Exh A - 1999 COS

1.0 Executive Summary

1.1 General

Over the past twelve (12) months, the Black and Veatch team conducted a comprehensive cost of service study for water and wastewater services under the direction of the Water and Wastewater Utility. The goal has been to replace the cost of service rate study model adopted in 1993 with an updated model consistent with current practice and data. The Utility's job in conducting the study has been to balance the interests of all customers so that all can be served.

The Study team was asked **to analyze rates without regard to past assumptions and to devise a new rate model that the Utility staff will use and adapt over the next five or more years.** The goals for the new rate structure are that it be equitable to all customer classes, fully defensible, implementable with available resources, and a reflection of as much consensus as possible, while providing adequate revenue to the Utility.

The Black and Veatch team was particularly sensitive to ensuring **fully defensible** methodologies are used, since the City of Austin has in past years spent more than $7 million unsuccessfully defending rates not based on accepted cost-of-service methods.

The new model has been developed to be "**revenue neutral**" in that it does not increase the Utility's total projected revenue to be generated from rates. Impact fees and recycled water rates were excluded from this study.

Cost of service rate studies deal with how to divide the rate burden among different types of customers. The overall amount of revenue required is not the subject of this study, but rather how to "cut up the pie" so that all customer groups pay their fair share. **Any revenue not contributed by one customer class must be provided by other customers**—thus, rate-setting is inherently controversial.

The consulting team had the benefit of the active participation of a **Public Involvement Committee** comprising representatives of all customer classes selected by the rate-paying groups themselves in conducting this study. The Council also appointed and funded a Residential Rate Advocate to represent in-City residential and small commercial ratepayers.

In 1993, the City Council made **a commitment to charge wholesale customers cost of service rates as part of a legal settlement and to move toward cost-based rates for all customers.** Since then, the Council has reviewed and adjusted rates annually in fulfilling this commitment. However, in-City residential ratepayers continue

adopting any rate structure. See "Section 1.4 Decisions Facing the Council" later in this Executive Summary for more on this subject.

1.3 Features of the Recommended Rate Structure and Model

1.3.1 More Accuracy and Precision

The new rate structures and corresponding models are **more accurate and precise** because they are based on fixed asset data that the Utility staff has developed since the previous rate study was completed. These and other data make it possible to more accurately attribute costs to particular water or wastewater service functions.

One finding that resulted from this greater accuracy is that the fixed service or "customer charge" for water and wastewater rates should be increased. The fixed charge is higher in the new rate structure largely because the study team was able to identify the fixed asset and depreciation costs associated with customer's meters and services which make up much of the fixed charge. This is just one example of many details altered by the use of fixed asset data.

1.3.2 More Incentives for Conservation

The recommended rate structure **introduces water conservation incentives for commercial, industrial and multifamily customers through the use of seasonal rates,** which impose a higher rate per 1,000 gallons of consumption during the peak-use summer months than during the winter months. Presently, the single-family residential customers are charged on the basis of a four-tier inverted block conservation rate structure without any corresponding incentives given to other customer classes. The seasonal rates are "revenue neutral" in that they recover the same amount of revenue from affected classes, but charge a higher price on their consumption during the peak–use summer months and a lower price during the winter months.

Wholesale customers are exempted from seasonal rates in the recommended structure because many already assess conservation rates on their retail customers. The Utility will investigate wholesale customers' conservation incentives and in the future may recommend that those without adequate retail incentives be charged seasonal rates

In addition, the new model **adds a fifth inverted block to the top tier of residential water rates** that would affect about 5% of the largest-volume customers to discourage excessive water use.

The new model uses a "non-coincident peak" methodology that spreads the cost of serving water customers during peak-use periods more broadly across customer classes

average usage per customer account which reflects expected normalized climatic and economic conditions for each user category. For example, the average usage per account for the inside City residential single family customer class was based on an analysis of the FY 1996-1998 usage, and is projected to be 8,400 gallons per month in FY 2000.

Wholesale water service is provided to 16 entities for resale to individual users. These customers generally represent municipal utility districts (MUD), water supply corporations (WSC), and municipal entities as shown on Table W-2. Water sales to wholesale customers are projected based upon recent historical consumption levels, and assume that FY 2000 purchased water quantities will not appreciably deviate from recent past levels.

Of the total water sales forecast for FY 2000, approximately 87.9% is expected to be used by the inside-City customer classes, 4.6% by the outside-City retail customer classes, and 7.5% by the wholesale customers.

In recent years, water sales have averaged approximately 88 percent of water system pumpage resulting in an approximate 12 percent unaccounted for water ratio. The difference between water sales and water pumpage reflects unmetered but known uses of water for fire fighting, sewer and hydrant flushing, and street cleaning, etc., and unaccounted for system losses in the transmission and distribution system. While recent historical experience would suggest that future unaccounted for water should approximate 12 percent of system pumpage, the annexation of a number of outside City wholesale customers effective January 1998 resulted in the unaccounted for water ratio to decline to an average of 11 percent since the annexation occurred. This reduced unaccounted for water ratio has consistently been experienced since that time. A ratio of 11 percent unaccounted for water is well within accepted industry standards or averages. It is estimated that 6 percent of this amount is lost in the smaller size mains distribution system in which wholesale customers should not share in

4 1.2 Water Revenue Under Existing Rates

The principal revenue for Austin's water system is derived from charges for metered water sales. For informational purposes, historical and projected metered water sales revenue is shown in Table W-3. The projection of revenue from metered water sales for FY 2000 is based upon the schedule of rates that became effective November 1, 1998, and is estimated to total $106,964,100.

The estimated $107 million of future metered water sales revenue is based upon the projection of customer growth and water sales volumes presented in Tables W-1 and W-2. A bill tabulation analysis of customer bills and usage for the respective customer classes was conducted to verify billing units and the application of existing rates to the projected sales quantities in arriving at the revenue estimates. Of the total projected sales revenue, it is estimated that the inside-City customer classes will contribute 88.7 %, the outside City retail

The FY 2000 operating budget as summarized in Table W-4 represents the Utility's budgetary organization structure based upon division, section, and activity categories. The principal function and activities of each organizational category are noted on the table. The treatment division encompasses responsibility for the operation and maintenance of the Utility's Green, Davis, and Ullrich water treatment plants (WTP); pumping stations, reservoirs, and instrument & control maintenance; water quality and instrument laboratories, and process engineering associated with water purification activities.

The pipeline division primarily is responsible for the operation and maintenance of the water distribution system (small & large mains) from the North and South Operations Centers. Other activities of the division include central support, field support services, and special services.

The engineering and planning division's activities include facility engineering, pipeline engineering (design, records & computer mapping), water resource planning, and construction and pipeline rehabilitation.

The business support division encompasses the meter maintenance shop, tap sales and inspection activities, retail customer service, and other support services. Some of the other business support services include the office of the director; environmental and regulatory compliance; public involvement; human resources; financial and budget-accounting management; and information technology.

The last category referred to as special support includes the Utility Customer Service Office (UCSO), bad debt, water conservation activities, special support, and other categories of a general nature.

As a part of the review process to ensure that appropriate operation and maintenance expense items are being assigned to the proper water and wastewater functions, Utility staff conducted an examination of the percentage allocation basis of the direct and joint-use activities of each division, section, and activity. Some expense items are readily identifiable as being related to providing water or wastewater service, while other items are shared between the two Utility functions. Further, for budgeting purposes, some items of expense relating to water functions may be reflected in a wastewater organizational category, and similarly some expense items related to wastewater functions may be reflected in a water organizational category. In those instances where expenses are jointly budgeted for, a determination was made as to how to apportion these expenses to water and wastewater functions by relating them to number of customer accounts, work orders, service activity statistics, and other such criteria. The percentage allocation basis for the Utility's operation and maintenance costs for each category of expense between water and wastewater service is shown in the Appendix A section to this report. Further, additional expense detail by organization code for each division, section, and activity of the water and wastewater utility

Table W-5

Water Utility
Operating Fund Cash Flow Analysis

Line No.	Description	Fiscal Year Ending September 30 1998 $	1999 $	Budget Year 2000 $
	Revenues			
1	Metered Water Sales Revenue	103,832,289	107,184,453	106,964,100
2	Fire Protection Charges			0
3	Additional Water Service Revenue Required:			
	Date / Revenue Increase / Months Effective			
	0.0% / 12			0
4	Total Water Sales Revenue	103,832,289	107,184,453	106,964,100
5	Miscellaneous Revenue	1,157,918	1,950,787	1,973,100
6	Investment Income	6,269,192	4,546,801	4,188,400
7	**Total Revenues**	111,259,399	113,682,041	113,125,600
	Revenue Requirements			
8	Operation & Maintenance Expense	44,282,500	46,509,300	49,360,000
	Debt Service			
	Revenue Bonds (Net)			
9	Existing	25,400,368	28,961,467	31,336,100
10	Proposed			0
11	Total Revenue Bonds	25,400,368	28,961,467	31,336,100
	Other Debt Service			
12	Commercial Paper	2,176,329	2,143,172	3,471,700
13	Contract Bond (Net)	4,963,532	5,448,161	5,529,700
14	Cert. of Part. & Contr. Oblig.	1,554,652	1,739,725	1,713,600
15	Water District Bonds	1,226,790	2,226,533	2,196,900
16	Total Debt Service	35,321,671	40,519,058	44,248,000
	Transfer to Other Funds			
17	Payment to the City General Fund	7,827,861	8,279,203	8,720,100
18	Routine Capital Outlay	820,438	590,811	1,190,600
19	Transfer to Capital Fund	8,125,000	11,737,500	12,149,000
20	Operating Transfers	703,863	517,346	1,528,300
21	Other Transfers	11,661,839	9,605,000	125,000
22	Total Transfers	29,139,001	30,729,860	23,713,000
23	**Total Revenue Requirements**	108,743,172	117,758,218	117,321,000
24	**Excess of Revenues Over Requirements**	2,516,227	(4,076,177)	(4,195,400)
	Debt Service Coverage			
25	Revenue Bonds	2.18	1.94	1.69
26	Total Debt Service	1.88	1.65	1.41

Other water system financial obligations include transfer payments to the City General Fund, the Capital Improvement Program (CIP) Fund, other fund transfers, and payments for other water utility obligations. Transfer payments to the City General Fund are established at 8.2 percent of the average gross revenues of the water system over the current and previous two years.

The total revenue requirements for FY 2000 are indicated to total $117,321,000. It is projected that without an overall revenue increase, a $4,195,400 revenue shortfall will occur that will be met from a portion of the Utility's operating reserves.

As a policy matter, the Utility strives to maintain a minimum operating reserve for working capital purposes to pay bills when due. The targeted minimum reserve amount is established at 30 days, or approximately 8.3 percent, of annual operating and maintenance expenses plus any operating fund transfers. Accepted water industry practice is to maintain at least 45 days or 12.5 percent of a utility's annual operation and maintenance requirement to ensure sufficient funds are on hand. While not shown on Table W-5, the Utility projects that it will have sufficient operating reserves to fund the revenue deficiency shown on Line 24.

(26)

A summary of FY 2000 revenue requirements and the relative proportion that each element bears to the total is as follows:

	FY2000 Revenue Requirements	
Element	Amount	Percent
Operation and Maintenance Expense	$ 49,360,000	42.1%
Debt Service	44,248,000	37.7%
Payment to General Fund	8,720,100	7.4%
Transfer to Capital Fund	12,149,000	10.4%
Routine Capital Outlay	1,190,600	1.0%
Other Transfers/Payments	1,653,300	1.4%
Total	$117,321,000	100.0%

Revenue bond debt service coverage, shown on Lines 25 and 26, represents the relationship of system net revenue to annual revenue bond and total debt service for each year. Maintaining adequate debt service coverage is a specific requirement for having issued utility revenue bonds and provides an indication of the financial support for issuance of proposed additional water utility revenue bonds. Coverage for the Utility's outstanding revenue bonds is shown on Line 25 to range from 218 percent (2.18 ratio) in FY 1998 to 169 percent in FY 2000 under existing revenue/rate levels. Total debt service coverage is shown to range from 188 percent to 141 percent over the same period.

a given function. In order to provide adequate service to its customers at all times, the system must be capable of providing not only the average annual amount of water used, but also supplying water at maximum rates of demand. Since all customers do not exert maximum demands at the same time, capacities of the various system components are established to meet the maximum coincidental demand of all classes of customers. The capacities of some facilities, such as water treatment (purification) and high service pumping, and transmission mains are designed to meet maximum day demands. Other facilities, such as booster pumping, tanks and water storage reservoirs, and distribution mains are designed to meet maximum hourly rates of water use. These requirements result in different ratios of average to maximum demands, or load factors to be met by the various parts of the system. The demand ratios, in turn, provide the basis for allocating costs of respective facilities to the Base and Extra Capacity cost components.

Water system facilities are designed to meet peak demands projected on the basis of experienced demands. Based on an evaluation of the Utility's recent system pumpage statistics, the FY 1996 to FY 1998 year demands generally reflect the highest peaks recorded in recent years and are used to reflect the relationship of average demands to maximum demands. The system demand characteristics are:

Fiscal Year	Usage			Ratio- MD to AD	Ratio- MH to AD
	Average Day mgd	Maximum Day mgd	Maximum Hour mgd		
1995-96	125.53	195.74	298.70	1.56	2.38
1996-97	117.27	190.92	278.20	1.63	2.37
1997-98	127.18	206.37	318.40	1.62	2.50
3 Yr. Avg.	123.33	197.68	298.43	1.60	2.42

(E)

mgd – million gallons per day
MD – Maximum Day; MH – Maximum Hour; AD – Average Day

The historical 3-year average annual, maximum day, and maximum hour water demands, shown as follows, are the bases of allocation factors used in this study. Shown in the tabulation are the total system coincidental demands and the corresponding allocation percentage factors

reflects expected normalized climatic and economic conditions. Wastewater volume for all customer classes is based on a winter average approach, or the average monthly amount of water used over a 90-day period from January through March. The estimated average usage per account for the inside City residential single family customer class for FY 2000 is based on an analysis of the 1996-1998 usage and is projected to be 5,000 gallons per month

Wholesale wastewater service is provided to 10 entities that collect wastewater within their individual systems, and discharge it to Austin's conveyance system for treatment and disposal. The largest of these customers include the Wells Branch Municipal Utility District (MUD), North Austin MUD No. 1, and Springwoods MUD. Wastewater sales to wholesale customers are projected based upon recent historical contributed sales levels, and assume that the FY 2000 wastewater quantities will not appreciably deviate from recent past levels.

In recent years a statistical analysis indicates that wastewater sales have averaged under 80 percent of wastewater treatment plant flow resulting in an approximate 20 percent infiltration/inflow (I/I) rate. The difference between wastewater sales and treated wastewater flow generally reflects normal infiltration of groundwater and inflow from stormwater runoff into the sewer system. It is believed that some of the measured wastewater flows at the plants may be in error due to meter inaccuracies, while in other instances some of the data was outright missing Therefore, based on other available studies, an I/I rate of 15 percent is assumed for the purposes of this study which is well within accepted industry standards or averages under normalized conditions.

7.1.2 Wastewater Revenue Under Existing Rates

The principal revenue for Austin's wastewater system is derived from charges from wastewater sales and extra strength surcharges. For informational purposes, historical and projected wastewater sales revenue is shown in Table S-3. The projection of revenue from wastewater sales for the FY 2000 is based upon the schedule of rates that became effective November 1, 1998, and is estimated to total $101,048,800.

Projected wastewater sales revenue by customer class under existing rates for the FY 2000 is shown in Table S-4. The estimated $101 million of future wastewater sales revenue is based upon the projection of customer growth and wastewater sales volumes presented in Tables S-1 and S-2. A bill tabulation analysis of the number of bills and wastewater volumes for each of the classes for a recent period was conducted to verify the billing units to which the existing rates applied in determining the revenue estimates. Projected revenues for the inside and outside City customer classes are shown indicating that 91.5 percent and 8.5 percent of the total revenue are derived from these respective groups.

Another component of the Utility's wastewater sales revenue is derived from industrial wastewater surcharges which are estimated to total $3,570,400 in FY 2000. Other

Table S-7

Wastewater Utility
Summary of Test Year Rate Base and Depreciation Expense to be Allocated
1999-2000 Test Year

Line No.	Description	(1) Original Cost Investment $	(2) Accumulated Depreciation Reserve $	(3) Annual Depreciation $	(4) Original Cost less Accumulated Depreciation $ Col (1) - Col. (2)
1	Existing Plant in Service	895,834,500	256,629,800	25,682,800	639,204,700
2	Work in Progress	25,746,100	369,100	369,100	25,377,000
3	Subtotal (a)	921,580,600	256,998,900	26,051,900	664,581,700
4	Less: Contributions (b)	155,933,600	40,793,900	0	115,139,700
5	Net Plant Investment (Rate Base)	765,647,000	216,205,000	26,051,900	549,442,000

(a) Original cost investment as of September 30, 1998.
(b) Includes impact fees, grants, developer and customer contributions in aid of construction as of September 30, 1998.

contributed volume of each class is generally based upon wastewater winter average billing records that exclude estimated water use not reaching the wastewater system, such as that used for lawn sprinkling and car washing.

Based on a historical analysis, it is estimated that the amount of flow entering the sewers through infiltration/inflow will average about 15 percent of the total wastewater flow reaching the treatment plants. Each customer class should bear its proportionate share of the costs associated with infiltration/inflow as the wastewater system must be adequate to convey and process the total flow. Recognizing that the major cost responsibility for infiltration/inflow is allocable on an individual connection basis, two-thirds (66.7%) of the infiltration/inflow volume is allocated to customer classes based on the estimated number of customer connections with the remaining one-third (33.3%) allocated on the basis of contributed volume. The allocation of I/I on this basis to customer classes is shown on Table S-12.

The responsibility for collection system capacity cost varies with the estimated peak flow rates of both contributed wastewater and infiltration attributable to each customer class. Infiltration/inflow is estimated to comprise about 30 percent of the total peak flows.

The BOD and suspended solids responsibility of each customer class is based on estimated average domestic strength concentrations and contributed wastewater volume for each class. Estimated average BOD and suspended solids concentrations of contributed domestic sewage are estimated to be about 144 milligrams per liter (mg/l) and 200 mg/l, respectively, for all customers excluding industrial users. Because of the pretreatment efforts of these customers, their strengths are estimated to be 77 mg/l for BOD and 82 mg/l for suspended solids. An average infiltration/inflow strength allowance of 40 mg/l for BOD and 95 mg/l for suspended solids was also used to balance total wastewater loadings contributed by normal and excess strength users with the total wastewater loadings received at the wastewater treatment plants.

The BOD and suspended solids strengths that are in excess of normal domestic limits of 200 mg/l are assigned to the surcharge customer classification as shown on Line 22 of Table S-11. The estimates of excess strength quantities for surcharge customers are based on a detailed analysis of extra strength data provided by historical surcharge billings of the Utility.

Customer costs are distributed among customer classes on the basis of the number of bills rendered.

8.4.3 Customer Class Cost of Service

Costs of service are distributed among customer classes by application of unit costs of service to respective service requirements. Unit costs of service are based upon the total costs previously allocated to functional components and the total number of applicable units of service.

Table S-12

Wastewater Utility
Allocation Of Infiltration / Inflow to Customer Classes

Line No.	Customer Class	(1) Number of Accounts	(2) Customer Related I/I 1,000 gals	(3) Billable Volume 1,000 gals	(4) Volume Related I/I 1,000 gals	(5) Total I/I 1,000 gals	(6) Total Treated Volume 1,000 gals
	Inside City						
1	Residential	144,200	2,593,340	8,753,978	514,940	3,108,280	11,862,258
2	Multi-Family	4,803	86,379	5,884,751	346,162	432,541	6,317,292
3	Commercial	10,317	185,544	5,679,488	334,088	519,632	6,199,120
4	Industrial	9	162	3,992,454	234,850	235,012	4,227,466
5	Utility	10	180	18,000	1,059	1,239	19,239
6	Total Inside City	159,339	2,865,604	24,328,671	1,431,098	4,296,703	28,625,374
	Outside City						
7	Residential	1,951	35,087	118,718	6,983	42,071	160,789
8	Multi-Family	152	2,734	179,223	10,543	13,276	192,499
9	Commercial	157	2,824	241,053	14,180	17,003	258,056
10	Total Outside City Retail	2,260	40,645	538,994	31,706	72,350	611,344
	Wholesale						
11	Branch Creek Estates WSC	392	7,050	17,699	1,041	8,091	25,790
12	Brushy Creek MUD (a)	0	0	30,764	1,810	1,810	32,574
13	Fern Bluff MUD (a)	0	0	54,671	3,216	3,216	57,887
14	North Austin MUD #1	2,489	44,763	225,285	13,252	58,015	283,300
15	Northtown MUD	663	11,924	36,405	2,141	14,065	50,470
16	Rollingwood, City of	13	234	11,445	673	907	12,352
17	Shady Hollow MUD (a)	0	0	82,868	4,875	4,875	87,743
18	Springwoods MUD	1,560	28,056	148,548	8,738	36,794	185,342
19	Sunset Valley, City of	5	90	37,473	2,204	2,294	39,767
20	Wells Branch MUD - N.A.G.C.	2,823	50,770	404,820	23,813	74,583	479,403
21	Total Wholesale	7,945	142,885	1,049,978	61,763	204,649	1,254,627
22	Total System	169,544	3,049,134	25,917,643	1,524,567	4,573,702	30,491,345
23	Proportion of Total		66.7%		33.3%	100.0%	

(a) Customer with sewage flow meters not assigned customer related I/I ; accounted for in their measured flow.

Water Utility
Allocation of Net Plant Investment To Functional Cost Components
Allocation Percentages

Line No.	Description	Commun to All			Resdl Only			Meters & Services	Customer Billing	Direct Fire	Watershed Land Purchases	Contract Revenue Debt	Excess Reserve Capacity
			Extra Capacity			Extra Capacity							
		Base	Maximum Day	Maximum Hour	Base	Maximum Day	Maximum Hour						
		%	%	%	%	%	%	%	%	%	%	%	%
1	Raw Water Pumping	62.4%	37.6%										
2	Basins	62.4%	37.6%										
3	Treatment Facilities	62.4%	37.6%										
4	Pump Stations	41.4%	24.9%	33.7%									
5	Booster Stations	41.4%	24.9%	33.7%									
6	Tanks/Reservoirs	41.4%	24.9%	33.7%									
7	Transmission Mains	62.4%	37.6%										
8	Distribution Mains				41.4%	24.9%	33.7%						
9	Hydrants									100.0%			
10	Services							100.0%					
11	Meters							100.0%					
12	Land and Easements	39.2%	23.6%	3.5%	14.0%	8.4%	11.4%						
13	Watershed Land Purchases										100.0%		
14	Buildings and Equipment	37.0%	22.3%	3.3%	13.2%	7.9%	10.7%	3.8%	0.0%	1.8%			
15	Misc. Engineering	37.0%	22.3%	3.3%	13.2%	7.9%	10.7%	3.8%	0.0%	1.8%			
16	Other General Facilities	37.0%	22.3%	3.3%	13.2%	7.9%	10.7%	3.8%	0.0%	1.8%			
17	Const. Work In Progress	37.0%	22.3%	3.3%	13.2%	7.9%	10.7%	3.8%	0.0%	1.8%			
18	Total Plant												
	Less: Contributed Plant												
19	State and Federal Grants	62.4%	37.6%										
20	Impact Fees/Developer Contr.	24.7%	14.9%	2.2%	20.5%	12.4%	16.7%	4.1%		4.6%			
21	Municipality Contribution	39.2%	23.6%	3.5%	14.0%	8.4%	11.4%						
22	Net Plant Investment												

Water Utility
Allocation of Annual Depreciation Expense To Functional Cost Components
Allocation Percentages

Line No.	Description	Common to All			Retail Only			Meters & Services	Customer Billing	Direct Fire	Watershed Land Purchases	Contract Revenue Debt	Excess Reserve Capacity
			Extra Capacity			Extra Capacity							
		Base	Maximum Day	Maximum Hour	Base	Maximum Day	Maximum Hour						
		%	%	%	%	%	%	%	%	%	%	%	%
1	Raw Water Pumping	62.4%	37.6%										
2	Basins	64.0%	36.0%										
3	Treatment Facilities	62.4%	37.6%										
4	Pump Stations	41.4%	24.9%	33.7%									
5	Booster Stations	41.4%	25.0%	33.6%									
6	Tanks/Reservoirs	41.4%	24.9%	33.7%									
7	Transmission Mains	62.4%	37.6%										
8	Distribution Mains				41.4%	24.9%	33.7%						
9	Hydrants									100.0%			
10	Services							100.0%					
11	Meters							100.0%					
12	Land and Easements												
13	Buildings and Equipment	37.4%	22.6%	3.8%	10.9%	6.6%	8.9%	8.4%	0.0%	1.5%	0.0%	0.0%	0.0%
14	Misc. Engineering	37.4%	22.6%	3.8%	10.9%	6.6%	8.9%	8.5%	0.0%	1.5%	0.0%	0.0%	0.0%
15	Other General Facilities	37.4%	22.6%	3.8%	10.9%	6.6%	8.9%	8.4%	0.0%	1.5%	0.0%	0.0%	0.0%
16	Const. Work In Progress	37.4%	22.6%	3.8%	10.9%	6.6%	8.9%	8.4%	0.0%	1.5%	0.0%	0.0%	0.0%
17	Total Depreciation Expense												

Water Utility
Allocation of Operation and Maintenance Expense To Functional Cost Components
Allocation Percentages

Line No.	Description	Customer All: Base %	Customer All: Base Capacity: Maximum Day %	Customer All: Base Capacity: Maximum Hour %	Retail Only: Base %	Retail Only: Base Capacity: Maximum Day %	Retail Only: Base Capacity: Maximum Hour %	Meters & Services %	Customer Billing %	Direct Fire %	Revenue Based Allocations %
	Treatment										
	Water Treatment Plants:										
	Operations:										
1	Electrical	[illegible]	[illegible]								
2	Chemical	[illegible]									
3	Other	[illegible]	[illegible]								
4	Maintenance	[illegible]	[illegible]								
5	Subtotal Treatment Plants										
6	SCADA Operations										
7	Pump Station & Reservoir Maintenance	[illegible]	[illegible]	[illegible]							
8	Instrument & Control Maint./Electric	[illegible]	[illegible]								
9	Water Laboratory/Process Engineering	[illegible]	[illegible]								
10	Treatment Support	[illegible]	[illegible]	[illegible]							
11	Subtotal Treatment										
	Pipeline Operations & Maintenance										
12	Small Cells				[illegible]						
13	Home Connections				[illegible]						
14	South Operations	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]				
15	North Operations	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]				
16	Other Pipeline Operations & Misc.	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]			[illegible]	
17	Subtotal Pipeline Operations & M										
	Engineering and Planning										
18	Facility Engineering	[illegible]	[illegible]								
19	Pipeline Engineering	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]				
20	Other Engineering and Planning	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
21	Subtotal Engineering & Planning										
	Business Support										
22	Meter Shop							[illegible]			
23	Tap Sales and Inspection				[illegible]						
24	Retail Customer Service										
25	Other Business Support	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
26	Subtotal Business Support										
	Special Support										
27	Utility Customer Service Office										
28	Water Conservation	[illegible]									
29	Bad Debt Expense										
30	Other Special Support	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
31	Subtotal Special Support										
32	Total Operation & Maintenance Exp.										
	Less Other Operating Revenue										
33	Customer Penalties								[illegible]		
34	Interest Income	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
35	All Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
36	Subtotal										
37	Net Operating Expense										
38	Percentage of Total										

COA Treated Water Usage in Million Gallons

Month	Usage (MGD) Usage	Avg Day Usage	Max Day Usage	Max Hour Usage	Max Day to Avg Day	Max Hour to Avg Day	Rainfall inches
Oct-92	3,733	120 43	137.75	200.20	1 14	1.66	1.38
Nov-92	2,808	93 61	103.22	169 60	1.10	1.81	3.76
Dec-92	2,661	85 82	96 02	132.70	1 12	1.55	3.29
Jan-93	2,544	82.07	94.18	136.30	1.15	1.66	3.39
Feb-93	2,288	81 71	87.39	131.00	1 07	1.60	3 14
Mar-93	2,634	84 95	96.83	155 70	1.14	1 83	2 09
Apr-93	2,749	91.63	113.26	154.00	1.24	1.68	2.94
May-93	2,982	96.19	114 11	156 60	1.19	1.63	5.30
Jun-93	3,163	105.43	128 00	205.80	1 21	1.95	3.99
Jul-93	4,644	149.80	179.39	271 10	1.20	1.81	0.00
Aug-93	5,498	177.35	185 44	285.70	1.05	1.61	0.75
Sep-93	4,096	136.54	160 92	209 10	1 18	1.53	0.34
FY 92-93	**39,799**	**109.04**	**185.44**	**285.70**	**1.70**	**2.62**	**30.37**
Oct-93	3,654	117.86	144.25	217.00	1 22	1 84	2.42
Nov-93	2,755	91.83	99 95	148.20	1.09	1.61	1.00
Dec-93	2,628	84.78	93.23	137 70	1 10	1.62	1.14
Jan-94	2,650	85.47	92.99	136.40	1.09	1.60	1.43
Feb-94	2,429	86.74	94.35	135.40	1.09	1.56	2.13
Mar-94	2,731	88 09	100.34	149 30	1.14	1.69	1 70
Apr-94	3,008	100.26	119 77	167 30	1 19	1.67	1.68
May-94	3,087	99.59	116.82	171 80	1.19	1.73	3 68
Jun-94	3,723	124 11	163.37	241.50	1.32	1.85	0 74
Jul-94	5,428	175 11	196.78	295.90	1.12	1.69	0.26
Aug-94	4,255	137.26	180.35	273.00	1 31	1.99	8.50
Sep-94	3,425	114.17	144.61	197.60	1 27	1.73	5.69
FY 93-94	**39,773**	**108.97**	**196.78**	**295.90**	**1.81**	**2.72**	**30.37**
Oct-94	3,262	105 24	136.82	187 20	1.30	1 78	7.65
Nov-94	2 804	93 47	100.54	164 40	1.08	1.76	1.83
Dec-94	2,670	86 14	94.32	155.90	1.09	1 81	5.67
Jan-95	2,681	86.49	94.92	134.80	1 10	1.56	0.81
Feb-95	2,530	90.36	103.12	133.40	1.14	1.48	1 44
Mar-95	2,818	90 92	102.69	140.20	1 13	1.54	2.21
Apr-95	2,899	96.65	112.59	160.00	1.16	1 66	3.08
May-95	3,239	104 49	117.12	152.60	1 12	1.46	9.49
Jun-95	3,541	118.04	147 58	204 90	1.25	1 74	2.74
Jul-95	4,850	156 45	191 31	309.00	1.22	1.98	0.63
Aug-95	4,484	144 63	171.40	250.50	1 19	1 73	5.71
Sep-95	3,805	126.83	164.60	236.40	1.30	1.86	2.70
FY 94-95	**39,585**	**108.45**	**191.31**	**309.00**	**1.76**	**2.85**	**44.16**
Oct-95	4,075	131 45	145.62	233.30	1.11	1 77	1.43
Nov-95	3,175	105.82	116.55	164.90	1.10	1 56	3.22
Dec-95	3,079	99.32	112.43	162.70	1.13	1 64	0.51
Jan-96	3,254	104.97	122.27	172 40	1.16	1.64	0.07
Feb-96	3,352	119 73	133.56	202.30	1.12	1 69	0.62
Mar-96	3,389	109.33	127.43	176.80	1 17	1.62	0.60
Apr-96	3,733	124 42	147.07	227.80	1.18	1.83	1.90
May-96	4,517	145 72	173 61	266.80	1 19	1.83	1.82
Jun-96	3,950	131 67	165.51	253.50	1 26	1.93	4 48
Jul-96	5,265	169.82	191.99	298.70	1.13	1.76	0.15
Aug-96	4,594	148.20	195.74	282 70	1.32	1.91	8.81
Sep-96	3,436	114 54	129.60	170.80	1.13	1.49	4.02
FY 95-96	**45,819**	**125.53**	**195.74**	**298.70**	**1.56**	**2.38**	**27.63**

Month	Usage (MGD) Usage	Avg Day Usage	Max Day Usage	Max Hour Usage	Max Day to Avg. Day	Max Hour to Avg. Day	Rainfall Inches
Oct-96	3,652	117 80	132.62	183 50	1.13	1 56	0.78
Nov-96	3,162	105 39	115.14	151 70	1 09	1 44	4 13
Dec-96	3,035	97 91	106.13	146 10	1 10	1.49	2.19
Jan-97	3,082	99.41	109.94	138 20	1.11	1.39	1 07
Feb-97	2,714	96 92	111.93	149 90	1.15	1.55	3 94
Mar-97	2,892	96.51	110.87	150 20	1 15	1.56	1.58
Apr-97	3,009	100.28	115.03	159 70	1 15	1.58	5 59
May-97	3,257	105.05	117.62	162.30	1.12	1.54	7 10
Jun-97	3,269	108 97	124.29	169.90	1 14	1 56	8 97
Jul-97	5,021	161 98	190.92	278 20	1 18	1.72	2.13
Aug-97	4,867	156.99	175.21	247 50	1 12	1 58	2.34
Sep-97	4,747	158.24	184 43	255 50	1 17	1.61	1.46
FY 96-97	**42,805**	**117.27**	**190.92**	**278.20**	**1.63**	**2.37**	**41.26**
Oct-97	3,875	125.00	161.86	217.40	1.29	1 74	5.42
Nov-97	3,243	104.60	127 92	169.10	1.22	1.62	2.91
Dec-97	2,926	94.38	102.86	146.20	1 09	1.55	4.46
Jan-98	2,882	92 96	98.24	151 80	1 06	1.63	2.67
Feb-98	2,582	92.22	97.53	152.00	1.06	1.65	3.26
Mar-98	3,001	96.80	108.88	197.20	1.12	2.04	3.07
Apr-98	3,485	116.15	140.38	246 70	1.21	2.12	0.76
May-98	4,736	152 78	177 45	305 10	1 16	2 00	0.73
Jun-98	5,214	173.81	202 44	318 40	1 16	1 83	1.56
Jul-98	5,549	178 99	206.25	311 30	1 15	1 74	0.90
Aug-98	4,878	157.36	206 37	314 70	1 31	2 00	1.39
Sep-98	4,049	130 63	176.47	249.80	1.35	1.91	5.76
FY 97-98	**46,420**	**127.18**	**206.37**	**318.40**	**1.62**	**2.50**	**33.91**

Notes:

1) Information provided by B & V - obtained from COA

2) Usage = treated water delivered to the distribution system

3) Pumpage = total of all water treatment plant pumpage

4) Rainfall from Robert Mueller Municipal Airport

Austin Water Utility
Contract Revenue Bond Debt Service

Line No	CRB Description	Budget Year 2000
		$
1	Circle C MUD #3	962,384
2	Circle C MUD #3 Assumed	161,831
3	Circle C MUD #4	0
4	Circle C MUD #4 Assumed	0
5	Maple Run MUD	1,388,658
6	Maple Run MUD Assumed	248,331
7	North Austin MUD	0
8	North Austin MUD Assumed	0
9	Southland Oaks MUD	704,065
10	Southland Oaks MUD Assumed	36,277
11	Tanglewood MUD	114,281
12	Tanglewood MUD Assumed	37,084
13	Village at W.O. MUD	1,507,636
14	Village at W.O. MUD Assumed	263,969
15	Wells Branch MUD	105,220
16	Wells Branch MUD Assumed	0
17	Unused	0
18	Total CRB Debt Service	5,529,736

Exh 5 - 1999 IP (2) √(E)

components of required revenue in the cost of service study. By making it easier for people to identify specific revenue items, it gives ratepayers greater confidence that the cost of service process is open and fair. In addition, because specific revenue components can be more easily identified, items of disagreement can more easily be discussed and debated.

The cash basis approach continues to treat outside city customers in the same manner – requiring those customers to bear the risks and rewards of ownership – as in the past. Conversion to the utility method would require charging outside-city users a return on investment on ownership risks that the city has previously shared with those users.

The cash basis avoids the inherent controversy of determining the appropriate, higher rate of return for outside city customers than for inside city customers.

Conclusion on Revenue Basis: On the basis of the (conceptual) discussion to date, the cash basis is the clear choice over the utility basis. However, the Rate Advocate recommends that the COS study be performed on both cash and utility bases to allow PIC members to better understand the impacts of this decision on COS issues.

The choice presented to the PIC has been whether to study the cash basis or the utility basis. The Rate Advocate believes that such a choice is unnecessary and undesirable. As described by the COS consultant, the utility basis appears to require more extensive work than the cash basis. Creating a cash basis revenue requirement alternative computer model should not be overly burdensome. Moreover, a new COS study is done very infrequently and at a significant cost to utility consumers. The opportunity to perform a thorough analysis of the choice between cash and utility bases in this COS study seems to amply justify the COS consultant's time

Test Year:

Consultant Recommendation: Use Projected or Budgeted test year

Searcy Willis, Multifamily:

I agree with the recommendation made by the rate consultant on this issue.

There is absolutely no reason to use a historical test year, unless the City desires to have each customer class scrutinize the budget (which is already approved). To reinvent the wheel by in effect reconciling between some audited historical period to the current budget would be pointless. I suppose that any customer class has the right to participate in the budget process, but to second guess an existing budget would imply that the City would have to revise the budget if costs were disapproved.

Donna Howe, Wholesale:

I believe we should follow a historical test year, not the projected test year.

I. **Test Year**

As a outside observer, this seems a confusing topic If, as was stated, there was no difference in outcomes, why would the city not wish to choose the method that has the least amount of controversy. Section 2.1.1 in the issue paper states that "because there is no profit motive, there is no obvious reason why the utility would

want to overstate its revenue requirements. In fact, city councils generally attempt to minimize costs in order to limit rate increases. This is a very common political goal, which effectively limits the potential for unreasonably high revenue requirements."

Yet in Austin, this does not appear to be the case. With a policy decision to keep In-City residential customers at a seven year average of 28.8% below Cost of Service, there is a sufficient motive to overstate revenue requirements for other customer classes. In the last seven years, how often have the utility budgeted revenue requirements been challenged during the budget process? I doubt the record will show any credible and meaningful discussion on water utility revenue requirements during the budget public hearings or council debate to pass the utility budget and rates.

In Texas, an historical test year is used in determining rates for investor owned utilities. Adjustments are permitted for known and measurable changes. However, as indicated by Mr. Willis, these adjustments are subjected to a high level of scrutiny. It is unreasonable to assume that the standard used to adjust historical cost in the process of preparing the City budget is the same standard that would be applied in a regulatory review. If rates are to be determined on a utility basis, the appropriate starting point is an historical test year. Each adjustment to historical costs and revenues needs to be explained and documented.

II. Recommendation

A change in cost of service methods will inevitably shift costs among customer classes, and may shift costs within the wholesale class. The City should provide both a cash/budget analysis and a utility/historical test year analysis. Both analyses are required in order to assure wholesale customers that the ratemaking process is not being manipulated

Michael Bamer, Wholesale:

I do not agree with the recommendation made by the rate consultant on this issue.

The reasons I oppose the recommendation of the rate consultant are as follows:

Using the historical test year adjusted for known and measurable changes is, in my opinion, the only practical and defensible methodology. It provides a stronger foundation and is more difficult to misuse than a projected test year. Using a projected test year is an incentive for the Utility to overstate its revenue requirements. (Which it consistently does even now)

I feel confident and I am sure I speak for the entire wholesale class when I say "So far this process is looking like a total reversal of the 1992 Cost of Service report and policy. Needless to say, it will be impossible to build any consensus and support for this new study. In order for me to sell it to my colleagues, I must first believe in it myself. From what I have seen so far, this appears to be the first phase of a systematic destruction of a policy that we, the Wholesale Customers, have come to accept as reasonable. I do hope you are able to reverse my early observation and opinion to this point." (2)

Joe Vickers, Outside City Residential:

I agree with the recommendation made by the rate consultant on this issue.

'The Perfect Storm':

Setting priorities at the Austin Water Utility in a time of fiscal crisis

By Scott Henson

June 9, 2010

'The Perfect Storm': Setting priorities at the Austin Water Utility in a time of fiscal crisis

BY SCOTT HENSON

Executive Summary

Austinites are using less water per capita Conservation is working. That should be cause for celebration. Saving water saves ratepayer money. It also means lower energy use and lawn-chemical consumption.

But at the Austin Water Utility (AWU) they're calling it a "Perfect Storm" of disaster because if people use less water, AWU won't generate enough revenue to pay for Water Treatment Plant 4 (WTP4), not to mention long-overdue maintenance costs This analysis by the Save Our Springs Alliance demonstrates that residential water rates could nearly double if the City continues along its present path

In the book and movie, "The Perfect Storm," a fishing boat captain (played on the big screen by George Clooney) steered his ship directly into the tempest in search of a big catch and everyone died. So city staff's use of the dire term is instructive. Like the sea captain in the story, AWU has recommended that the City Council charge ahead with WTP4 – costing ratepayers $1.2 billion over the life of the project - regardless of the fiscal danger. But this is not a movie. Austin families can't afford large rate hikes during a recession and the City has alternatives to this expensive boondoggle.

Just last month AWU officials informed the City Council of an expected $43.2 million revenue shortfall in FY 2010 due to lower than projected water sales. The water utility's revenue model had somehow failed to predict the "perfect storm" of reduced water use by residences and businesses due to rain and conservation. If current reduced water sales levels persist, Austin could be required to nearly double residential water rates by 2015, mostly to pay for the Water Treatment Plant #4.

Despite years of controversy and debate surrounding the project, residential rate payers have never been given a realistic estimate of WTP4's hit to consumer pocketbooks, particularly when combined with other ongoing debt-funded projects and the City Council's unpublicized decision to shift water-rate burdens from commercial to residential customers. This report attempts to quantify these global residential rate impacts.

Investment in WTP4 has been touted as Austin's "stimulus" for the local business community, albeit one financed by local rate payers instead of the federal government.[1] But Austin could also add jobs – real, long-term jobs - by repairing massive leaks in our existing water system—leaks that allow nearly 10 million gallons of water a day to just seep into the ground. It could and should also invest in "green jobs" in water conservation and efficiency that would pay long-term dividends while drought-proofing our economy

Recommendations:

- Estimate proposed rate increases based on data that includes implementation of new water conservation goals and the 2008 cost-of-service study, then tell residential rate payers exactly what their overall rate hikes will be through 2015.
- Constructing expensive new infrastructure while simultaneously shifting costs from commercial to residential customers puts too high a burden on residential water customers. Put off new construction until the cost-of-service adjustments are complete to avoid piling onto residential rate payers all at once.
- Before beginning construction on WTP4, evaluate cheaper plant options that would replace the decommissioned "Green Water Treatment plant" with a new plant located in the Desired Development Zone and drawing water from Lady Bird Lake.
- Continue to implement water conservation, including aggressive, summertime lawn watering restrictions, to limit peak-day water use and achieve recently adopted city-wide conservation goals
- Prioritize fixing leaky pipes over a new intake for new revenue bond indebtedness so that millions of gallons of water aren't uselessly seeping into the ground each day

Introduction: The Perfect Storm and Austin Water Rates

At a recent meeting of the Water-Wastewater Commission Budget Subcommittee, Austin Water Utility (AWU) officials told commissioners they were experiencing a "Perfect Storm" of reduced water sales and income because of recent rain, the effects of conservation programs, and the economic downturn. Revenues are down more than 10% and AWU expects to take in $43.2 million less this fiscal year than they'd budgeted. If, in that environment, the Austin City Council moves forward with construction of Water Treatment Plant 4, as they are scheduled to do at their meeting on Thursday, June 10, there's every reason to believe they'll be steering residential ratepayers into a hurricane of future water-rate hikes.

Austin homeowners already face large, projected rate hikes to pay for Water Treatment Plant #4, and if this "Perfect Storm" continues, they will be much larger than anyone has so far admitted. In 2009, the City of Austin began a series of multi-year water rate hikes aimed in large part at paying for the WTP4 project – dubbed the Billion Dollar Mistake on the Lake by local environmental groups – with its massive, miles-long tunnels under the Balcones Canyonlands Preserve. AWU has suggested raising rates continuously over six years beginning with a 10.1% residential rate increase approved and implemented last fall. But public discussions of rate hikes have *largely failed to consider the disparate impact on residential ratepayers*, and they certainly don't take into account AWU's new revenue reality in the short-to-medium term. If the utility sells less water and has the same debts to pay, they must charge consumers more per unit of water.

Projected Homeowner Water Rate Hikes Already Onerous

For residential consumers, proposed increases in the cost of water will rise much faster in the near future than implied by aggregated estimates from the utility.

AWU says that combined water-wastewater rates increased 4.5% overall in the FY 2010 budget, but that number is deceiving because residential customers took the brunt of the increase, witnessing a 10.1% boost in single-family residential water rates.[3]

The disparate impact on homeowners results from a city-sponsored cost of service study[4] which placed Austin on a multi-year path toward shifting rate burdens from commercial and wholesale customers to residential users. AWU plans "to continue to phase out the remainder of the water rate subsidy of the residential customer class over the next 5-7 years,"[4] meaning similar adjustments can be projected going forward.

Table 1 shows the aggregated "combined" water and wastewater rate increases for all classes suggested by AWU recently to the Budget Subcommittee of Austin's Water-Wastewater Commission[5].

Table 1: Projected Combined Water Rate Hikes (2010 – 2015)

	2010	2011	2012	2013	2014	2015	Total
Water	5.70%	6.80%	5.50%	6 60%	5.70%	2.50%	34.19%
Wastewater	3.30%	2%	3.50%	4.30%	3.10%	2.50%	20 20%
Combined	4.50%	4.50%	4.50%	5.50%	4.50%	2.50%	28.96%

On its face, that results in a 28.96% overall increase. However, residential ratepayers took the brunt of the hit in the first year, seeing their water rates increase by 10.1%, not 5.7%. So residential water rates went up 77% more than the averaged amount because of the shift in burden from commercial and wholesale customers. If residential rates increase disproportionately over the next five years at the same rate as in last year's budget, then logically residential increases will be higher than "combined" rate increases. How much higher? Assuming the shift in burden continues at the same pace as in 2010[6], here are the projected residential water-rate increases over the same period:

Table 2: Residential Rate Hikes Including Cost of Service Adjustment (2010 - 2015)

	2010	2011	2012	2013	2014	2015	Total
Residential Water	10.10%	12.05%	9.75%	11.69%	10.10%	4.43%	73.82%

So between overall rate hikes and the shift in burden from industrial to residential ratepayers, Austin homeowners could see a 74% rate increase over this period – a number city staff have scrupulously avoided estimating by projecting forward only "combined" increases instead of including details about the cost-of-service reallocations.

AWU Revenue Models Flawed, Over-Optimistic

No one has told Austin's residential water consumers their rates are scheduled to rise as much as 74% to pay for cost reallocations and Water Treatment Plant 4, but that's already in the works. On top of that, the utility based those rates on the assumption that people would buy more water than has generally turned out to be the case.

The bonded indebtedness to pay for Water Treatment Plant 4 and other AWU projects is secured by revenues from AWU water sales,[7] which are the only available revenue source to pay off the debt. If water sales don't meet projected levels, bondholders can force the City to raise rates through a writ of mandamus,[8] or bond houses might lower the ratings on City of Austin debt. Houston this year increased their combined water wastewater rates by 30% because of an expanding bond-debt burden. Reported the Houston Chronicle, "Had [Houston] failed to raise rates, many noted, the system likely would face a

downgrade in its debt, increasing costs and leading the city to continue running a deficit in the water-sewer utility. This year that shortfall is expected to exceed $100 million."[9]

Austin could easily find itself in the same situation. AWU's assumptions underlying the written solicitation of bond debt for Water Treatment Plant 4 anticipate water sales and revenue rising indefinitely, but this year's revenue decline belies those assumptions. AWU's projected $43.2 million shortfall demonstrates what happens when conservation combines with higher rainfall levels, a development that took AWU budget officials by surprise.

AWU's budget and financial manager Rusty Cobern recently told an industry publication that "Rising conservation has contributed to revenue volatility at AWU" explaining that "We would have expected a revenue windfall during the [recent] drought" but that didn't happen. He concluded that "Aggressive conservation pricing models can eliminate windfall opportunities."[10]

So if AWU's revenue model failed to predict the current shortfall, projecting just one year into the future, how firmly can we rely on their projections several years out? If current, lower usage levels persist into the future, thanks to expanded conservation and/or the alleviation of record drought conditions, rates must increase even more.

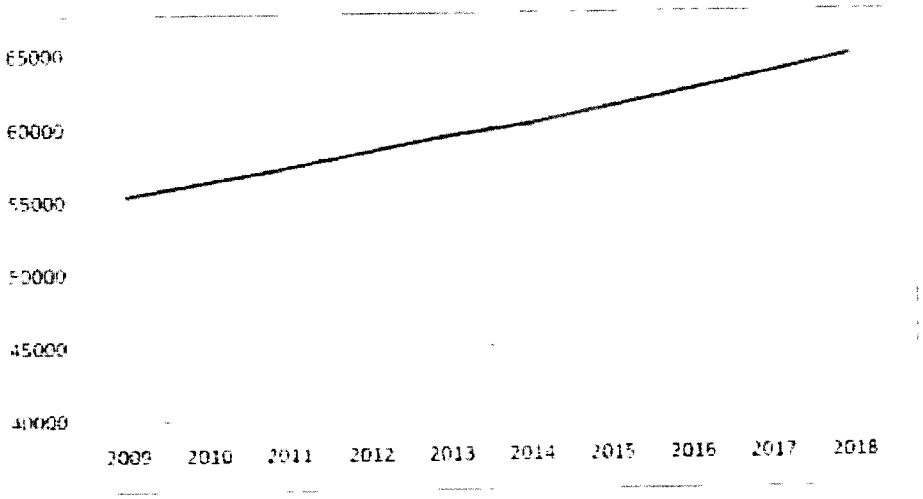
Austin recently adopted aggressive new water conservation goals which, upon implementation, will significantly reduce the total amount of water sold. Water-demand projections presented to the City Council in 2009 showing the need for WTP4 assumed Austinites would use 162 gallons per capita per day (gpcd) in 2020.[11] On May 13, 2010, the Austin City Council approved conservation goals aiming to reduce water use to 140 gpcp by 2020[12], thereby also reducing the volume of water sold and thus the revenue available to pay for Water Treatment Plant 4. What's more, single-family residential water use per account has been declining, from a high of 10,258 gallons per month in 1999-2000 to 6,287 gallons in the 2008-2009 Fiscal Year.[13]

Overestimating Water Sales

These trends create a dilemma if WTP4 is constructed. If water use doesn't increase steadily, then even the already-high projected rate hikes described above probably underestimate the amount AWU needs to cover WTP4-related debt, which will cost ratepayers $1.2 billion including interest. AWU's projected shortfall in the current fiscal year is 10.2% of projected revenue. The utility has sufficient reserves to cover that amount for one year[14], but going forward if the situation continues, rates must increase even higher. In that case, instead of a 74% rate increase by 2015 for homeowners, *93.6% would be required*.[15] Rates could go up even further depending on how badly AWU has overestimated future water use (and/or underestimated the cost of WTP4)

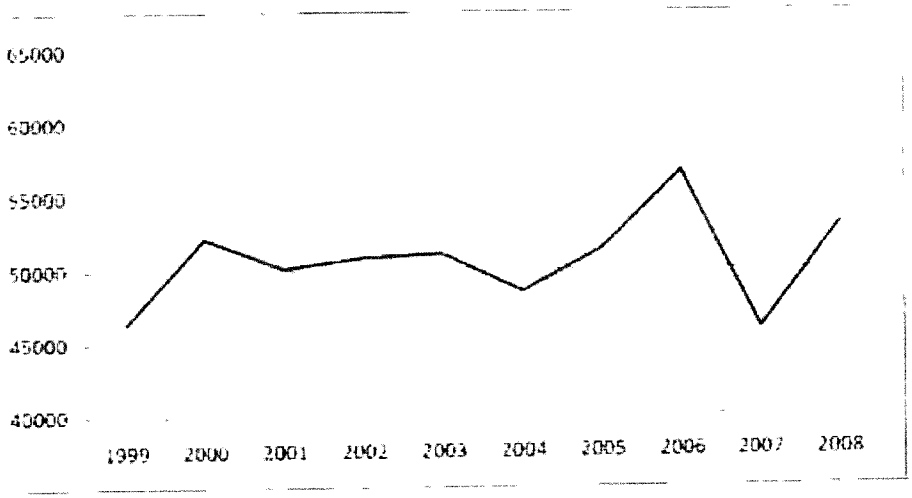
Using data derived from the bond prospectus associated with WTP4[16], Chart 1 depicts the increases in total pumpage AWU told bondholders will occur to generate sufficient revenue to pay its debt:

Chart 1. Projected Total AWU Pumpage: 2009 - 2018



These projections certainly don't jibe with a $43 2 million dip in 2010 water sales, but the trend also seems unrealistic compared to actual total pumpage data from the past decade, as reported by the City in the same source. According to the data depicted in Chart 1, AWU believes total pumpage will increase steadily over time. But that contradicts the City's recent experience, even during a period marked by dramatic economic and population growth, depicted in Chart 2:

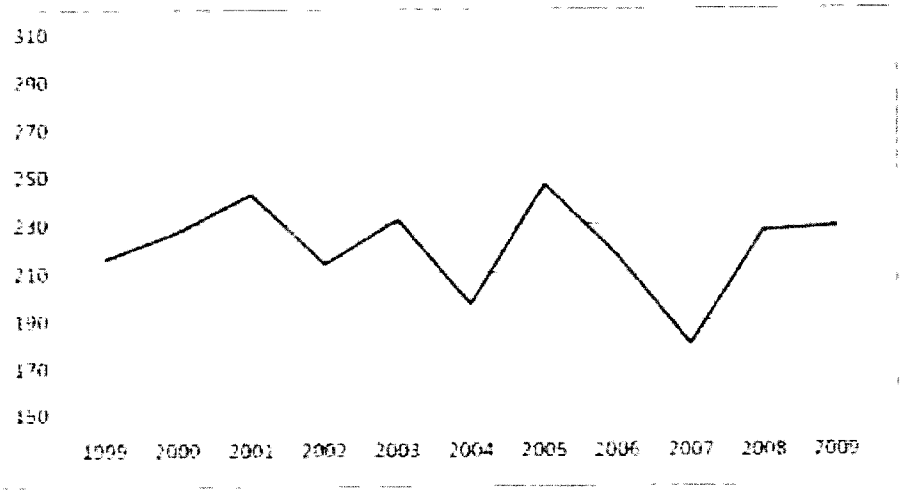
Chart 2. Total AWU Annual Pumpage: 1999 – 2008



AWU has consistently overestimated Austinites' water use to project demand for water treatment facilities that never materialized. In 2002, when the Austin City Council first authorized hiring Carollo

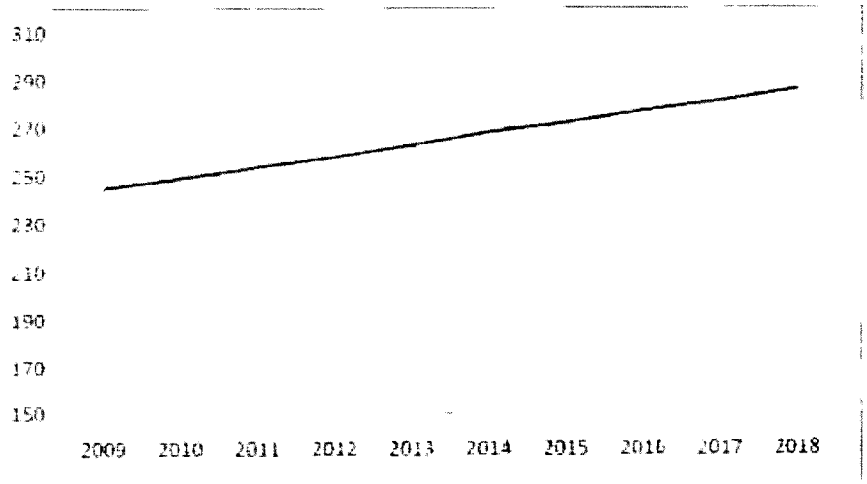
Engineering for the WTP4 project, AWU staff estimated that Austin's peak summer water use would reach 281 million gallons per day (mgd) by 2009 [17] That turned out to be a dramatic overestimate. Chart 3 shows the actual peak use over this period:

Chart 3. Actual Peak Water Use Per Day 1999 - 2009



Even so, similar to its overall pumpage projections, AWU told bondholders that peak use will climb steadily in the near future despite these recent, countervailing trends:

Chart 4. Projected Peak Water Use Per Day: 2009 – 2018



Given the inflated estimates from 2002, there's little reason to believe from recent experience that the steep upward curve depicted to bondholders represents a realistic expectation of real world events. These exceedingly optimistic "forward looking statements" assume current revenue shortfalls are an anomaly and future water sales will increase at steady, predictable rates. However, AWU's long-term projections have been consistently overstated, while conservation has proven to work

Bottom line: Several situations could conceivably cause water rates to rise much higher than AWU officials have so far projected, including successful conservation efforts, more rain, and a real property glut that has reduced the number of new residential and commercial hookups. By contrast, as AWU's Mr. Cobern noted, summertime conservation measures – particularly restrictions on lawn watering – have eliminated "windfall opportunities" from higher summer water use that AWU previously anticipated. So if water sales aren't as high as AWU optimistically projected, the utility must either increase rates or reduce the General Fund transfer from the utility (which this fiscal year runs about $29 million[28]) and make up the difference with property tax increases

Steering the AWU Away from the Perfect Storm

The Austin environmental community has argued that AWU should wait before launching WTP4 to perform necessary environmental assessments of the transmission lines, save money in the short-term, and to determine before borrowing a half-billion dollars whether conservation measures could forestall new construction even longer. Now, facing unprecedented revenue shortfalls , lower water use through conservation, and this so-called "Perfect Storm," the logic of environmentalists' argument resonates even more strongly.

Any average Austinite whose income is declining would think twice about purchasing an expensive new home that commits the family to high, ongoing debt payments, but that's how AWU suggests Austin respond in the face of its current, unexpected decline in revenue.

The "Perfect Storm" behind lower 2010 water revenues stems primarily from three sources, according to AWU: New conservation measures, the end of the recent record setting drought, and the current economic downturn Of those, the conservation measures aren't going away, some years will inevitably be rainier than others, and even though Austin's economy remains better than most, few believe the effects of the economic crunch will be over anytime soon. Meanwhile, conservation measures have eliminated opportunities for revenue "windfalls" the utility previously expected during periods of drought

So this isn't necessarily a temporary condition; some or all of these situations may continue for some time, making now the worst possible moment for AWU to take on large amounts of new, rate-secured debt

The Perfect Storm: *Setting priorities at the Austin Water Utility in a time of fiscal crisis*, June 9, 2010

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Misplaced Priorities: Fix Leaky Pipes Instead of Building New Intake

In the meantime, AWU continues to put off critical maintenance on older water lines in the central city which are responsible for leaks that drain billions of gallons of water per year from the system. The city parks department recently announced it would stop building new facilities until it could afford to pay for maintenance on the ones it already has[19], but AWU has not yet learned that basic lesson of fiscal prudence in lean economic times.

Some have argued for WTP4 based on the jobs created through a large, debt-financed public works project. AWU Director Greg Meszaros even said he considered WTP4 a "local stimulus" project that would create thousands of short-term jobs[20], though in this case ratepayers, not the Obama Administration, will pick up the tab. But if Austin wants to create jobs through AWU, it's focused on the wrong project.

According to the City Auditor, AWU lost 9.85 million gallons of water per day in 2007 through leaky pipes which have never been fixed.[21] That's 3.5 billion gallons of water per year the City just allows to seep into the ground. It makes little sense to build 50 mgd in new capacity while letting nearly 10 mgd leak out of the system every day.

Responding last summer to questions submitted by Councilmember Bill Spelman, AWU revealed that out of 3,600 miles of pipe that it operates, 900 miles are deteriorated and there are 250 miles of "highly deteriorated" pipe where the majority of leaks are located.[22] During a cold snap in January, reported the Austin Chronicle, those old cast-iron sections of the system accounted for 91% of water main breaks.[23]

No water system is leak-proof, but the City could start by fixing the 250 miles of identifiably deteriorated pipe, a task which would cost $330 million, city staff told Councilmember Spelman. That's a significant amount which would require a nine-figure bond issue, not to mention generating employment lasting many years beyond WTP4's scheduled construction. But that's not where AWU's priorities lie. Instead AWU plans to spend just $81.8 million fixing leaks over the next five years, AWU told Spelman, by which time even more pipe will inevitably deteriorate.

The Water Utility's "Perfect Storm" was easily predicted. Both peak-day and total water use have been flat to slightly declining since 2001. Per-household use is down. Both residents and businesses are saving water and saving money. These trends will likely continue. Rather than increase the damage to ratepayers and the environment, it's time for a midcourse correction and a return to safe harbor.

Recommendations:

The Save Our Springs Alliance offers these common-sense recommendations in the face of AWU's mounting fiscal crisis and misplaced priorities:

- Estimate proposed rate increases based on data that includes implementation of new water conservation goals and the 2008 cost-of-service study, then tell residential rate payers exactly what their overall rate hikes will be through 2015.
- Constructing expensive new infrastructure while simultaneously shifting costs from commercial to residential customers puts too high a burden on residential water customers. Put off new construction until the cost-of-service adjustments are complete to avoid piling onto residential rate payers all at once.
- Before beginning construction on WTP4, evaluate cheaper plant options that would replace the decommissioned "Green Water Treatment plant" with a new plant located in the Desired Development Zone and drawing water from Lady Bird Lake.
- Continue to implement water conservation, including aggressive, summertime lawn watering restrictions, to limit peak-day water use and achieve recently adopted city-wide conservation goals.
- Prioritize fixing leaky pipes over a new intake for new revenue bond indebtedness so that millions of gallons of water aren't uselessly seeping into the ground each day.

Appendix: The following data associated with the charts in this report was taken from the City of Austin Bond Prospectus dated November 5, 2009, p 21.

Data for Chart 1: Projected total annual pumpage (in millions of gallons)

2009	55,385
2010	56,289
2011	57,270
2012	58,301
2013	59,350
2014	60,155
2015	61,242
2016	62,349
2017	63,477
2018	64,624

Data for Chart 2: Historic Annual Pumpage (in millions of gallons)

1999	46,422
2000	52,194
2001	50,140
2002	50,883
2003	51,111
2004	48,469
2005	51,374
2006	56,603
2007	45,868
2008	53,066

Data for Chart 3: Historial Annual Peak Day Use (in millions of gallons per day)

1999	216
2000	227
2001	243
2002	214
2003	232
2004	197
2005	247
2006	217
2007	180
2008	227
2009	229

Data for Chart 4: Projected Peak Use (in million of gallons per day)

2009	245
2010	249
2011	254
2012	258
2013	263
2014	268
2015	272
2016	277
2017	281
2018	286

Note: This documented was edited June 10 to correct non-substantive typographical and editing errors

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ENDNOTES:

[i] Also unlike the federal stimulus, Austin ratepayers will see immediate rate increases to pay for it while debt accrued in Washington can be put off until future generations

[ii] "2009-2010 PROPOSED BUDGET RESPONSE TO REQUEST FOR INFORMATION," Response to City Councilmember Chris Riley. Request #30, September 9, 2009

[iii] Study Report. Austin Water Utility Cost of Service Rate Study 2008, Red Oak Consulting

[iv] Backup material for Water-Wastewater commissioners provided to the author by city staff from the June 3 meeting of the Budget Subcommittee

[v] Ibid

[vi] All projections are within the 5-7 year period during which AWU says it will shift its cost-of-service allocations.

[vii] "Utility bills likely to increase," City and County Beat Blog, Austin American Statesman, April 28, 2010.

[viii] Bond Prospectus, "Official Statement," Dated November 5, 2009, p. 14

[ix] "Water-sewer rates to climb 30% over next three years," Houston Chronicle, April 22, 2010.

[x] "US Urban Residents Cut Water Usage, Utilities Are Forced to Raise Prices," Circle of Blue WaterNews, April 19, 2010.

[xi] Spreadsheet obtained under the Public Information Act from the Austin Water Utility by Bill Bunch, October 2009.

[13] Austin City Council Agenda Item 35, May 13, 2010. The "Fiscal Memo" accompanying the agenda item stated the financial impact to the Austin Water Utility is "unknown" beyond the need to hire more conservation personnel, but the fiscal impact of selling less water is clear from the 2010 revenue shortfall. AWU will receive less revenue than would otherwise be anticipated

[14] Backup material for Water-Wastewater commissioners provided to the author by city staff from the June 3 meeting of the Budget Subcommittee. "Historical & Projected Accounts (FY Average)"

[15] Backup material for Water-Wastewater commissioners provided to the author by city staff from the June 3 meeting of the Budget Subcommittee.

[16] Assume from the calculation in Table 2 that the amount required to pay off WTP4 debt and other obligations is 1.7382 times the 2009 rate, or a 73.82% increase for residential ratepayers from pre-WTP4 rates at projected levels of use. Now assume water sales continue to underperform compared to AWU projections, currently revenues are at 89.78% of projected amounts. If lower water use and sales continue along these lines, to achieve the same revenue level will require a rate equal to 1.7382/.8978, or a 93.6% overall rate increase from 2009 levels

[17] Bond Prospectus, "Official Statement," Dated November 5, 2009, p. 21

[18] "Recommendation for Council Action," Backup material, Austin City Council, Agenda Item 32, 4/4/02

[19] Really an extra $ 28,967,464," according to backup material for Water-Wastewater commissioners provided to the author by city staff from the June 3 meeting of the Budget Subcommittee

[20] "Parks and Rec: If you build it," Austin Chronicle, May 28, 2010. Said PARD director Sara Hensley, ""We have to say we can't build it if we can't maintain it."

[21] Comments recorded in author's notes from a public meeting April 20 at Concordia University

[22] Office of the City Auditor, "Audit Report: Austin Water Utility Water Loss," April 28, 2009

[23] Memorandum to Councilmember Bill Spelman from Assistant City Manager Rudy Garza, "Response to WTP4 questions," July 22, 2009, pp. 10-11

[24] "Frozen Assets: AWU and the Busted Pipes," Austin Chronicle, January 22, 2010

	Co Asset No	Acq Date	Description	[redacted]
WTP #4	200810000018392	1/10/2008	LAND-N RANCH ROAD 620 (GAX08010908427)	32,034,370.10
WTP #4	198700000139960	6/1/1987	WTP #4 CONST BOWMAN TRACT	5,855,081.70
WTP #4	198500000139820	11/1/1985	WATER TREATMENT PLT #4 BOWMA	5,067,100.07
WTP #4	2005UP000111160	30/9/2006	WTP#4 DESIGN	4,737,561.23
WTP #4	198600000139950	11/1/1986	WTP #4 CONST BOWMAN TRACT	3,805,818.90
WTP #4	199800000147190	30/9/1998	WTP #4/TRANS MAIN PH7-TUNNEL	4,707,087.63
WTP #4	198400000139810	11/1/1984	WATER TREATMENT PLANT #4	2,651,523.05
WTP #4	2005UP000111160	10/1/2005	WTP#4 DESIGN	3,276,582.64
WTP #4	198700000140220	12/1/1987	WATER TRMT PLT #4/LIME CRK R	2,100,000.00
WTP #4	199800000147200	30/9/1998	WTP #4/TRANS MAIN PH6-TUNNEL	2,568,397.88
WTP #4	199800000153620	30/9/1998	RIVERPLACE TO WTP #4-STREET	2,418,372.09
WTP #4	199800000158690	30/9/1998	WTP #4/TRANS MAIN PH6-LINES	3,425,861.02
WTP #4	199800000158660	30/9/1998	WTP #4/TRANS MAIN PH7-LINES	3,132,653.73
WTP #4	199800000158630	30/9/1998	WTP #4/TRANS MAIN PH5-LINES	3,085,879.89
WTP #4	201010000035621	8/1/2010	WTP4 BULLICK HOLLOW ROAD	973,144.69
WTP #4	199800000158730	30/9/1998	WTP #4/36" TRANSMISSION MAIN	1,637,758.91
WTP #4	198700000154660	9/1/1987	WATER TREATMENT PLANT #4 ENG	1,497,612.25
WTP #4	199800000153610	30/9/1998	WTP #4/36" TRANSM MAIN-DR IM	561,807.07
WTP #4	198600000139940	2/1/1986	WTP #4 RAW WATER TUN COMANCH	382,605.00
WTP #4	200910000028359	16/4/2009	WTP #4 PERIMETER FENCE	367,614.65
WTP #4	199800000158640	30/9/1998	WTP #4/TRANS MAIN PH5-VALVES	643,758.59
WTP #4	199800000153600	30/9/1998	WTP #4/TRANS MAIN PH6-IMP TO	430,871.05
WTP #4	199800000158770	30/9/1998	WTP #4/36" TRANSM MAIN-DRNG	552,572.17
WTP #4	199800000153590	30/9/1998	WTP #4/TRANS MAIN PH7-IMP TO	218,457.07
WTP #4	199800000158730	10/1/2002	WTP #4/36" TRANSMISSION MAIN	136,025.20
WTP #4	198700000140200	4/1/1987	WTP #4 NW TRNS MN-OLD LMPSAS	82,100.00
WTP #4	199800000158700	30/9/1998	WTP #4/TRANS MAIN PH6-VALVES	166,724.03
WTP #4	199800000153630	30/9/1998	WTP #4/STREET-CURB INLETS	113,331.06
WTP #4	199800000158650	30/9/1998	WTP #4/TRANS MAIN PH5-MANHOL	159,886.49
WTP #4	198800000143690	12/1/1988	WTP#4 -DEPOSIT CAUSE#1642	65,216.00
WTP #4	199800000158740	30/9/1998	WTP #4/36" TRANSMISSION MAIN	105,960.28

WTP #4	199800000158670	30/9/1998	WTP #4/TRANS MAIN PH7-VALVES	105,788.27
WTP #4	199800000158680	30/9/1998	WTP #4/TRANS MAIN PH7-MANHOL	79,126.18
WTP #4	198800000143580	7/1/1988	WTP #4/HWY620/WATERLINE ESMN	35,049.00
WTP #4	198800000143590	7/1/1988	WTP #4/RM 620/WATERLN ESMNT	30,708.00
WTP #4	199800000158720	30/9/1998	WTP #4/TRANS MAIN PH6-FIRE H	51,087.99
WTP #4	198800000143680	12/1/1988	WTP#4 DEPOSIT-CAUSE#1643	22,745.00
WTP #4	198800000143640	9/1/1988	WTP#4 ESMNT	20,000.00
WTP #4	199800000158750	30/9/1998	WTP #4/36" TRANSM MAIN-MANHO	34,230.68
WTP #4	199800000158760	30/9/1998	WTP #4/36" TRANS MAIN-FIRE H	30,790.41
WTP #4	200910000028483	10/1/2008	WTP #4 PRE DESIGN STUDY	17,535.69
WTP #4	198800000143560	6/1/1988	WTP #4/RR620 N/WATERLINE ESM	11,211.00
WTP #4	198800000143610	8/1/1988	WTP #4 W ESMNT NWB""	9,767.00
WTP #4	198800000143550	6/1/1988	WTP #4/W ESMNT NW B"/RM620"	8,189.00
WTP #4	198600000144060	8/1/1986	WTP #4-RAW WATER TUN HWY 620	7,500.00
WTP #4	198800000139730	9/1/1988	WTP#4 APPRAISAL OF TRACT	7,500.00
WTP #4	199800000147210	30/9/1998	WTP #4/STREET-CONTROL STRUCT	9,288.73
WTP #4	198800000143570	6/1/1988	WTP #4/RM 620/WATERLINE ESMN	6,323.00
WTP #4	198600000143950	6/1/1986	WTP #4 RAW WATER TUNNEL ACQU	5,047.83
WTP #4	198600000143970	7/1/1986	WTP #4 RAW WATER TUNNEL ACQU	4,425.00
WTP #4	198600000144040	7/1/1986	WTP#4 RAW WATER TUN ZIMMERMA	4,000.00
WTP #4	198700000153240	3/1/1987	WTP #4-INSTALL CHAIN LINK FE	7,472.40
WTP #4	198600000144020	5/1/1986	WTP #4 RAW WATER TUN ZIMMERM	3,200.00
WTP #4	199800000158710	30/9/1998	WTP #4/TRANS MAIN PH6-MANHOL	5,865.66
WTP #4	198600000143940	2/1/1986	WTP #4 ACQUISITION-SERVICES-	2,930.00
WTP #4	198600000143960	5/1/1986	WTP #4 WATER TUNNEL ACQUISIT	2,556.25
WTP #4	198600000144010	8/1/1986	WTP#4 RAW WATER TUN ZIMMERMA	2,410.00
WTP #4	198800000143700	12/1/1988	WTP#4 - COMMISSIONERS FEE	1,800.00
WTP #4	198600000144090	12/1/1986	WTP#4-ANDER MILL RD 12004 RO	1,600.00
WTP #4	198800000143540	5/1/1988	WTP#4/RM620@ST 880/WATERLINE	1,518.00
WTP #4	198600000144000	5/1/1986	WTP #4 APPRAISAL FEE 20.129A	1,200.00
WTP #4	198600000144030	5/1/1986	WTP#4 APPRAISAL FEE 4.92AC W	1,200.00
WTP #4	198600000144050	5/1/1986	WTP #4 APPRAISAL FEE 308.58A	1,200.00
WTP #4	198600000144080	5/1/1986	WTP #4 APPRAISAL FEE 46.74AC	1,200.00
WTP #4	198600000143990	9/1/1986	WTP #4 N/W A" WATER TRNS MN	1,200.00
WTP #4	198600000144100	11/1/1986	WTP #4 N/W A TRANS LN TITLE	550.00

WTP #4	198800000139720	9/1/1988	WTP#4 COST/ASSOC/WITH -COUR	270.00
WTP #4	198700000143500	7/1/1987	WTP #4 ZIMMERMAN LN/E RM 620	250.00
WTP #4	198700000143510	7/1/1987	WTP#4/OLP LAMPASAS/EASMNT TI	221.00
WTP #4	198700000139710	12/1/1987	WTP #4/OVERNT MAIL SVC/AIRBO	8.50
			Total WTP #4	87,498,699.03

[redacted]	YTD Deprec	Code	Useful Life	Standard Acq Date	Acq Year	Useful Life	[redacted]
-	-	1	-	1/10/2008	2008	-	-
-	-	1	-	6/1/1987	1987	-	-
-	-	1	-	11/1/1985	1985	-	-
628,114.91	256,840.38	16	20.00	30/9/2006	2006	20	19,739.84
-	-	1	-	11/1/1986	1986	-	-
1,162,572.71	93,276.70	21	50.00	30/9/1998	1998	50	7,845.15
-	-	1	-	11/1/1984	1984	-	-
818,947.65	163,812.41	16	20.00	10/1/2005	2005	20	13,652.43
-	-	1	-	12/1/1987	1987	-	-
634,351.71	50,895.96	21	50.00	30/9/1998	1998	50	4,280.66
597,297.79	47,923.00	21	50.00	30/9/1998	1998	50	4,030.62
1,659,869.44	135,845.47	21	25.00	30/9/1998	1998	25	11,419.54
1,517,807.12	124,218.95	21	25.00	30/9/1998	1998	25	10,442.18
1,495,144.74	122,364.26	21	25.00	30/9/1998	1998	25	10,286.27
3,999.22	3,999.22	16	40.00	8/1/2010	2010	40	2,027.38
793,513.23	64,941.99	21	25.00	30/9/1998	1998	25	5,459.20
674,989.07	30,557.44	16	50.00	9/1/1987	1987	50	2,496.02
158,407.27	10,615.75	21	50.00	30/9/1998	1998	50	936.35
-	-	1	-	2/1/1986	1986	-	-
13,395.25	9,190.34	15	40.00	16/4/2009	2009	40	765.86
311,908.37	25,526.91	21	25.00	30/9/1998	1998	25	2,145.86
121,488.54	8,141.64	21	50.00	30/9/1998	1998	50	718.12
281,222.31	20,873.04	21	25.00	30/9/1998	1998	25	1,841.91
61,596.10	4,127.91	21	50.00	30/9/1998	1998	50	364.10
46,875.81	5,243.26	21	25.00	10/1/2002	2002	25	453.42
-	-	1	-	4/1/1987	1987	-	-
84,851.34	6,297.92	21	25.00	30/9/1998	1998	25	555.75
31,954.72	2,141.48	15	50.00	30/9/1998	1998	50	188.89
81,371.42	6,039.60	21	25.00	30/9/1998	1998	25	532.95
-	-	1	-	12/1/1988	1988	-	-
53,926.70	4,002.62	21	25.00	30/9/1998	1998	25	353.20

53,839.05	3,996.08	21	25.00	30/9/1998	1998	25	352.63
37,968.96	3,165.27	21	25.00	30/9/1998	1998	25	263.75
-	-	1	-	7/1/1988	1988	-	-
-	-	1	-	7/1/1988	1988	-	-
24,514.61	2,043.65	25	25.00	30/9/1998	1998	25	170.29
-	-	1	-	12/1/1988	1988	-	-
-	-	1	-	9/1/1988	1988	-	-
16,425.65	1,369.34	21	25.00	30/9/1998	1998	25	114.10
14,774.85	1,231.72	21	25.00	30/9/1998	1998	25	102.63
1,750.58	876.79	5	20.00	10/1/2008	2008	20	73.07
-	-	1	-	6/1/1988	1988	-	-
-	-	1	-	8/1/1988	1988	-	-
-	-	1	-	6/1/1988	1988	-	-
-	-	1	-	8/1/1986	1986	-	-
-	-	1	-	9/1/1988	1988	-	-
2,227.95	185.79	15	50.00	30/9/1998	1998	50	15.48
-	-	1	-	6/1/1988	1988	-	-
-	-	1	-	6/1/1986	1986	-	-
-	-	1	-	7/1/1986	1986	-	-
-	-	1	-	7/1/1986	1986	-	-
3,515.23	149.77	15	50.00	3/1/1987	1987	50	12.45
-	-	1	-	5/1/1986	1986	-	-
2,814.57	234.67	21	25.00	30/9/1998	1998	25	19.55
-	-	1	-	2/1/1986	1986	-	-
-	-	1	-	5/1/1986	1986	-	-
-	-	1	-	8/1/1986	1986	-	-
-	-	1	-	12/1/1988	1988	-	-
-	-	1	-	12/1/1986	1986	-	-
-	-	1	-	5/1/1988	1988	-	-
-	-	1	-	5/1/1986	1986	-	-
-	-	1	-	5/1/1986	1986	-	-
-	-	1	-	5/1/1986	1986	-	-
-	-	1	-	5/1/1986	1986	-	-
-	-	1	-	9/1/1986	1986	-	-
-	-	1	-	11/1/1986	1986	-	-

-	-	1	-	9/1/1988	1988	-	-
-	-	1	-	7/1/1987	1987	-	-
-	-	1	-	7/1/1987	1987	-	-
-	-	1	-	12/1/1987	1987	-	-
11,391,436.87	1,210,129.33						101,659.65

Code Desc	Book Value	Year	CCI	RCNLD
Land & Easements	32,034,370.00	2008	8,311.10	34,958,666.00
Land & Easements	5,855,082.00	1987	4,420.00	12,014,619.00
Land & Easements	5,067,100.00	1985	4,202.30	10,936,463.00
Treatment	4,109,446.00	2006	7,751.20	4,808,528.00
Land & Easements	3,805,819.00	1986	4,305.00	8,018,152.00
Transmission Mains	3,544,515.00	1998	5,920.40	5,430,025.00
Land & Easements	2,651,523.00	1984	4,149.80	5,795,258.00
Treatment	2,457,635.00	2005	7,446.00	2,993,608.00
Land & Easements	2,100,000.00	1987	4,420.00	4,309,197.00
Transmission Mains	1,934,046.00	1998	5,920.40	2,962,865.00
Transmission Mains	1,821,074.00	1998	5,920.40	2,789,798.00
Transmission Mains	1,765,992.00	1998	5,920.40	2,705,413.00
Transmission Mains	1,614,847.00	1998	5,920.40	2,473,867.00
Transmission Mains	1,590,735.00	1998	5,920.40	2,436,929.00
Treatment	969,145.00	2010	8,752.40	1,004,293.00
Transmission Mains	844,246.00	1998	5,920.40	1,293,343.00
Treatment	822,623.00	1987	4,420.00	1,688,022.00
Transmission Mains	403,400.00	1998	5,920.40	617,989.00
Land & Easements	382,605.00	1986	4,305.00	806,077.00
General Buildings/Other Structures	354,219.00	2009	8,569.80	374,887.00
Transmission Mains	331,850.00	1998	5,920.40	508,378.00
Transmission Mains	309,383.00	1998	5,920.40	473,959.00
Transmission Mains	271,350.00	1998	5,920.40	415,695.00
Transmission Mains	156,861.00	1998	5,920.40	240,303.00
Transmission Mains	89,149.00	2002	6,537.90	123,674.00
Land & Easements	82,100.00	1987	4,420.00	168,469.00
Transmission Mains	81,873.00	1998	5,920.40	125,425.00
General Buildings/Other Structures	81,376.00	1998	5,920.40	124,665.00
Transmission Mains	78,515.00	1998	5,920.40	120,281.00
Land & Easements	65,216.00	1988	4,528.00	130,631.00
Transmission Mains	52,034.00	1998	5,920.40	79,713.00

Transmission Mains	51,949.00	1998	5,920.40	79,584.00
Transmission Mains	41,157.00	1998	5,920.40	63,051.00
Land & Easements	35,049.00	1988	4,528.00	70,205.00
Land & Easements	30,708.00	1988	4,528.00	61,510.00
Hydrants	26,573.00	1998	5,920.40	40,709.00
Land & Easements	22,745.00	1988	4,528.00	45,559.00
Land & Easements	20,000.00	1988	4,528.00	40,061.00
Transmission Mains	17,805.00	1998	5,920.40	27,276.00
Transmission Mains	16,016.00	1998	5,920.40	24,535.00
Engineering/Studies Contributed Capital	15,785.00	2008	8,311.10	17,226.00
Land & Easements	11,211.00	1988	4,528.00	22,456.00
Land & Easements	9,767.00	1988	4,528.00	19,564.00
Land & Easements	8,189.00	1988	4,528.00	16,403.00
Land & Easements	7,500.00	1986	4,305.00	15,801.00
Land & Easements	7,500.00	1988	4,528.00	15,023.00
General Buildings/Other Structures	7,061.00	1998	5,920.40	10,817.00
Land & Easements	6,323.00	1988	4,528.00	12,665.00
Land & Easements	5,048.00	1986	4,305.00	10,635.00
Land & Easements	4,425.00	1986	4,305.00	9,323.00
Land & Easements	4,000.00	1986	4,305.00	8,427.00
General Buildings/Other Structures	3,957.00	1987	4,420.00	8,120.00
Land & Easements	3,200.00	1986	4,305.00	6,742.00
Transmission Mains	3,051.00	1998	5,920.40	4,674.00
Land & Easements	2,930.00	1986	4,305.00	6,173.00
Land & Easements	2,556.00	1986	4,305.00	5,386.00
Land & Easements	2,410.00	1986	4,305.00	5,077.00
Land & Easements	1,800.00	1988	4,528.00	3,605.00
Land & Easements	1,600.00	1986	4,305.00	3,371.00
Land & Easements	1,518.00	1988	4,528.00	3,041.00
Land & Easements	1,200.00	1986	4,305.00	2,528.00
Land & Easements	1,200.00	1986	4,305.00	2,528.00
Land & Easements	1,200.00	1986	4,305.00	2,528.00
Land & Easements	1,200.00	1986	4,305.00	2,528.00
Land & Easements	1,200.00	1986	4,305.00	2,528.00
Land & Easements	550.00	1986	4,305.00	1,159.00

Land & Easements	270.00	1988	4,528.00	541.00
Land & Easements	250.00	1987	4,420.00	513.00
Land & Easements	221.00	1987	4,420.00	453.00
Land & Easements	9.00	1987	4,420.00	17.00
	76,107,262.00			111,601,534.00