5.5.1.18. Sludge Thickening

Sludge Thickening includes a portion of O&M at the treatment facilities, along with the rate base costs of the sludge thickening assets and equipment at the treatment facilities.

5.5.1.19. Biosolids Management

The primary O&M costs associated with this function include all O&M from AWU's Hornsby Biosolids Plant. There are also a host of facilities that form the basis for the rate base for this function. These facilities include sludge digestion, dewatering, odor control, lagoons, drying beds, composting, and land application.

5.5.1.20. Wholesale & Industrial Services

Support service costs for wholesale customers are included in this function.

5.5.1.21. Customer Service

Customer service costs include an indirect portion of administrative and support services, and most of AWU's costs for billing and customer services.

5.5.1.22. Indirect Treatment

This function includes indirect allocations of administrative and support services, and some O&M costs from AWU's treatment facilities.

5.5.1.23. Indirect Costs (e.g., administrative and general)

Costs that were not directly accountable to any of the functions were allocated proportionally to some or all of the functions based on weighted averages of the costs included in those functions. Costs that were allocated indirectly include most of AWU's administration and support services.

5.5.2. Step 2: Assignment of Costs to Cost Pools

Step 2 assigns costs to cost pools. A cost pool is a grouping of costs and one or more customer classes that share responsibility for that grouping of costs. AWU's costs are assigned to one of the following cost pools:

- Joint
- Retail Only
- Wholesale
- Contract Revenue Bonds
- Commercial & Industrial
- Surcharge Customers

The *Joint* cost pool includes costs common to all customer classes. Joint costs are those costs that are shared by all customers of the water system in proportion to their respective use of the system. Other cost pools include costs specific to certain groups of customer classes. For example, costs associated with collection are specific costs associated with

serving retail rather than wholesale customer classes. Specific pools, therefore, could be divided into retail customers and wholesale customers.

Table C-9 in Appendix C provides a summary of functionalized O&M costs by cost pool. Table C-10 provides a summary of specially allocated items by cost pool. Table C-11 shows those costs that are allocated based on historical revenues (as opposed to water use). These costs are described as *Revenue Allocated Costs* and were allocated to the Joint cost pool. The general fund transfer is an example of a revenue based cost. The allocation of the cost to customer classes is consistent with the method of determining the amount of the transfer (i.e., three-year historical average revenues). Table C-12 shows how functionalized net plant in service was allocated to cost pool.

5.5.3. Step 3: Allocation of Costs by Pools to Cost Categories

To facilitate the allocation of costs by pools to customer service characteristics, costs are allocated to cost categories in Step 3. AWU's functionalized costs are allocated to the following cost categories:

- Mains
- Lift Stations
- Preliminary Treatment
- Primary Treatment
- Aeration
- Secondary Treatment
- Sludge Pumping
- Other Sludge-Related
- Effluent Disposal
- Biosolids Management
- Services
- Industrial Waste Control
- Customer Services
- Revenue Allocated Costs

Cost categories provide a way to further aggregate similar types of costs after functionalized costs have been disaggregated to cost pools.

5.5.4. Step 4: Allocation of Costs to Customer Service Characteristics

The assignment of costs to customer service characteristics varies with the allocation methodology used. As described in Section 3, the base/extra-capacity cost allocation method is used in this study. Under this method, costs are assigned to the following customer service characteristics based on an engineering analysis of the system:

- Flow
- Biochemical Oxygen Demand (BOD)
- Total Suspended Solids (TSS)

- Customer
- Meter

Flow costs are costs that vary with the volume of flow contributed to the system. Therefore, the relative strength of sewage does not affect flow costs. Typically, flow costs include the cost of operating lift stations and the capital costs for assets that are designed based on flow requirements.

Sewage strength costs, including BOD and TSS, represent costs incurred to treat wastewater of various qualities. Examples of strength-related costs are certain chemicals and electrical costs associated with operation of the aeration basins, etc.

Customer costs are those costs incurred to serve customers, regardless of wastewater flows or strengths. Customer costs are those costs that vary with the number of customers. Examples of these costs include water meter reading (to bill sewage flow) and billing costs.

Meter costs are those costs that vary with the size of the meter used to serve a customer. Examples of equivalent meter costs include meter replacement and maintenance.

The distribution of system costs to wastewater flow and strength characteristics varies by wastewater utility and can usually be determined by an analysis of the system's design features and operating history. A summary of user charge revenue requirements by customer class and customer service characteristic is provided in Table C-13 in Appendix C.

5.5.5. Step 5: Distribution of Costs to Customer Classes

As mentioned previously, Steps 1 through 5 are described in more detail in Section 4. The steps taken to allocate user charge revenue requirements generally do not differ between water and wastewater utilities. For more detail on this, and the other steps listed above, please refer to Section 4.

5.6. Additional Steps for Allocating Capital Costs

Allocating capital costs involves steps in addition to those outlined above. Capital costs are allocated by allocating the assets that serve customers. The steps involved (Steps 6 through 8) are described in more detail in Section 4.

5.6.1. Allocating Depreciation Expenses

The portion of its cash-basis capital costs that are recovered in proportion to the depreciation expense are allocated following the same steps as for O&M costs. Depreciation is allocated on the same basis as the asset associated with each line item.

5.7. Cost-of-Service by Customer Class

After the revenue requirements have been allocated by categories and customer class to the customer characteristics, the O&M, special costs, revenue-based allocation costs, return on rate base, and depreciation expenses are summed to determine the total cost of service by customer class. Appendix C of this report contains detailed calculations for the wastewater cost-of-service rate analysis.

The results presented in this report are based on AWU's revenue requirements for FY2009. These rates depict the impact that changes to AWU's cost-of-service approach would have on its customers. Where appropriate, results (both rates and revenue) from this study are compared to AWU's currently adopted rates and revenue for FY2009. Within this report, the current rates and revenue used for comparison are called AWU's *Existing Rates* or *Existing*. The rates and revenue calculated within this study, using the proposed methodology, are called AWU's *Computed Rates* or *Computed*.

A summary of the existing and computed retail rates and fixed charges is provided in Table 5-1.

Table 5-1 Existing and Computed Retail Rates

Charge	Existing Rates	Computed Rates
Monthly Meter Charge - All Sizes	$8.00	$8.00
Volume Charge by Customer (per kgal)		
Residential		
Block 1	$3.29	$3.34
Block 2	7.44	7.49
Multi-Family	6.59	6.85
Commercial	7.23	6.86
Industrial		
Hospira	6.64	6.74
Spansion	6.64	5.81
Applied Materials	6.64	7.00
Freescale	6.64	6.42
Samsung	6.64	6.36
Sematech	6.64	5.99
University of Texas	6.64	6.73

In addition to the rates presented above, extra-strength surcharges were calculated for AWU's wastewater utility. For BOD, the extra-strength surcharge is $0.692 per pound. For TSS, the surcharge is $0.375 per pound.

A summary of the existing and computed wholesale rates is provided in Table 5-2.

Table 5-2 Existing and Computed Wholesale Rates

Charge	Existing Rates	Computed Rates
Monthly Meter Charge - All Sizes	$8.00	$8.00
Volume Charge by Customer (per Kgal)		
Comanche Canyon (WCID#17)	$3.50	$3.65
Manor, City of	4.62	4.99
North Austin MUD#1	4.98	4.98
Northtown MUD	5.00	4.96
Rollingwood, City of	4.72	5.02
Shady Hollow MUD	4.62	4.99
Sunset Valley, City of	4.62	4.96
Steiner Ranch (WCID #17)	3.38	3.62
Wells Branch MUD	4.94	5.02
Westlake Hills, City of	4.49	4.79

The computed wholesale rates in the table above were calculated for each individual wholesale customer. The computed volume rates shown for wholesale customers are uniform rates that apply to all levels of water consumed during a billing period.

5.8. Findings and Recommendations

5.8.1. Findings

Calculating cost-of-service rates requires that both the use of the system and the cost of operations be estimated. In ratemaking, the costs of operating the utility are referred to as the utility's revenue requirements.

Based on the analysis presented in this section, Table 5-3 is provided below showing a summary of revenues under existing and computed rates. This table is also provided in Appendix C as Table C-14.

Table 5-3 Revenue Under Existing and Computed Rates

Customer Class	Existing Rates	Computed Rates	Percent Difference
Residential	$74,392,185	$74,692,011	0.4%
Multi-Family	46,253,768	47,729,253	3.2%
Commercial	47,639,158	45,285,030	(4.9%)
Comanche Canyon (WCID#17)	8,496	8,795	3.5%
Marion, City of	277,296	296,195	6.8%
North Austin MUD #1	1,473,619	1,466,614	(0.5%)
Northtown MUD	839,721	829,885	(1.2%)
Rollingwood, City of	178,512	188,051	5.3%
Shady Hollow MUD	411,264	439,208	6.8%
Sunset Valley, City of	330,645	351,229	6.2%
Steiner Ranch (WCID #17)	1,718	1,824	6.1%
Wells Branch MUD	1,919,935	1,938,903	1.0%
Westlake Hills, City of	141,900	149,433	5.3%
Hospira	992,737	1,002,277	1.0%
Spansion	3,100,936	2,733,719	(11.8%)
Applied Materials	332,097	347,172	4.5%
Freescale	2,988,288	2,885,391	(3.4%)
Samsung	4,714,496	4,513,542	(4.3%)
Sematech	464,896	421,414	(9.4%)
University of Texas	1,607,649	1,620,537	0.8%
Extra-Strength Surcharges	0	1,728,734	0.0%
Total	$188,069,357	$191,629,215	1.9%

5.8.2. Recommendations

The computed wastewater rates are based on various assumptions that may need revision in the future. Accordingly, Red Oak recommends that AWU update its cost and revenue estimates on an annual basis. The rates determined in these analyses depend on the assumptions contained in the wastewater financial plan presented in Section 3 of this report. Should changes in customer usage or costs occur, AWU may need to adjust its rates differently than those predicted in this study. Many factors impact the cost to serve customers, and those factors will change over time in a manner that may not be possible to predict.

Red Oak recommends that AWU continue to collect additional wastewater samples to further improve the accuracy of AWU's current customer sample used in this study.

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Cost of Service Rate Study 2008

SECTION

6

Findings and Recommendations

REDOAK CONSULTING
A DIVISION OF MALCOLM PIRNIE

2908083 / POR

6. Findings and Recommendations

This section presents the findings and recommendations for the water and wastewater cost-of-service analyses.

6.1. Findings

The methodology developed for the water and wastewater utilities resulted in findings applicable to both utilities, to water alone, and wastewater alone. Each group of findings is discussed below.

6.1.1. Findings Common to Both Water and Wastewater

The following findings were common to both water and wastewater utilities.

6.1.1.1. Consolidation of Retail Customer Classes

Prior to the current study, AWU's cost-of-service methodology included differing costs for its inside- and outside-city residential customers. Also, because of differences in water and wastewater use between the two groups of customers, the revenue productivity of the inside-city and outside-city rate structures differed. When compared, the costs and revenues between the two groups of customers have converged over time resulting in very similar cost-of-service rates. Based on this finding, Red Oak recommended AWU consider consolidating these classes to simplify its rate setting process.

6.1.1.2. Disaggregation of Large-Volume Customer Class

AWU has several large-volume customers that use water primarily for industrial purposes. Prior to the current study, these customers were in one customer class so that reductions in costs by one large-volume customer were shared by all. Disaggregating the large-volume class provides greater incentive for individual large-volume customers to reduce the costs it imposes on AWU. This direct incentive will allow large-volume customers to benefit from investments they make in their systems that improve water conservation, wastewater pretreatment, etc.

6.1.1.3. Low-Income Subsidy

AWU and its citizens support the principle that its services should be affordable for all of its customers. To improve the affordability of water and wastewater services, AWU can implement a low-income waiver of its fixed monthly charges for its customers with limited financial resources. AWU can team with Austin Energy to implement this program and avoid adding significant administrative burdens for the program.

6.1.2. Findings for Water

The water methodology used in this study follows the industry standard approaches described by the AWWA in its *Manual of Water Supply Practices: Principles of Water Rates, Fees, and Charges* and the decisions of the Executive Team.

The results presented in this report are based on AWU's revenue requirements for FY2009. These rates depict the impact that changes to AWU's cost-of-service approach would have on its customers. Where appropriate, results (both rates and revenue) from this study are compared to AWU's currently adopted rates and revenue for FY2009. Within this report, the current rates and revenue used for comparison are called AWU's *Existing Rates* or *Existing*. The rates and revenue calculated within this study, using the proposed methodology, are called AWU's *Computed Rates* or *Computed*.

Using a cost-of-service analysis, the rates AWU charges will be in proportion to AWU's cost of providing service to each class of customers. This proportionality is a central theme in cost-of-service studies—customers pay in proportion to the cost of serving them, with no customer classes receiving a subsidy from or providing a subsidy to another customer class.

Based on the analysis presented in Section 4, cost-of-service rates were calculated for AWU's various customer classes and meter sizes. Table 6-1 provides a summary of the existing and computed fixed monthly water charges by meter size. Appendix B of this report contains the detailed calculations for the water cost-of-service rate analysis.

Table 6-1 Existing and Computed Fixed Monthly Water Charges

Meter Size	Existing Rates	Computed Rates
5/8-Inch	$6.25	$6.58
3/4-Inch	7.21	7.78
1-Inch	8.55	9.24
1 1/4-Inch	10.47	11.79
1 1/2-Inch	12.39	14.36
2-Inch	16.23	21.44
3-Inch	33.13	58.92
4-Inch	52.33	75.93
6-Inch	100.33	152.09
8-Inch	148.33	859.64
10-Inch	196.33	897.18
12-Inch	225.13	919.71

The fixed monthly charges include an amount to recover both the direct and indirect fire costs.

Table 6-2 provides a comparison of the existing and computed volume water rates by customer class. The computed rates include a full adjustment for the elimination of the residential subsidy. AWU's Executive Team proposed to phase the subsidy out over five to seven years.

Table 6-2 Existing and Computed Volume Water Rates

Volume Rates (per Kgal)	Existing Rates	Computed Rates
Residential		
Block 1	$0.98	$1.10
Block 2	2.59	3.00
Block 3	4.75	6.00
Block 4	8.50	8.62
Block 5	8.50	10.00
Multi Family		
Peak	$3.88	$3.66
Off-Peak	3.54	3.34
Commercial		
Peak	$4.58	$3.90
Off-Peak	4.20	3.56
Industrial		
Hospira		
Peak	$4.28	$5.01
Off-Peak	3.93	4.56
Spansion		
Peak	$4.28	$3.60
Off-Peak	3.93	3.26
Applied Materials		
Peak	$4.28	$3.74
Off-Peak	3.93	3.40
Freescale		
Peak	$4.28	$3.84
Off-Peak	3.93	3.48
Samsung		
Peak	$4.28	$3.76
Off-Peak	3.93	3.41
Sematech		
Peak	$4.28	$3.62
Off-Peak	3.93	3.30
University of Texas		
Peak	$4.28	$3.89
Off-Peak	3.93	3.53

To meet the goals of the City's Conservation Task Force, AWU examined the possibility of adding a fifth block to its residential water rate design. This fifth block applies to all consumption exceeding 25 kgal per month. The existing and computed block thresholds are presented in Table 6-3.

Table 6-3 Existing and Computed Block Thresholds (Kgal)

Block	1	2	3	4	5
Existing	2	9	15	Over	NA
Proposed	2	9	15	25	Over

Currently single-family residential customers with separate irrigation meters are allowed to purchase water at all blocks for both meters. That allows a single-family residential customer with an irrigation meter to purchase twice as much water in blocks 1 and 2. The cost of water in these first two blocks is priced at less than the average cost of service to allow low-income citizens to have more affordable water. The unintended consequence is that single-family customers with irrigation meters can receive up to twice the benefit as other single-family customers. To correct this situation, AWU has computed pricing all irrigation water consumed by single-family customers in blocks 1 and 2 at the block 3 rate. This will improve equity and provide a greater conservation incentive.

The Conservation Task Force also recommended analyzing the benefits of establishing a higher rate for customers with irrigation meters. After examining the approaches to implementing this recommendation, the consultants, PIC, and Executive Team recommended against its creation. One major concern of establishing a rate for irrigation meters is the inequity that would result for these customers. This inequity is caused by the partial implementation of a separate irrigation metering program. Those customers with separate irrigation meters would be chared rates substantially higher than the cost of service while similarly situated customers without a separate irrigation meter would continue to receive water intended for outdoor use at a lower, domestic meter rate.

As an alternative, AWU is investigating the option of implementing an excess-use rate design that will allow higher rates for irrigation meters without the negative impact to equity.

A summary of the existing and computed wholesale water rates is provided in Table 6-4.

Table 6-4 Existing and Computed Wholesale Water Rates

Charge	Existing Rates	Computed Rates
Monthly Meter Charge		
5/8-inch meter	$6.25	$6.58
Volume Charge by Customer		
(per Kgal)		
Creedmore-Maha WSC	$2.88	$2.93
High Valley	2.75	2.80
Lost Creek MUD	3.02	3.06
Manor, City of	2.76	3.15
Manville WSC	3.27	3.32
Marsha Water	2.78	2.85
Nighthawk WSC	2.73	2.80
North Austin MUD	3.12	3.24
Northtown MUD	2.92	2.98
Rivercrest WSC	3.10	3.10
Rollingwood	3.33	3.39
Shady Hollow MUD	3.21	3.26
Sunset Valley MUD	3.19	3.29
Travis Co. Water District 10	3.13	3.19
Wells Branch MUD	2.80	2.84
Windermere Utility Co.	6.96	7.06

The City's Conservation Task Force suggested AWU study the possibility of using conservation-oriented rates to improve water conservation among AWU's wholesale customers. As part of this study, Red Oak found:

1. Because each wholesale customer is its own customer class, each customer has an incentive to conserve—especially during AWU's peak season. The cost allocations for wholesale customers include the consequences of each customer's peaking factors.

2. Through the PIC process, the wholesale class expressed concern that a conservation-oriented rate design would not provide an incentive toward conservation but would increase the volatility of costs for the wholesale customer, and, consequently, revenues for AWU.

For these reasons, conservation incentives for wholesale customers are more likely to be successful through other means than rates.

Calculating cost-of-service rates requires that both the use of the system and the cost of operations be estimated. In ratemaking, the costs of operating the utility are referred to as the utility's revenue requirements. The revenue requirements used in this analysis are described in Section 4.3 of this report.

Based on the analysis presented in this section, Table 6-5 below shows a summary of water revenue under existing and computed rates. This table is also provided in Appendix B as Table B-14.

Table 6-5 Water Revenue Under Existing and Computed Rates

Customer Class	Existing Rates	Computed Rates	Percent Difference
Residential	$78,810,693	$86,709,735	10.0%
Multi-Family	34,631,345	33,857,794	(2.2%)
Commercial	61,533,634	53,740,884	(12.7%)
Creedmore-Maha	178,719	179,953	0.7%
High Valley	18,859	18,865	0.0%
Lost Creek	887,545	891,647	0.5%
Manor, City of	729	642	(11.9%)
Manville WSC	280,479	280,725	0.1%
Marsha Water	28,059	28,378	1.1%
Nighthawk	29,375	29,606	0.8%
North Austin MUD	1,170,391	1,190,933	1.8%
Northtown MUD	627,063	629,259	0.4%
Rivercrest	317,685	311,953	(1.8%)
Rollingwood	434,825	434,956	0.0%
Shady Hollow	779,199	782,897	0.5%
Sunset Valley MUD	306,657	307,207	0.2%
Water District 10	2,633,503	2,650,573	0.6%
Wells Branch MUD	1,523,677	1,529,066	0.4%
Windermere	99,340	99,649	0.3%
Hospira	348,548	406,372	16.6%
Spansion	2,092,246	1,771,037	(15.4%)
Applied Materials	373,745	343,021	(8.2%)
Freescale	3,068,951	2,763,541	(10.0%)
Samsung	3,887,156	3,402,853	(12.5%)
Somatech	398,204	345,211	(13.3%)
University of Texas	1,946,422	1,804,453	(7.3%)
Totals	$196,407,020	$194,511,209	(1.0%)

6.1.3. Findings for Wastewater

Section 5 of this report documents the steps taken to calculate AWU's wastewater cost-of-service rates. Red Oak allocated the revenue requirements by categories and customer class to the customer characteristics, and determined the total cost of service by customer class. With that information, rates were developed for each customer class. Appendix C of this report contains the detailed calculations for the wastewater cost-of-service rate analysis.

The results presented in this report are based on AWU's revenue requirements for FY2009. These rates depict the impact that changes to AWU's cost-of-service approach would have on its customers. Where appropriate, results (both rates and revenue) from this study are compared to AWU's currently adopted rates and revenue for FY2009. Within this report, the current rates and revenue used for comparison are called AWU's *Existing Rates* or *Existing*. The rates and revenue calculated within this study, using the proposed methodology, are called AWU's *Computed Rates* or *Computed*.

A summary of the existing and computed retail wastewater rates and fixed charges is provided in Table 6-6. The computed rates include a full adjustment for the elimination of the residential subsidy. AWU's Executive Team has decided to propose the complete elimination of the residential subsidy for wastewater in FY2010.

Table 6-6 Existing and Computed Retail Wastewater Rates

Charge	Existing Rates	Computed Rates
Monthly Meter Charge - All Sizes	$8.00	$8.00
Volume Charge by Customer (per Kgal)		
Residential		
Block 1	$3.29	$3.34
Block 2	7.44	7.49
Multi-Family	6.59	6.85
Commercial	7.23	6.86
Industrial		
Hospira	6.64	6.74
Spansion	6.64	5.81
Applied Materials	6.64	7.00
Freescale	6.64	6.42
Samsung	6.64	6.36
Sematech	6.64	5.99
University of Texas	6.64	6.73

A summary of the existing and computed wholesale wastewater rates is provided in Table 6-7.

Table 6-7 Existing and Computed Wholesale Wastewater Rates

Charge	Existing Rates	Computed Rates
Monthly Meter Charge – All Sizes	$8.00	$8.00
Volume Charge by Customer (per Kgal)		
Comanche Canyon (WCID#17)	$3.50	$3.65
Manor, City of	4.62	4.99
North Austin MUD #1	4.98	4.98
Northtown MUD	5.00	4.96
Rollingwood, City of	4.72	5.02
Shady Hollow MUD	4.62	4.99
Sunset Valley, City of	4.62	4.96
Steiner Ranch (WCID#17)	3.38	3.62
Wells Branch MUD	4.94	5.02
Westlake Hills, City of	4.49	4.79

Calculating cost-of-service rates requires that both the use of the system and the cost of operations be estimated. In ratemaking, the costs of operating the utility are referred to as the utility's revenue requirements.

Based on the analysis presented in this section, Table 6-8 is provided below showing a summary of revenues under existing and computed rates. This table is also provided in Appendix C as Table C-14.

Table 6-8 Wastewater Revenue Under Existing and Computed Rates

Customer Class	Existing Rates	Computed Rates	Percent Difference
Residential	$74,392,185	$74,692,011	0.4%
Multi-Family	46,253,768	47,729,253	3.2%
Commercial	47,639,158	45,285,030	(4.9%)
Comanche Canyon (WCID#17)	8,496	8,795	3.5%
Manor, City of	277,296	296,195	6.8%
North Austin MUD #1	1,473,619	1,466,614	(0.5%)
Northtown MUD	839,721	829,885	(1.2%)
Rollingwood, City of	178,512	188,051	5.3%
Shady Hollow MUD	411,264	439,208	6.8%
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Steiner Ranch (WCID#17)	1,718	1,824	6.1%
Wells Branch MUD	1,919,935	1,938,903	1.0%
Westlake Hills, City of	141,900	149,433	5.3%
Hospira	992,737	1,002,277	1.0%
Spansion	3,100,976	2,733,719	(11.8%)
Applied Materials	332,097	347,172	4.5%
Freescale	2,988,288	2,885,391	(3.4%)
Samsung	4,714,496	4,513,542	(4.3%)
Sematech	464,896	421,414	(9.4%)
University of Texas	1,607,649	1,620,537	0.8%
Extra-Strength Surcharges	0	4,728,734	0.0%
Totals	$188,069,357	$191,629,215	1.9%

As part of the study, Red Oak examined AWU's allocation of the costs of inflow and infiltration (I/I). As described in Section 3, four alternatives for allocating I/I costs were examined. The Executive Team decided to allocation I/I costs as a system-wide costs based on contributed flow.

6.2. Recommendations

6.2.1. Recommendations for Water

6.2.1.1. Customer Demands

One of the key elements to any cost-of-service analysis is an estimate of the likely customer demands. Estimating these demands, and subsequently, rates, is complex and subject to uncertainty. The forecast of demands in this analysis is based on recent water sales trends that may change due to external factors. External factors that impact water demands for AWU include weather, economic growth or recession, and public attitudes.

The factor that varies most dramatically in Austin is the weather. Because AWU, like most water utilities, has primarily fixed costs (i.e., costs the utility incurs regardless of water sales, such as salaries, capital improvements, etc.), the impact that a cool and/or wet summer has on revenues is not offset by a natural reduction in its costs. Therefore, the revenues of the utility are at risk from unusual summer demands. To mitigate this risk, Red Oak suggests AWU monitor its revenues closely and revise its rates and financial plan as necessary to be consistent with future circumstances.

6.2.1.2. Rate Design

Key findings from the conservation impact model include the following:

1. Due to the nature of the revenue adjustments computed in this study, AWU will need to closely watch its revenues from year-to-year. Many variables can alter a utility's revenue stream, including changes in weather, the local and regional economy, and customers' reaction to rate adjustments.

2. One of the challenges in adjusting rates is accurately predicting a revenue neutral rate design, where revenues earned after a rate adjustment equal those prior to the rate adjustment. Without a precise count of customers by meter size, it is more difficult to project a utility's total revenues.

Although AWU appears to have a solution for conservation-oriented residential rates, AWU should take great care to mitigate risk by following prudent management practices. This includes reviewing rates and revenues at least annually to see if additional adjustments are necessary.

In the process of cost-of-service analysis, Red Oak found that the cost and revenue difference between the inside- and outside-city customers were negligible. The Executive Team agreed with this finding. The computed rates in this report combine the inside- and outside-city customers and should be applied to all customers regardless of location.

6.2.1.3. Transition

The impact on AWU's customers of changing in water rates may be significant. AWU may consider transitioning from its current rates to the rates generated by the proposed methodology over several years. This transitional period may reduce the unintended consequences of adjusting rates to the cost of service.

6.2.2. Recommendations for Wastewater

6.2.2.1. Cost and Revenue Estimates

The computed wastewater rates are based on various assumptions that may need revision in the future. Accordingly, Red Oak recommends that AWU update its cost and revenue estimates on an annual basis. The rates determined in these analyses depend on the assumptions contained in the wastewater financial plan presented in Section 3 of this

report. Should changes in customer usage or costs occur, AWU may need to adjust its rates differently than those predicted in this study. Many factors impact the cost to serve customers, and those factors will change over time in a manner that may not be possible to predict.

Red Oak recommends that AWU continue to collect additional wastewater samples to further improve the accuracy of AWU's current customer sample used in this study

6.2.2.2. Transition

The impact on AWU's customers of changing in water rates may be significant. AWU may consider transitioning from its current rates to the rates generated by the proposed methodology over several years. This transitional period may reduce the unintended consequences of adjusting rates to the cost of service.

Austin Water Utility
Cost of Service Rate Study 2008

APPENDIX

A

Summary Table of Executive Team Decisions

REDOAK CONSULTING
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2908083 / POR

Cost of Service Study 2007-08
Executive Review / Decision Summary

#1	**Category / PIC Meeting Date:**	Public Involvement Committee Process and Schedule - 11/27/2007
	Decision Needed:	Release of the Cost of Service Model to the PIC
	Options Available:	Several Members of the PIC expressed interest in receiving copies of the COS model once it has been supplied by the consultants. Staff offered to model various alternatives for the committee members, but not release working copies of the model.
	Executive Decision:	The Utility decided not to release the model to PIC members or the general public. However, the Utility committed to provide a comprehensive overview of the model as part of a future PIC meeting. The Utility provided all PIC members and interested parties with an opportunity to view the model via online meetings to see the consultants walk through all of the components of the model. The Utility provided "what if" scenarios for the PIC members to compare impacts of various changes in model inputs, and provided full printouts of the model in .pdf format on compact disks.

#2	**Category / PIC Meeting Date:**	Public Involvement Committee Process and Schedule - 11/27/2007
	Decision Needed:	Whether or not to modify the PIC meeting schedule to hold multiple sessions to discuss Water/Wastewater Allocation Methodologies
	Options Available:	PIC members expressed concern over whether the current schedule allows enough time to adequately discuss the issue of Water/Wastewater Allocation Methodologies. They suggested that this topic is too large to be covered in a single evening. The current schedule calls for this meeting to be held on January 7, 2008.
	Executive Decision:	The Executive Team decided to separate this into two meetings. The first meeting on Water Allocations and Fire Charges was held on January 7, 2008, and Wastewater Allocation and Inflow and Infiltration workshop was held on January 22, 2008.

#3	**Category / PIC Meeting Date:**	Public Involvement Committee Process and Schedule - 11/27/2007
	Decision Needed:	Whether or not to solicit and use customer supplied data to support the analysis of peaking factors.
	Options Available:	At the first PIC meeting, the industrial class representative introduced the concept of having the consultant review meter information supplied by customers that monitor their water usage throughout the day. Later two other members of the PIC expressed support for this idea.
	Executive Decision:	The Executive Team decided toconsider only data collected by the City and not consider other data or information provided by third parties. Data produced by customers or classes cannot be controlled or verified by the City. Also, more specific data for one customer or class as compared to the other classes may introduce inconsistencies into the calculations.

#4	**Category / PIC Meeting Date:**	Executive Committee Review Process and Procedures - 11/27/2007
	Decision Needed:	Criteria Weighting Factors
	Options Available:	The consultants asked for the Executive committee to determine the relative importance of the evaluation criteria on a 1-10 (1=Not Important, 10=Very Important).
	Executive Decision:	The Executive Team provided weighting factors which were included in the appendices to later issue papers.

#5	**Category / PIC Meeting Date:**	Revenue Requirements -12/17/2007
	Decision Needed:	Which Method of determining revenue requirements is most appropriate?
	Options Available:	Cash basis Utility basis Utility basis with cash residual
	Executive Decision:	The Executive Team decided to use the cash basis method for determining revenue requirements.

* AWU's Current Methodology
# Red Oak Recommendation

Cost of Service Study 2007-08
Executive Review / Decision Summary

#6	**Category / PIC Meeting Date:**	Revenue Requirements -12/17/2007
	Decision Needed:	How should future O&M expenses be projected?
	Options Available:	Historical test year with adjustments for known and measurable changes Future budgeted O&M expenses
	Executive Decision:	The Executive Team decided to use future budgeted O&M expenses to calculate revenue requirements.

#7	**Category / PIC Meeting Date:**	Revenue Requirements -12/17/2007
	Decision Needed:	How should the Rate of Return be determined?
	Options Available:	Weighted average cost of capital Indexed return Fixed return N/A if use cash basis
	Executive Decision:	N/A since the Executive Team decided to use the cash basis.

#8	**Category / PIC Meeting Date:**	Revenue Requirements -12/17/2007
	Decision Needed:	How should construction work in progress be treated?
	Options Available:	Capitalize the interest during construction Include CWIP in the rate base N/A if use cash basis
	Executive Decision:	N/A since the Executive Team decided to use the cash basis.

#9	**Category / PIC Meeting Date:**	Water Cost Allocations - 01/07/2008
	Decision Needed:	Which method of determining water cost allocations is most appropriate?
	Options Available:	Commodity / Demand Base / Extra-Capacity *# Rubottom "Hybrid" method
	Executive Decision:	The Executive Team selected the Base / Extra-Capacity method for determining water cost allocations.

#10	**Category / PIC Meeting Date:**	Water Cost Allocations - 01/07/2008
	Decision Needed:	What are the appropriate Time Steps?
	Options Available:	Peak-day and peak-hour demands *# Peak-season, peak day, and peak-hour demands
	Executive Decision:	The Executive Team decided to continue using the peak-day and peak-hour demand methodology.

#11	**Category / PIC Meeting Date:**	Water Cost Allocations - 01/07/2008
	Decision Needed:	Should private fire connections be charged for direct and indirect fire costs?
	Options Available:	No separate charge for private fire connections * Charge private fire connections for direct fire costs only # Charge private fire connections for direct and indirect fire costs
	Executive Decision:	The Executive Team decided to continue with the current methodology - no separate charges for private fire connections.

* AWU's Current Methodology
# Red Oak Recommendation

Cost of Service Study 2007-08
Executive Review / Decision Summary

#12	**Category / PIC Meeting Date:**	Water Cost Allocations - 01/07/2008
	Decision Needed:	How should public fire cost be recovered?
	Options Available:	Recovered indirectly * Fixed charge based on property value Fixed charge based on fire customer class Fixed charge based on water meter size #
	Executive Decision:	The Executive Team selected the fixed charge based on water meter size.

#13	**Category / PIC Meeting Date:**	Wastewater Cost Allocations - 01/22/2008
	Decision Needed:	Which is the most appropriate overall method for allocating costs?
	Options Available:	Design basis * Functional basis Hybrid, where O&M costs are allocated based on function, and capital costs based on design #
	Executive Decision:	The Executive Team decided to use the Hybrid method, allocating O&M costs based on function and capital costs based on design.

#14	**Category / PIC Meeting Date:**	Wastewater Cost Allocations - 01/22/2008
	Decision Needed:	What are the appropriate customer service characteristics to use for the cost allocation process (e.g., flow, BOD, TSS, etc.)?
	Options Available:	Flow, BOD, and TSS only *# Add Total Kjeldahl Nitrogen (TKN) # Add Phosphorus#
	Executive Decision:	The Executive Team decided to use flow, BOD, and TSS only as customer service characteristics for wastewater cost allocation. The model was built with the capability to add TKN allocations in the future. AWU will not implement a sampling protocol to gather TKN data until future regulations require it.

* AWU's Current Methodology
\# Red Oak Recommendation

Cost of Service Study 2007-08
Executive Review / Decision Summary

#15	**Category / PIC Meeting Date:**	Wastewater Cost Allocations - 01/22/2008
	Decision Needed:	How should I/I be allocated in the cost allocation process?
	Options Available:	Combined connections and volume * Contributed wastewater volume # Number of connections Land area
	Executive Decision:	The Executive Team decided to allocate inflow and infiltration (I/I) as a system cost (based on contributed volume).

#16	**Category / PIC Meeting Date:**	Customer Classification - 02/19/2008
	Decision Needed:	Should the large-volume customer class be disaggregated?
	Options Available:	Maintain one class* Separate classes for each large-volume customer #
	Executive Decision:	The Executive Team decided to disaggregate the large-volume (industrial) customer class.

#17	**Category / PIC Meeting Date:**	Customer Classification - 02/19/2008
	Decision Needed:	Should the threshold for inclusion in the large-volume class be adjusted?
	Options Available:	Maintain 85 MG per year as the threshold *# Increase the threshold to 100 MG per year Reduce the threshold to 50 MG per year (or 30 MG per year per request from Industrial PIC member)
	Executive Decision:	The Executive Team decided to maintain the 85 MG per year threshold.

#18	**Category / PIC Meeting Date:**	Customer Classification - 02/19/2008
	Decision Needed:	Should an irrigation class be created?
	Options Available:	Do not implement an irrigation class *# Implement an irrigation class
	Executive Decision:	The Executive Team decided not to implement an irrigation class and to further investigate the implementation of an excess-use rate design for commercial and multifamily customers.

* AWU's Current Methodology
# Red Oak Recommendation

Cost of Service Study 2007-08
Executive Review / Decision Summary

Note: Irrigation issues from 03/17/08 meeting shown before Rate Structure issues from 03/03/08 meeting since 02/19/08 issues discusses irrigation class.

#19	**Category / PIC Meeting Date:**	Rates for Irrigation Customers - 03/17/2008
	Decision Needed:	If AWU implements higher rates for irrigation services, how should the excess revenue generated by the higher rates be used?
	Options Available:	Use the excess revenues to reduce the rate for indoor water use for irrigation customers Use the excess revenues to reduce the rates for all customers Set the irrigation rate at the cost of service to eliminate excess revenues Set the excess revenues aside for other designated purposes Do not establish an irrigation rate *#
	Executive Decision:	The Executive Team decided not to establish an irrigation rate.

#20	**Category / PIC Meeting Date:**	Rates for Non-residential Irrigation Customers - 03/17/2008
	Decision Needed:	What is an appropriate level for the non-residential irrigation rates?
	Options Available:	Set the irrigation rate equal to the highest residential block rate Set the rate equal to the cost-of-service rate for irrigation # Do not establish an irrigation rate *#
	Executive Decision:	The Executive Team decided not to establish an irrigation rate.

#21	**Category / PIC Meeting Date:**	Rates for Irrigation Customers - 03/17/2008
	Decision Needed:	Should single family residential customers with irrigation meter receive irrigation water at the block 1 & 2 rates?
	Options Available:	Provide block 1 and 2 discounted water * Price all water at the same rates for block 3 and above #
	Executive Decision:	The Executive Team decided to include irrigation accounts within the excess-use rate structure for the respective classes (commercial and multifamily) associated with each irrigation account.

#22	**Category / PIC Meeting Date:**	Rate Structures - 03/03/2008
	Decision Needed:	What is the best method for providing a subsidy to low-income customers?
	Options Available:	Discounted rates for Block 1 and Block 2 * Waive the fixed charge for qualified low-income residential customers #
	Executive Decision:	The Executive Team decided to waive the fixed charge for qualified low-income residential customers.

#23	**Category / PIC Meeting Date:**	Rate Structures - 03/03/2008
	Decision Needed:	How should AWU recover a subsidy to low-income customers?
	Options Available:	Recover the subsidy within the single family residential class* Recover the subsidy from all retail customer classes #
	Executive Decision:	The Executive Team decided to recover the low-income residential subsidy from all retail customer classes. AWU will extend the program to outside-city residential customers who qualify. The cost to administer the subsidy program will be identified and included in the allocation to the retail customer classes.

#24	**Category / PIC Meeting Date:**	Rate Structures - 03/03/2008
	Decision Needed:	Should AWU introduce a 5th block for single family residential customers?
	Options Available:	Current 4-block structure* Create a 5-block structure Create a revised 4-block structure #
	Executive Decision:	The Executive Team decided to implement a 5-block structure for residential rates.

* AWU's Current Methodology
# Red Oak Recommendation

#25	**Category / PIC Meeting Date:**	Rate Structures - 03/03/2008
	Decision Needed:	What conservation incentives should exist for wholesale customers?
	Options Available:	Uniform rates by wholesale class *# Seasonal rates Excess-use rates
	Executive Decision:	The Executive Team decided to continue the use of uniform rates for wholesale customers.

#26	**Category / PIC Meeting Date:**	Rate Structures - Not an original issue paper decision
	Decision Needed:	Should the Residential Class subsidy continue?
	Options Available:	Status quo * All at COS Transition to COS
	Executive Decision:	The Executive Team decided to transition all customers classes to cost of service. The transition will be done over several years in an effort to avoid "Rate Shock" for any particular class.

#27	**Category / PIC Meeting Date:**	Excess-Use Rate Structure - 03/03/2008 Issue Paper, but not identified as major decision issue
	Decision Needed:	Should AWU implement an excess-use rate design for its non-residential retail customers to meet the conservation objectives of the Water Conservation Task Force?
	Options Available:	Use the excess-use rate design to achieve the goals of the Water Conservation Task Force Do not establish an excess-use rate design *
	Executive Decision:	The Executive Team decided to pursue implementation of an excess-use rate structure to achieve the goals of the Water Conservation Task Force. The excess-use rate structure will be implemented at a later date, after the conversion and reprogramming of the existing billing system and development of a public information and outreach program.

#28	**Category:**	Customer Classification - No Issue Paper
	Decision Needed:	Should the Outside City and Inside City retail classes be combined?
	Options Available:	Maintain status quo - Inside City and Outside City retail customer classes separated * Combine the Inside City and Outside City retail customer classes
	Executive Decision:	The Executive Team decided to combine the Inside City and Outside City retail customer classes.

#29	**Category:**	General Fund Transfer Allocation
	Decision Needed:	Should the General Fund Transfer be allocated to customer classes based on revenues rather than allocated invested capital?
	Options Available:	Maintain status quo - General Fund Transfer allocated based on three year history of revenue by class Allocate General Fund Transfer based on invested capital
	Executive Decision:	The Executive Team decided to allocate the General Fund Transfer based on three years of historical revenues by class.

* AWU's Current Methodology
\# Red Oak Recommendation

#30	**Category:**	Rate Structures
	Topic	How should the wastewater strengths for large-volume customers be calculated?
	Options Available:	Maintain status quo - one year strengths 3-year average of historical sewage strengths
	Executive Decision:	The Executive Team decided to use a three-year average of historical samples to estimate sewage strengths for the large-volume customers.

#31	**Category:**	Allocation of Water Treatment Plant Maintenance Costs
	Decision Needed:	How should water treatment plant maintenance costs be allocated?
	Options Available:	Allocated to Base and Max Day Allocated to Base only
	Executive Decision:	The Executive Team decided to allocate the water treatment plant maintenance costs to Base only.

* AWU's Current Methodology
\# Red Oak Recommendation

Austin Water Utility
Cost of Service Rate Study 2008

APPENDIX

B

Water Cost-of-Service Results

REDOAK CONSULTING
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Table B-1
Austin Water Utility
Water Cost of Service Model
Number of Water Accounts & Estimated Sales and Production by Customer Class

Customer Class	Accounts	Estimated Water Sales (Kgal)	Estimated Water Production (Kgal)	Estimated Unaccounted For Water (Kgal)
Residential	185,620	18,637,701	19,214,125	576,424
Multi-Family	5,738	9,109,523	9,391,261	281,738
Commercial	15,881	13,493,324	13,910,643	417,319
Creedmore-Maha	3	61,702	61,702	0
High Valley	1	6,787	6,787	0
Lost Creek	1	293,109	293,109	0
Manor, City of	1	120	120	0
Manville WSC	1	85,582	85,582	0
Marshall Water	1	10,023	10,023	0
Nighthawk	1	10,615	10,615	0
North Austin MUD	6	370,964	370,964	0
Northtown MUD	6	210,499	210,499	0
Rivercrest	3	100,896	100,896	0
Rollingwood	3	129,493	129,493	0
Shady Hollow	2	241,991	241,991	0
Sunset Valley MUD	7	93,090	93,090	0
Water District 10	1	840,512	840,512	0
Wells Branch MUD	7	541,063	541,063	0
Windermere	1	14,100	14,100	0
Hospira	1	85,973	88,631	2,659
Spansion	2	516,000	531,959	15,959
Applied Materials	9	90,193	92,983	2,789
Freescale	6	756,000	779,381	23,381
Samsung	1	960,000	989,691	29,691
Sematech	1	97,642	100,662	3,020
University of Texas	14	474,635	489,315	14,679
Totals	207,318	47,231,535	48,599,194	1,367,659

Table B-2
Austin Water Utility
Water Cost of Service Model
Summary of Customer Service Characteristics

Customer Class	Base	Max-Day	Max-Hour	Customer	Meter	Fire
Residential	39.54%	45.97%	42.50%	89.58%	62.50%	28.03%
Multi-Family	19.32%	12.57%	16.85%	2.77%	12.81%	37.23%
Commercial	28.62%	27.67%	28.20%	7.66%	23.23%	31.05%
Creedmore-Maha	0.13%	0.14%	0.13%	0.00%	0.01%	0.00%
High Valley	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%
Lost Creek	0.60%	0.76%	0.65%	0.00%	0.03%	0.00%
Manor, City of	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Manville WSC	0.18%	0.31%	0.22%	0.00%	0.01%	0.00%
Marshall Water	0.02%	0.02%	0.02%	0.00%	0.00%	0.00%
Nighthawk	0.02%	0.02%	0.02%	0.00%	0.00%	0.00%
North Austin MUD	0.76%	1.17%	0.90%	0.00%	0.12%	0.00%
Northtown MUD	0.43%	0.50%	0.45%	0.00%	0.16%	0.00%
Riverforest	0.21%	0.30%	0.24%	0.00%	0.06%	0.00%
Rollingwood	0.27%	0.49%	0.34%	0.00%	0.05%	0.00%
Shady Hollow	0.50%	0.80%	0.58%	0.00%	0.03%	0.00%
Sunset Valley MUD	0.19%	0.31%	0.23%	0.00%	0.13%	0.00%
Water District 10	1.73%	2.51%	1.99%	0.00%	0.04%	0.00%
Wells Branch MUD	1.11%	1.03%	1.08%	0.00%	0.11%	0.00%
Windermere	0.03%	0.23%	0.10%	0.00%	0.02%	0.00%
Hospira	0.18%	0.40%	0.26%	0.00%	0.03%	0.21%
Spansion	1.09%	0.61%	0.91%	0.00%	0.05%	0.42%
Applied Materials	0.19%	0.14%	0.17%	0.00%	0.10%	0.46%
Freescale	1.69%	1.33%	1.47%	0.00%	0.15%	0.86%
Samsung	2.04%	1.67%	1.88%	0.00%	0.03%	0.21%
Sematech	0.21%	0.13%	0.18%	0.00%	0.03%	0.21%
University of Texas	1.01%	0.92%	0.97%	0.01%	0.25%	1.33%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table B-3
Austin Water Utility
Water Cost of Service Model
Assignment of Classes to Cost Pools

Customer Class	Joint	Retail Only	Wholesale	Watershed Land Purchase	LCRA	Indirect Fire
Residential	100%	100%	0%	100%	100%	100%
Multi-Family	100%	100%	0%	100%	100%	100%
Commercial	100%	100%	0%	100%	100%	100%
Creedmore-Maha	100%	0%	100%	0%	100%	100%
High Valley	100%	0%	100%	0%	100%	100%
Lost Creek	100%	0%	100%	0%	100%	100%
Manor, City of	100%	0%	100%	0%	100%	100%
Manville WSC	100%	0%	100%	0%	100%	100%
Marshall Water	100%	0%	100%	0%	100%	100%
Nighthawk	100%	0%	100%	0%	100%	100%
North Austin MUD	100%	0%	100%	0%	100%	100%
Northtown MUD	100%	0%	100%	0%	100%	100%
Rivercrest	100%	0%	100%	0%	100%	100%
Rollingwood	100%	0%	100%	0%	100%	100%
Shady Hollow	100%	0%	100%	0%	100%	100%
Sunset Valley MUD	100%	0%	100%	0%	100%	100%
Water District 10	100%	0%	100%	0%	100%	100%
Wells Branch MUD	100%	0%	100%	0%	100%	100%
Windermere	100%	0%	100%	0%	100%	100%
Hospira	100%	100%	0%	100%	100%	100%
Samsung	100%	100%	0%	100%	100%	100%
Applied Materials	100%	100%	0%	100%	100%	100%
Freescale	100%	100%	0%	100%	100%	100%
Samsung	100%	100%	0%	100%	100%	100%
Sematech	100%	100%	0%	100%	100%	100%
University of Texas	100%	100%	0%	100%	100%	100%

Table B-4
Austin Water Utility
Water Cost of Service Model
Actual O&M Costs

Item		Class Code Description		Computed
WATER TREATMENT				
Environmental & Regulatory Support		Treatment		$629,203
Water Treatment Laboratory		Treatment		1,418,589
Water Treatment Engineering				
Process Engineering		Treatment		1,324,259
Facility Engineering - Treatment		Treatment		717,487
Green WTP Maintenance		Treatment		531,045
Davis WTP Maintenance		Treatment		1,377,682
Ullrich WTP Maintenance		Treatment		1,143,020
Electrical Maintenance		Treatment		945,738
Instrumentation & Control Maintenance		Treatment		704,249
Admin Support		Treatment		347,213
Systems Support		Treatment		1,103,869
Green WTP Operations				
Electrical		Treatment		0
Chemical		Treatment		0
Other		Treatment		1,801,457
Davis WTP Operations				
Electrical		Treatment		3,925,917
Chemical		Treatment		2,188,168
Other		Treatment		1,245,910
Ullrich WTP Operations				
Electrical		Treatment		5,069,011
Chemical		Treatment		2,630,195
Other		Treatment		1,842,177
PIPELINE OPERATIONS				
Pump Station & Reservoir Maintenance (SCADA)				
Electrical		Transmission & Distr		3,042,783
Other		Transmission & Distr		2,796,817
Distribution Pipeline Maintenance		Transmission & Distr		0
Management Services		Transmission & Distr		576,928
Dist Pipeline Operations		Transmission & Distr		7,024,460
Distribution Service (House) Connection		Transmission & Distr		419,882
Pipeline Rehabilitation & Construction		Transmission & Distr		2,014,331
Metering Services				
Meter Shop		Transmission & Distr		1,595,336
ARV/PRV Maintenance		Transmission & Distr		268,701
Valve & Hydrant				
Valves		Transmission & Distr		1,063,463
Valve Exercising		Transmission & Distr		535,543
Hydrants		Transmission & Distr		1,296,883
DISTRIBUTION SYSTEM SUPPORT				
Asset Mgt - Distribution		Transmission & Distr		198,174
Dispatch		Transmission & Distr		405,932
Water Facility Engineering - Distribution		Transmission & Distr		393,017
Water Pipeline Engineering		Transmission & Distr		660,046
Infrastructure Records		Transmission & Distr		581,495
Distribution Engineering		Transmission & Distr		645,784
Distribution Engineering & Tech Support		Transmission & Distr		503,056
GIS Services		Transmission & Distr		490,203
Line Locators - Distribution		Transmission & Distr		425,058
Water Protection / Inspection		Transmission & Distr		609,864
Small Calls		Transmission & Distr		1,223,986
System Planning		Transmission & Distr		1,242,542
Utility Development Services		Transmission & Distr		385,865
ONE STOP SHOP				
Building Plan Review		Service		232,904

Table B-4
Austin Water Utility
Water Cost of Service Model
Actual O&M Costs

Item	Class Code Description	Computed
Research & Consult Water Cons	Services	3,204
Land Use Review	Services	39,136
Site Inspections	Services	279,848
Permit and License Center	Services	97,686
SUPPORT SERVICES		
Administration & Management		
Internal Audit	Administative	213,725
Business Support	Administative	389,621
Strategic Resources Services (Wholesale)	Administative	127,044
Business Improvement Services	Administative	193,494
Financial Mngt / Budget & Accounting		
CIP Budgeting / Acct & Fin Reporting	Administative	311,603
Rates, Analysis & Asset Mngt (RAAM)	Administative	270,245
Utility Central Stores	Administative	165,057
Budget & Accounting	Administative	499,203
Information Technology	Administative	4,620,627
Facility Management - Service Centers	Administative	588,020
Facility Management - WCC, NSC	Administative	422,759
Purchasing	Administative	177,324
Accounts Payable	Administative	247,259
Public Involvement	Administative	340,723
Human Resources Services		
Organizational Development	Administative	114,969
Employment - Compensation	Administative	152,902
Employee Relations & Workers Comp	Administative	157,146
Safety & Training	Administative	418,239
Equipment Repairs	Administative	255,033
CONSERVATION & REUSE		
Facility Engineering - Conservation	Administative	14,502
Environmental Affairs & Conservation		
Reicher Ranch	Administative	82,125
Land Management	Administative	1,322,895
Balcones Canyonland Preserve	Administative	1,189,498
Water Reuse	Administative	976
BILLING CUSTOMER SERVICES		
Tap Sales	Services	227,976
Taps Investigation & Admin	Services	89,340
Retail Customer Service	Customer Service	414,266
Utility Customer Services Office - AE	Customer Service	8,713,434
Bad Debt	Administative	990,000
TRANSFERS & OTHER REQUIREMENTS		
Commission on Debt	Administative	30,250
Special Support	Administative	9,813,888
WATER CONSERVATION		
Water Conservation	Administative	6,920,904
Other Operating Transfers		
Operating Transfers	Administative	1,290,811
Other Transfers	Administative	214,209
Funding of low-income subsidy		0
Total O&M Costs		$94,670,254

Table B-5 Austin Water Utility Water Cost of Service Model Cash Basis Capital Costs		
Item		**Computed**
Debt Service Requirements		$78,634,102
Transfer to City General Fund		18,255,005
Transfer to Sustainability Fund		1,980,285
Transfer to Water Construction Fund/Capital Outlay		12,311,291
Operating Transfers		0
Other Transfers		214,209
Total		$106,394,891

Table B-6
Austin Water Utility
Water Cost of Service Model
Non-Rate Revenue

Item		Computed
Industrial Waste Permits		39
Backflow Prevention Compliance Fee		355,928
Reconnection Fee		14,302
Restitution Criminal Acts		1
Xerox Copies - Utilities		3,555
Late Payment Penalties		786,547
Building Rental Income		165,712
Damage Charges		169,320
Process Assessment		0
Sales of Promotional Items		0
Compost/Sludge Sales		0
Agricultural Bi-products		1
Water Special Billings		5,090
Wastewater Special Billings		0
Vendor Registration Fees		0
Property Sales-Motorized Vehicles		17,843
After Hours Turn On		237,271
Meters on Fire Hydrants		21,971
Septic Tank Haulers Fee		0
Commission Agenda Packets		1
Maple Run MUD Surcharge		0
A/R Adjustment - UCSO Admin		0
A/R Adjustment - WWW Admin		0
A/R Adjustment - Leak Adjustment		(622,547)
A/R Adjustment - Conservation Rebate		1
Off-Systems - General Services		0
Outside City UT Service Appl Fee		0
Lab Testing Fee		1
Reuse Water Service		348,092
Tanglewood Forest Surcharge		0
Southland Oaks Surcharge		60,349
Wholesale Penalties & Fees		1
NWA Mud # Surcharge Credit		(253,230)
Service Installation		448,668
Special Bill - Wtr Un Meter		244,871
A/R Adjustment		1
Miscellaneous Revenues		96,829
Returned Check Fee		12,081
Junk/Metal Sales		14,670
Cash Over/Short		1
Transfer In from CRF		5,000,000
Sales Tax Penalty		1
New Service Connections		424,012
Transfer in from Public Works		150,291
Transfer in from CIP		1,000,000
Transfer in from Watershed Protection		0
Recls Recpt		2,000
Interest Income (Capital Portion)		618,625
Decrease (Increase) in Operating Reserves		(1,638,845)
Full Year Revenue Increase Adjustment (a)		0
Interest Income (O&M Portion)		556,717
Decrease (Increase) in Operating Reserves		(1,474,843)
Total		$6,765,590

Table B-7
Austin Water Utility
Water Cost of Service Model
Summary of User Charge Revenue Requirements by Customer Class

Customer Class	O&M	Special Costs	Revenue-Based Allocations	Depreciation	Return	Total
Residential	$43,754,763	$3,557,822	$6,027,631	$9,888,301	$23,603,038	$86,611,526
Multi-Family	15,446,684	1,641,198	2,732,974	4,085,353	9,915,628	33,821,837
Commercial	23,894,254	2,440,996	4,747,023	6,568,482	16,035,330	53,676,086
Creedmore-Maha	84,232	4,709	13,676	22,369	54,870	179,856
High Valley	9,058	518	1,523	2,281	5,513	18,893
Lost Creek	405,214	22,369	78,235	111,326	273,484	890,629
Manor, City of	332	9	49	103	130	624
Manville WSC	123,915	6,531	21,588	37,188	91,256	280,478
Marsha Water	15,478	765	2,273	3,433	8,425	28,369
Nighthawk	14,188	810	2,362	3,551	8,661	29,572
North Austin MUD	630,028	28,311	101,607	154,109	375,351	1,289,406
Northtown MUD	291,792	16,064	50,318	79,290	191,730	629,194
Rivercrest	143,472	7,700	19,800	41,140	99,823	311,935
Rollingwood	190,195	9,882	34,510	58,201	142,012	434,800
Shady Hollow	345,849	18,468	69,764	101,312	248,507	783,900
Sunset Valley MUD	136,393	7,104	26,114	40,629	97,134	307,374
Water District 10	1,182,507	64,145	236,907	336,974	828,488	2,649,021
Wells Branch MUD	725,138	41,292	122,535	185,635	455,373	1,529,973
Windermere	32,582	1,076	10,665	16,200	39,193	99,716
Hospira	166,839	15,489	25,953	56,321	141,399	406,002
Spansion	783,099	92,964	173,269	203,728	516,530	1,769,589
Applied Materials	152,584	16,249	30,618	41,691	101,511	342,654
Freescale	1,200,879	136,205	255,950	331,172	836,908	2,761,112
Samsung	1,498,976	172,956	267,733	411,581	1,048,187	3,399,434
Sematech	153,612	17,591	30,408	40,869	102,389	344,870
University of Texas	789,008	85,512	152,105	222,450	553,943	1,803,018
Total	$92,049,037	$8,196,736	$15,235,290	$23,043,659	$55,774,833	$194,299,555

Table B-8
Austin Water Utility
Water Cost of Service Model
Distribution of O&M Costs to Cost Pools

Item	Joint	Retail Only	Wholesale	Watershed Land Purchase	LCRA	Indirect Fire	Total
Raw Water	$0	$0	$0	$0	$0	$0	$0
Treatment Average Day	36,711,289	0	0	0	0	0	36,711,289
Treatment Facilities	5,898,483	0	0	0	0	0	5,898,483
Pump Stations & Booster Stations	3,166,039	0	0	0	0	0	3,166,039
Pump Stations Power	3,827,196	0	0	0	0	0	3,827,196
Tanks/ Reservoirs	351,782	0	0	0	0	0	351,782
Transmission Mains	11,815,621	0	0	0	0	0	11,815,621
Distribution Mains	0	11,662,285	0	0	0	0	11,662,285
Direct Fire	0	1,695,082	0	0	0	0	1,695,082
Retail Meters & Services	0	1,396,591	0	0	0	0	1,396,591
Meters & Services	2,344,576	0	0	0	0	0	2,344,576
Watershed Land Purchases	0	0	0	0	0	0	0
LCRA Water Rights	0	0	0	0	0	0	0
Customer Service	11,480,772	0	0	0	0	0	11,480,772
Small Calls	1,539,523	0	0	0	0	0	1,539,523
Wholesale Services	0	31,959	127,836	0	0	0	159,795
Revenue-Based Volume Charge	0	0	0	0	0	0	0
Indirect	0	0	0	0	0	0	0
Totals	$77,135,282	$14,785,918	$127,836	$0	$0	$0	$92,049,037

Table B-9
Austin Water Utility
Water Cost of Service Model
Distribution of Specially Allocated Items to Cost Pools

Item	Joint	Retail Only	Wholesale	Watershed Land Purchase	LCRA	Indirect Fire	Total
Raw Water	$0	$0	$0	$0	$0	$0	$0
Treatment Average Day	0	0	0	0	0	0	0
Treatment Facilities	0	0	0	0	0	0	0
Pump Stations & Booster Stations	0	0	0	0	0	0	0
Pump Stations Power	0	0	0	0	0	0	0
Tanks/ Reservoirs	0	0	0	0	0	0	0
Transmission Mains	0	0	0	0	0	0	0
Distribution Mains	0	0	0	0	0	0	0
Directly	0	0	0	0	0	0	0
Retail Meters & Services	0	0	0	0	0	0	0
Meters & Services	0	0	0	0	0	0	0
Watershed Land Purchases	0	0	0	4,487,823	0	0	4,487,823
LCRA Water Rights	0	0	0	0	3,708,913	0	3,708,913
Customer Service	0	0	0	0	0	0	0
Small Calls	0	0	0	0	0	0	0
Wholesale Services	0	0	0	0	0	0	0
Revenue Based Volume Charge	0	0	0	0	0	0	0
Indirect	0	0	0	0	0	0	0
Totals	$0	$0	$0	$4,487,823	$3,708,913	$0	$8,196,736

Table B-10
Austin Water Utility
Water Cost of Service Model
Distribution of Revenue-Based Allocated Items to Cost Pools

Item	Joint	Retail Only	Wholesale	Watershed Land Purchase	LCRA	Indirect Fire	Total
Raw Water	$0	$0	$0	$0	$0	$0	$0
Treatment Average Day	0	0	0	0	0	0	0
Treatment Facilities	0	0	0	0	0	0	0
Pump Stations & Booster Stations	0	0	0	0	0	0	0
Pump Stations Power	0	0	0	0	0	0	0
Tanks/ Reservoirs	0	0	0	0	0	0	0
Transmission Mains	0	0	0	0	0	0	0
Distribution Mains	0	0	0	0	0	0	0
Direct Fire	0	0	0	0	0	0	0
Retail Meters & Services	0	0	0	0	0	0	0
Meters & Services	0	0	0	0	0	0	0
Watershed Land Purchases	0	0	0	0	0	0	0
LCRA Water Rights	0	0	0	0	0	0	0
Customer Services	0	0	0	0	0	0	0
Small Calls	0	0	0	0	0	0	0
Wholesale Services	0	0	0	0	0	0	0
Revenue-Based Volume Charge	15,235,290	0	0	0	0	0	15,235,290
Indirect	0	0	0	0	0	0	0
Totals	$15,235,290	$0	$0	$0	$0	$0	$15,235,290

Table B-11
Austin Water Utility
Water Cost of Service Model
Distribution of Net Plant in Service to Cost Pools

Description	Joint	Retail Only	Wholesale	Watershed Land Purchase	LCRA	Indirect Fire	Total
Raw Water	$0	$0	$0	$0	$0	$0	$0
Treatment Average Day	0	0	0	0	0	0	0
Treatment Facilities	152,204,526	0	0	0	0	0	152,204,526
Pump Stations & Booster Stations	50,098,948	0	0	0	0	0	50,098,948
Pump Stations Power	0	0	0	0	0	0	0
Tanks / Reservoirs	34,760,565	0	0	0	0	0	34,760,565
Transmission Mains	202,190,528	0	0	0	0	0	202,190,528
Distribution Mains	0	124,165,067	0	0	0	0	124,165,067
Direct Fire	0	7,188,888	0	0	0	0	7,188,888
Retail Meters & Services	0	0	0	0	0	0	0
Meters & Services	7,859,826	0	0	0	0	0	7,859,826
Watershed Land Purchases	0	0	0	0	0	0	0
LCRA Water Rights	0	0	0	0	0	0	0
Customer Service	0	0	0	0	0	0	0
Small Calls	0	0	0	0	0	0	0
Wholesale Services	0	0	0	0	0	0	0
Revenue Based Volume Charge	0	0	0	0	0	0	0
Indirect	33,399,381	10,271,583	0	0	0	0	43,670,964
Totals	$460,513,774	$141,625,538	$0	$0	$0	$0	$602,139,312

Table B-12
Austin Water Utility
Water Cost of Service Model
User Charge Revenue Requirements by Customer Service Characteristic

Customer Class	Base	Max-Day	Max-Hour	Customer	Meter	Fire	Totals
Residential	$52,691,032	$15,016,380	$8,856,168	$10,279,179	$3,394,950	$1,193,816	$86,611,526
Multi-Family	25,540,579	4,105,505	1,535,649	317,752	736,905	1,585,447	33,821,837
Commercial	38,580,395	9,037,792	2,569,999	879,466	1,336,052	1,322,372	53,676,086
Creedmore-Maha	143,839	35,342	0	166	509	0	179,856
High Valley	15,840	2,883	0	55	84	0	18,863
Lost Creek	696,560	192,652	0	55	1,361	0	890,629
Manor, City of	302	81	0	55	204	0	642
Manville WSC	202,125	77,958	0	55	340	0	280,478
Marsha Water	23,418	4,812	0	55	84	0	28,369
Nighthawk	24,754	4,559	0	55	204	0	29,572
North Austin MUD	884,140	297,421	0	332	7,485	0	1,189,406
Northtown MUD	494,373	127,346	0	332	7,143	0	629,194
Rivercrest	232,344	76,319	0	166	2,806	0	311,635
Rollingwood	307,681	124,912	0	166	2,041	0	434,800
Shady Hollow	580,253	202,175	0	111	1,361	0	783,900
Sunset Valley MUD	222,492	78,982	0	388	5,513	0	307,374
Water District 10	2,009,959	657,402	0	55	1,865	0	2,669,021
Wells Branch MUD	1,263,928	260,735	0	388	4,924	0	1,529,975
Windermere	40,409	58,570	0	55	680	0	99,715
Hospira	241,203	130,011	24,022	55	1,802	8,909	406,002
Spansion	1,465,183	200,358	82,966	110	3,165	17,818	1,769,599
Applied Materials	256,435	45,126	15,504	498	5,467	19,623	342,654
Freescale	2,148,785	434,137	133,975	332	7,310	36,595	2,761,112
Samsung	2,671,294	545,724	171,649	55	1,802	8,909	3,399,434
Sematech	274,875	42,987	16,241	55	1,802	8,909	344,870
University of Texas	1,340,455	302,123	88,811	775	14,320	56,534	1,803,018
Totals	$132,302,691	$32,042,291	$8,474,985	$11,480,772	$5,739,884	$4,258,932	$194,299,555

Table B-13
Austin Water Utility
Water Cost of Service Model
Peaking Factors by Customer Class

Customer Class	Max-Day	Max-Hour
Residential	1.66	2.42
Multi-Family	1.37	1.99
Commercial	1.55	2.25
Creedmore-Maha	1.62	2.36
High Valley	1.46	2.12
Lost Creek	1.71	2.49
Manor, City of	1.73	2.52
Manville WSC	1.99	2.89
Marsha Water	1.52	2.21
Nighthawk	1.47	2.13
North Austin MUD	1.87	2.72
Northtown MUD	1.66	2.40
Rivercrest	1.82	2.65
Rollingwood	2.05	2.97
Shady Hollow	1.91	2.76
Sunset Valley MUD	1.92	2.80
Water District 10	1.82	2.64
Wells Branch MUD	1.52	2.22
Windermere	5.52	8.09
Hospira	2.24	3.27
Spansion	1.32	1.91
Applied Materials	1.41	2.05
Freescale	1.47	2.13
Samsung	1.47	2.13
Sematech	1.36	1.98
University of Texas	1.52	2.21

Table B-14
Austin Water Utility
Water Cost of Service Model
Revenue Summary

Customer Class	Existing Rates	Computed Rates	Percent Difference
Residential	$78,810,693	$86,709,735	10.0%
Multi-Family	34,631,345	33,857,794	(2.2%)
Commercial	61,533,634	53,740,884	(12.7%)
Creedmore-Maha	178,719	179,953	0.7%
High Valley	18,839	18,865	0.0%
Lost Creek	887,545	891,647	0.5%
Manor, City of	729	642	(11.9%)
Manville WSC	280,479	280,725	0.1%
Marsha Water	28,059	28,378	1.1%
Nighthawk	29,375	29,606	0.8%
North Austin MUD	1,170,391	1,190,933	1.8%
Northtown MUD	627,063	629,259	0.4%
Rivercrest	317,685	311,953	(1.8%)
Rollingwood	434,825	434,956	0.0%
Shady Hollow	779,199	782,897	0.5%
Sunset Valley MUD	306,657	307,207	0.2%
Water District 10	2,633,503	2,650,573	0.6%
Wells Branch MUD	1,523,677	1,529,066	0.4%
Windermere	99,340	99,649	0.3%
Hospira	348,548	406,372	16.6%
Spansion	2,092,216	1,771,037	(15.4%)
Applied Materials	373,745	343,021	(8.2%)
Freescale	3,068,951	2,763,541	(10.0%)
Samsung	3,887,156	3,402,853	(12.5%)
Sematech	398,204	345,211	(13.3%)
University of Texas	1,946,422	1,804,453	(7.3%)
Totals	$196,407,020	$194,511,209	(1.0%)