CITY OF AUSTIN WATER UTILITY

2008 COST OF SERVICE AND RATE STUDY

RESIDENTIAL RATE ADVOCATE REPORT

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INTRODUCTION

Ms Rubottom was engaged as the residential rate advocate in October, 2007 to participate in the Public Involvement Committee Process as a rate expert representing the City's residential rate class. Austin Water Utility (AWU) hired Ms. Rubottom to participate in the 2008 Cost of Service and Rate Study review and discussion. AWU also hired Red Oak Consulting to prepare the cost of service study and recommend methodologies to allocate AWU's water and wastewater cost of service to rate classes and design rates.

Ms. Rubottom attended the Public Involvement Committee (PIC) meetings held by AWU and provided written comments to Red Oak Consultant's recommended cost of service and rate design methodologies both for the water and wastewater utilities. She met with Ms. Lanetta Cooper, the representative of the residential rate class, on several occasions to discuss her concerns and to formulate ideas of cost allocation methods that reflected her views of the shortcomings of current methodologies. Ms. Cooper and Ms. Rubottom met with Mr. Randy Chapman concerning residential rate affordability for lower income residences. Ms Rubottom also met with the AWU staff and Red Oak Consultants to review more technical aspects of the studies.

As a part of the Residential Rate Advocate's scope of services, the following report summarizes the advocate's review of the final proposed cost of service allocation and rate design methodologies recommended by the Executive Team of the AWU. The report includes discussion sections on the Public Utility Involvement process, the Water and Wastewater cost of service and rate proposals. Appendix A includes all written comments filed in the PIC process by the Advocate on behalf of the residential class. Appendix B summarizes existing and proposed overall water and wastewater revenues. It provides an overview of the change in AWU costs during the study period and the sharing of the cost burden by major customer type. Appendix C summarizes the existing and proposed water rates and revenues by customer class annualized for a full year of billing each. Appendix D calculates monthly residential water and wastewater bills and totals them for various levels of water use. Appendix E summarizes the same information as Appendix C for the wastewater rates and revenues.

As a representative of all residential customers, the Residential Rate Advocate must look to the appropriateness of an overall concept for pricing. The residential rate design recovers costs unequally from the residential customers within the rate class depending on how much water they use. As such, the best way to represent each and every residential customer in the class is to seek out the best pricing approach within the residential class based on an appropriate pricing philosophy consistently applied, confident that differences in water bills to the customers of varying levels of consumption within the class are in the long term best interest of the public in general. With a philosophy of cost as a basis for fair and equitable

rates that promote the efficient utilization of society's resources, one does not fall prey to merely seeking methods that minimize the bills of one customer group over another in the short-run. The cost basis of rates must capture significant drivers of system costs as closely to reality as possible. To the extent that a compromise method is used which does not recognize critical aspects of system cost incurrence, then strict adherence to average cost of service may not necessarily lead to the most appropriate rates. In that case, a concern of gradualism in changing rates is important.

The PIC process was an exemplary process of what participating in utility rate setting with staff of a public entity can and should be like. Both the staff and the consultant were helpful and seemed committed to having all PIC members feel heard and understood and to have their questions answered. The customer participants on the PIC were clearly interested in doing what was in keeping with the cost and rate policies that they believed in, even if it meant on occasion accepting a higher rate as a result of doing the right thing. They were cordial and respectful of one another and the staff and consultants. The AWU staff diligently responded to requests for information that obviously required their efforts well outside normal working hours. Ms. Rubottom commends them for their dedication and professionalism.

In general, Ms. Rubottom agrees with many of the recommendations made by the Executive Team. However, she disagrees with the Executive Team's recommendations in a few areas and suggests several future studies to enhance AWU's rate setting. One area of disagreement is the recommendation to continue using the Base /Extra Capacity allocation method in the water cost of service study. Another is the Executive Team recommendation to move away from the 10% cost of service adjustment mechanism which has historically been used to set residential water and wastewater rates to produce less revenue than the calculated cost of service by setting commercial and industrial rates higher than their respective calculated cost of service amounts. A third area of disagreement is the proposed rate design within the residential class.

The future study areas Ms. Rubottom will recommend involve water seasonal and marginal cost analyses and studying the relationship of family income to water use among residential customers.

Lastly, the Advocate recommends minor changes to the Public Involvement Committee process.

Public Involvement Process

As mentioned above, the AWU PIC process was extraordinary. The AWU staff and consultant were helpful, cordial, patient and attentive to concerns expresses by all PIC members and the public. The members of the PIC themselves sought to understand the issues and to find the "right" answer, not just that which would yield the lowest rate to their class to the detriment

of other classes. The members came to realize the mutual dependence and identity that most everyone had with the other classes. Commercial and industrial representatives were themselves residential customers. Residential customers are employed by industrial and commercial customers. Multifamily customers house people just as people populate residences. Representatives did not seek to arbitrarily push or shove costs on to other classes. All did their best to understand water and wastewater system costs in an effort to find the most rational means of recovering AWU's needed revenue requirement fairly from all customers.

Ms. Rubottom would like to make a few suggestions for future PIC processes. The commercial class representatives need to have some form of expert assistance as they were the only class not represented by a utility rate professional, or in the case of the large industrial customers, engineers qualified to quickly comprehend the issues presented. Either the residential rate advocate expert should represent both customer classes or the commercial class should be otherwise provided with rate expertise. In this process, the small commercial representatives were frequently frustrated by not having the time to understand the utility industry ratemaking vocabulary and concepts in order to best represent their point of view. At least one commercial representative discontinued attending the PIC meetings perhaps due to this frustration. Many of the small commercial customers are busy with their businesses and do not have time to become utility rate experts on the side. If all customers in the process were only represented by themselves and did not have rate expertise, the commercial customers would not be so disadvantaged; however, that is not the case. The AWU staff and rate consultants went out of their way to be helpful and explain in as many ways and as straightforwardly as they could the various issues that were covered, but the process is inherently complex and involves, engineering, accounting, regulatory, finance and economic concepts that are not common knowledge even among educated professionals.

Also, there was a need to clarify the role of the PIC group as voting or non-voting in the beginning of the process. In the future it would be better for the roles of the group to be defined at the outset to decrease confusion and misunderstandings. Once again, the staff and consultants artfully lead the group through a process to come to the understanding that the group would not be "voting" on the issues, but would be providing input both collectively and individually to the Executive Team of decision makers.

Appendix A includes all of the written comments Ms. Rubottom provided to the Public Involvement Committee in the process. While the report which follows touches on the issues raised by the residential rate advocate in the process, the written comments included in Appendix A provide more in depth discussion of the issues described below.

WATER COST OF SERVICE AND RATE DESIGN

COST OF SERVICE

AWU Proposal

AWU's water cost of service includes its ongoing operating expenses, payments on debt borrowed to build water utility plant and ensure future water supply, transfers to the general fund of the City, and an additional amount of revenue to partially fund future utility plant construction. These costs are allocated to customer classes using historical metered water use and estimates of each class's water usage on the peak day and during the peak hour of the water system. The only actual measured customer class data used in the cost allocation is how much water each customer and customer class used monthly and the number of customers by type and meter size. All other peak day and peak hour amounts used in the cost allocation process are estimates based on assumptions applied to the monthly water uses of all classes that are then summed and compared to the measured system parameter – either peak day water production or peak hour water production. This is critical to note, because the differing peaking factor assumptions drive the different costs of service per gallon of water used for the different classes of service. For instance, the residential rate class has assumed higher daily and hourly peaking factors that drive the allocation of water costs. The result of these assumptions is that the residential cost of water service per 1000 gallons is a higher amount than that for the commercial, industrial and multifamily rate classes. The degree of this difference is in large part the result of the assumptions used to estimate peak day and peak hour water demands.

The most critical issue in setting water rates is the allocation method applied to the costs of the water infrastructure, both initial construction cost and ongoing operation and maintenance cost. These costs include the operating and capital costs of the water treatment, storage, transmission and distribution portions of water plant in service. For perspective, the total AWU Water Cost of Service to be recovered from rates is $195 million of that $135 million are affected by the Base/Excess Capacity Method of allocating. So, the choice of that method over others drives to a large degree the results of the cost of service between the customer classes.

Recommendations

Ms. Rubottom recommended that the AWU staff and consultants develop a new cost allocation method that allocated costs to seasons and then within seasons to customer classes in order to provide cost support for peak and off peak rates and the higher rates in the residential inverted block rate. Also she recommended that the allocation method consider some of the cost causal aspects of system planning and design such as the need for an off-peak demand time to be able to take some of the plant off line for maintenance and the reality that additional investment is made in plant to reduce annual operating costs beyond what would be needed just to serve peak water demands.

In lieu of the staff and consultants developing a seasonal cost allocation model, Ms. Rubottom recommended a change to the Base and Extra Capacity Non Coincidental Peak calculation which would provide more recognition of the role of total annual consumption in incurring plant costs. Ms. Rubottom's comments and concerns about the Base and Extra Capacity method as proposed are included in Appendix A in her written filed comments to the January 27, 2008 PIC meeting.

The Executive Team's decision to continue with the Base/Extra Capacity/Non Coincidental Peak method is based to a significant degree on the method's historical use and acceptance. AWU is rightfully concerned with the defense of its wholesale rates which are subject to appeal to the TCEQ. It is significant to note that the wholesale revenues of AWU are only 5% of the total system rate revenues. It is unfortunate that the City cannot be more innovative in looking at seasonal and marginal costs of service when setting water rates due to such a small portion of its system. Perhaps in future studies, the City could use a historically standard method of allocating between wholesale and retail to determine revenue requirements for the two jurisdictions and then be free to innovatively allocate the costs of service among the retail classes so that the cost of service study can be better used to guide setting peak and off peak seasonal rates on a rational cost basis for the vast majority of its system.

The Executive Team also recommends basing proposed rates on precisely the calculated cost of service for all classes. This change from historical practice creates a drastic change to the level of residential water rates. If in fact, the cost of service was precise and did not include many estimates and best available industry standard methods of allocating costs, then perhaps, setting rate class revenue requirements following the cost of service precisely might make sense. However, that is not the case, as is discussed in detail in Ms. Rubottom's comments filed in the PIC process and included in Appendix A. So, to make a drastic change using estimations and methods that do not address certain aspects of utility costs does not seem the wiser course at this time. The method also does not provide cost information to support the volume seasonal and inverted block rate designs.

Ms. Rubottom also recommends additional study of AWU's peak and off peak costs of providing service so that a more appropriate price signal can be given based on AWU's peak cost of service. One of AWU's recommended reasons for the proposed rate design is the policy of promoting water conservation. This is an important policy for the City of Austin and would be best supported by determining the cost upon which to base an economically efficient price which would promote efficient use of water as a scarce resource. The philosophy that seems to underlie much of the translation of cost to rate design is that the higher the volume charge, the more conservation, the better, regardless of the utility's historical or future cost of providing water at peak and off peak times either on average or on the margin – either short or long term. To complete the City's conservation policy planning, Ms. Rubottom recommends that the Water Utility undertake a marginal cost study to determine the marginal cost of providing water service by season of the year to inform the rate design and provide an economic basis for the conservation price incentives in the water rate designs. Of course, average cost of service will still be used to determine the revenue requirements, but marginal cost information could be put to good use when translating average cost class revenue requirements in to the rate components.

WATER RATE DESIGN

AWU Proposal

The Executive Team's proposed water rate design includes a fixed monthly charge and some form of volume charge separately for each of the rates classes – residential, commercial, multifamily, industrial and wholesale. The proposal for the volume charges is to continue the residential rate as an inverted block rate and the commercial, multifamily and industrial rates as seasonal rates. The wholesale rates are to continue as flat annual rates. The customer charges are based on the customer and meter related costs as identified in the cost of service study and a waiver of the fixed monthly customer charge in the case of qualifying low income residential customers. The Executive Team also considered an excess use rate for non-residential customers that would charge each customer a higher rate for consumption that exceeds their own individual average use throughout the year. This rate is under consideration as the City determines the technicalities of administrating such a rate. Appendix C summarizes the proposed water rates and revenues for all rate classes and the resulting changes from the 2007 and 2008 rates.

Recommendations

AWU's proposed fixed monthly charge waiver for qualifying low income households is the most accurate way to provide a discount rate to qualified low income customers. Ms. Rubottom agrees wholeheartedly with this approach. In this way, all of the customers who pay more in rates to provide this discount can rest assured that it is targeting those customers who are indeed in need.

As proposed, the volume rate differences between the residential and non-residential rates do not appear to be fair and equitable rates that also promote efficient water use by all customers. For example, a residential customer deciding on the margin whether or not to use water above 9,000 gallons per month in the summer time faces a price per 1000 gallons of $6.00-$10.00/kgal depending on their overall level of consumption. A commercial or multifamily customer consuming water from the same system during the same summer period faces a price of only $3.66 - $3.90/kgal. This is an enormous difference. While these differences can be explained as the consequence of the sum total of all policy input to the rate design process, they still do not make economic sense in terms of providing a price signal to all customers of the cost imposed on the AWU water system of their incremental consumption during the summer peak season and the off peak season. This is especially true since the higher residential block rates ($6.00-$10.00/kgal) are charged throughout the year, not just during the peak season. While it is true that the AWU's cost of providing water service during peak times is higher, there is no cost justification for charging higher rates in the off peak season. To explain to a residential customer why any water consumption during the off peak time is charged at a rate higher than the cost is virtually impossible to do. AWU's position seems to be that a penalty price is in order for all consumption above 9,000 gallons by a residential customer.

The Base allocated portion of the residential volume cost of service is equal to $2.83/kgals in the AWU cost of service study. When adding the peak day and hour additional costs, the total volume cost of service reaches $3.84/kgal. To charge any consumption less than the $2.83/kgal is in effect charging less than the costs as currently defined by AWU, which is true for the proposed $1.00/kgal rate for the first 2000 gallons of water consumed. The inverted block rate structure charges the first 2000 gallons of water at below cost for all customers, not just those who are in need of assistance in order to afford water service. AWU's proposed method of waiving the customer charge for those that qualify for

assistance is a better method for implementing the City's affordable water goals. If all consumption was priced at or above the cost, a cost based price signal could be maintained. If affordability is still an issue, then the fixed monthly charge could be increased, thus increasing the discount for the customer identified as needing the discount. A relatively higher fixed monthly charge would also contribute to the stability of AWU's revenues. At the same time the volume prices could minimally reflect the cost of service at all levels and thus provide a more appropriate conservation incentive for all consumption.

Another area where Ms. Rubottom disagrees with the Executive Team recommendation is in the proposed residential rate design. The increase in volume charge for the 9,000-15,000 gallon block is a 44% rate increase. This is a fairly drastic increase that could affect many customers, not just the larger water users. The rate of $6.00/kgal is above the average volume cost for this rate class ($3.84/kgal) and is well above any estimation of marginal cost that was discussed during the PIC process.

Ms. Rubottom would like for AWU to consider moving away from the block rate form to a seasonal rate that is based on the cost of service by season – peak and off peak. The block rate structure is difficult to understand and has the effect of charging some consumption during the peak time at lower rates and other at higher rates, when the system cost is the same for all consumption within a given time period. Using the block rate to address the issues of affordability of water for low income customers does not accurately provide the intended discount to only the lower income customers. All customers buy a portion of their consumption at the lower block prices. It has not been verified that the lowest consuming customers (0-2000 gallons per month) are in fact the customers most in need of assistance in covering their water bills. Nor has it been verified that customers consuming in the 9,000-15,000 range are not in need of assistance. The importance of the price signal to residential consumers as they make decisions about appliance and plumbing fixture purchases and choice of landscape is such that the price would best be reflective of AWU's cost of providing service in the various times of the year. The inverted block rate confuses these price signals for customers.

Ms. Rubottom believes that pursuing seasonal cost identification and using the results to set rates will produce more rationally economic pricing of peak and off peak water use with much less administrative cost and a clearer customer understanding than excess use and block rates will. The argument that some water use costs more to serve than others is a system cost argument. The mistaken principle that is the foundation of excess use rates is that if all customers used an equal amount of water throughout the year, then the system cost per unit of water sold would be minimal. As was learned by the PIC members in presentations given to the PIC by the AWU planning and operating personnel, that is not the case. A utility system with no off peak times would require more capacity be built than just that to meet peak demand, because excess capacity would be required in order to take water plant off line for maintenance that is required to keep the plant operating. So, to provide price signals that would result in encouraging and rewarding totally uniform use throughout the year would not necessarily result in a lower cost water system.

With seasonal cost allocation, peak and off peak rates can be designed based on the relative costs with consideration for revenue stability. AWU's proposed waiver of the fixed monthly charge for lower income customers is the most accurate way to target customers whose income levels do in fact match

with the policy intent of making water affordable for those in need. It is an appropriate mechanism by which to implement AWU's affordability goals without charging less for actual consumption than the cost, thus diluting the incentive to efficiently use water. When customers make consumption decisions, such as whether or not to replace a washing machine with a more water efficient newer one, the most efficient overall decision is made when the water price input to that decision is based on the cost of providing the water. If the price is less than cost, then the potential savings to the customer purchasing the new machine will be less and the customer might not be able to cost justify the new machine. The utility then goes on producing water at the higher cost even though replacing the machine would have cost less. While this is an oversimplified example, it does serve to illustrate the importance of cost based pricing in promoting efficient utilization of all resources.

Ms. Rubottom recommends that AWU consider a seasonal rate for residential customers in the future when the results of the seasonal cost of service studies could inform the rate design of the cost of providing service between peak and off peak service. At that time, AWU could consider the best seasonal rate design in light of both the policy goal of having rates be based on the cost of service, promotion of efficient use of water, and the need for AWU to have revenue stability reflective of the short term fixed cost nature of many of its costs.

Ms. Rubottom also recommends additional study of AWU's residential customers for use in guiding future rate designs. Many of the policies driving decisions applied to the residential rate design are based on the assumption that lower consuming water customers are by definition lower income than higher consuming water customers. While that is most likely true to some degree, it is unknown to what degree and at what block levels the income to water use relationship holds.

In fact, anecdotal evidence suggests that some lower income families with large numbers of individuals in the household and thus higher water use may actually be lower income than some low consuming residential second homes with lower water consumption that results from occasional use of the home. For the sake of not only clarity, but also of not unintentionally harming some lower or middle income residences by charging above cost rates, Ms. Rubottom also recommends that AWU study the relationship between residential income and consumption levels using utility data on consumption and physical addresses and census data on income by geographical area. Many of the residential rate design recommendations are based on the assumption that lower water consumption levels equate to lower income levels. As such a great deal of costs are shifted to the medium to larger consuming water customers within the residential rate class by use of the severely inclining block rate design that is recommended by the Executive Team. These prices cannot be cost justified even at peak times from the cost of service studies done to date. Therefore, to overcharge some consumption based on an incorrect assumption that lower water users are all lower in income than medium water users could be doing harm to the very people the policy intends to help.

Wastewater Cost of Service and Rate Design

COST OF SERVICE

AWU Proposal

AWU's wastewater cost of service consists of similar components to the water cost of service. Where peak use of water is a driving factor of cost allocation in the water cost of service, strength of wastewater is the cost driving factor in the wastewater cost of service study. As in the peak water use estimation, the wastewater strength of the various classes is estimated using limited known data and common sense understanding of the nature of the class's wastewater discharges to the system. AWU proposes to allocate Inflow and Infiltration, a system cost that is beyond the control of any customer, on the basis of wastewater flows, a change from the past cost of service study.

Recommendations

As expressed by Ms. Rubottom in previously filed comments the AWU proposed cost of service methodologies are reasonable and related to the operation and planning of the wastewater utility. Allocation of inflow and infiltration costs based on flow is the best way of handling a cost which is a system cost that increases flow related costs of the system and is beyond the control of customers. As there were no disagreements on the overall method of allocating wastewater infrastructure costs, the Advocate agrees with the Executive Team that the proposed rates be based on the calculated cost of service subject to consideration of gradualism in the change of rates over time.

RATE DESIGN

AWU Proposal

The Executive Team proposes to base the proposed rates on the calculated cost of service for each rate class, abandoning the previous approach of basing residential rates on less than the calculated cost and increasing commercial and industrial costs to recover total system revenue requirements. AWU's proposed wastewater rate design for the residential rate class includes a fixed monthly charge and an inverted block charge for the average volume of water used during the winter months. The proposed rate design for all other classes includes a fixed monthly charge and a flat volume charge for all wastewater flows. Wastewater volumes are based on measured average winter water use in cases where water flows which return to the wastewater system are not separately metered, which is the vast majority of cases. In some cases, separate water meters measure water for interior use separate from a water meter which measures all outdoor use.

AWU also proposes to waive the customer charge in the case of qualifying low income residential customers. Appendix C summarizes the wastewater existing and proposed rates and revenues for 2007 through 2009 and the resulting changes to customer class revenues.

Recommendations

AWU's cost of service study did not provide cost justification for the amounts of the inverted block rate for residential wastewater other than to lower the cost per 1000 gallons of wastewater billed for the lower water consuming customers. The proposed residential rate is as follows: 0-2000 = $3.43/Kgal for the first 0 to 2000 gallons and $7.73/Kgal for all gallons above 2000 gallons, with an $8.50 customer charge. Once again, AWU should focus the policy goal of affordable wastewater service on the customer charge and not on the volume charge. The inverted block rates and their levels should be cost justified so that all residential customers have confidence in the cost basis of the rates that they are charged and in the qualifications of those that receive assistance.

Austin Water Utility

2008 Cost of Service and Rate Design

Appendix A

Comments of Residential Rate Advocate

Public Involvement Committee Meetings

Comments of Residential Rate Advocate

November 27, 2007 Public Involvement Committee Meeting

First, we would like to thank the Utility staff for the initial information provided in the PIC notebooks. The Residential Rate Advocate offers comments from the meeting in two areas. The first area involves the Public Involvement Committee process as presented by the Water Utility staff and consultants. The second area involves requests for the upcoming meeting on Revenue Requirements.

Process:

1. The 1999 Public Involvement Committee had four representatives from the residential class. The current PIC has only one residential rate class representative and the Residential Rate Advocate. This representation (2/11ths = 18%) is not proportionate to either the number of customers (89.5%) or the revenues (39.4%) to what the residential class comprises. As such what is the relevance of a majority vote of the committee on issues when the committee makeup is not proportionally representative of the underlying constituency? Perhaps, only consensus recommendations of the Committee should be referred to the decision makers for consideration and where consensus cannot be reached only individual PIC representatives' comments should be included. Such an approach provides an incentive for the PIC to reach consensus. No votes should be taken, as it is unclear what a majority vote of the PIC Committee represents. This would provide incentive for the committee to work together towards consensus, finding the common good which represents the shared benefit inherent in public utility systems. Absent such an approach, the makeup of the PIC should be adjusted to reflect the proportionality of the total customer and revenue base more closely. Nothing in the process should preclude individual PIC members from forwarding their individual concerns to the decision makers on any and all issues.
2. Small independently owned businesses as commercial customers were not represented on the Committee yet. The one commercial customer named to the committee represents a larger national chain customer. We urge the City Staff to continue to pursue an additional commercial customer representative from the smaller customers in that class. In the 1999 Cost of Service study, the Residential Rate Advocate was also asked to represent the small commercial customers within the commercial class. We wish only to make note that this has changed in this study and that the Residential Rate Advocate has not been asked to represent the small commercial customers.
3. In the 1999 PIC process, there was a concern expressed that the process was did not allow for meaningful public participation due to the unavailability of the Cost Of Service allocation model to the PIC members for analysis purposes. At this first PIC meeting, the issue of COS model availability was discussed. The Water Utility staff described this year's process as different from the last in that the utility will be given the COS model developed by the consultant in electronic format with all calculation capabilities enabled, as opposed the consultant owning the model as in the last process. However, upon being questioned, the Red Oak Consultant suggested that others would not be able to run the model themselves with their varying assumptions and methodologies due to its complexity. However, they did say that they would run a reasonable number of alternative methods upon request if the model as designed would accommodate the methods that PIC members were envisioning. This is not an issue unique to Austin in utility rate setting processes that seek customer involvement. Cost of service and rate design models are designed for use by rate analysts who have years of training in accounting, economics and computer-aided analysis and programming. This is not usually intentional. There just are not usually hordes of people waiting in line to get at those models to play with, so the analysts tend to develop them to get their jobs done in the best and most effective and efficient way they have available at the time. The models are not typically designed for general public use. In this case, the PIC has at least three highly trained rate analysts on the involvement team, if not more. I recommend that the consultants and staff make the model available to those who are able to

use it effectively and/or agree upfront to make a reasonable number of COS runs for others who are not able to. Having all Committee members work from the same set of calculations could have many advantages in the process, including enhancing clarity, minimizing costs to the customers of multiple consultants developing multiple models, and increasing accuracy of comparisons. In most cost allocation discussions, the effect of differing allocation methods can be framed by looking at the extremes, knowing that all other methods land somewhere in the middle. Perhaps this reality could be used by the PIC members, Utility staff and Red Oak to choose an efficient number of methods to consider, i.e. ones that address the most salient disagreements on allocation philosophy identified by the PIC members. The PIC members working together with the Water Utility project team from a single set of models testing alternatives seems like a consensus building process whereas each PIC member developing its own model and running things separately is more akin to a litigated rate proceeding. Perhaps it will come to that, but that should not be the goal.

4. The 5 day turnaround time for written comments is not working well for the Residential Rate Advocate to include the Residential Rate Class Representative in a review process for the written comments. The Representative is a volunteer who has a full time job and is doing this as a public service. Perhaps if we extended the comment time frame to target 5 days, but be no longer than 8 days, that would help. For the December 17, 2007 meeting, the Residential Rate Advocate will not be able to return comments until December 28, 2007. We respectfully request that extension.
5. It would be beneficial for the utility staff to have operations and planning personnel of the utility give the PIC a brief overview of how each of the systems, water and wastewater, work. That overview would include a map and/or listing of the facilities that make up the investment in plant in service and how each system is planned, operated and maintained. The presentation should include maps of each system that show locations of industrial and institutional customers and wholesale customers. If this came before the discussion on water and wastewater allocation methods, the Committee could reflect on the actual system operation and planning when discussing the merits of various allocation methodologies as applied to the Austin Water Utility. The Committee having a shared understanding of what drives costs in the systems would enhance the discussion of allocation methods which best reflect cost causation on Austin's systems.

Revenue Requirements Meeting:

1. For the revenue requirements meeting, please provide detail of O&M (including functionalized salaries and wages, supervision and engineering, chemicals and treatment supplies, repairs and maintenance, outside services, power costs, customer service and accounting costs and the detail of all administrative costs, and any amortizations to be included in cost of service when using the "utility basis"), debt service by issue for the next 5 years, depreciation by plant, detail of rate base, including functionalization (treatment, transmission, distribution, general, etc.) of plant in service and by plant in the case of water and wastewater treatment plants. Include in rate base, the non-plant assets such as Watershed management land, LCRA future water supply payment any other non-plant, or intangible rate base items. Provide a detail listing of what fixed asset data is available for the Water Utility plant in service. Describe the method by which depreciation methods are calculated and applied to individual or classes of assets. Provide the depreciable lives of all assets. Also, please provide for each debt instrument which gives rise to a revenue requirement in this case, the Official Statement associated with that debt, any information on advanced refunding, and the principle and interest payments related to each issue for the current rate year and the next 10 years. In other words, please provide all of the underlying information used to calculate the two approaches, utility and cash basis. The focus of this review is not to analyze the adequacy of the Water Utility's total revenue requirements, but to focus on what allocation methodology is best suited for the capital costs of the Austin systems.
2. Please also provide the most recent version of a 5-year financial forecast of the Water Utility system, showing water and wastewater separately and any other future plans that are available for either

system. This could include a Master Plan or a Capital Improvement Plan, etc. As the goal of this process is to develop methodologies that will be used for the upcoming five to 10 years, it seems prudent to take a look at what is upcoming in the Water Utility's financial future that these allocation methods will be applied to.

Comments of Residential Rate Advocate

January 7, 2008 Public Involvement Committee Meeting

First, we would like to thank the Utility staff for the providing the requested information both before and after the meeting. Also, we appreciate Teresa Lutz presentation on the water system and its planning and operations. The Residential Rate Advocate offers comments from the meeting in two areas. The first area discusses the rate consultants' recommended cost allocation method. The second area involves requests for the upcoming meeting on Revenue Requirements.

Utility Plant Cost Allocation Method

On page 3 of Issue Paper #2, the consultants explain that although the size of a facility may be based on the magnitude of the peak demands, the total costs incurred by the utility to build the facility is also related to the facilities' use throughout the year to serve customers' annual consumption (referred to as average demand sometimes). That is to say, that the least costly solution to meet the peak demand is not often the solution that the utility implements because the utility is trying to minimize the total costs to serve all customers year round, not just at peak times. Higher capital costs are often times incurred by the utility when that higher capital cost can result in lower operating and maintenance costs throughout the year. The money spent to build facilities which are sized based on peak demands provides benefits throughout the year to reduce the total cost of all water consumption and indeed to make off-peak consumption possible. Without facilities, off-peak consumption would be impossible. So, most certainly costs of facilities can be attributed to both peak and off peak consumption.

The consultant's comments agree with this understanding of the way in which the water utility incurs costs to meet all customers' water needs. As such, this is the consultant's basis for recommending the Base/Extra Capacity allocation method over the Commodity/Demand method. However, following through an example calculation based on the example used in the Issue Paper, the results of the amount of peak costs allocated to each class under the two different methods, shows that the result is the same. The Base/Extra Capacity method applied to an example $10,000,000 cost amount using residential, commercial and industrial typical characteristics shows that the results of the two allocation methods are identical.

The comparative allocation method calculation is illustrated on the attached EXCEL spreadsheet. The allocation of Base and Extra Capacity costs to classes is based on the language provided on page 7 of Issue Paper #2 under the subtitle "Findings on Overall Methods." If this calculation does not accurately depict what is proposed, please illustrate the proposed method precisely using the example provided to clarify for the committee.

The Base/Extra Capacity method is like the Average and Excess Demand method used to allocate generating plant costs in electric utility cost of service studies. The same result has been demonstrated time and again in various electric cost of service studies illustrating that this method results in the same proportional allocation of costs to classes as if all plant costs had been allocated in proportion to each class's contribution to peak demand. If the methods have exactly equal results, then how can the Base/Extra Capacity method recognize the many benefits to off peak customers of the investment in plant above and beyond the minimal cost to meet the peak demand? The answer is that it does not. It is an absolutely arbitrary calculation that through a multi step calculation appears to do take average demand in to account, but in the final result does not. While the method is used widely and is an acceptable method by AWWA manual standards, it does not do what the consultants purport it to do, which is to give recognition to the significant additional plant costs that are incurred to provide reliable and less costly service to customers throughout the year and not just at the peak time. Since the result comes out the

same as allocating all plant costs on peak demand, is there any point in the complication of the Base/Extra method calculations?

Utility cost allocations have been debated for at least 75 years and there does not seem to be an end to the debate in sight. With all of the technological innovation of the recent decade, there has been no utility cost allocation method developed that stands out as the truth – the do all and end all method. This would be a method that would ring so truthful that only the most immoral person could deny its veracity in seeking lower rates for themselves and no objective judge would disagree with it. There is a reason for this lack. And it is important to any utility ratemaking process to keep it in mind when engaging in the age old activity of allocating a utility's cost of service between the customer classes.

The reason is that the vast majority of the utility's costs are shared costs. A cost of service study tries to attribute costs of the water system to subsets of customers by following cost causal lines, but it is virtually impossible to do because these system costs were incurred in response to system attributes, not those of individual customer classes considered separately. It is the basic economies of scale inherent in the water utility that caused the utility to evolve in to the system that serves all customers that we have today, rather than a series of individual systems serving individual customers or groups. It is these economies of scale that render us willing to grant the utility monopoly status in an area in exchange for democratic/governmental control over prices. Hence, the City council has ultimate say over the prices and indeed the utility itself is publicly owned.

In the electric industry, cost allocation and rate design experts turned to the utility system planners in attempts to capture some of the real cost relationships between demand and consumption patterns and the way that the planners decided to incur costs on the system. This could be done in the case of water utilities also. The challenge with this approach is that the cost realities that planners routinely deal with can be so complex that only experts can understand them. As rate setting is a public process with policy makers sitting as ultimate judges of prices, methodologies must be sophisticated enough to capture the essence of cost causation, but not be needlessly complex beyond the understanding of policy makers and customers who wish to participate in the process. Several methods of capacity related cost allocation evolved in the electric industry to come closer to mimicking system planning cost realities, while staying simple enough to be used in the public process of rate setting. The impetus for this development was the drastic increase in capacity related costs that came with the building of base load coal and nuclear plants that were clearly beneficial to both peak off-peak users in minimizing the total cost to the customers. As the costs of water treatment plant for the Austin Water Utility increase, along with the investment in transmission and distribution systems, it is most likely time for the utility to look at the next evolution of allocation methods to apply to plant capital costs. These methods would take into account the costs and benefits cited by the consultants' in the Issue Paper #2 page 3 and also take into account such things as Ms. Lutz's discussion of needing the off peak times to be able to do maintenance on the various plant components of the system. If all customers of the system consumed water at a uniform rate throughout the year, the utility would have to have additional capacity available to serve demands when maintaining plant even though it was not needed to meet peak demands. So, there is a benefit to the user who uses water uniformly throughout the year to partnering on a system with users who use more at some times than others. That benefit is additional capacity that was built to meet peak demand is available to serve the uniform user in off-peak times when plant and equipment must be taken off line to perform required maintenance.

While a newly designed cost allocation method would not necessarily meet the criteria of having achieved industry acceptance, its intent could meet the notion of industry accepted principles of water utility

planning, operations and maintenance. With Treatment Plant #4 in the plans and possibly its costs being allocated in the time frame of this cost of service study method, the time may be ripe for a more sophisticated cost allocation method that more accurately identifies costs and benefits to the various customer classes than the traditional more simplified methods that were adequate in the past.

As the system was built to meet system demands, an allocation method could focus on allocating system costs to the peak and off peak times based on system characteristics that are related to the type of capacity cost being allocated. Once allocated to times of the typical year, then costs within those times could be allocated to customer classes based on their contribution to the system characteristic in that time. Such an allocation study could provide cost of service guidance for peak and off peak rate differentials. We respectfully request that the utility and its consultant consider developing an allocation methodology that would address these issues by reviewing similar well- accepted methods used the electric utility industry. As an alternative, we recommend a slightly adjusted method of allocating the demand related portions of the costs in the Base/Extra Capacity method to classes. Rather than use the excess calculation to allocate to classes, use the total demands in each category. This method is detailed on the example included in the EXCEL spreadsheet that is attached to this file as an exhibit. The result is a total cost allocation to classes that falls within the bounds of an allocation based solely on peak demands and one based solely on average demands/total consumption. This approach does provide recognition of the total annual consumption in the allocation formula.

There is no one way to allocate shared utility costs, because the same asset serves all customers at the same time and at different times. No customer could get water from the river into potable quality and delivered to their plumbing without the utility plant that gets it there whether at peak or off peak times. The same treatment plant, pipe, pump, etc. serves, and is available to serve customers across all classes, throughout the year as is there at the peak time.

What we are really seeking is a civilized way to go about deciding what customers will pay for water service from a system that was designed to most cost effectively serve all customers. Hence, the notion of what is the "fair" amount for each customer to pay. Fairness, as beauty, is in the eyes of the beholder. Historically, the thinking has been, since it is costs that give rise to the need to charge rates, then rates based on the costs are the most "fair" rates that could be charged. The shared or joint costs of the utility are studied to see what service needs of customers cause the utility to incur those shared costs to serve customers. From that understanding, an allocation approach is developed that attempts to mirror the "cost-causal" aspect of each type of cost. However, this cost causing identification is constrained by the need for practicality and the existence of policy decisions such as charging system wide rather than geographically differentiated rates.
The utility builds its system with the goal of minimizing the total costs to service all customers in the system wherever they are and whenever they join the system. The utility came to be because the economy of scale of serving all customers from one system was a better solution than each customer providing for its own water needs. The system is not only designed to serve peak demand reliably, it is also designed to serve demand reliably year round, including the very real need to have down time to maintain complex and expensive equipment. It is also designed to take advantage of the economies of scale inherent in most utility infrastructure. These realities need to be more accurately reflected in the allocation method that is chosen.
Comments on tentative Water System functions (Page Issue Paper #2)
This list of assumptions seems to imply that there is no average demand function associated with storage, transmission, pumping or distribution facilities. We disagree with this if that is the intent. Potable water cannot be delivered off peak without the existence of these facilities and therefore some portion of their

costs (both capital and O&M) should be allocated to all water use throughout the year. The question of what portion of cost should be allocated to water use throughout the year is relevant, not whether or not any costs should be allocated to off peak usage. Without seeing the proposed cost of service study, it is difficult to see clearly what the consultant is proposing for the actual allocation of these costs to customer classes.

Estimation of Class Peak Demand Data

The Issue Paper #2 was not specific on how this is proposed to be done. As a great deal of cost could be allocated amongst the classes based on these estimates, we would like to see detailed work papers with sources identified and estimation methodologies described in order to provide further comment on this important aspect of the study. Because peak demand data is not actually measured and recorded beyond peak month consumption, using allocation methods that over emphasize peak day and hour consumption must be taken as no more than the estimates that they are.

Allocation of Pipeline Plant and O&M Costs

As was mentioned in the meeting by Ms. Cooper, representative of the residential class, the economics of pipeline construction should not be ignored in a review of cost allocation methods used to allocate their costs. As she pointed out, the unit cost to increase the peak capacity of a water line is extremely small compared to the cost of putting the line in place in the first place. For a small amount of additional cost the capacity of a given pipeline can be significantly upsized. The same can be said of pump stations to a degree. In response to Ms. Cooper's suggestion, the consultant referred to her notion as a marginal cost notion and said that the study at hand is an embedded average cost study. We would argue that the underlying economics of pipelines can and should be reflected in the cost allocation method even within the context of an average, embedded cost of service study. We recommend incorporating this reality in to the cost allocation methodology as the study progresses. At a later date, we would like to present a methodology that could be used within the context of the average embedded cost study.

Allocation of Fire Flow Related Costs

The Issue Paper #2 did a very good job of outlining the dilemmas and challenges related to capturing and recovering fire flow costs from those customers who receive the largest benefit from having fire flow. Since the method which best aligns costs and benefits is most likely not practical in implementation, we urge caution in adopting second best alternatives which might significantly affect the cost of service of the customer classes by their implementation. We will continue to review the discussion and offer additional comment in the future. Any charge or allocation that is based on the number of meters is liable to have the costs allocated largely to the residential and small commercial classes, who do benefit from the availability of fire flow, but whose property values are most likely not reflected accurately in the proposed meter size differential. As property values are the most likely indicator of the benefit of having fire available, meter size by customer class may be a very poor proxy for the relative property values of each water customer class. We urge caution in moving forward with such a separate fire flow charge without adequate deliberation. Even without implementing a separate charge for fireflow, the question of allocation of that portion of system costs that can be reasonably attributed to fire flows could be treated differently than in past studies. Any change should be carefully considered in light of the fact that direct cost causal lines are elusive at best. We look forward to further commenting on a specific proposal when it is identified in the cost allocation study.

~~Exhibit AER-2~~

~~Draft Calculation Subject to Check~~

January 7, 2008 PIC meeting Comments Residential Rate Advocate

City of Austin
2007-2008 Cost of Service Study

Comparison of Base/Extra Allocation with Commodity/Demand Allocation

	Total	Residential	Commercial	Industrial	Total
Peak hour	335	210	105	20	335
Peak day	215	127	68	20	215
Average	140	75	50	15	140
Peaking Factors:					
Peak hour	2.4	2.8	2.1	1.3	2.4
Peak day	1.5	1.7	1.4	1.3	1.5
Peak hour Percent	36%	63%	31%	6%	100%
Peak day Percent	22%	59%	32%	9%	100%
Average percent	42%	54%	36%	11%	100%
Peak Hour Excess	100%	83	37	0	120
Percent of Total		69%	31%	0%	100%
Peak Day Excess		52	18	5	75
Percent of Total		69%	24%	7%	100%
Average Day allocator		54%	36%	11%	100%

Commodity/Demand Method as described in Issue Paper #2

Cost	10,000,000				
Peak Hour Percentage from above		63%	31%	6%	100%
Allocated cost		6,268,657	3,134,328	597,015	10,000,000

Note that while industrial consumes in the peak hour, class gets no allocation of peak hour costs.

Same Exact Result

Base/Extra Capacity Method as described in Issue Paper #2

Cost	10,000,000				
Peak Hour Excess Percent	3,582,090	2,477,612	1,104,478	-	3,582,090
Peak Day Excess Percent	2,238,806	1,552,239	537,313	149,254	2,238,806
Average percent	4,179,104	2,238,806	1,492,537	447,761	4,179,104
		6,268,657	3,134,328	597,015	10,000,000
Resulting percent allocation of cost		63%	31%	6%	100%

Result is equal to same allocation percentage of cost to each class as allocating all cost on contribution to Peak hour.
This is a fallacy of this method. It always has been. This is not a new discovery.

A differerent way to more meaningfully allocate base, peak day and peak hour costs to classes is to allocate each category in proportion to each class's total contribution to each category.

	Total	Residential	Commercial	Industrial	Total
Example:					
Cost	10,000,000				
Peak hour Percent	3,582,090	2,245,489	1,122,744	213,856	3,582,090
Peak day Percent	2,238,806	1,322,457	708,087	208,261	2,238,806
Average percent	4,179,104	2,238,806	1,492,537	447,761	4,179,104
Resulting cost allocation		5,806,752	3,323,369	869,878	10,000,000
Resulting percent allocation of cost		58%	33%	9%	100%

Note that the resulting percent allocation of cost is between allocating on peak and allocating on average.

In this instance, industrial class gets an allocation of plant which is peak classified as the class has consumption at the peak time
The more peaking class, residential, still receives a percent allocation of cost greater than if all costs had been allocated on average demand (the same thing as total annual consumption)

Prepared by
Angela Taylor Rubottom
Residential Rate Advocate

Comments of Residential Rate Advocate
January 22, 2008 Public Involvement Committee Meeting
Wastewater Cost Allocations

Overall Allocation Method

Red Oak Consulting has recommended using the Hybrid Method of allocating capital and O&M costs of the wastewater utility. While this method is reasonable and seems like a balanced approach to allocation of wastewater costs, it does not stand out as conceptually superior to other methods. All methods considered rely on estimated measures of TSS and BOD from a sampling of class wastewater strengths. These measures are estimates and as such the resulting cost of service is only as estimate and should be looked at as such when the time comes to set class revenue requirements and design rates.

The Hybrid method's effectiveness in allocating will depend to a great extent to its detailed application to Austin Water Utility's actual costs. There will be a good deal of judgment still to be determined in determining which cost of the Utility will be allocated on a design as compared to a functional basis. Judgment will also be required to determine which cost is incurred for which function. As such we look forward to the opportunity to comment on the consultant's specific recommendations regarding the allocation of Austin Water Utility's actual cost of service components when available.

Customer Class Characteristics

Red Oak Consulting recommends the use of flow, BOD, and TSS as the customer characteristics to include in the hybrid allocation process. In addition they recommend future consideration of including TKN and Phosphorous. The flow is the only actual measured customer characteristic of each and every customer class. The other measures are based on various estimation methodologies. As such, a review of the specific estimation methodologies would be appropriate to determine the level of accuracy of these estimates and thus the level of accuracy to place on cost of service measures using these characteristics.

There was not enough information given to determine the appropriateness of applying City resources to the future consideration of TKN and Phosphorous. City staff experts' ideas on the future impact of these constituents on the City's permit requirements and future costs are needed before further commenting on these issues.

Inflow and Infiltration

Of all the cost components identified, this one has the least relationship to customer classes and is clearly a system cost. Its incurrence and the amount of it is determined by the utility's decision to invest to reduce I&I or invest to accommodate it in the system. This component is analyzed and viewed economically from the point of view of what is best for the total system, not weighing one class's cost of service versus another. So, the allocation should be done in a way that spreads the costs over the system in proportion to the benefit the system provides to the whole. Using annual total flow as an allocation method seems reasonable. However, once again, it is important to realize that there is not any method that is conceptually superior. As such, practical considerations should be weighed; such as what kind of effect this allocation change from previous studies will have on the class cost of service compared to past studies. Any drastic changes that might result in a drastic rate change for that class need to be mitigated by the underlying conceptual dilemma that a superior method of cost sharing is not totally clear.

Summary

Again, the devil can be in the details in cost of service studies, thus we would like to reserve the opportunity to comment on the detail application of these allocation methods to the City's costs of service in the upcoming study.

Angela Taylor Rubottom, Principal Consultant
West View Financial Consulting

Comments of Residential Rate Advocate

February 19, 2008 Public Involvement Committee Meeting

Wastewater Cost Allocations

Customer Classification

The Austin Water Utility customer classifications have been uniquely driven by the history of rate challenges in the City. Much focus has been put on the classification of wholesale and industrial customers as those customers have found the greatest economic benefit in funding involvement the City's rate processes. The great disparity of customers within the residential and commercial classes has been addressed only through rate design without separate cost of service being considered specifically in the cost of service study. We support the staff and consultants' efforts to be aware of the enormous variation in both consumption of water annually and seasonally in both the residential and commercial classes. We also support the consideration of various rate designs to address these enormous variations within these classes. It is interesting to note that the vast majority of water is consumed within these two classes, and therefore concern for efficient price signals in these classes is relevant to the discussion of the future of water conservation incentives on the system.

Estimating Peaking Factors By Class

We would like to thank Red Oak consulting and the AWU staff for providing data on the AWU system and its classes as an example of the calculations being proposed for estimating customer class peak day and peak hour water demands.

We would like to try to articulate the underlying assumptions that are being made in the estimation process and review the basis of those assumptions. The estimation of these types of peak water demands by customer class drives a significant amount and portion of the water cost of service being allocated to customer classes. The accuracy of the demand estimations is a measure of the degree of precision, or lack thereof, and must be considered when using the cost of service results to establish class revenue requirements and design water rates for each customer class. The same can be said of the estimation processes used to derive wastewater strengths by customer class in the wastewater cost of service allocation.

In order to assess the peaking factor estimation method, one must find one's way through the math of developing system peaking factors that are then applied to the only actual metered data available for each and every customer class - the class monthly water consumption divided by the number of days in the month, referred to as average demand. The development of the peaking factors assumes that certain relationships that can be calculated on a system basis (because there is hourly water demand data that is measured and accurate for the system that is not available for the customers classes) also apply on a class-by-class basis. This assumption is most likely incorrect, however, it is defended as the best use of available data.

To clarify, could the consultant explain specifically how the system ratios used in estimating the class peaking factors were calculated?

The reason to pursue estimating the peak day and hour demands is purportedly because the system demand in these hours drives the incurrence of certain capacity related costs of the system. The peak day and peak hour demands of each class are inputs to the calculations used in the Base and Extra Capacity method of allocating the water cost of service. It is challenging at best to make sense of the Base and Extra Capacity method of allocation, much less to describe it to a residential customer. That challenge is increased when the customer class contribution to the system peak hour and system peak day are not the demands used in the allocation,

but rather the class demands at the supposed time when the class reaches its peak (the class non-coincident peak demand – day and hour). Without using these class non-coincident peak demands, the Base and Extra Capacity allocation method produces the same results as if the peak demands were the only allocators used. When estimating class non-coincident peak demands both daily and hourly as proposed, there is not a measured system demand that all demands can add up to as a check of the veracity of the demand estimates. In the estimation process, the actual hour in which the estimated class peak occurred is not even ascertained. In reality all class peak demands would likely not occur during the same hour. Needless to say, the sum of the class non-coincident peak demands is not used in the system planning process. So to say that NCP's are cost causative factors is a stretch. The use of class non-coincident peak demands to allocate costs that are system peak related is difficult if not impossible to explain to the customers, especially after spending the first 10 minutes explaining to them the relevance of the system peak times in driving some costs on the system.

A more direct approach to cost allocation, for those system costs that can be rightfully attributed to system peak demands is to estimate each class's contribution to those demands (Peak hour or day) and use that contribution as the allocator for the demand related costs, not the unrelated and arbitrary excess class non-coincident peak demand above average demand calculation used in the Base and Extra Capacity method as proposed. Attributing cost responsibility equitably between the peak times and the rest of the year can then be done based on the economics of the system in a manner that addresses such economic realities as economies of scale in pipeline construction and other facilities, the need for off peak times in order to maintain plant and equipment and the need to and clear benefit of having plant available year round to serve year round demands in addition to peak demands. Whatever method is used to apportion plant and equipment costs between peak and off peak times can then be supported based on the method's relationship to economics of the system that can be explicitly discussed and identified.

Such an approach is more straightforward and the customer class demands being estimated are merely each class's portion of the system water demands that drive costs throughout the year.

Estimating Wastewater Strengths by Class

Using the total system measured information and applying the measured information from those customers where available enhance the estimation of these amounts. The challenge is that the vast majority of the customers' wastewater strengths are not measured and thus the residual of the system amounts to be identified by customer class is 94% in one instance and 99% in the other. When work papers are available that more clearly describe how the remaining strengths are apportioned comments will be offered at that time.

Disaggregation of Large-Volume class (formerly known as Inside City Industrial Class)

This issue is largely an issue within the industrial class. The staff and consultants assured the PIC members that the cost allocation to other classes would be unaffected by the disaggregation of the industrial class into single customers for cost allocation purposes. We would request that the cost of service studies be done both with and without the disaggregation of this class so that hypothesis can be tested. Because the potential for conservation of water and the recycling of wastewater lies with additional investment by the individual industrial customers, we would rely on the staff's and consultant's expertise in assuring rates whose resultant investments on the part of the industrial customers and AWU are those with the highest cost benefit to all.

Threshold for Inclusion in Large Volume Service Class

We defer to staff's judgement on this issue for the time being.

Establishment of Irrigation Class

The consultants' discussion of this issue highlights the varying degree to which the use of water to irrigate exists within the various customer classes. A very small amount of irrigation water is separately metered and identified, but the vast majority is not. What seems to be underlying the desire to focus on the pricing of irrigation water is the notion of its non-essential nature compared to indoor water uses and its potential as a source of future water conservation.

We agree with the consultants that the use of seasonal and other rate designs might go a long way toward sending the price signals that would provide the right signal for efficient investment in water conservation on the part of the customers.

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Comments of Residential Rate Advocate

March 3, 2008 Public Involvement Committee Meeting

Rate Design

Rate Design Goals and Objectives

In general, the objective of this process is to set the rates based on cost of service, which is why we spent the bulk of these meetings discussing the cost of service study. In addition the utility rate setting process sometimes has goals related to other public policy concerns. In actuality, there are many definitions of cost of service. The one we have focused on is the accounting average cost of service that is based on the accounting costs that AWU incurs over a year (in this case a budget year) to provide service to the existing customers. This is the cost definition that is usually used to justify rates as (1) adequate to meet the utility's need for revenue to maintain its financial integrity, and (2) fair and equitable to the various customers. Another definition of cost is that cost which will be incurred in the future to serve additional water demands. This is referred to as the marginal or incremental cost of service and can be estimated based on the utility's demand and CIP forecasts. Economic theory would suggest that a great deal of public benefit can be had when prices/rates are set equal to marginal or incremental costs. The most far reaching of those claimed benefits are that the allocation of scarce resources will be the most efficient and that the collective satisfaction of all involved will be maximized. Without addressing the macroeconomic aspects of the theory of marginal cost pricing, one can see the common sense appeal of prices that would signal customers the costs the utility could avoid if the customer reduced their consumption either at certain times or in total over the year. The customer could then make a comparison of how much to spend to conserve compared to how much to pay to consume and the rational economic consumer would choose the lesser of the options. Stated another way, the customer could compare how much satisfaction they get from the consumption to what the price is that reflects the cost to the utility of their consumption and decide whether or not the consumption is worth it to them or not.

The discussion of rate design goals and objectives that relate to conservation are two fold, as I understand them. The first of AWU's conservation goals is to delay or avoid entirely the increase in water peak demand that would lead to the need to add water treatment capacity. The cost per 1000 gallons of additional treatment capacity used by the Water Conservation Task Force to compare costs and benefits of various conservation strategies was reported during a previous meeting to be $3.40/ 1000 gallons of peak water demand avoided. (Note: It was not clear if this amount was loss adjusted to the meter or not.) A question that arises naturally is, why should AWU provide a peak price signal greater than or less than this cost to serve peak water demands and if greater than or less than, by how much and why? In other words, would AWU want to signal customers to spend more reducing their peak water demands than it would cost the City to serve them? These reasons need to be articulated so that the policy conversations concerning them can be discussed openly and transparently.

The second conservation goal is to reduce total annual water consumed by AWU to avoid the cost of paying LCRA for raw water that will begin once certain total raw water diversions are reached by AWU. While that cost to avoid in the future was not provided, it is likely that it is in the neighborhood of $.50 -$0.75 per 1000 gallons at the meter (includes an estimate for water losses in AWU's system and increases in LCRA rates over time.) Other costs that could be avoided by AWU if total annual consumption decreased are clearly electricity and chemicals and maintenance expenses that increase with the use of equipment that is used more the more total water is passed through them. Estimates of these costs have not been discussed in PIC meetings to date, but were most likely looked at by the Conservation Taskforce in its cost benefit analyses. Since AWU's right to divert surface water is finite, the more water is conserved, the more water remains to provide water to population growth in the area. That is, with lower per capita water use, a larger population can be supported from this finite quantity of water. Or, thought of another way, the less per capita residential water use is, the more water is available to provide to

new industry and commercial concerns. Other effects of reduced per capital water use in AWU's service area include the maintenance of relatively higher lake levels in Lake Travis and a reduction of the frequency of interruption of water supply to irrigation farmers downstream of Austin.

How should AWU decide how high to make the peak rate for water? What should be the basis of the amount of the conservation incentive? Should it be the result of the average accounting cost of service applied to seasons and classes of service? Should it be an estimate of the cost avoided by reducing peak use and/or annual use? Should an idea of the long run marginal or incremental cost of providing service be considered? Which of these cost bases best supports the policy reasons to promote conservation? Stated another way, how much conservation is sought by AWU at what price/cost to the customer or lost benefit of the use by the customer? Answering these questions seems to be of import in the process of implementing conservation policy goals in the process of water and wastewater rate setting.

Another question comes to mind after the rate design discussion. Are there some uses of water that the City, as a policy matter, wishes to penalize by charging more than the cost (by any definition) to provide water for these uses? At the meetings, several mentions were made of wasteful water use. Are these wasteful water uses clearly defined, articulated, and agreed upon? What authority is the judge of wasteful vs. not wasteful use? Does the state Water Code provide the guidance and framework for this concept? The City's Drought Contingency Plan? Is there also a concept of essential use? Is that defined and agreed upon with in the City's processes?

As pointed out in the meeting, the appearance of inequity exists in the existing rates by comparing the cost in the residential tail block ($7.63/1000 galls year round) and the non-residential rates in the peak and off-peak seasons ($3.16 to $4.18 / 1000 gals). One goal of this process is to justify that differential to the residential customers who pay that, the highest rate on the system. Or, if that differential cannot be justified, a change to that relationship should be made in the new rates.

Comments of the Residential Rate Advocate

City of Austin Water and Wastewater Cost of Service and Rate Studies 2008-2009

July 22, 2008 Public Involvement Committee Meeting

At the July 22, 2008 meeting, the Public Involvement Committee received the first full cost of service detail for both the water and wastewater cost of service studies for the budget year 2007-2008. All participants seemed grateful to receive a level of detail that enables a full review of the conceptual allocation methodologies that have been discussed over the last several meetings. While it is intellectually appealing to deal with the cost of service issues conceptually, seeking the most appropriate by way of discussion, in reality it is exceedingly difficult to perceive the meaningfulness of a particular method of cost allocation without seeing it applied to the particular utility's situation and costs that need to be paid. Admittedly this can disintegrate to a shopping expedition for the method which holds a particular class responsible for the least cost, however, that did not seem to be the case in this PIC process. PIC members engaged enthusiastically in the discussions of how the water and wastewater systems worked and sought to understand each of the methodological options that the Rate Consultant presented.

The PIC members were provided the summarized cost of service results with comparisons of the revenue requirement effects on each of the customer classes of the remaining unresolved issues. The cases were explained and the reasons for the differences in the results were highlighted by examples of particular customer class's relative results under each alternative methodology.

My comments will be divided between water cost of service, water rate design and wastewater cost of service issues. I would like to express my gratitude to the staff and rate consultants for all of their work in providing the results of the alternative water plant cost allocation method suggested by the Residential Rate Advocate. After the meeting, I reviewed the model calculations of my alternative method with the rate consultant and AWU staff and am appreciative of their time and patience with my questions. In that review, I identified a few changes to the calculations of the alternative cost of service methodology. The consultants and staff correctly reflected my recommendation for calculating the customer allocation factors applied to the Max day and Max Hour portions of water plant. My suggested change to the "Hybrid" case is in the area of Operation and Maintenance Expenses. The Base Case allocated Treatment Plant maintenance expenses based on the overall treatment facilities allocator, which includes 100% emphasis on the peaking water demands, either class peak or contribution to system peak demands. (See Residential Rate Advocate provided EXCEL spreadsheet example calculation of Base and Excess Capacity allocators reducing to the same percentage allocators as allocating 100% on peak demands, except made slightly different by substituting class non-coincident peak demands.) Specifically, my recommended change would be to Table 105 in the Water Cost of Service Model. The lines "Green, Ulrich and Davis WTP Maintenance" should be changed from 100% Treatment Facilities to 100% Treatment Average Day. As the need for plant maintenance is driven primarily by the use of the plant, I recommend allocating maintenance expense to customer classes in proportion to their total annual water demands, or the average day demand, which is merely the total annual demand

divided by 365 days. The average day demand is used in the model to allocate other costs which are driven by the total annual flow from the system, such as power and chemical costs.

Another recommended allocation change is to the allocation of the City General Fund Transfer. I recommend that the General Fund Transfer amount be allocated to customer classes based on revenues rather than on allocated invested capital. Because the transfer is basically an expense to the utility, it should not be allocated and treated as return. The general fund transfer amount is not available to offset borrowing to fund capital improvement projects, although it can most likely be accounted for as coverage in meeting the utility's bond covenant coverage requirements. Unlike a revenue requirement item driven by the need to meet a particular coverage requirement, the city general fund transfer is calculated and treated more as a sales tax expense. When a revenue requirement is driven by the need to set rates with an adequate coverage level to meet bond covenants and that amount is available to fund CIP rather than issue additional bonds, the proposed treatment would be appropriate. However, in the City's case, the funds are transferred out of the utility and not used to fund utility CIP, as I understand it. It would seem more consistent to allocate the city fund transfer between customer classes in proportion to their total revenue requirements/ revenues rather than as a function of the allocation of invested capital/rate base to the classes. While this can be a calculation challenge due to the potential of circular references in allocation programs, approximations are routinely made in cost of service studies.

Another option we would like to have run in the alternative cost of service method is to use 2% rather than 3% as the distribution loss factor. The 3% factor is merely an estimate and to run a sensitivity around that is reasonable.

We would also like for the Executive Committee to consider the following discussions as they make the decision of what methods the Utility staff plans on recommending to the Water/Wastewater Commission and the City Council.

In the water cost of service study, the way that the cost of transmission and distribution mains and the contributions in aid of construction to those are handled makes a difference in the resulting cost of service allocation because the wholesale class is not allocated a portion of the distribution mains' costs. As I understand it, the city has detail property accounting records in which it has booked original cost of mains separately between transmission and distribution mains. What is not clear is how the city has historically booked contributions in aid of construction between transmission and distribution mains. The allocation of transmission and distribution mains' costs reduced by the contributions in aid of construction and accumulated depreciation is used to allocate the capital costs of the system to customer classes (along with the other functional plant costs, of course). When plant is reduced by accumulated depreciation, contributions in aid of construction should also be reduced from their original cost amount in order to not overstate the net reduction in plant costs.

The total plant costs involved in mains is $326 million. This is a substantial portion of the $602 million of total net plant in service. Prior to taking into account contributions in aid of construction, transmission mains are 62% of total distribution and transmission net plant, while distribution is 38%. After taking into consideration contributions in aid of construction, only 50% of total distribution and

transmission net plant is attributable to transmission mains, relieving the wholesale class of responsibility for some $38 million dollars of net plant investment in the allocation of capital costs. This percentage split was 54% to 36% (transmission/distribution) in the previous Black and Veatch study. We encourage the executive team to seek assurance that this change is a result of an accurate and detailed accounting of the contributions in aid of construction and not an unintentional change. We would appreciate an explanation of why the percentage allocations changed in the way that they did as the result of this change will be a shifting of the burden of responsibility for water mains to the retail class from the wholesale class compared to previous studies.

The following general comments apply to both the water and wastewater cost of service studies.

Cost allocations of utility costs have been debated for at least 75 years and there does not seem to be an end to the debate in sight. With all of the technological development that has occurred, there has been no utility cost allocation method developed that stands forth as the truth – the do all, end all – method. This would be a method that would ring so truthful that only the most immoral could deny its veracity and no objective judge would disagree with. There is a reason for this. And it is important to keep that reason in mind when engaging in the age old activity of allocating a utility's cost of service. The reason for this is that a significant majority of a water/wastewater utility's costs are shared costs. This derives from the underlying nature of what it takes to provide utility service. Very few facilities serve only one or several customer classes of the utility. Most facilities serve all customers. The utility system has been planned and built to best serve the combined demands or needs of all customers as they have arrived on the system over time. It is that very nature which renders us willing to grant the utility monopoly status in an area in exchange for democratic/governmental control over prices. Hence, the City Council has ultimate say over the prices.

There is no one way to allocate shared utility costs, because the same asset serves all customers at the same time and at different times. The same treatment plant, pipe, pump, etc. serves and is available to serve customers across all classes throughout the year. The cost allocation process seeks to allocate system costs as a basis for rates from a system which was designed to most cost effectively serve all customers. The rates seek to be fair and to provide price signals that increase economic efficiency for both the customer and the utility.

Fairness, as beauty, is in the eyes of the beholder. Historically, the thinking has been, since it's the utility's costs which give rise to the need to charge rates, rates based on the costs of service are the most fair. The shared or joint costs of the utility are studied to see what service needs of customer cause the utility to incur those shared costs to serve customers. From that understanding, an allocation approach is developed that attempts to mirror the "cost-causal" aspect of each cost. However, this cost causing identification is constrained by the need for practicality. The cost tradeoffs made in utility planning that results in cost incurrence can be very complex and defy simple treatment. The utility builds its system with the goal of minimizing the total costs to serve all customers in the system wherever they are. The utility came to be because the economy of scale of serving all customers from one system was a better solution than each customer providing for its own water and wastewater needs. The system is not only designed to serve peak demands with adequately sized facilities, it is also designed to serve demand reliably and with the least cost year round, including the real need to have down time to maintain complex and expensive equipment and to take advantage of the economies of scale inherent in all utility infrastructure.

A reasonable cost allocation methodology should recognize both the need to size facilities for maximum peak demands, but also to design facilities to minimize the overall total annual costs to serve all customers year round. The Base and Extra Capacity method does not adequately recognize this need and places too much cost responsibility on serving peak demands and not enough on serving water demands throughout the year.

In general, the objective of the rate setting process is to set the rates based on cost of service, which is why we spent the bulk of these meetings discussing the cost of service study. In addition the utility rate setting process sometimes has goals related to other public policy concerns. In actuality, there are many definitions of cost of service. The one we have focused on is the accounting average cost of service that is based on the accounting costs that AWU incurs over a year (in this case a budget year) to provide service to the existing customers. This is the cost definition that is usually used to justify rates as (1) adequate to meet the utility's need for revenue to maintain its financial integrity, and (2) fair and equitable to the various customers. Another definition of cost is that cost which will be incurred in the future to serve additional water demands. This is referred to as the marginal or incremental cost of service and can be estimated based on the utility's demand and CIP forecasts. Economic theory would suggest that a great deal of public benefit can be had when prices/rates are set equal to marginal or incremental costs. The most far reaching of those claimed benefits are that the allocation of scarce resources will be the most efficient and that the collective satisfaction of all involved will be maximized. Without addressing the macroeconomic aspects of the theory of marginal cost pricing, one can see the common sense appeal of prices that would signal customers the costs the utility could avoid if the customer reduced their consumption either at certain times or in total over the year. The customer could then make a comparison of how much to spend to conserve compared to how much to pay to consume and the rational economic consumer would choose the lesser of the options. Stated another way, the customer could compare how much satisfaction they get from the consumption to what the price is that reflects the cost to the utility of their consumption and decide whether or not the consumption is worth it to them or not.

The discussion of rate design goals and objectives that relate to conservation are two fold, as I understand them. The first of AWU's conservation goals is to delay or avoid entirely the increase in water peak demand that would lead to the need to add water treatment capacity. The cost per 1000 gallons of additional treatment capacity used by the Water Conservation Task Force to compare costs and benefits of various conservation strategies was reported during a previous meeting to be $3.40/ 1000 gallons of peak water demand avoided. (Note: It was not clear if this amount was loss adjusted to the meter or not.) A question that arises naturally is, why should AWU provide a peak price signal greater than or less than this cost to serve peak water demands and if greater than or less than, by how much and why? In other words, would AWU want to signal customers to spend more reducing their peak water demands than it would cost the City to serve them? These reasons need to be articulated so that the policy conversations concerning them can be discussed openly and transparently.

The second conservation goal is to reduce total annual water consumed by AWU to avoid the cost of paying LCRA for raw water that will begin once certain total raw water diversions are reached by AWU. While that cost to avoid in the future was not provided, it is likely that it is in the neighborhood of $.50 - $1.00 per 1000 gallons at the meter (includes an estimate for water losses in AWU's system and increases in

LCRA rates over time.) Other costs that could be avoided by AWU if total annual consumption decreased are clearly electricity and chemicals and maintenance expenses that increase with the use of equipment that is used more with increased flow. Estimates of these costs have not been discussed in PIC meetings to date, but were most likely looked at by the Conservation Task Force in its cost benefit analyses. Since AWU's right to divert surface water is finite, the more water is conserved, the more water remains to provide water to population growth in the area. That is, with lower per capita water use, a larger population can be supported from this finite quantity of water. Or, thought of another way, the less per capita residential water use is, the more water is available to provide to new industry and commercial concerns. Other effects of reduced per capital water use in AWU's service area include the maintenance of relatively higher lake levels in Lake Travis and a reduction of the frequency of interruption of water supply to irrigation farmers downstream of Austin.

How should AWU decide how high to make the peak rate for water? What should be the basis of the amount of the conservation incentive? Should it be the result of the average accounting cost of service applied to seasons and classes of service? Should it be an estimate of the cost avoided by reducing peak use and/or annual use? Should an idea of the long run marginal or incremental cost of providing service be considered? Which of these cost bases best supports the policy reasons to promote conservation? Stated another way, how much conservation is sought by AWU at what price/cost to the customer or lost benefit of the use by the customer? Answering these questions seems to be of import in the process of implementing conservation policy goals in the process of water and wastewater rate setting.

Another question comes to mind after the PIC rate design discussions. Are there some uses of water that the City, as a policy matter, wishes to penalize by charging more than the cost (by any definition) to provide water for these uses? At the meetings, several mentions were made of wasteful water use. Are these wasteful water uses clearly defined, articulated, and agreed upon? What authority is the judge of wasteful vs. not wasteful use? Does the state Water Code provide the guidance and framework for this concept? The City's Drought Contingency Plan? Is there also a concept of essential use? Is that defined and agreed upon within the City's processes?

As pointed out in the meeting, the appearance of inequity exists in the existing rates by comparing the cost in the residential tail block ($7.63/1000 galls year round) and the non-residential rates in the peak and off-peak seasons ($3.16 to $4.18 / 1000 gals). One goal of this process is to justify that differential to the residential customers who pay that, the highest rate on the system. Or, if that differential cannot be justified, a change to that relationship should be made in the new rates.

The water rate designs being considered are within the realm of reason. However, the question of charging more than the marginal cost to the utility to increase system peak capacity in the tail blocks of the residential rates throughout the year is being exacerbated in the proposed rate design. On its face, it is difficult to explain why it is the correct price signal for water consumed in the peak season months to have a price ranging from $3-$4 per 1000 gallons to $7-$8 per 1000 gallons. I recommend that the utility proceed to study the marginal cost of providing water services at various times in the year and use that as a springboard to support the residential, commercial, and multifamily relative unit volume prices and their relationship to one another in the peak season.

We agree with the allocation of I&I in the wastewater cost of service on total annual flow to the system as this most equitable spreads the burden of what is a system cost that customers do not have any control of.

Concerning the recommended two step rate increase process, I misunderstood when the process was delayed last spring. I thought that the rate increase itself was being delayed to April 2009, not that an interim rate increase is to be implemented based on existing cost allocation and rate design methodologies. Because one basic principal of rate design is to only make gradual changes to rates, this interim rate may advantage the existing methodologies in the process. This could be remedied if changes to the existing cost of service and rate design methodologies, if needed to be made, could be made gradually over a period of several years between now and the next cost of service and rate design public review process.

Once again, I would like to compliment the utility staff on their efforts to make the PIC process an inclusive process. I would also like to acknowledge each of the customer class representatives for contributing their time and interest to participating on the Public Involvement Committee.

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Appendix B
Overall System Revenue Comparison

Proposed Revenues	11/1/2007 Rate Revenues	11/1/2008 Rate Revenues	Difference (07 to 08)	%	11/1/2009 Rate Revenues	Difference (08 to 09)	%	Difference (07 to 09)	%
Residential									
Water	70,734,088	78,399,764	7,665,677	11%	88,654,991	10,255,227	13%	17,920,904	25%
Wastewater	71,399,257	75,332,589	3,933,331	6%	75,829,710	497,121	1%	4,430,452	6%
Total Residential	**142,133,345**	**153,732,353**	**11,599,008**	**8%**	**164,484,701**	**10,752,348**	**7%**	**22,351,356**	**16%**
Multi Family			-						
Water	30,952,201	34,626,773	3,674,572	12%	34,139,641	(487,132)	-1%	3,187,440	10%
Wastewater	44,184,148	44,240,426	56,278	0%	48,059,079	3,818,653	9%	3,874,931	9%
Total Multi Family	**75,136,349**	**78,867,199**	**3,730,850**	**5%**	**82,198,720**	**3,331,521**	**4%**	**7,062,371**	**9%**
Commercial			-						
Water	55,528,047	55,783,080	255,034	0%	53,480,995	(2,302,086)	-4%	(2,047,052)	-4%
Wastewater	45,584,321	45,708,035	123,714	0%	45,257,445	(450,589)	-1%	(326,875)	-1%
Total Commercial	**101,112,367**	**101,491,115**	**378,748**	**0%**	**98,738,440**	**(2,752,675)**	**-3%**	**(2,373,927)**	**-2%**
Industrial			-						
Water	9,898,111	11,097,965	1,199,853	12%	9,953,699	(1,144,266)	-10%	55,587	1%
Wastewater	13,516,862	14,201,422	684,560	5%	13,525,234	(676,188)	-5%	8,372	0%
Total Industrial	**23,414,974**	**25,299,387**	**1,884,413**	**8%**	**23,478,933**	**(1,820,454)**	**-7%**	**63,959**	**0%**
Wholesale			-						
Water	8,465,263	9,310,091	844,827	10%	9,658,450	348,359	4%	1,193,187	14%
Wastewater	5,253,188	5,254,246	1,058	0%	5,707,527	453,281	9%	454,340	9%
Total Wholesale	**13,718,451**	**14,564,337**	**845,886**	**6%**	**15,365,977**	**801,641**	**6%**	**1,647,526**	**12%**
Wastewater Surcharge	-	-	-		4,728,734	4,728,734		4,728,734	
Total System			-						
Water	175,577,710	189,217,673	13,639,963	8%	195,887,776	6,670,103	4%	20,310,066	12%
Wastewater	179,937,776	184,736,718	4,798,942	3%	193,107,729	8,371,012	5%	13,169,953	7%
Total	**355,515,486**	**373,954,391**	**18,438,905**	**5%**	**388,995,505**	**15,041,114**	**4%**	**33,480,019**	**9%**

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Water	Billing Determinant	Existing Rate 11/1/2007	11/1/2007 Annualized Revenues	Charged Rate 11/1/2008	11/1/2008 Annualized Revenue	Dollar Difference	Percent Difference	Calculated Rate 11/1/2009	Calculated 11/1/2009 Annualized Revenue	Dollar Difference (08-09)	Percent Difference	Dollar Difference (07-09)	Percent Difference
Residential													
5/8"	171,230	$ 5.35	$ 10,992,966	$ 6.25	$ 12,842,250	$ 1,849,284	17%	$ 6.58	$ 13,520,321	$ 678,071	5%	$ 2,527,355	23%
3/4"	8,331	$ 6.25	$ 624,825	$ 7.21	$ 720,798	$ 95,973	15%	$ 7.78	$ 777,782	$ 56,984	8%	$ 152,957	24%
1"	4,910	$ 7.51	$ 442,489	$ 8.55	$ 503,766	$ 61,277	14%	$ 9.24	$ 544,421	$ 40,655	8%	$ 101,932	23%
1 1/4"	10	$ 9.31	$ 1,117	$ 10.47	$ 1,256	$ 139	12%	$ 11.79	$ 1,415	$ 158	13%	$ 298	27%
1 1/2"	1,052	$ 11.11	$ 140,253	$ 12.39	$ 156,411	$ 16,159	12%	$ 14.36	$ 181,281	$ 24,869	16%	$ 41,028	29%
2"	87	$ 14.71	$ 15,357	$ 16.23	$ 16,944	$ 1,587	10%	$ 21.44	$ 22,383	$ 5,439	32%	$ 7,026	46%
Total Customer	185,620		$ 12,217,007		$ 14,241,426	$ 2,024,419	17%		$ 15,047,603	$ 806,177	6%	$ 2,830,595	**23%**
0-2000 gallons	4,255,307	$ 0.93	$ 3,957,436	$ 0.98	$ 4,170,201	$ 212,765	5%	$ 1.10	$ 4,680,838	$ 510,637	12%	$ 723,402	18%
2001-9000 gallons	8,866,834	$ 2.43	$ 21,546,407	$ 2.59	$ 22,965,100	$ 1,418,693	7%	$ 3.00	$ 26,600,502	$ 3,635,402	16%	$ 5,054,095	23%
9,001-15,000 gallons	2,629,126	$ 4.18	$ 10,989,747	$ 4.75	$ 12,488,349	$ 1,498,602	14%	$ 6.00	$ 15,774,756	$ 3,286,408	26%	$ 4,785,009	44%
15,000-25,000 gallons	1,676,121	$ 7.63	$ 12,788,803	$ 8.50	$ 14,247,029	$ 1,458,225	11%	$ 8.62	$ 14,448,163	$ 201,135	1%	$ 1,659,360	13%
25,001 gallons and up	1,210,313	$ 7.63	$ 9,234,688	$ 8.50	$ 10,287,661	$ 1,052,972	11%	$ 10.00	$ 12,103,130	$ 1,815,470	18%	$ 2,868,442	31%
Total Volume	18,637,701		$ 58,517,080		$ 64,158,338	$ 5,641,258	10%		$ 73,607,389	$ 9,449,050	15%	$ 15,090,308	**26%**
Total			**$ 70,734,088**		**$ 78,399,764**	**$ 7,665,677**	**11%**		**$ 88,654,991**	**$ 10,255,227**	**13%**	**$ 17,920,904**	**25%**
Multi Family													
5/8"	2,346	$ 5.35	$ 150,613	$ 6.25	$ 175,950	$ 25,337	17%	$ 6.58	$ 185,240	$ 9,290	5%	$ 34,627	23%
3/4"	239	$ 6.25	$ 17,925	$ 7.21	$ 20,678	$ 2,753	15%	$ 7.78	$ 22,313	$ 1,635	8%	$ 4,388	24%
1"	1,053	$ 7.51	$ 94,896	$ 8.55	$ 108,038	$ 13,141	14%	$ 9.24	$ 116,757	$ 8,719	8%	$ 21,860	23%
1 1/4"	3	$ 9.31	$ 335	$ 10.47	$ 377	$ 42	12%	$ 11.79	$ 424	$ 48	13%	$ 89	27%
1 1/2"	604	$ 11.11	$ 80,525	$ 12.39	$ 89,803	$ 9,277	12%	$ 14.36	$ 104,081	$ 14,279	16%	$ 23,556	29%
2"	719	$ 14.71	$ 126,918	$ 16.23	$ 140,032	$ 13,115	10%	$ 21.44	$ 184,984	$ 44,952	32%	$ 58,066	46%
3"	240	$ 30.55	$ 87,984	$ 33.13	$ 95,414	$ 7,430	8%	$ 38.92	$ 112,090	$ 16,675	17%	$ 24,106	27%
4"	220	$ 48.55	$ 128,172	$ 52.33	$ 138,151	$ 9,979	8%	$ 75.93	$ 200,455	$ 62,304	45%	$ 72,283	56%
6"	181	$ 93.55	$ 203,191	$ 100.33	$ 217,917	$ 14,726	7%	$ 152.09	$ 330,339	$ 112,423	52%	$ 127,149	63%
8"	103	$ 138.55	$ 171,248	$ 148.33	$ 183,336	$ 12,088	7%	$ 859.64	$ 1,062,515	$ 879,179	480%	$ 891,267	520%
10"	29	$ 183.55	$ 63,875	$ 196.33	$ 68,323	$ 4,447	7%	$ 897.18	$ 312,219	$ 243,896	357%	$ 248,343	389%
12"	1	$ 210.55	$ 2,527	$ 225.13	$ 2,702	$ 175	7%	$ 919.71	$ 11,037	$ 8,335	309%	$ 8,510	337%
Peak Season	3,348,051	$ 3.47	$ 11,617,737	$ 3.88	$ 12,990,438	$ 1,372,701	12%	$ 3.66	$ 12,253,867	$ (736,571)	-6%	$ 636,130	5%
Off Peak Season	5,761,473	$ 3.16	$ 18,206,255	$ 3.54	$ 20,395,614	$ 2,189,360	12%	$ 3.34	$ 19,243,320	$ (1,152,295)	-6%	$ 1,037,065	6%
Total			**$ 30,952,201**		**$ 34,626,773**	**$ 3,674,572**	**12%**		**$ 34,139,641**	**$ (487,132)**	**-1%**	**$ 3,187,440**	**10%**

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Water	Billing Determinant	Existing Rate 11/1/2007	11/1/2007 Annualized Revenues	Charged Rate 11/1/2008	11/1/2008 Annualized Revenue	Dollar Difference	Percent Difference	Calculated Rate 11/1/2009	Calculated 11/1/2009 Annualized Revenue	Dollar Difference (08-09)	Percent Difference	Dollar Difference (07-09)	Percent Difference
Commercial													
5/8"	5,771	$ 5.35	$ 370,498	$ 6.25	$ 432,825	$ 62,327	17%	$ 6.58	$ 455,678	$ 22,853	5%	$ 85,180	23%
3/4"	886	$ 6.25	$ 66,450	$ 7.21	$ 76,657	$ 10,207	15%	$ 7.78	$ 82,717	$ 6,060	8%	$ 16,267	24%
1"	2,771	$ 7.51	$ 249,723	$ 8.55	$ 284,305	$ 34,582	14%	$ 9.24	$ 307,248	$ 22,944	8%	$ 57,526	23%
1 1/4"	2	$ 9.31	$ 223	$ 10.47	$ 251	$ 28	12%	$ 11.79	$ 283	$ 32	13%	$ 60	27%
1 1/2"	2,237	$ 11.11	$ 298,237	$ 12.39	$ 332,597	$ 34,360	12%	$ 14.36	$ 385,480	$ 52,883	16%	$ 87,243	29%
2"	2,648	$ 14.71	$ 467,425	$ 16.23	$ 515,724	$ 48,300	10%	$ 21.44	$ 681,277	$ 165,553	32%	$ 213,852	46%
3"	1,043	$ 30.55	$ 382,364	$ 33.13	$ 414,655	$ 32,291	8%	$ 38.92	$ 487,123	$ 72,468	17%	$ 104,759	27%
4"	337	$ 48.55	$ 196,336	$ 52.33	$ 211,623	$ 15,286	8%	$ 75.93	$ 307,061	$ 95,438	45%	$ 110,725	56%
6"	129	$ 93.55	$ 144,815	$ 100.33	$ 155,311	$ 10,495	7%	$ 152.09	$ 235,435	$ 80,124	52%	$ 90,620	63%
8"	44	$ 138.55	$ 73,154	$ 148.33	$ 78,318	$ 5,164	7%	$ 859.64	$ 453,890	$ 375,572	480%	$ 380,736	520%
10"	13	$ 183.55	$ 28,634	$ 196.33	$ 30,627	$ 1,994	7%	$ 897.18	$ 139,960	$ 109,333	357%	$ 111,326	389%
12"	-	$ 210.55	$ -	$ 225.13	$ -	$ -		$ 919.71	$ -	$ -		$ -	
Peak Season	5,613,565	$ 4.18	$ 23,464,702	$ 4.18	$ 23,464,702	$ -	0%	$ 3.90	$ 21,892,904	$ (1,571,798)	-7%	$ (1,571,798)	-7%
Off Peak Season	7,879,758	$ 3.78	$ 29,785,485	$ 3.78	$ 29,785,485	$ -	0%	$ 3.56	$ 28,051,938	$ (1,733,547)	-6%	$ (1,733,547)	-6%
Total			$ 55,528,047		$ 55,783,080	**$ 255,034**	**0%**		$ 53,480,995	**$ (2,302,086)**	**-4%**	$ (2,047,052)	-4%
Total Industrial													
5/8"	-	$ 5.35	$ -	$ 6.25	$ -	$ -		$ 6.58	$ -	$ -		$ -	
3/4"	-	$ 6.25	$ -	$ 7.21	$ -	$ -		$ 7.78	$ -	$ -		$ -	
1"	1	$ 7.51	$ 90	$ 8.55	$ 103	$ 12	14%	$ 9.24	$ 111	$ 8	8%	$ 21	23%
1 1/4"	-	$ 9.31	$ -	$ 10.47	$ -	$ -		$ 11.79	$ -	$ -		$ -	
1 1/2"	-	$ 11.11	$ -	$ 12.39	$ -	$ -		$ 14.36	$ -	$ -		$ -	
2"	3	$ 14.71	$ 530	$ 16.23	$ 584	$ 55	10%	$ 21.44	$ 772	$ 188	32%	$ 242	46%
3"	3	$ 30.55	$ 1,100	$ 33.13	$ 1,193	$ 93	8%	$ 38.92	$ 1,401	$ 208	17%	$ 301	27%
4"	5	$ 48.55	$ 2,913	$ 52.33	$ 3,140	$ 227	8%	$ 75.93	$ 4,556	$ 1,416	45%	$ 1,643	56%
6"	6	$ 93.55	$ 6,736	$ 100.33	$ 6,120	$ (615)	-9%	$ 152.09	$ 10,950	$ 4,830	79%	$ 4,215	63%
8"	6	$ 138.55	$ 9,976	$ 148.33	$ 7,417	$ (2,559)	-26%	$ 859.64	$ 61,894	$ 54,478	735%	$ 51,918	520%
10"	11	$ 183.55	$ 24,229	$ 196.33	$ 21,596	$ (2,632)	-11%	$ 897.18	$ 118,428	$ 96,831	448%	$ 94,199	389%
12"	-	$ 210.55	$ -	$ 225.13	$ -	$ -		$ 919.71	$ -	$ -		$ -	
Peak Season	1,013,521	$ 3.85	$ 3,902,056	$ 4.28	$ 4,337,870	$ 435,814	11%		$ 3,850,726	$ (487,143)	-11%	$ (51,329)	-1%
Off Peak Season	1,709,909	$ 3.48	$ 5,950,483	$ 3.93	$ 6,719,942	$ 769,459	13%		$ 5,904,860	$ (815,082)	-12%	$ (45,623)	-1%
Total			**$ 9,898,111**		**$ 11,097,965**	**$ 1,199,853**	**12%**		**$ 9,953,699**	**$ (1,144,266)**	**-10%**	**$ 55,587**	**1%**

Austin Water Utility

2008 Cost of Service and Rate Study

Water	Billing Determinant	Existing Rate 11/1/2007	11/1/2007 Annualized Revenues	Charged Rate 11/1/2008	11/1/2008 Annualized Revenue	Dollar Difference	Percent Difference	Calculated Rate 11/1/2009	Calculated 11/1/2009 Annualized Revenue	Dollar Difference (08-09)	Percent Difference	Dollar Difference (07-09)	Percent Difference
Total Wholesale													
5/8"	1		$ 64		$ 75	$ 11	17%		$ 79	$ 4	5%	$ 15	23%
3/4"	1		$ 75		$ 87	$ 12	15%		$ 93	$ 7	8%	$ 18	24%
1"	-		$ -		$ -	$ -			$ -	$ -		$ -	
1 1/4"	-		$ -		$ -	$ -			$ -	$ -		$ -	
1 1/2"	2		$ 267		$ 297	$ 31	12%		$ 345	$ 47	16%	$ 78	29%
2"	6		$ 1,059		$ 1,169	$ 109	10%		$ 1,544	$ 375	32%	$ 485	46%
3"	2		$ 733		$ 795	$ 62	8%		$ 934	$ 139	17%	$ 201	27%
4"	2		$ 1,165		$ 1,256	$ 91	8%		$ 1,822	$ 566	45%	$ 657	56%
6"	3		$ 3,368		$ 3,612	$ 244	7%		$ 5,475	$ 1,863	52%	$ 2,107	63%
8"	7		$ 11,638		$ 12,460	$ 822	7%		$ 72,210	$ 59,750	480%	$ 60,572	520%
10"	15		$ 29,001		$ 35,339	$ 6,339	22%		$ 131,885	$ 96,546	273%	$ 102,885	355%
12"	1		$ 2,527		$ 2,702	$ 175	7%		$ 11,037	$ 8,335	309%	$ 8,510	337%
Volume	3,010,546		$ 8,415,366		$ 9,252,300	$ 836,933	10%		$ 9,433,026	$ 180,726	2%	$ 1,017,660	12%
Total			**$ 8,465,263**		**$ 9,310,091**	**$ 844,827**	**10%**		**$ 9,658,450**	**$ 348,359**	**4%**	**$ 1,193,187**	**14%**
Total System													
5/8"	179,348	$ 5.35	$ 11,514,142		$ 13,451,100	$ 1,936,958	17%	$ 6.58	$ 14,161,318	$ 710,218	5%	$ 2,647,176	23%
3/4"	9,457	$ 6.25	$ 709,275		$ 818,220	$ 108,945	15%	$ 7.78	$ 882,906	$ 64,686	8%	$ 173,631	24%
1"	8,735	$ 7.51	$ 787,198		$ 896,211	$ 109,013	14%	$ 9.24	$ 968,537	$ 72,326	8%	$ 181,339	23%
1 1/4"	15	$ 9.31	$ 1,676		$ 1,885	$ 209	12%	$ 11.79	$ 2,122	$ 238	13%	$ 446	27%
1 1/2"	3,895	$ 11.11	$ 519,281		$ 579,109	$ 59,827	12%	$ 14.36	$ 671,186	$ 92,078	16%	$ 151,905	29%
2"	3,463	$ 14.71	$ 611,289		$ 674,454	$ 63,165	10%	$ 21.44	$ 890,961	$ 216,507	32%	$ 279,672	46%
3"	1,288	$ 30.55	$ 472,181		$ 512,057	$ 39,876	8%	$ 38.92	$ 601,548	$ 89,490	17%	$ 129,367	27%
4"	564	$ 48.55	$ 328,586		$ 354,169	$ 25,583	8%	$ 75.93	$ 513,894	$ 159,725	45%	$ 185,308	56%
6"	319	$ 93.55	$ 358,109		$ 382,960	$ 24,850	7%	$ 152.09	$ 582,201	$ 199,241	52%	$ 224,091	63%
8"	160	$ 138.55	$ 266,016		$ 281,530	$ 15,514	6%	$ 859.64	$ 1,650,509	$ 1,368,978	486%	$ 1,384,493	520%
10"	68	$ 183.55	$ 145,739		$ 155,886	$ 10,147	7%	$ 897.18	$ 702,492	$ 546,606	351%	$ 556,753	382%
12"	2	$ 210.55	$ 5,053		$ 5,403	$ 350	7%	$ 919.71	$ 22,073	$ 16,670	309%	$ 17,020	337%
Subtotal Monthly Charge			**$ 15,718,545**		**$ 18,112,984**	**$ 2,394,438**	**15%**		**$ 21,649,746**	**$ 3,536,762**	**20%**	**$ 5,931,200**	**38%**
Volume													
0-2000 gallons	4,255,307	$ 0.93	$ 3,957,436		$ 4,170,201	$ 212,765	5%	$ 1.10	$ 4,680,838	$ 510,637	12%	$ 723,402	18%
2001-9000 gallons	8,866,834	$ 2.43	$ 21,546,407		$ 22,965,100	$ 1,418,693	7%	$ 3.00	$ 26,600,502	$ 3,635,402	16%	$ 5,054,095	23%
9,001-15,000 gallons	2,629,126	$ 4.18	$ 10,989,747		$ 12,488,349	$ 1,498,602	14%	$ 6.00	$ 15,774,756	$ 3,286,408	26%	$ 4,785,009	44%
15,000-25,000 gallons	1,676,121	$ 7.63	$ 12,788,803		$ 14,247,029	$ 1,458,225	11%	$ 8.62	$ 14,448,163	$ 201,135	1%	$ 1,659,360	13%
25,001 gallons and up	1,210,313	$ 7.63	$ 9,234,688		$ 10,287,661	$ 1,052,972	11%	$ 10.00	$ 12,103,130	$ 1,815,470	18%	$ 2,868,442	31%
Peak	9,975,137	$ 3.91	$ 38,984,495		$ 40,793,009	$ 1,808,515	5%	$ 3.81	$ 37,997,497	$ (2,795,513)	-7%	$ (986,998)	-3%
Off Peak	15,351,140	$ 3.51	$ 53,942,223		$ 56,901,042	$ 2,958,819	5%	$ 3.47	$ 53,200,119	$ (3,700,923)	-7%	$ (742,105)	-1%
Wholesale	3,010,546	$ 2.80	$ 8,415,366		$ 9,252,300	$ 836,933	10%	$ 3.13	$ 9,433,026	$ 180,726	2%	$ 1,017,660	12%
Subtotal Volume	**46,974,524**		**$ 159,859,164**		**$ 171,104,690**	**$ 11,245,525**	**7%**		**$ 174,238,030**	**$ 3,133,341**	**2%**	**$ 14,378,866**	**9%**
Total Revenues			**$ 175,577,710**		**$ 189,217,673**	**$ 13,639,963**	**8%**		**$ 195,887,776**	**$ 6,670,103**	**4%**	**$ 20,310,066**	**12%**

Austin Water Utility
2008 Cost of Service and Rate Study

		11/1/2007 Existing Rate	*Charged Rate 11/1/2008*	Dollar Difference (08-07)	Percent Difference	*Calculated Rate 11/1/2009*	Dollar Difference (09-08)	Percent Difference	Dollar Difference (09-07)	Percent Difference	Annual Increase (09-07)
	2										
Water - 2,000 gallons											
Fixed Monthly Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons											
9,001-15,000 gallons											
15,000-25,000 gallons											
25,001 gallons and up											
Total Volume		$ 1.86	$ 1.96			$ 2.20					
Total Bill		**$ 7.21**	**$ 8.21**	**$ 1.00**	**14%**	**$ 8.78**	**$ 0.57**	**7%**	**$ 1.57**	**22%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ -	$ -			$ -					
Total Bill		**$ 13.46**	**$ 14.58**	**$ 1.12**	**8%**	**$ 14.68**	**$ 0.10**	**1%**	**$ 1.22**	**9%**	
Total Water and Wastewater		**$ 20.67**	**$ 22.79**	**$ 2.12**	**10%**	**$ 23.46**	**$ 0.67**	**3%**	**$ 2.79**	**13%**	**$ 33.48**
	6										
Water - 6,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 9.72	$ 10.36			$ 12.00					
9,001-15,000 gallons											
15,000-25,000 gallons											
25,001 gallons and up											
Total Volume		$ 11.58	$ 12.32			$ 14.20					
Total Bill		**$ 16.93**	**$ 18.57**	**$ 1.64**	**10%**	**$ 20.78**	**$ 2.21**	**12%**	**$ 3.85**	**23%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 28.72	$ 29.76			$ 29.96					
Total Bill		**$ 42.18**	**$ 44.34**	**$ 2.16**	**5%**	**$ 44.64**	**$ 0.30**	**1%**	**$ 2.46**	**6%**	
Total Water and Wastewater		**$ 59.11**	**$ 62.91**	**$ 3.80**	**6%**	**$ 65.42**	**$ 2.51**	**4%**	**$ 6.31**	**11%**	**$ 75.72**
	9										
Water - 9,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 17.01	$ 18.13			$ 21.00					
9,001-15,000 gallons											
15,000-25,000 gallons											
25,001 gallons and up											
Total Volume		$ 18.87	$ 20.09			$ 23.20					
Total Bill		**$ 24.22**	**$ 26.34**	**$ 2.12**	**9%**	**$ 29.78**	**$ 3.44**	**13%**	**$ 5.56**	**23%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 50.26	$ 52.08			$ 52.43					
Total Bill		**$ 63.72**	**$ 66.66**	**$ 2.94**	**5%**	**$ 67.11**	**$ 0.45**	**1%**	**$ 3.39**	**5%**	
Total Water and Wastewater		**$ 87.94**	**$ 93.00**	**$ 5.06**	**6%**	**$ 96.89**	**$ 3.89**	**4%**	**$ 8.95**	**10%**	**$ 107.40**
	10										
Water - 10,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 17.01	$ 18.13			$ 21.00					
9,001-15,000 gallons		$ 12.54	$ 14.25			$ 18.00					
15,000-25,000 gallons											
25,001 gallons and up											
Total Volume		$ 31.41	$ 34.34			$ 41.20					
Total Bill		**$ 36.76**	**$ 40.59**	**$ 3.83**	**10%**	**$ 47.78**	**$ 7.19**	**18%**	**$ 11.02**	**30%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 57.44	$ 59.52			$ 59.92					
Total Bill		**$ 70.90**	**$ 74.10**	**$ 3.20**	**5%**	**$ 74.60**	**$ 0.50**	**1%**	**$ 3.70**	**5%**	
Total Water and Wastewater		**$ 107.66**	**$ 114.69**	**$ 7.03**	**7%**	**$ 122.38**	**$ 7.69**	**7%**	**$ 14.72**	**14%**	**$ 176.64**
	15										
Water - 15,000 gallons											
Customer Charge		$ 5.35	$ 6.25	$ 0.90	17%	$ 6.58	$ 0.33	5%	$ 1.23	23%	
0-2000 gallons		$ 1.86	$ 1.96	$ 0.10	5%	$ 2.20	$ 0.24	12%	$ 0.34	18%	
2001-9000 gallons		$ 17.01	$ 18.13	$ 1.12	7%	$ 21.00	$ 2.87	16%	$ 3.99	23%	
9,001-15,000 gallons		$ 25.08	$ 28.50	$ 3.42	14%	$ 36.00	$ 7.50	26%	$ 10.92	44%	
15,000-25,000 gallons											
25,001 gallons and up											
Total Volume		$ 43.95	$ 48.59			$ 59.20					

Austin Water Utility
2008 Cost of Service and Rate Study

		11/1/2007 Existing Rate	Charged Rate 11/1/2008	Dollar Difference (08-07)	Percent Difference	Calculated Rate 11/1/2009	Dollar Difference (09-08)	Percent Difference	Dollar Difference (09-07)	Percent Difference	Annual Increase (09-07)
Total Bill		**$ 49.30**	**$ 54.84**	**$ 5.54**	**11%**	**$ 65.78**	**$ 10.94**	**20%**	**$ 16.48**	**33%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 93.34	$ 96.72			$ 97.37					
Total Bill		**$ 106.80**	**$ 111.30**	**$ 4.50**	**4%**	**$ 112.05**	**$ 0.75**	**1%**	**$ 5.25**	**5%**	
Total Water and Wastewater		**$ 156.10**	**$ 166.14**	**$ 10.04**	**6%**	**$ 177.83**	**$ 11.69**	**7%**	**$ 21.73**	**14%**	**$ 260.76**
	25										
Water - 25,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 17.01	$ 18.13			$ 21.00					
9,001-15,000 gallons		$ 25.08	$ 28.50			$ 36.00					
15,000-25,000 gallons		$ 76.30	$ 85.00			$ 86.20					
25,001 gallons and up											
Total Volume		$ 120.25	$ 133.59			$ 145.40					
Total Bill		**$ 125.60**	**$ 139.84**	**$ 14.24**	**11%**	**$ 151.98**	**$ 12.14**	**9%**	**$ 26.38**	**21%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 165.14	$ 171.12			$ 172.27					
Total Bill		**$ 178.60**	**$ 185.70**	**$ 7.10**	**4%**	**$ 186.95**	**$ 1.25**	**1%**	**$ 8.35**	**5%**	
Total Water and Wastewater		**$ 304.20**	**$ 325.54**	**$ 21.34**	**7%**	**$ 338.93**	**$ 13.39**	**4%**	**$ 34.73**	**11%**	**$ 416.76**
	40										
Water - 40,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 17.01	$ 18.13			$ 21.00					
9,001-15,000 gallons		$ 25.08	$ 28.50			$ 36.00					
15,000-25,000 gallons		$ 76.30	$ 85.00			$ 86.20					
25,001 gallons and up		$ 114.45	$ 127.50			$ 150.00					
Total Volume		$ 232.84	$ 259.13			$ 293.20					
Total Bill		**$ 238.19**	**$ 265.38**	**$ 27.19**	**11%**	**$ 299.78**	**$ 34.40**	**13%**	**$ 61.59**	**26%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 272.84	$ 282.72			$ 284.62					
Total Bill		**$ 286.30**	**$ 297.30**	**$ 11.00**	**4%**	**$ 299.30**	**$ 2.00**	**1%**	**$ 13.00**	**5%**	
Total Water and Wastewater		**$ 524.49**	**$ 562.68**	**$ 38.19**	**7%**	**$ 599.08**	**$ 36.40**	**6%**	**$ 74.59**	**14%**	**$ 895.08**
	50										
Water - 50,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 17.01	$ 18.13			$ 21.00					
9,001-15,000 gallons		$ 25.08	$ 28.50			$ 36.00					
15,000-25,000 gallons		$ 76.30	$ 85.00			$ 86.20					
25,001 gallons and up		$ 190.75	$ 212.50			$ 250.00					
Total Volume		$ 309.14	$ 344.13			$ 393.20					
Total Bill		**$ 314.49**	**$ 350.38**	**$ 35.89**	**11%**	**$ 399.78**	**$ 49.40**	**14%**	**$ 85.29**	**27%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 344.64	$ 357.12			$ 359.52					
Total Bill		**$ 358.10**	**$ 371.70**	**$ 13.60**	**4%**	**$ 374.20**	**$ 2.50**	**1%**	**$ 16.10**	**4%**	
Total Water and Wastewater		**$ 672.59**	**$ 722.08**	**$ 49.49**	**7%**	**$ 773.98**	**$ 51.90**	**7%**	**$ 101.39**	**15%**	**$ 1,216.68**
	70										
Water - 70,000 gallons											
Customer Charge		$ 5.35	$ 6.25			$ 6.58					
0-2000 gallons		$ 1.86	$ 1.96			$ 2.20					
2001-9000 gallons		$ 17.01	$ 18.13			$ 21.00					
9,001-15,000 gallons		$ 25.08	$ 28.50			$ 36.00					
15,000-25,000 gallons		$ 76.30	$ 85.00			$ 86.20					
25,001 gallons and up		$ 343.35	$ 382.50			$ 450.00					
Total Volume		$ 461.74	$ 514.13			$ 593.20					
Total Bill		**$ 467.09**	**$ 520.38**	**$ 53.29**	**11%**	**$ 599.78**	**$ 79.40**	**15%**	**$ 132.69**	**28%**	
Wastewater											
Monthly Meter Charge		$ 7.10	$ 8.00			$ 8.00					
0-2000 gallons		$ 6.36	$ 6.58			$ 6.68					
2,000 gallons and above		$ 488.24	$ 505.92			$ 509.32					
Total Bill		**$ 501.70**	**$ 520.50**	**$ 18.80**	**4%**	**$ 524.00**	**$ 3.50**	**1%**	**$ 22.30**	**4%**	
Total Water and Wastewater		**$ 968.79**	**$ 1,040.88**	**$ 72.09**	**7%**	**$ 1,123.78**	**$ 82.90**	**8%**	**$ 154.99**	**16%**	**$ 1,859.88**

Austin Water Utility
2008 Cost of Service and Rate Study

Wastewater	Billing Determinant	*Existing Rate 11/1/2007*	Existing Annualized Revenues	Billing Determinant	*Charged Rate 11/1/2008*	11/1/2008 Annualized Revenue	Dollar Difference	Percent Difference	Billing Determinant	*Calculated Rate 11/1/2009*	Calculated 11/1/2009 Annualized Revenue	Dollar Difference (08-09)	Percent Difference	Dollar Difference (07-09)	Percent Difference
Residential															
Customer	177,229	$ 7.10	$ 15,099,911	177,229	$ 8.00	$ 17,013,984	$ 1,914,073	13%	177,229	$ 8.00	$ 17,013,984	$ -	0%	$ 1,914,073	13%
0-2000 gallons	3,771,805	$ 3.18	$ 11,994,341	3,771,805	$ 3.29	$ 12,409,240	$ 414,899	3%	3,771,805	$ 3.34	$ 12,597,830	$ 188,590	2%	$ 603,489	5%
2000 gallons and above	6,170,614	$ 7.18	$ 44,305,005	6,170,614	$ 7.44	$ 45,909,365	$ 1,604,360	4%	6,170,614	$ 7.49	$ 46,217,896	$ 308,531	1%	$ 1,912,890	4%
Total Volume	9,942,419		$ 56,299,347	9,942,419		$ 58,318,605	$ 2,019,258	4%	9,942,419		$ 58,815,726	$ 497,121	1%	$ 2,516,379	4%
Total			**$ 71,399,257**			**$ 75,332,589**	**$ 3,933,331**	**6%**			**$ 75,829,710**	**$ 497,121**	**1%**	**$ 4,430,452**	**6%**
Multi Family															
Customer	5,202	$ 7.10	$ 443,210	5,202	$ 8.00	$ 499,392	$ 56,182	13%	5,202	$ 8.00	$ 499,392	$ -	0%	$ 56,182	13%
Volume	6,943,006	$ 6.30	$ 43,740,938	6,943,006	$ 6.30	$ 43,740,938	$ -	0%	6,943,006	$ 6.85	$ 47,559,591	$ 3,818,653	9%	$ 3,818,653	9%
Total			**$ 44,184,148**			**$ 44,240,330**	**$ 56,182**	**0%**			**$ 48,058,983**	**$ 3,818,653**	**9%**	**$ 3,874,835**	**9%**
Commercial															
5/8"	11,455	$ 7.10	$ 975,966	11,455	$ 8.00	$ 1,099,680	$ 123,714	13%	11,455	$ 8.00	$ 1,099,680	$ -	0%	$ 123,714	13%
Volume	6,436,992	$ 6.93	$ 44,608,355	6,436,992	$ 6.93	$ 44,608,355	$ -	0%	6,436,992	$ 6.86	$ 44,157,765	$ (450,589)	-1%	$ (450,589)	-1%
Total			$ 45,584,321			$ 45,708,035	**$ 123,714**	**0%**			**$ 45,257,445**	**$ (450,589)**	**-1%**	$ (326,875)	-1%
Total Industrial															
Customer			$ 2,130			$ 2,400					$ 2,400				
Volume	2,138,407	$ 6.32	$ 13,514,732	2,138,407	$ 6.32	$ 14,199,022	$ 684,290	5%	2,138,407	$ 6.32	$ 13,522,834	$ (676,188)	-5%	$ 8,102	0%
Total			**$ 13,516,862**			**$ 14,201,422**	**$ 684,560**	**5%**			**$ 13,525,234**	**$ (676,188)**	**-5%**	**$ 8,372**	**0%**
Total Wholesale				98							$ 9,408				
Customer			$ 8,350			$ 9,408					$ 5,698,119	$ 453,281	9%	$ 453,281	9%
Volume	1,143,355	$ 4.59	$ 5,244,838	1,143,355	$ 4.59	$ 5,244,838	$ -	0%	1,143,355	$ 4.98	$ 5,707,527	$ 453,281	9%	$ 454,340	9%
Total			**$ 5,253,188**			**$ 5,254,246**	**$ 1,058**	**0%**			**$ 18,624,864**	**$ -**	**0%**	**$ 2,095,297**	**13%**
Total System															
Monthly Charge			**$ 16,529,567**			**$ 18,624,864**	**$ 2,095,297**	**13%**			**$ 169,754,035**	**$ 3,642,278**	**2%**	**$ 6,345,826**	**4%**
Volume Charge	**26,604,179**		**$ 163,408,209**			**$ 166,111,758**	**$ 2,703,548**	**2%**			**$ 4,728,734**	**$ 4,728,734**		**$ 4,728,734**	
Extra Strength Surcharge			**$ -**			**$ -**					**$ 193,107,633**	**$ 8,371,012**	**5%**	**$ 13,169,857**	**7%**
Total Revenues			**$ 179,937,776**			**$ 184,736,622**	**$ 4,798,846**	**3%**							