 years. In support of power supply planning, we assessed each member's market competitiveness and legacy power supply obligations which led to the development of a preferred future resource plan and portfolio. To facilitate the development of KyMEA, we assisted in the regulatory process, development of the bylaws and agreements. Once completed, KyMEA will provide a framework for the members to consolidate market power in executing purchased power agreements, owning/operating power generation facilities, and issuing bonds to finance asset development.



Water, Wastewater, and Stormwater Insights

Waters of the U.S. rule challenged

As expected, many court challenges have been filed to block the implementation of the EPA's "Waters of the U.S." rule, originally released in August 2015. Many of these cases have resulted in a stay of the application of the rule, which will likely be the subject of litigation for some time to come. Water suppliers should continue to follow this litigation, which will ultimately determine the application of the EPA's oversight over waterways within the U.S.

Continued focus on affordability

The American Water Works Association (AWWA) has joined forces with other water groups to gather information on financial assistance and customer subsidy programs currently in place. The group will evaluate these programs and their legal viability based on applicable laws, statutes, and regulations at both state and local levels. Once complete, a resource guide will include case studies and key lessons taken from other utilities facing affordability challenges. The resource guide should prove valuable to utilities as they design and

Water, Wastewater, and Stormwater Insights cont.

implement customer assistance programs in light of ever increasing costs primarily drive by regulatory related capital investment.

Review of state revolving funds

A recent review by the Associated Press of the Drinking Water State Revolving Fund shows that roughly \$1.1 billion in appropriations have been left unspent in the fund. In addition to the federal government, inefficiencies in state governments who administer the funds and structural problems with the program contributed to the failure in distributing funds. Despite this, the report notes that the amount of unspent funds has been cut in half over the past several years and the program continues to provide a much-needed source of funds saving ratepayers millions.

Second round of SWIFT funding

The second round of funding under the State Water Implementation Fund of Texas Program will officially open on December 1, 2015. To be eligible, projects must be recommended water management strategies in the adopted regional water plans. Abridged applications are due by February 1, 2016.

Water, Wastewater, and Stormwater Project Highlight

Wholesale Wastewater Contract Assistance City of Fort Worth Water Department, Texas

NewGen was retained by the City of Fort Worth Water Department to assist the Department staff in the preparation, review, and negotiation of a new uniform wholesale wastewater contract with 23 wholesale customers. Tasks include meeting with all 23 wholesale customers to discuss issues associated with updating the current wholesale contract, which is 30 years old and expires in spring of 2017. In addition to conducting financial sensitivity analyses, NewGen will also assist in developing strategies, recommendations, and contractual language to address issues and concerns identified by Department staff and wholesale customers.



Solid Waste and Recycling Insights

Microbeads ban signed by California Governor

Bill AB888 to ban the sale of personal care products containing plastic microbeads in California was signed by the Governor of California in September. Plastic microbeads measure less than 5 millimeters in diameter and are oftentimes added by manufacturers to facial

scrubs, toothpastes, and other personal care products for color or to provide texture to the product. A single product can have over 250,000 microbeads. The beads are designed to wash down the drain and are so small that they are rarely captured by wastewater treatment facilities. As a result, they end up in local waterways and eventually in many cases, in the ocean. There is an increased awareness of this products' adverse impact on the environment and as a result, manufacturers are beginning to remove this ingredient from their products.

Texas researchers begin a study of beach trash

Researchers from the University of Texas Marine Science Institute are conducting a two-year study, with a \$51,000 grant from NOAA to track marine debris on Coastal Bend beaches in Texas. The results will be made available for a national database that tracks the trends with beach trash on other U.S. coasts. (If the reader would like more information on illegal dumping, email Dave Yanke at dyanke@newgenstrategies.net – he has developed environmental enforcement manuals and conducted workshops concerning illegal dumping for local governmental officials in Iowa, Missouri, and Texas. These manuals have been used by local governments to implement and/or modify their code enforcement and environmental enforcement programs.)

U.S. EPA joins with other organizations to set the Nation's first food waste reduction goals

On September 16, the U.S. Agriculture Secretary and U.S. EPA Deputy Administrator announced the United States' first-ever national food waste reduction goal, calling for a 50% reduction by 2030. As part of the effort, the federal government will lead a new partnership with charitable organizations; faith-based organizations; and the private sector and local, state, and tribal governments to reduce food loss and waste in order to improve overall food security and conserve our nation's natural resources. Food loss and waste accounts for approximately 31 percent – or 133 billion pounds of the total food supply ultimately made available to retailers and consumers. (For more information on this topic, please see the study recently completed by NewGen for the [Houston-Galveston Area Council concerning commercial food waste collection challenges and opportunities.](#))

Solid Waste and Recycling Project Highlight

Solid Waste Cost of Service and Rate Design Study City of Scottsdale, Arizona

NewGen was retained by the City of Scottsdale, Arizona to conduct a solid waste cost of service and rate design study. Key issues to be addressed include the determination of the cost of the service for each major customer class – residential, brush/bulk, commercial

Solid Waste and Recycling cont.

dumpster, and commercial roll-off (for both solid waste and recycling services). The goal of the study will be to ensure equitable rates are established for each customer class and that the rates ensure the short- and long-term financial integrity of Scottsdale's solid waste and recycling operations.



Recent Hires

Max Weaver, Analyst

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Max joined NewGen in the Austin, Texas office in September 2015. He is a graduate of The University of Texas (UT) where he obtained a Bachelor of Business Administration in Finance. He has previously served as a teaching assistant in the finance department at UT and a summer intern with AT&T.

Roscila Spink, Executive Assistant

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Roscila joined NewGen in the Nashville, Tennessee office in October 2015. She served four years in the U.S. Navy, worked as a DOD contractor in San Diego, and has extensive experience in administrative support.



Conferences and Seminars

Texas Compost Summit & Training - October 7-9, 2015

Mr. Dave Yanke spoke at the Texas Compost Summit & Training, held in Denton, Texas. The conference was sponsored by the Texas Compost Council, a council of the State of Texas Alliance for Recycling (STAR). Mr. Yanke spoke regarding the findings of a study completed by NewGen for the Houston-Galveston Area Council (H-GAC) addressing the challenges, opportunities, and solutions associated with the collection of commercial

food waste within the H-GAC's 13-county planning region. Findings from the study are currently being implemented to expand the collection of commercial food waste from restaurants, grocery stores, and commercial food processing facilities. *(A copy of the PowerPoint presentation can be provided upon request.)*

GFOAT Fall Conference - October 27, 2015

Sessions: Rate Structures & Revenues from Current Rates

Mr. Dave Yanke spoke at the Government Finance Officers Association of Texas (GFOAT) Fall Conference at the Utility Rate Making and Customer Service Workshop held on October 27-28 in Houston, Texas. Mr. Yanke spoke on a variety of water and wastewater rate design options as well as the importance of the conduct of revenue reconciliations prior to planning for any type of rate increases. Issues discussed during these sessions included the evaluation of billing data, methods for handling billing data discrepancies, customer class allocations and peaking factors and their impact on retail and wholesale customer classes. The sessions involved extensive dialogue and sharing of information amongst the various cities and water supply corporations in attendance. *(Copies of the PowerPoint presentations can be provided upon request.)*

GFOAT Fall Conference - October 27, 2015

Session: To the PUC...And Beyond!

Mr. Chris Ekrut spoke at the GFOAT Fall Conference at the Utility Rate Making and Customer Service Workshop held on October 27-28 in Houston, Texas. Mr. Ekrut's session included a discussion of the regulatory and legislative issues impacting water and wastewater providers in Texas, as well as the transition of rate regulation from the Texas Commission on Environmental Quality (TCEQ) to the Public Utilities Commission (PUC). *(Copies of the PowerPoint presentations can be provided upon request.)*

STAR Annual Member Meeting - November 5, 2015

At the STAR annual member meeting, held on Thursday November 5 in Austin, Texas, Mr. Yanke was elected to serve as the Vice-Chairman, as he begins his second year on the STAR Board of Directors. As he begins his new duties as Vice-Chairman, he will also work in transitioning his duties as Treasurer to the newly elected Treasurer, Russell Luker of Balcones Resources.

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