

Austin Water Utility Cost of Service Study

Public Involvement Comments July 22, 2008 PIC Meeting & Online Model Review Sessions

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Submitted: 08/12/2008**

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.

Dan Wilcox, Spansion, (On behalf of both Industrial PIC members and Large Volume Customer Group LVCG)
Submitted: 08/19/2008

TO: Austin Water Utility Executive Team
FROM: Large Volume Customer Group (LVCG)
DATE: August 19, 2008
RE: Cost of Service Models and Demonstration

On behalf of the Large Volume Customer Group (LVCG), we would like to thank the Austin Water Utility (AWU) for the recent presentation on the new Water and Wastewater Cost of Service Models. We understand that the AWU intends to first use the new models for rate recommendations for the Spring of 2009, and that the rates will ultimately be based on the 2008 – 2009 budget leveraging updated connection counts, customer usage, customer waste strengths among many other factors.

With that said, we appreciate the AWU taking into consideration some of our concerns and suggestions during the development of the Cost of Service and Rate Design proposal including the decision by the Executive Team to disaggregate the Large Volume Customer Class enabling individual customers that employ better process management, water conservation, reduction in peak loads, and improved waste treatment practices can benefit from lower rates. We look forward to the AWU working closely with large volume users to improve data collection through joint meter installations or other efforts, which will help cull real time flow data to improve reporting accuracy of peak hour and peak day allocation factors used in developing rates.

In addition, LVCG would also like to reinforce the importance of the following topical recommendations as you continue to prepare and finalize your 2009 and beyond Water and Wastewater cost of services model:

- maintaining current allocation for Infiltration/Inflow (I/I) based on a 50/50 method, which takes into consideration both flow and number of connections vs. the recent proposal to allocate I/I as a system charge based strictly on volume, which would impose undue costs on customers that are located close to the treatment facilities connected to large mains;
- eliminating the 10% surcharge on LVCG to help keep Austin water and wastewater rates more competitive for existing businesses and new companies choosing to locate their facilities in Austin; and
- separating irrigation classes by focusing on improving the incentives for the use of alternatives to irrigation with potable water, such as use of gray water or reclaimed water. The development of a cost effective reclaimed water delivery system to deliver non-potable water to appropriate users. We support the higher charges for discretionary water use and hope that additional data gathering and analysis for a separate irrigation class identifying and classifying discretionary water use will be considered in the future.

We again thank the AWU team for developing fair and reasonable water and wastewater cost of service models. Your diligent efforts will help to address the important challenge of managing future water needs so that Austin businesses may remain competitive on the global business front.

We look forward to continuing to work with AWU.

Sincerely,

Dan Wilcox and Jeff Covington

Joy Smith, Wholesale PIC Member (Wells Branch Municipal Utility District)
Submitted: 08/12/2008

Hi Michael,

I know that our final reports are due today. I think that the only outstanding issue for the wholesale customers is the one about seasonal rates. I've spoken with as many of my fellow board members as possible and the overwhelming thought is that seasonal rates would be a bureaucratic nuisance more than anything.

We recognize that the goal is to encourage conservation. The truth is that most of us have conservation rates/methods already built into our rate structures. We wouldn't disturb our customers with a changing rate, so we would have to budget accordingly, spending more during the summer months and less the rest of the year. Bottom line, unnecessary hassle. I believe that the City of Austin can find better methods to encourage conservation.

Thanks for all your help during this process!

Joy

Nelisa Heddin, Wholesale Customer Representative (Water Resources Management, LP)
Submitted: 08/21/2008

Re: PIC Member Comments, Final Model Review

I would first like to express my appreciation to the City of Austin and Red Oak Consulting for their tremendous efforts in accommodating PIC members and working to develop a model which meets the needs of the City while taking into consideration the many complex issues presented by the City's diverse customer base.

I have had the pleasure to review the model developed by Red Oak Consulting and have discussed the many issues addressed in this model with City staff. Below, please find my comments:

1. Wholesale Rate Design – It is my understanding that the City is considering rate design for wholesale customers based on a block or seasonal rate design; as recommended by the Conservation Task Force. I would strongly recommend against such rate design as each

individual whole sale customer has had its individual peaking factor taken into consideration during the cost allocation process. Therefore, these customers already have a motivation to conserve water and control their peaking. This rate design option would introduce volatility in the City's revenue recovery as well as in the customers' individual cost management.

2. Base-Extra Capacity vs. hybrid Approach – My review of these two cost allocation methodologies indicates that the individual peaking for the hybrid approach are artificially reduced and therefore the cost allocation to higher peaking customers is reduced. This methodology is not consistent with all industry standards pertaining to cost allocation; it also does not encourage water conservation.
3. I&I – It is my understanding that the City is in the process of studying it's I&I and determining the major sources of I&I on the system. It is my opinion that the City should obtain the results of this analysis prior to determining the methodology for cost allocation associated with I&I.

END OF PUBLIC COMMENTS FROM July 22nd PIC MEETING