

October 2017

# Austin Water Rate Review

Report by the Residential Rate Advocate



PREPARED BY:

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ECONOMICS

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SUSTAINABILITY

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NewGen Strategies and Solutions, LLC (NewGen) has been engaged by the City of Austin (City) to serve as the Residential Rate Advocate in the water, reclaimed water, and wastewater cost of service and rate design study (Rate Study) currently being conducted for Austin Water (AW). This report conveys our comments and recommendations as of the conclusion of the Public Involvement Committee (PIC) and Wholesale Involvement Committee (WIC) meeting process. We understand an Independent Hearings Examiner (IHE) process is forthcoming. NewGen intends to participate in that process and may have further comments and recommendations at a future date.

## 1. PIC Process

First, we feel it is appropriate to comment on the recently completed PIC process. NewGen appreciates the forthright nature of the AW staff and executive team throughout the PIC process. Questions posed to AW were answered with transparency and honesty even when the answer did not necessarily benefit or align with AW's position on issues. Thus, AW exhibited candor that should be acknowledged.

Further, the AW staff and executive team listened to the positions proffered by the PIC participants and considered the merits of comments made and positions taken when reaching a decision on any particular issue. Here again, AW displayed consideration for opposing views and acknowledged issues of contention.

One facet of the PIC process that was considered unsatisfactory by some PIC participants was the lack of tangible quantitative rate impacts stemming from the various decisions made by the AW executive team. Issues, decisions, and rationales were mentioned, but the ultimate rate impacts were oftentimes not discussed. Further, the discussion of rate design (i.e., how the utility is going to recover the costs from customers once each customer class's revenue requirement has been determined) was minimal. This was most likely by design, presumably to keep the participants focused on issues rather than results, but it resulted in some frustration that was voiced by more than one PIC and/or WIC participant. NewGen expects rate design and rate impacts to be more fully developed, evaluated, and discussed in the IHE process.

## 2. Supported AW Decisions

NewGen supports many of the decisions made by the AW executive team thus far. Although not intended to be an exhaustive list, we specifically agree with the following decisions.

- **Historical Test Year** – NewGen supports the use of a historical test year. The use of a historical test year better ensures realistic costs are utilized in the cost of service analysis as the costs are reflective of actual results, rather than budget estimates containing potential contingencies and/or overly pessimistic/optimistic assumptions. Undoubtedly, AW will want to make known and measurable adjustments to the historical test year, which is acceptable in our view to the extent that the adjustments meet the definition contained in Texas Administrative Code Title 16 § 24.3(32).
- **Base-Extra** – NewGen supports the use of the base-extra capacity methodology to allocate water costs to customer classes. As mentioned in the American Water Works Association (AWWA) M1 Manual<sup>1</sup>, compared with other methods considered, the base-extra capacity methodology

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<sup>1</sup> American Water Works Association, Manual of Water Supply Practices, M1, *Principles of Water Rates, Fees and Charges*, Fifth Edition, 2000, Page 59

identifies the lowest rates possible at perfect load factor (or constant rate of consumption), which can help prevent a utility from establishing rates that could result in the sale of water below cost. Further, we support the use of the non-coincidental peak methodology to develop the allocation of costs.

- **Allocation of Infiltration and Inflow** – NewGen supports the allocation of infiltration and inflow (I&I) for the wastewater utility based on total flows. The major contributors to I&I are not associated with a particular customer class. Thus, using total flows to allocate I&I is equitable, is consistent with industry standards, recognizes that individual customers can do little to impact I&I, and reflects the fact that the cost of I&I is primarily associated with “consuming” flow-related capacity.
- **Wastewater Strength Parameters** – NewGen supports the continued use of biochemical oxygen demand (BOD) and total suspended solids (TSS) as the primary wastewater strength parameters in allocating costs and surcharges for excessive strength. Additional strength parameters, such as nitrogen, phosphorus and ammonia, may be used in the future if changes in operation or regulation cause these constituents to be a significant driver of costs. For now, BOD and TSS appropriately capture the significant treatment costs, as confirmed by AW staff in the PIC process.<sup>2</sup>
- **Peaking Ratios** – NewGen supports the continued use of monthly water meter readings to develop peak day and peak hour demands for each customer class. This requires the use of a formula to estimate these peaking ratios based on the relationship between customer class and system peak and average data but, until more granular data is available for all customer classes, this is the most equitable means to develop these peaking ratios. Further, NewGen believes it is important that the data used to develop these peaking ratios is based on meter readings taken by AW (or its contractor), rather than self-reported meter readings taken by customers. Finally, we support the deployment of Advanced Metering Infrastructure (AMI), which will facilitate the collection of more granular data as needed for a more exacting analysis in the future.
- **Costs Allocated to Wholesale Customers** – NewGen supports the allocation of all reasonable costs to wholesale customers in the identification of the cost of service, including, but not limited to: the general fund transfer (or a surrogate amount, such as a payment in lieu of taxes or franchise fee), rate case expenses, necessary contributions to financial reserves, reclaimed water support, financing costs (e.g., SWAP and commercial paper), debt service on the Green Water Treatment Plant, Barton Springs/Edwards Aquifer Conservation costs, costs associated with the Govalle Wastewater Treatment Plant, and costs associated with Water Treatment Plant No. 4.

As a general rule, NewGen would suggest AW assess whether the cost in question is related to the provision of water or wastewater service. If the cost in question is related to the provision of water or wastewater service, then, unless it is related to a function not associated with wholesale customers (e.g., water distribution), wholesale customers should be sharing in the cost. If the cost in question is not related to the provision of water or wastewater service, then not only should it be excluded from wholesale rates but NewGen would suggest it may not be a cost that retail customers should be paying either.

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<sup>2</sup> PIC meeting on January 31, 2017 (The relevant comments start at approximately 1 hour, 1 minute from the start of the recording of the meeting. All future footnotes in this report related to PIC or WIC meetings will identify the approximate time of the relevant comments in a similar fashion.)

### 3. Comments

NewGen identified some issues on which we feel it is appropriate to comment. The key comments identified by NewGen are discussed below.

#### 3.1. General Fund Transfer

NewGen received a myriad of comments from residential customers throughout our public engagement efforts. One issue was prevalent enough that we thought it appropriate to address it in this report – the General Fund Transfer (GFT). There were many comments on the GFT, most with the theme that either the GFT is too high or should be eliminated.

##### Should the GFT be Eliminated?

There were some residential customers that suggested the GFT should be eliminated. They point out that the GFT is under the control of the Austin City Council and, therefore, could be removed from rates at City Council's request. Further, the City, they claim, should find some other means to support General Fund activities without the GFT. In addition, it was pointed out that if the GFT were eliminated, and the City compensated for this loss of revenue by increasing taxes, then the cost would at least be tax deductible to residents on their federal income taxes.

First, we agree that the City Council could, if it desired, eliminate the GFT and either cutback on services or increase taxes or other sources of revenue, as this is within its discretion. However, is that really what is appropriate? Are there other major cities that have taken this approach?

Transfers, such as the GFT, are commonplace for municipally-owned utilities throughout the State of Texas, and nation. Further, in cities where the utility is not municipally-owned, there are generally fees, such as franchise fees or payments in lieu of taxes, or taxes that are similar to the GFT. In these cases, the cost of such payments to the city are appropriately recovered in rates as a cost of doing business. NewGen does not see a reason for a city to forgo a revenue source that it would otherwise have if the utility were privately-owned, just because the utility is municipally-owned. Therefore, we conclude that it is appropriate for AW to recover the cost of a reasonable GFT in rates as an appropriate cost of doing business, as is done in many cities across the state and nation.

On the idea of eliminating the GFT and, correspondingly, increasing taxes to offset the shortfall in General Fund funding so that the cost is tax deductible to residents, we would note that the financial impact of this policy, even if it works as described, would likely be moderate and it could result in a significant shift in which customers pay this cost. As a hypothetical example, assume a residential customer that consumes 10,000 gallons per month through a ¾-inch meter. This customer would experience water bills that add up to approximately \$950 per year under current rates. For simplicity, if we assume 8.2% of this annual amount represents the portion for GFT, and could be recovered via taxes instead, then the new tax revenue in our example would amount to approximately \$77.90 per year. At the highest marginal federal income tax rate of 39.6%, this would yield a savings of less than \$31 per year, which we view as a moderate impact at best. Typical residential customers are served through a smaller, 5/8-inch meter, use meaningfully less water than assumed in this example, and are not in the highest federal income tax bracket. So, for most residential customers the results would be even less meaningful.

Further, eliminating the GFT and, correspondingly, increasing taxes could have an unforeseen result that would be financially detrimental to residential customers. The City of Austin is unique in Texas in that it is the state capitol and, in addition to the many state office buildings, it has several colleges and

universities within its corporate boundaries, including the University of Texas at Austin. As such, there are significant portions of the City that are exempt from property taxes. These properties do, however, receive and pay for water, reclaimed water, and wastewater services provided by AW and, thus, these significant customers of the utility pay their share of the GFT. If the GFT were eliminated, and the funding replaced with increased taxes, these customers would not pay any of this cost. Thus, it seems possible, if not likely, that the additional cost shifted to tax paying customers, including residents, would offset any potential benefit of the cost being tax deductible.

Moreover, the Texas Legislature has expressly recognized a municipally-owned utility's ability to transfer revenues to the municipality's general fund (see, for example, Texas Government Code § 1502.059). Therefore, based on our conclusions and observations, we believe some level of GFT, in concept, is appropriate for inclusion in rates and the GFT should not be eliminated.

### The Level of the GFT

If there is to be a GFT, it should be set at a reasonable level. However, there is no universal industry standard to help judge the appropriate level for GFT or any other similar transfers or fees (e.g., franchise fees, payment in lieu of taxes, etc.). At the fourth PIC meeting, AW presented data from utilities around the state indicating the types and amounts of transfers. There was great variation in the types and levels of transfers and, within this context, AW's GFT did not stand out as unreasonable.

Further, AW's GFT has been set at 8.2% of a three-year average of gross revenue<sup>3</sup> since 1999 and is approved annually by City Council in the budget process. Thus, the current level of GFT reflects longstanding practices of the City. Therefore, based on the benchmarking data presented and subject to additional information being provided that alters our view, **NewGen finds the level of the GFT to be reasonable.**

## 3.2. Metering Wholesale Wastewater

NewGen suggests the City consider metering wholesale wastewater customers to encourage these customers to maintain their systems and minimize I&I to the best of their ability. Although metering wastewater is not as straightforward as metering water, metering wastewater provides an equitable means to ensure a customer with serious I&I issues is not subsidized by all other customers. As a point of reference, the City of Fort Worth meters many of its wholesale wastewater customers for this very reason.

## 3.3. Rate Design

The PIC process concluded with AW providing draft cost of service results by customer class for FY 2017 and without meaningful discussion of rate design. Therefore, there may be additional comments or suggestions NewGen would have on rate design when it is presented. NewGen looks forward to providing our comments on rate design during the IHE process, as appropriate.

## 4. Opportunities

NewGen has identified some opportunities for improvement along with some suggested revisions to the decisions made by the AW executive team to-date. The key opportunities identified by NewGen are discussed below.

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<sup>3</sup> The three-year average is based on the actual revenues for the prior two years and an estimate of the current year revenue.

## 4.1. Financial Targets

AW provided information during the PIC process regarding the financial targets that the AW executive team is planning to achieve, including targets for debt service coverage (DSC), cash reserves, and capital project cash funding. These three elements are interrelated and impact the overall revenue requirement for the utilities.

### Debt Service Coverage

DSC is a measure of financial flexibility that judges a utility's financial margin to pay debt service from net revenues after priority expenses, such as operation and maintenance (O&M) expenses, are paid. The DSC ratio is calculated by dividing the net revenues available to pay debt service by the principal and interest payments on debt service for the year. DSC is not a direct input into the analysis the way AW calculates its revenue requirement, but it is a metric that is checked to ensure compliance with financial policies and commitments. Thus, the need to increase DSC could cause an increase in the revenue requirement.

AW Financial Policy Number 5 requires the utility to target a DSC ratio of at least 1.50. Standard & Poor's Rating Services (S&P) requires a DSC ratio of 1.6 or above to receive the highest grade possible for this criterion.<sup>4</sup> As an additional point of reference, the median DSC for combined water and wastewater utilities was 1.49 in the 2015 AWWA Benchmarking Performance Indicators survey (AWWA Survey).<sup>5</sup>

AW provided data during the PIC process that indicated the DSC ratio had been as low as 1.25 in fiscal year (FY) 2010 and FY 2014 – during a time of prolonged drought. Although a prolonged drought could reoccur, the financial impact on AW would be expected to be less significant since AW formerly recovered only approximately 11% of water revenue from fixed charges<sup>6</sup>, whereas AW targets recovering approximately 25% of water revenue from fixed charges currently.<sup>7</sup> Thus, the utility has significantly more financial stability than it did during the last drought.

More recently, AW's DSC ratio has improved and is forecasted to be 1.71 in FY 2017.<sup>8</sup> NewGen believes this level of DSC is sufficient to demonstrate the financial flexibility of AW. This DSC exceeds AW's financial policy requirements (i.e., target 1.50), exceeds the S&P requirements for the highest grade for the DSC criterion (i.e., 1.60), and is meaningfully greater than the median value in the AWWA Survey (i.e., 1.49). Thus, **NewGen would not recommend AW increase the revenue requirement just to achieve a higher DSC**, as this action would not be warranted.

AW's preliminary recommendation is to target a DSC of 1.85.<sup>9</sup> AW would undoubtedly point out, as it did during the PIC process, that a 2017 Fitch Ratings report (Fitch Medians Report) indicates that the median DSC for utilities with a 'AA' credit rating is 2.30.<sup>10</sup> However, NewGen would counter that the Fitch Medians Report is a snapshot in time reflecting median statistics for utilities that, in this case, were grouped together by current credit ratings (i.e., not the median for all utilities). Unlike the S&P requirement cited earlier, which is a static yardstick used for scoring utilities, the Fitch Medians Report does not indicate the

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<sup>4</sup> Standard & Poor's Rating Services, McGraw Hill Financial, U.S. Public Finance: U.S. Public Finance Waterworks, Sanitary Sewer, and Drainage Utility Systems: Rating Methodology and Assumptions, 2016

<sup>5</sup> Response to question number 991 submitted by Grant Rabon through the Rate Study website

<sup>6</sup> Response to question number 922 submitted by Lanetta Cooper through the Rate Study website

<sup>7</sup> PIC meeting on January 31, 2017 (at approximately 24 minutes, 10 seconds from the start)

<sup>8</sup> PIC Meeting Number 9, January 31, 2017, slide 22

<sup>9</sup> PIC Meeting Number 10, February 21, 2017, slide 15

<sup>10</sup> 2017 Water and Sewer Medians, Fitch Ratings, Public Finance, December 16, 2016, page 10

requirements for attaining these various credit ratings (i.e., a utility does not need a 2.30 DSC to attain a ‘AA’ credit rating). Further, by AW’s own admission in the PIC process, there is no indication AW’s current rating from Fitch is at risk (e.g., AW is not on credit watch) and AW’s goal is to maintain its ‘AA’ credit rating.<sup>11</sup> Thus, there is no demonstrated need for AW to target achieving a higher DSC than it currently achieves. NewGen does not contend that the DSC may not increase from current levels due to the influence of other factors, such as increased requirements for cash reserves or capital project cash funding; rather we contend that AW should not increase the revenue requirement simply to achieve a higher DSC than is currently being achieved.

**Table 1**  
**Summary of DSC Ratios**

	DSC
AWWA Survey median	1.49
AW Financial Policy 5 (minimum target)	1.50
S&P criteria (to receive highest grade possible)	1.60
AW current forecast (FY 2017)	1.71
AW preliminary target	1.85
Fitch Medians Report median for ‘AA’ credit rated utilities	2.30

### Cash Reserves

Cash reserves serve as an indication of liquidity or ability to meet short-term liabilities, particularly under unforeseen hardships. Cash reserves are sometimes judged based on days cash on hand (DCOH), which is calculated by Fitch as current unrestricted cash and investments, divided by annual operating expenditures (less depreciation), divided by 365 days in a year.<sup>12</sup> The need to increase cash reserves and DCOH may increase the revenue requirement.

AW Financial Policy Number 12 requires AW to maintain cash operating reserves equivalent to a minimum of 60 days of budgeted O&M expense. In addition, AW Financial Policy Number 16 requires AW to target 120 days of budgeted water operating requirements in a Water Revenue Stability Reserve Fund. This latter requirement only applies to the water utility (i.e., it does not apply to the reclaimed water or wastewater utilities). Both of these financial policies calculate the required number of days in a manner that is similar to the way Fitch calculates DCOH, so NewGen will treat them as comparable despite some nuanced differences in the calculations. This means AW’s financial policies require 60 DCOH plus 120 DCOH (i.e., 180 DCOH) for the water utility and 60 DCOH for the wastewater and reclaimed water utilities. S&P requires more than 150 DCOH and \$75 million in actual cash to receive the highest grade possible for this criterion.<sup>13</sup>

AW is currently assessing a special fee of \$0.19 per 1,000 gallons on all retail customer water bills to increase the Water Revenue Stability Reserve Fund balance to 120 DCOH.<sup>14</sup> Once the Water Revenue

<sup>11</sup> Response to question number 992 submitted by Grant Rabon through the Rate Study website

<sup>12</sup> 2017 Water and Sewer Medians, Fitch Ratings, Public Finance, December 16, 2016, page 6

<sup>13</sup> Standard & Poor’s Rating Services, McGraw Hill Financial, U.S. Public Finance: U.S. Public Finance Waterworks, Sanitary Sewer, and Drainage Utility Systems: Rating Methodology and Assumptions, 2016

<sup>14</sup> The wholesale rate to fund the Water Revenue Stability Reserve Fund is currently \$0.10 per 1,000 gallons

Stability Reserve Fund is fully funded at 120 DCOH, the special fee associated with this fund can be reduced to whatever is needed to maintain the 120 DCOH as operating expenses increase over time. AW verbally conveyed that 120 DCOH in the water fund would represent approximately \$50 million and they estimated they will reach 120 DCOH in the Water Revenue Stability Reserve Fund in 2018.<sup>15</sup> It is worth noting that, with City Council’s approval, AW could fully fund the Water Revenue Stability Reserve Fund immediately from excess funds currently in the Operating Cash Reserve and eliminate the special fee currently collected as well as the additional transfers from the Water Operating Fund (\$2 million in FY 2017<sup>16</sup>).

AW’s combined overall DCOH is forecasted to be 216 in FY 2017.<sup>17</sup> **NewGen finds the current level of cash reserves to be adequate for AW.** The current cash reserves greatly exceed the AW financial policies and earn the highest score possible for this S&P evaluation criterion. Thus, there is no demonstrated need for AW to target achieving a higher DCOH than it currently achieves.

Based on comments from AW during the PIC process, NewGen surmises AW may be targeting approximately 365 DCOH<sup>18</sup>, supported primarily by the previously cited Fitch Medians Report, which indicates that the median DCOH for utilities with a ‘AA’ credit rating is 499. We raise the same objections to the reliance on the Fitch Medians Report as in the DSC discussion and, further, point out that median DCOH in the same Fitch Medians Report is 269 for utilities serving 500,000 or more people. Thus, utility systems much smaller than AW seem to be the primary contributor to the much higher median DCOH for utilities with a ‘AA’ credit rating. As a point of reference, the median DCOH for combined water and wastewater utilities in the AWWA Survey is 272.

Table 2  
Summary of DCOH

	DCOH
<b>Individual Utility</b>	
AW Financial Policies 12 & 16 – Water	180
AW Financial Policy 12 – Wastewater/Reclaimed Water	60
<b>Combined Utilities</b>	
S&P criteria (to receive highest grade possible)	150
AW current forecast (FY 2017)	216
Fitch Medians Report median for 500,000+ population	269
AWWA Survey median	272
AW preliminary target	365
Fitch Medians Report median for ‘AA’ credit rated utilities	499

AW verbally commented that approximately 250 DCOH is the low end of their range of acceptable DCOH targets.<sup>19</sup> Thus, if AW is to target a level of DCOH above the current level, NewGen would suggest the

<sup>15</sup> WIC meeting on January 17, 2017 and PIC Meeting Number 9, January 31, 2017, slide 25

<sup>16</sup> Response to question number 905 submitted by Lanetta Cooper through the Rate Study website

<sup>17</sup> PIC Meeting Number 9, January 31, 2017, slide 24

<sup>18</sup> WIC meeting on January 31, 2017 (at approximately 39 minutes, 50 seconds from the start)

<sup>19</sup> WIC meeting on January 31, 2017 (at approximately 45 minutes, 40 seconds from the start)



target be 250 DCOH. This target happens to be much more closely aligned with the median DCOH for utilities serving 500,000 or more people in the Fitch Medians Report (i.e., 269 DCOH) and all combined water and wastewater utilities in the AWWA Survey (i.e., 272 DCOH) than the 365 DCOH target suggested by AW.

### Capital Project Cash Funding

The percentage of capital project costs that are funded from cash provides an indication of financial stability. The more capital projects are cash funded, the less debt is needed, which reduces debt service and improves DSC. The need to increase the portion of capital projects funded from cash may increase the revenue requirement.

AW Financial Policy Number 10 indicates cash funding of capital projects at a minimum level of 20% is desirable. The FY 2017 cash funding for capital projects is forecasted to be at 35.8%.<sup>20</sup> AW anticipates increasing the level of cash funding for capital projects until capital projects are funded at approximately 50% from cash.<sup>21</sup>

**NewGen generally finds the current level of cash funded capital to be adequate.** The current level greatly exceeds the AW financial policy. Moreover, there is no demonstrated need for AW to target achieving a higher level of cash funded capital than it currently achieves. Rather than target a certain level of cash funding for all capital projects, NewGen suggests the portions of capital projects that are cash funded be determined by examining the useful lives of the various facilities being constructed in order to minimize inter-generational equity issues. For example, if AW is constructing a facility that has an expected 50-year useful life, it is probably appropriate to limit the level of cash funding to pay for this facility. In the extreme case where this facility were 100% cash funded, current (and past) customers would be paying for a facility that will serve future customers for many years, but without recovering any of the costs to construct the facility from future customers.

## 4.2. Affordability

Rates should reflect a prudent balance of different, and often competing, objectives such as improving financial metrics and affordability. During the recent drought, AW experienced significant deterioration in its financial condition as demonstrated by financial metrics, such as DCOH, DSC, etc. On May 19, 2014, Fitch announced it had revised its rating outlook on AW revenue bonds from 'Stable' to 'Negative' in part due to the financial impact of the drought. **In the same press release, Fitch mentioned the declining affordability of rates as a risk and cited monthly residential bills at "an above average 2.1% of median household income."**<sup>22</sup> AW responded by prioritizing improving financial metrics and implementing rates to recover additional revenue. AW's financial condition improved and, in a May 3, 2016 press release, Fitch announced it had revised its rating outlook on AW revenue bonds from 'Negative' to 'Stable'.<sup>23</sup>

**NewGen suggests improving financial metrics should no longer be the highest priority of AW at the cost of affordability. Instead, it is prudent at this point for AW to refocus on affordability.** This shift in priorities should not imperil the financial stability of the utility given its current financial condition and

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<sup>20</sup> PIC Meeting Number 9, January 31, 2017, slide 27

<sup>21</sup> Response to question number 828 submitted by Karyn Keese through the Rate Study website and WIC meeting on January 31, 2017 (at approximately 27 minutes, 30 seconds and also 55 minutes from the start)

<sup>22</sup> Fitch Ratings, New York, Press Release on May 19, 2014, <https://www.fitchratings.com/site/pr/830710>

<sup>23</sup> Fitch Ratings, New York, Press Release on May 3, 2016, <https://www.fitchratings.com/site/pr/1003824>

stable outlook. We are not suggesting AW significantly reduce rates or risk a return to its prior financial hardship. We simply suggest that AW is no longer in financial distress and has improving financial metrics even with current Conservation Stage watering restrictions limiting automatic irrigation to once per week. Further, even if a drought recurs, AW's current fixed rate recovery is greatly improved, lessening the financial impact of reduced water sales. Thus, these changed conditions allow AW to address affordability without significantly increasing the risk of financial distress.

### Bills as a Percent of Median Household Income

In the previously mentioned May 19, 2014 press release, Fitch cited AW's declining rate affordability and indicated the combined water and wastewater bill for AW residential customers was approximately \$88 per month, equal to an above average 2.1% of median household income (MHI). In its public finance bond rating criteria publication, Fitch mentioned rate increases to preserve financial strength "...will be more sustainable when rate affordability is a focus of policymakers and cost containment is regularly employed" and also went on to mention it, "generally considers rates for service higher than 1% of MHI for an individual water, sewer and stormwater utility to be financially burdensome."<sup>24</sup>

AW provided calculations to show the current residential bills are within the 1% of MHI guideline, but its calculations did not follow the same formula used by Fitch in its determination of affordability.<sup>25</sup> First, AW used MHI data for the Austin-Round Rock-San Marcos metro area based on an American Community Survey (ACS) 1-Year Estimate provided by the U.S. Census. This regional MHI is significantly (approximately 16%) higher than the Austin-specific MHI also available from the U. S. Census. The lower, Austin-specific value is what Fitch uses in its formula and is more appropriate given it better aligns with the AW customer base. AW also calculated its residential water and wastewater bills based on what it calculated as the average water consumption of 5,800 gallons per month and 4,000 gallons per month in wastewater flow. This also diverged from the Fitch formula, which uses 7,500 gallons per month for water and 6,000 gallons per month for wastewater bill calculations. In addition to being inconsistent with the Fitch formula, NewGen believes the inclining block nature of AW's residential water and wastewater rates makes using average water consumption for the bill calculation potentially misleading. The first rate blocks are set below cost of service and the 5,800 gallons of water consumption per month used by AW in its calculations is within the second rate block of a five-block inclining rate structure. Thus, the representative bill calculated by AW is likely below the cost of service and, therefore, a potentially misleading reference for affordability. Put another way, if AW received only the revenue calculated by AW in its average bill from each residential customer, it would significantly under-recover its costs.

To illustrate this point, let us assume AW has 184,490 residential customers not on the Customer Assistance Program (CAP), hereafter referred to as non-CAP customers.<sup>26</sup> If these non-CAP customers were all charged the \$41.59 per month<sup>27</sup> AW calculates is the average non-CAP residential bill in FY 2017, then this would yield annual revenue of approximately \$92 million. However, AW has indicated these same non-CAP customers are projected to generate more than \$109 million in revenue in FY 2017,<sup>28</sup> which equates to approximately \$49.30 per month per customer. Thus, this discrepancy of approximately \$17

<sup>24</sup> Fitch Ratings, Public Finance, U. S. Water and Sewer Revenue Bond Rating Criteria, September 3, 2015, page 5.

<sup>25</sup> Responses to questions number 832, 833 and 834 submitted by Grant Rabon through the Rate Study website

<sup>26</sup> This is the average number of residential customers provided on worksheet 3 of the "RFC Austin Water Model DRAFT V5-5-17 V36" model provided by AW

<sup>27</sup> As provided in response to question number 832 submitted by Grant Rabon through the Rate Study website

<sup>28</sup> As shown on worksheet 16 of the "RFC Austin Water Model DRAFT V5-5-17 V36" model provided by AW

million in total revenue, or \$7.71 per bill, illustrates why the bill calculated by AW based on average consumption is misleading.

NewGen submits that, in AW's case, the average residential bill may be more appropriately represented by total monthly residential revenue divided by customers, which results in a significantly higher bill than the one calculated by AW based on average consumption. Regardless, **NewGen believes the calculation of bills as a percentage of MHI should follow Fitch's formula, rather than a formula devised by AW, since Fitch's formula is how AW will be judged by the rating agency.**

NewGen used Fitch's formula to calculate this yardstick for affordability under current AW rates. Our calculations yielded a combined water and wastewater bill for AW residential customers of approximately \$118 per month, equal to approximately 2.4% of MHI. The Fitch Medians Report conveys the combined water and wastewater bill for residential customers of utilities serving 500,000 or more people is 1.5% of MHI, and for customers of utilities with a 'AA' credit rating it is 1.7% of MHI. NewGen does not mention the Fitch medians here to indicate this is what AW needs to achieve in order to maintain its current bond rating but, rather, to illustrate how AW's rates compare with what AW cites as its peers. The significant differential in percent of MHI between the Fitch medians and AW helps quantify the affordability challenge for AW and its customers.

### EPA Guidelines for Affordability

It is worth making a brief aside to discuss the often-cited Environmental Protection Agency (EPA) guidelines for affordability (EPA Guidelines), as discussed in an Affordability Assessment Tool publication.<sup>29</sup> The EPA Guidelines are often stated to be residential bills that are not more than 2.5% of MHI for water and not more than 2.0% of MHI for wastewater.

However, these guidelines are often misunderstood or misapplied, so it is important to understand the purpose and limitations of the EPA Guidelines. First, the purpose of the EPA Guidelines is to analyze the affordability of federal mandates stemming from the Clean Water Act and Safe Drinking Water Act. Specifically, the purpose is to determine if the mandates have too large a financial burden on customers (and not to judge the absolute affordability of rates). If the mandates are determined to have too great an economic burden, EPA *might* then allow flexibility in the timing of implementation or in the requirements.

When assessing water regulations, it is important to note that the EPA Guidelines are not for individual water utilities and are limited to evaluating the impact on small communities. Specifically, the EPA would consider regulations to be unaffordable for small communities (those with populations under 10,000) if the regulation would result in water bills greater than 2.5% of MHI for all small communities lumped together (i.e., not MHI for individual communities). Thus, applying the 2.5% of MHI guideline to AW to judge the affordability of water rates would be misapplying the guideline.

The application of the EPA Guidelines for wastewater is slightly different and involves a two-part screening analysis. The first part of the screen is to determine the Residential Indicator, which is the average per household cost of wastewater relative to MHI. If the resulting cost is 2.0% or more of MHI, then it signals a "large economic impact" on residents and the community may experience economic hardship complying with the standards. The second part of the screen examines six economic indicators that yield a Financial Capability Indicator. The two parts of the screen are ultimately combined into an overall rating of the

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<sup>29</sup> Affordability Assessment Tool for Federal Water Mandates, Stratus Consulting, Boulder, Colorado, 2013, prepared for United States Conference of Mayors, American Water Works Association, and Water Environment Federation

level of financial burden. Thus, here again, simply applying the 2.0% of MHI guideline to AW to judge the affordability of wastewater rates would be misapplying the guideline.

It is worth noting that the way the EPA determines the annual cost per household in its calculation for wastewater bills is to take the total residential share of costs divided by the number of households, which is similar to what NewGen suggested would be appropriate for determine an average bill for AW (rather than using average consumption).

Thus, the EPA Guidelines, although often mentioned, are not well-suited to judging the overall affordability of rates (as this is not what they were developed to accomplish). The affordability criteria utilized by Fitch, and the other rating agencies, is more appropriate for evaluating affordability for AW’s residential customers.

### Bill Benchmarking

In NewGen’s experience, it can be difficult to fairly compare one utility’s rates or bills to another. There are a myriad of differences between utilities that can impact rates. Efficiently run utilities can have higher rates than less efficiently run utilities due to factors beyond their control, such as source of water supply, topography, system age, regulations, etc. Acknowledging the potential issues associated with benchmarking or comparing rates or bills, it is nonetheless instructive to observe how AW’s bills compare with other utilities to further illustrate the affordability issue. In this endeavor, NewGen does not intend to imply that AW should set rates that align with some other utility but, rather, that the overall magnitude of the AW bills benchmarked against numerous other utilities should provide the proper perspective and rationale for why affordability should be prioritized.

The data in Table 3 was taken from the previously cited AWWA Survey. It indicates AW’s bills, at least for 7,500 gallons of billable volume per month, are significantly higher than the median bill, or even bottom quartile bill, for the over 90 utilities in the survey. AW is less of an outlier with bills based on average consumption, but AW’s residential bills are still higher than the median. Further, for AW the average consumption comparison is based on 5,800 gallons of water consumption per month and 3,900 gallons of wastewater flow per month and, as discussed previously, AW’s inclining block rate structure makes the use of average consumption problematic for equitable comparisons.

**Table 3**  
**AWWA Survey Residential Bills**

	Austin Water	Top Quartile	Median	Bottom Quartile
Water (7,500 gallons per month)	\$ 50.89	\$ 27.86	\$ 35.94	\$ 46.38
Wastewater (7,500 gallons per month)	69.54	34.75	46.17	56.59
Water (average gallons)	\$ 34.12	\$ 24.57	\$ 30.45	\$ 36.62
Wastewater (average gallons)	36.67	27.30	34.18	45.25

Source: 2015 AWWA Benchmarking Performance Indicators survey

A 2016 Black & Veatch rate survey of the 50 largest cities provides a similar indication of the affordability issue. Table 4 summarizes the relevant residential bill comparisons and, for any comparison with billed volume, AW ranks at best 37 out of 51 utilities, where 1 indicates the lowest bill and 51 is the highest bill.

**Table 4  
Black & Veatch Survey Residential Bills**

	<b>Austin Water</b>	<b>Average</b>	<b>Median</b>	<b>Austin Rank</b>
<b>3,750 gallons per month</b>				
Water	\$ 26.05	\$ 23.32	\$ 22.66	37
Wastewater	37.50	30.07	27.58	39
Combined	63.55	53.39	49.34	40
<b>7,500 gallons per month</b>				
Water	\$ 54.78	\$ 40.02	\$ 38.00	42
Wastewater	74.77	51.44	47.86	44
Combined	129.55	91.46	84.63	45
<b>15,000 gallons per month</b>				
Water	\$ 143.99	\$ 81.46	\$ 74.47	49
Wastewater	149.32	92.87	81.44	45
Combined	293.31	174.34	159.62	48

Source: 50 Largest Cities Rate Survey 2016, Black & Veatch Management Consulting, LLC

Finally, a 2017 Texas Municipal League survey covering 687 Texas cities providing water service and 661 Texas cities providing wastewater service conveys a similar assessment. Table 5 summarizes some of the relevant data from this survey focusing on the 32 cities in the survey with a population of greater than 100,000. Of the 32 largest cities, ten had a higher water bill but only one had a higher wastewater bill than AW for residential customers with 5,000 gallons per month in consumption/flow. AW had the highest water and wastewater bills of the 32 largest cities in Texas for residential customers with 10,000 gallons per month in consumption/flow. For either consumption scenario, AW had significantly higher bills than the average or median bills for the 32 largest cities.

**Table 5  
Texas Municipal League Survey Residential Bills for the 32  
Largest Cities**

	<b>Austin Water</b>	<b>Average</b>	<b>Median</b>
<b>5,000 gallons per month</b>			
Water	\$ 33.11	\$ 28.41	\$ 28.38
Wastewater	51.96	29.21	28.36
<b>10,000 gallons per month</b>			
Water	\$ 79.05	\$ 49.77	\$ 46.38
Wastewater	103.70	48.95	46.51

Source: 2017 Water and Wastewater Survey, Texas Municipal League,  
<https://www.tml.org/surveys>

Given AW's steep inclining block rate structure for water, it makes sense that AW's bills would compare unfavorably with other utilities for elevated water consumption reflective of significant discretionary water use. In theory, this is what the rates are designed to accomplish (i.e., charge a steep price for discretionary water consumption to discourage waste and encourage conservation). However, in the three surveys summarized above, **AW's bills are typically higher, and sometimes significantly higher, than other utilities even at low levels of water consumption.**

### Other Guidelines to Consider

There are other guidelines that could be evaluated to better refine or diagnose the affordability issue. For example, MHI could be replaced with Effective Buying Income (EBI), which is income less personal tax payments to better reflect "disposable" or "after tax" income. Other socioeconomic indicators could also be evaluated, such as income distribution, poverty rates, public assistance recipients, unemployment rates, or nondiscretionary spending, to provide a more complete picture of a community's economic and social characteristics. The analysis could also drill down into specific areas of the city or neighborhoods to assess the affordability on a geographic basis. The analysis could also evaluate the impact on groups of customers based on level of income so that the affordability for someone with annual income of between \$10,000 and \$15,000, for example, could be assessed.

Ultimately, however, regardless of the guideline or how it is measured, AW must have the focus on affordability as a primary concern in order to make progress towards addressing the issue. Austin Energy has established a goal to maintain rates in the lower 50 percent among comparable Texas electric utilities. Further, in 2012 Austin City Council established a goal that Austin Energy rates not increase by more than two percent annually. Perhaps a similar commitment by AW and City Council is appropriate to maintain focus and accountability.

### 4.3. Fire Protection Cost Recovery

AW provides public fire protection as part of the services it provides to customers. This includes the public hydrants located throughout the system that can be used to extinguish fires. AW should recover its costs for public fire protection in an equitable manner. Arguably the most equitable means to recover these costs is via ad valorem taxes, as this creates a rational nexus between the service provided and the benefit received (i.e., protection of property). Thus, individual property owners would pay for fire protection in accordance with the value of the property being protected. However, this method of cost recovery can be labor intensive and burdensome to administer. Thus, many utilities opt to use an alternate basis to recover this cost directly through rates (as opposed to ad valorem taxes). However, if the cost is not to be allocated to customers based on the value of the property protected, then what is the most equitable alternate means to allocate this cost to customers?

Since 2008, AW has utilized a rolling three-year historical average of actual water consumption by meter size as the basis for allocating the cost of fire protection to customers.<sup>30</sup> Although not as clear a nexus as property value, historical water consumption provides some reasonable association between the benefit and the service provided. It can be theorized large water users, as a group, are associated with larger properties with greater fire flow requirements and, therefore, are receiving a greater benefit from fire protection services. This rationale is cited in the AWWA M1.<sup>31</sup>

<sup>30</sup> PIC Meeting Number 11, March 6, 2017, slide 13

<sup>31</sup> American Water Works Association, Manual of Water Supply Practices, M1, *Principles of Water Rates, Fees and Charges*, Fifth Edition, 2000, Page 227

AW is currently proposing to change the basis for allocating fire protection costs so that it would be based on the maximum flow capacities of each meter size.<sup>32</sup> Maximum flow capacities are the basis for allocating costs classified as meter-related within the cost of service, which is a common industry practice. This proposed change would add fire protection costs to be allocated in this manner as well, presumably under the theory that larger water meters correlate to larger properties with greater fire flow requirements (which is similar to the rationale for using historical water consumption). AW mentioned that part of the reason to make this change is so that they can more easily tie their values, and resulting allocations, to a more easily referenced set of data.<sup>33</sup> The maximum flow capacities for each meter size and type can be located in tables within the AWWA M6 Manual of Water Supply Practices. Thus, AW would have a definitive source to cite for these values.

While NewGen does not contend that the method of allocating fire protection costs based on historical consumption is superior to the use of maximum flow capacities, we similarly do not find maximum flow capacities to be meaningfully more equitable than historical consumption. Essentially, they are both acceptable approximations given that a more direct basis for cost assignment is not practical.

However, the impact of this change in policy is meaningful. The projected increase in the cost allocated to the residential customer classes if AW makes its proposed change is approximately \$1.2 million in FY 2017.<sup>34</sup> Given the significant impact of this change to cost allocation, it should not be an arbitrary change – the change should be mandated in the interest of improving the equitable distribution of costs. However, as previously mentioned, the proposed basis is not more equitable than the historical basis – it is simply another acceptable basis. Given the meaningful cost allocation impact, **NewGen proposes that the basis should only be changed if it better aligns with industry practice or is more equitable than the historical basis**, and the proposed change is neither in our opinion.

In lieu of changing the basis to maximum flow capacities, NewGen suggests AW consider changing the basis to one founded on the nominal meter size and principals of the Hazen-Williams equation for flow through pressure conduits, wherein the relative flow potential for various pipe sizes are based on the diameter raised to the 2.63 power. This is the basis used in the AWWA M1 to demonstrate the allocation of private fire protection costs.<sup>35</sup>

Table 6 summarizes the equivalent fire service factors based on these three options by water meter size. As shown in the table, AW's proposed basis significantly reduces the factors for larger meter sizes, which puts more cost on customers with small meters (i.e., 5/8, 3/4 and 1-inch). This causes the previously mentioned approximately \$1.2 million increase in costs to be allocated to the residential customer classes.

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<sup>32</sup> PIC Meeting Number 12, April 25, 2017, slide 8

<sup>33</sup> WIC meeting on April 25, 2017 (at approximately 7 minutes, 30 seconds from the start)

<sup>34</sup> Calculation performed in the "RFC Austin Water Model DRAFT V5-5-17 V36" model provided by AW and confirmed by AW's consultant

<sup>35</sup> American Water Works Association, Manual of Water Supply Practices, M1, *Principles of Water Rates, Fees and Charges*, Fifth Edition, 2000, Page 224

**Table 6**  
**Equivalent Fire Service Factors**

Meter Size (inches)	Historical Basis	AW Proposed Basis	NewGen Proposed for Consideration
	Historical Consumption <sup>(1)</sup>	Maximum Flow Capacities <sup>(2)</sup>	Hazen-Williams <sup>(3)</sup>
5/8	1.00	1.00	1.00
3/4	1.96	1.67	1.62
1	2.80	2.67	3.44
1 1/2	7.27	3.33	10.00
2	15.90	6.67	21.31
3	24.94	23.33	61.90
4	71.43	40.00	131.90
6	153.09	83.33	383.15
8	800.00 *	160.00	816.51
10	900.00 *	253.33	1,468.37
12	1,000.00 *	333.33	2,371.82

Sources:

- 1) "Characteristics" worksheet of the "Water Option 01\_Budget Submittal" model provided by AW
- 2) Worksheet 3 of the "RFC Austin Water Model DRAFT V5-5-17 V36" model provided by AW
- 3) Nominal diameter in inches raised to the 2.63 power and all divided by the resulting value for a 5/8-inch meter

\* AW staff overrode the calculated values with hard-coded values to rationalize the factors

NewGen’s calculations suggest use of the Hazen-Williams equation would reduce the costs allocated to the residential customer classes by approximately \$0.6 million, as compared with the approximately \$1.2 million increase under AW’s proposal. Further, use of the Hazen-Williams equation would provide AW the desired clarity on factors to use and reference, which was cited by AW as one of the primary reasons for proposing the change. The change in cost responsibility by customer class using the Hazen-Williams equation is no more severe than AW’s proposal, and for many customer classes the change is more moderate compared with AW’s proposal. **Thus, if AW desires to change the basis for allocating the cost of fire protection to customers, NewGen considers the use of the Hazen-Williams equation to be an equally valid and equitable basis that has a more moderate impact on the allocation of cost responsibility than AW’s proposal.**

#### 4.4. Fire Demands

Part of determining the cost of fire protection involves an assessment of maximum day and maximum hour fire flow demands, which are estimated within the model most recently developed for AW.<sup>36</sup> This analysis assumes two different zones with correspondingly different assumptions about maximum flow

<sup>36</sup> As shown on worksheet 28 of the "RFC Austin Water Model DRAFT V5-5-17 V36" model provided by AW



rates and fire duration. Zone 1 assumes a four-hour duration at 6,000 gallons per minute and Zone 2 assumes a three-hour duration at 3,500 gallons per minute.<sup>37</sup>

NewGen makes no assessment as to the validity of these flow and duration assumptions, but we take exception with the fact that, in AW's model, these impacts are added together to determine the overall fire flow demands. NewGen believes this issue greatly overstates the possible demands from a fire event and, as a result, increases the costs allocated to the residential customer classes.

### Weighted Average Needed

Adding the estimated demands from the two zones together makes an error in logic, as it does not account for the fact that 100% of the system cannot be composed of both Zone 1 and Zone 2 sized facilities. To illustrate this point, consider if there were more than two zones, would adding the estimated demands from each zone together to determine the total potential demand still be appropriate? We believe taking this hypothetical to the extreme reveals the error in logic embedded in the current analysis.

**NewGen proposes that AW calculate a weighted average of the demands from the two zones as a means to better reflect the possible fire flow demands.** For example, if 50% of the facilities are sized as Zone 1 and the other 50% are sized as Zone 2, then apply these weightings to the demands before adding them together. NewGen calculates that if this 50%/50% weighting was used it would reduce the cost allocated to the residential customer classes by approximately \$110,000 in FY 2017. NewGen cannot determine the proper weightings for the two zones with the information currently available, but we are certain failing to weight the demands is overstating the costs allocated to the residential customer classes.

## 4.5. One Residential Customer Class

AW treats residential CAP and non-CAP customers as two different customer classes in its analysis. NewGen would submit that CAP customers are just a subset of all residential customers and **all residential customers should be treated as one class of customers for the calculation of cost of service.**

Generally, a customer class should include those customers who: (a) are in a similar location in relation to the utility; (b) receive the same or similar service from the utility; and (c) place similar demands upon the utility. Essentially, the idea is to separate customers into groups based on characteristics or service requirements that differentiate them from other customers with regard to cost responsibility. Based on this concept, NewGen contends that the residential CAP and non-CAP customers should be grouped together in one residential customer class.

Even when there is a cost basis for segregating two groups of customers, it is not always done for logistical or administrative reasons. For example, customers at the top of a large hill may be more expensive to serve than customers at the bottom of the hill in the same neighborhood due to pumping costs. Similarly, customers close to the treatment plant may use significantly less of the transmission and distribution system than customers located on the other side of the system. However, it is typical industry practice not to make distinctions between these groups of customers because the differences are not significant enough to justify the administrative burden of segregating them. (It is also widely considered to be less prejudicial not to make these distinctions.)

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<sup>37</sup> As an aside, only the maximum hour demands matter in the model as none of the fire protection facilities are identified as being designed for maximum day demands. As a result, the duration assumption is not meaningful to the analysis and only the maximum flow rate is important.

The designation of a CAP customer is based on something completely removed from the water and wastewater service being provided. It is a distinction based on participation in certain state, federal, or local assistance programs, such as Medicaid, SNAP, Telephone Lifeline Program, CHIP, CEAP, MAP, SSI or VASH. Thus, it has nothing to do with the level of service provided or the cost of providing service to the customer. Further, a residence can be designated as a CAP customer and then later reclassified as a non-CAP customer based on factors completely unrelated to water and wastewater service characteristics. Given the designation of a CAP customer has nothing to do with the factors relevant for determining a customer class, there is no cost of service rationale for segregating these customers. In fact, AW does not differentiate between CAP and non-CAP customers when forecasting monthly water consumption and uses the same distribution of consumption by rate block for both CAP and non-CAP customers in its analysis.<sup>38</sup>

Having the CAP customers segregated from the rest of the residential customers creates some risks for the CAP customers. Because they are a smaller subset of the overall residential class, CAP customers are more susceptible to fluctuations in the costs allocated to them based on variations in their consumption. To illustrate this point, consider the maximum day and maximum hour peaking factors summarized in Table 7. Peaking factors are critical drivers of the costs allocated to customer classes in AW’s water cost of service analysis. AW uses a three-year average for these factors when conducting its analysis in an effort to prevent significant swings in the allocation of costs from year to year based on water consumption variations, primarily due to weather.

**Table 7**  
**Residential Customer Class Peaking Factors**

	FY 2012	FY 2013	FY 2014	FY 2015	3-Year Average (FY 2012 - 2014)	3-Year Average (FY 2013 - 2015)
<b>Maximum Day</b>						
Non-CAP	1.70	1.45	1.58	1.91	1.58	1.65
CAP	1.90	1.64	1.75	1.45	1.76	1.62
Combined	1.70	1.46	1.60	1.86	1.59	1.64
<b>Maximum Hour</b>						
Non-CAP	2.62	1.99	2.20	2.71	2.27	2.30
CAP	2.93	2.26	2.44	2.06	2.54	2.25
Combined	2.63	2.01	2.22	2.64	2.29	2.29

Source: Worksheets 18 through 21 of the "RFC Austin Water Model DRAFT V5-5-17 V36" model provided by AW; the combined peaking factors were calculated by NewGen

As highlighted in Table 7, even though AW uses a three-year average, the CAP customer class would experience a meaningful change in its maximum day peaking factor from one year (based on an average of FY 2012 to FY 2014) to the next (based on an average of FY 2013 to FY 2015). The change in the maximum hour peaking factor would be even more significant. CAP customer maximum day and maximum hour peaking factors are higher than the non-CAP customer values in three of the four years evaluated. Higher peaking factors result in more costs being allocated to the customer class. The

<sup>38</sup> Response to question number 914 submitted by Lanetta Cooper through the Rate Study website

combined peaking factors show how combining the CAP and non-CAP customers into one class helps mute the variations for each group – especially for the maximum hour peaking factors in this example.

**NewGen suggests rate design is the appropriate phase of the analysis to recognize the difference between CAP and non-CAP customers based on the rate accommodations developed for the CAP customers.** There is no need to address this difference before the rate design phase.

## 5. Conclusion

NewGen appreciates the opportunity to assist in the Rate Study, and is prepared to answer questions that may arise from the enclosed commentary. While our work has been guided by our singular role in this process, we recognize that the most appropriate cost allocation and rate design methodologies to be utilized should be guided primarily by the goals and objectives of the City Council, as well as regulatory requirements pursuant to those customers under the Public Utility Commission of Texas’s appellate jurisdiction. In this vein, some of our recommendations may be over-ridden by larger policy goals. NewGen appreciates the opportunity to be a participant in this process and to represent the residential ratepayer community.