Special Publication SJ98-SP15

WATER SUPPLY NEEDS AND SOURCES ASSESSMENT: ALTERNATIVE WATER SUPPLY STRATEGIES INVESTIGATION: IMPLEMENTATION OF WATER CONSERVATION RATE STRUCTURES

by

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in association with
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St. Johns River Water Management District
Palatka, Florida

1998

EXECUTIVE SUMMARY

As part of St. Johns River Water Management District's (SJRWMD's) Investigation of Alternative Water Supply Strategies, Post, Buckley, Schuh & Jernigan, Inc. (PBS&J) in association with Burton and Associates, Inc. was tasked with evaluating the impact of implementation of water conservation rate structures. Water conservation rate structures are used by water utilities to moderate consumption through a pricing mechanism that increases the price of water as usage increases. This practice is based upon general economic theory, which holds that the demand for a commodity decreases as its price increases. This theory is supported by empirical research specifically related to water usage. Florida utilities generally employ conservation rate structures in an attempt to reduce per capita water consumption in response to regulatory requirements.

This study was divided into two phases. In Phase I (Lockridge and Jackson 1996) an assessment of data availability and development of methodologies for evaluating water conservation rates were conducted. In Phase II, the subject of this report, data were collected and the analysis was performed.

In Phase I, the WATERATE computer software (Brown & Caldwell and Whitcomb 1993) was selected. A questionnaire was sent to 25 utilities to assess data availability for running the model and collecting as much of the data as feasible. In Phase I, complete data were received from only one utility; however, it was believed that data could readily be obtained from a total of 16 utilities based on follow-up telephone calls and expressions by utilities of a willingness to cooperate in the study. It was determined that data from property appraiser's offices would be needed to supplement the utility-provided data.

In Phase II, the first step was to develop a research design. Based on a meeting with a group of selected utilities in the study area, it was determined that a modification of the recommended research design proposed in Phase I would be appropriate. Three scenarios were established that would be evaluated for each utility to determine the effectiveness of water conservation rates structures:

- Scenario 1 - effect of current conservation rates (or for utilities with uniform rates, a three-block structure based on Orange County Utilities' structure).

- Scenario 2 - effect of eliminating fixed charges.

- Scenario 3 - effect of a four-block conservation rate structure.

In Phase I, the importance of property value data in properly calculating elasticity response for each utility was emphasized, but the difficulty in acquiring accurate information was pointed out. In Phase II, the data collection effort on property values was successful and property value averages in the three ranges required in the WATERATE model were obtained for all 25 utilities.

Data collection from utilities was not as successful, however. Only eight utilities fully responded to the data collection efforts. They are Daytona Beach, New Smyrna Beach, Orange County, Port Orange, Sanford, Sanlando Utilities, Titusville, and Winter Park. The eight utilities include one investor-owned utility regulated by the Public Service Commission (Sanlando Utilities). Current fixed charges for water for these utilities range from insignificant (4 percent of the total revenue) to extremely significant (60 percent of the total revenue). The percentage of single-family water consumption ranges from 32 percent to 89 percent of total consumption. Housing values in the medium to high ranges vary from over 90 percent for two utilities and less than 50 percent for one. Because of this variability, the eight utilities provide a good cross section of the study area for conducting the analysis.

Each of the three scenarios established in the research design were run using WATERATE for the eight utilities. The conclusions of the analysis are:

- Individual circumstances have a high degree of influence on the effectiveness of conservation rate implementation. No standard solution emerged as a useful model for all utilities. A case-by-case empirical approach that experiments with different structures to reach an optimal solution is needed.

- The conservation effect of inclining block rate structures varies considerably based on the utility's current rate structure. In general, little effect can be gained by requiring a utility with a three-block structure to change to a four-block structure.

- The sewer usage rate can interfere with the effects of conservation rates for water. This was seen in the analysis of City of Sanford data, where dissavings in potable water may result from implementation of block rates.

- For utilities with high fixed charges, the greatest conservation effect can be achieved by reduction of that charge. However, this creates more volatility in annual revenue streams.

- Conservation rates for the sample utilities tend, overall, to result in long-term water savings. However, these savings are not extremely large, tending to maximize at about five percent of total water consumption.

- The effects produced by the model are long-term, structural changes in the level of water consumption. Immediate short-term effects can vary significantly depending on intervening effects, such as weather and, in all probability, the general state of the economy.

Based on this analysis, it is recommended that SJRWMD use caution in requiring water conservation rates in the Consumptive Use Permitting process. If a utility can provide evidence (possibly using the WATERATE model as a basis) that water conservation rates provide no significant water savings, then they should not be required to implement the rates. Water savings from other water conservation approaches can be considered in such cases.

SJRWMD may want to promote reduction of fixed charges as an alternative to conservation rates. However, since reduction of the fixed charge will increase the sensitivity of a utility's total revenue to changes in consumption caused by weather or the general state of the economy, this approach should be suggested as an optional alternative to implementation of conservation rates rather than mandated as a requirement of the permitting process.

SJRWMD should continue to monitor the professional literature to identify further evidence of the effects of water conservation rates on water usage in the context of other alternative approaches and periodically evaluate the status of conservation rate implementation by utilities in SJRWMD to determine the usefulness of future promotion through the regulatory process.

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INTRODUCTION

BACKGROUND

St. Johns River Water Management District (SJRWMD) is responsible for managing ground water resources in a nineteen county area of northeastern Florida. Ground water aquifers are currently the primary sources of potable water supply in SJRWMD. The most dependable ground water source is the Floridan aquifer. However, Vergara (1994) projected shortfalls in available water supply in certain critical areas throughout SJRWMD boundaries by the year 2010. Areas with existing or 2010 projected water supply problems were designated as priority water resource caution areas (PWRCAs).

As a result, SJRWMD embarked on an Investigation of Alternative Water Supply Strategies. Strategies being investigated include using lower quality water supplies, surface water, reclaimed water, aquifer recharge, aquifer storage and recovery, mitigation and avoidance, and various water conservation techniques.

SJRWMD contracted with Post, Buckley, Schuh & Jernigan, Inc. (PBS&J) to perform various tasks for the purpose of assessing water conservation and the reuse of reclaimed water as effective alternative water supply strategies. This report, prepared in association with Burton & Associates, Inc., specifically addresses Task III - Implementation of Water Conservation Rate Structures.

Water conservation rate structures are used by water utilities to moderate consumption through a pricing mechanism that increases the price of water as usage increases. This practice is based upon general economic theory, which holds that the quantity of a commodity demanded decreases as its price increases. This theory is supported by empirical research specifically related to water usage. Florida utilities generally employ conservation rate structures in an attempt to reduce *per capita* water consumption in response to regulatory requirements.

The purpose of Task III is to determine the potential impacts of water conservation rate structures on reducing potable water consumption and thereby extending the viability of current water supply sources.

Phase I (Lockridge and Jackson 1996) was undertaken to assess the availability of data, develop methodologies, and estimate the budget for performing the analysis to determine the potential impacts of water conservation rate structures. In Phase II, the subject of this report, data were collected and the analysis performed.

The Phase I study determined that the WATERATE computer software, developed by the Southwest Florida Water Management District (SWFWMD) as part of an empirical study of the effects of water price on customers' demand for water, is an appropriate tool for estimated potential impacts of water conservation rate structures for utilities within SJRWMD. Based on information provided by a questionnaire sent to 25 utilities and on follow-up telephone calls, it was estimated that the data required to perform the analysis could be obtained from 16 utilities, supplemented by property value data from property appraisers' offices and, in some cases, by sewer service rate data from other utilities serving the same customers.

In Phase I, it was determined that the primary indicators of the effectiveness of water conservation rate structures would be the estimated percentage change in water consumption by customer class achieved through implementation of the rates, holding revenue constant. On an aggregate basis, this information can be used to estimate the overall expected effectiveness of the use of water conservation rate structures in conserving water resources in the region.

PURPOSE

The purpose of this study is to determine the potential impacts of water conservation rate structures for selected public supply utilities in SJRWMD. The study is divided into two phases:

- Phase I - Assess data availability, develop methodologies, and determine costs for collecting data and performing analyses required to achieve the purpose of the study.

- Phase II - Collect and analyze required data and project impacts of various pricing structures on water use.

Phase I was completed and reported upon in 1996. This report documents the results of Phase II.

SCOPE OF SERVICES

Specific services performed were as follows:

1. Determine, in consultation with SJRWMD staff and concerned utilities, the water conservation rate structures to be used as a basis for estimating consumption effects.

2. Determine the primary modeled results to be reported.

3. Collect data from participating utilities and other sources.

4. Analyze the data using the WATERATE model.

5. Prepare a report documenting the results of the WATERATE analysis, including a tabular summary of data and modeled results.

METHODOLOGY

DETERMINATION OF WATER CONSERVATION RATE STRUCTURES TO BE USED AND PRIMARY MODELED RESULTS TO BE REPORTED

On September 20, 1996, a meeting was held with SJRWMD staff and representatives of several utilities to be included in the study. The group determined that the recommended research design proposed in the Phase I report was satisfactory, including the identification of percentage change in water consumption as the primary modeled result. After discussion of alternatives, the group recommended the use of the conservation rate structure used by Orange County Utilities as a basis for determining conservation effects.

COLLECTION OF DATA FROM PARTICIPATING UTILITIES AND OTHER SOURCES

Data Provided By The Utilities

Phase I included a survey of each utility identified in the scope of service to determine the availability of required project data and the willingness of each utility's staff to provide the data for the purpose of the project. Table 1, originally included in the Phase I report, summarizes the status of expected participation for each of the 25 utilities contacted. Indications at that point in time were that there were 16 total probable participants in Phase II.

During Phase II, a more in-depth survey was developed and submitted to a contact person from each utility identified during Phase I. Follow-up calls were made to utilities failing to respond or providing an incomplete response.

A third survey was then conducted which used printed data input screens from the WATERATE model. This was done in an attempt to ensure that contact persons at each utility clearly understood the data needs and were reassured that data were not being requested unless

Table 1. Summary of Phase I follow-up results

	Respondent	Call Made	Contact Made	Results of Follow-Up Contact	Probable Participant
1	Altamonte Springs	Yes	No		
2	Apopka	Yes	Yes	Willing to participate in Phase II	X
3	Casselberry	Yes	Yes	They believe they returned questionnaire, we have no record	X
4	Cocoa	No	No	Large number of customers on separate sewer - impractical	
5	Daytona Beach	Yes	No		
6	DeLand	Yes	Yes	Will assess data availability and call back	
7	Eustis	Yes	No		
8	Leesburg	Yes	No		
9	Maitland	Yes	Yes	Willing to participate in Phase II	X
10	Mt. Dora	Yes	No		
11	New Smyrna Beach	Yes	Yes	Willing to participate in Phase II	X
12	Ocoee	Yes	Yes	Billing statistics not available by customer class	
13	Orange County	Yes	Yes	We have full billing statistics from recent rate study	X
14	Orlando Utilities Commission	Yes	Yes	Willing to participate in Phase II	X
15	Ormond Beach	Yes	Yes	Willing to participate in Phase II	X
16	Oviedo	Yes	Yes	Willing to participate in Phase II	X
17	Port Orange	N/A	N/A	Original data is complete	X
18	Sanford	N/A	N/A	Original data is essentially complete	X
19	Sanlando Utilities	N/A	N/A	Original data is complete	X
20	Seminole County	No	No	Letter sent indicates willingness to participate	X
21	Florida Water Services (Deltona)	Yes	Yes	Willing to participate in Phase II	X
22	Titusville	N/A	N/A	We have full billing statistics from recent rate study	X
23	Village Center	Yes	Yes	Willing to participate in Phase II	X
24	Winter Park	Yes	Yes	Willing to participate in Phase II	X
25	Winter Springs	Yes	Yes	Billing statistics not available by customer class	
				Total Probable Participants	16

N/A = Not applicable. No need to make additional contact because original data provided complete or nearly complete.

Source: Lockridge and Jackson (1996)

they were actually required by the model. This survey was sent to each contact, and copies were sent to each utility's engineering department and to the office of the utility director.

Ten days after the third survey was sent, it was resubmitted to each utility. Follow-up phone calls were made to confirm receipt and ensure an understanding of the request.

After an appropriate period of time, information received from each utility was reviewed to identify missing data. These data were requested specifically from each utility and, where necessary, the scope of contact was expanded to include other departments such as customer service.

Additionally, the City or County Clerk's office for each government-owned utility was contacted to obtain all water, wastewater, and reclaimed water ordinances. Each ordinance was reviewed and a rate schedule was developed for each utility's service area. This provided authoritative references to confirm the accuracy of survey data.

Finally, the latest consumptive use permit applications submitted by utilities in the sample were reviewed to determine whether useful data could be obtained from that source.

Property Value Data Collection

Using service area maps and other information available from each utility, the geographic service area of each of the 25 utilities was roughly defined. With the assistance of appropriate planning departments and engineering staffs, a more precise definition was developed of the service area outside of the utility's particular political jurisdiction. The percentage of single-family properties falling within each of the WATERATE model's valuation categories (low [below $55,001 assessed value], medium [$55,001 through $81,300], and high [greater than $81,300]) were obtained from county property appraisers' records. Appendix A, "Specific Property Value Data Collection," presents the data gathered in this process.

DATA ANALYSIS USING THE WATERATE MODEL

Empirical Basis For The WATERATE Model

The WATERATE model is based on a recent study of price elasticity prepared for the Southwest Florida Water Management District (Brown & Caldwell and Whitcomb. 1993) (hereinafter referred to as the "SWFWMD study"). While the study covered both residential and commercial water customers, it focused on single-family residential users. Using a multiple regression model, the authors identified variables that explained approximately 60 percent of the variance in water usage among 1,200 residential customers of ten utilities over a period of one year. Then, by holding other variables constant (such as weather, irrigation restrictions, well depth, and property values), the effect of price differences on water usage was isolated and used to determine price elasticity, measured in terms of expected percentage change in water usage for each percentage change in water price. A similar procedure was followed for nine commercial classes and for multifamily residential customers. To test the validity of the relationships determined from the cross-sectional analysis (analysis of water use differences among customers at the same point in time) when applied to a single utility over time, the authors compared average water usage in Winter Haven before and after a 27 percent rate increase.

The most salient conclusions of the study for purposes of this project were:

- Elasticity varies significantly by property value, with customers residing in higher-value homes exhibiting more sensitivity to price changes. For this reason, the price elasticity factors incorporated into WATERATE are divided into high, medium, and low property value groups.

- Multifamily customers are generally price inelastic, probably because individual apartments are seldom metered.

- Estimates of elasticity for commercial classes are less reliable than those for residential, since the number of customers in the

analysis is considerably smaller and the variance explained by the regression equation is generally much lower.

- The results of the longitudinal analysis for Winter Haven implied elasticity of demand factors by customer class reasonably close to those determined by the short term analysis. However, the authors caution that factors other than price could have affected the change in demand after the rate increase. More obviously, since in this aggregate analysis there is essentially only one observation (the unit of analysis being the utility), the results must be considered anecdotal in nature. However, it is important that the results did not *contradict* the cross-sectional analysis; this provides an additional element of strength to the elasticity estimate developed in the study.

Design Of The WATERATE Software

The WATERATE software implements an analytical model based on parameters determined during the SWFWMD study described above. The user enters base year data about a specific utility relevant to the calculation of elasticity of demand responses to changes in water prices. The software produces reports documenting the input data and projecting results for a three-year period after the base year, consisting of revenue requirements and revenue received from water rates, changes in consumption for each class of customer, and changes in consumption for each class of customer for each conservation rate block.

The actual WATERATE data input screens and reports of results are included in their entirety for each utility in Appendix B, "Complete WATERATE Model Output for Each Utility". In summary, they are:

Input Data

Table 1. General Information

- Customer classes
- Identification of customer classes paying block rates
- Whether rates are annual or seasonal
- Default rates of (1) account growth and (2) economic inflation

- Type of year (fiscal or calendar)
- Identification of base year
- Water unit used to measure consumption (100 cubic feet or 1,000 gallons)

Table 2. Water Accounts

- Equivalent Meter Units and number of meters for each meter size (for each customer class, if fixed charges vary by customer class)

Table 3a. Annual Water Use (for each customer class)

Table 3b. Water Use Distribution (for each customer class)

For customer classes paying block rates, the total number of bills within each rate block used in the model, divided between sewer and non-sewer customers, is required. However, if this information is not available the user can select a default distribution based on the SWFWMD study.

Table 4. Revenue Requirements

Total revenue required from water rates by the utility and the amount of that total revenue that varies with changes in consumption.

Table 5. Price Elasticities

Elasticity of demand for each customer class. For the single-family residential class, elasticity can be calculated by the model based on the SWFWMD study if the user enters the percentage of single-family properties in low, medium and high ranges (see discussion above). If the percentage of commercial customers falling into specified industry groupings is known, a similar calculation can be made for commercial customers. The model recommends elasticity factors of zero for multifamily customers with master meters, -0.25 for commercial customers absent detailed information on industry groupings, and -0.40 for irrigation meters.

In addition, the user enters the expected degree to which the long-run elasticity response is recognized in any given year in the model's projections.

Table 6. Fixed Charges (monthly fixed fees charged per month to each account and to each customer based on the number of Equivalent Meter Units, by customer class if necessary)

Table 7. Water and Sewer Prices (water and sewer prices by block for each customer class, entered for the year preceding the base year, the base year, and the three years following the base year)

Output Data

Table 8. Revenue Summary

For the base year and three following years, the model calculates

- the base year water rate revenue requirement, as defined by the user
- the price elastic change in the revenue requirement from one year to the next, based upon the user's specification of the amount of total water rate revenue that varies with changes in consumption
- Revenues from proposed rates:
    - Fixed charge revenue - meter size independent (charged per account)
    - Fixed charge revenue - meter size dependent (charged per Equivalent Meter Unit
    - Quantity (usage) charge revenue for each customer class
- Revenue surplus or shortfall (revenue required less revenue received)

Table 9. Water Summary

For three years following the base year, the model calculates percentage change in consumption for each customer class and in total.

Table 10. Water Change by Block

For each customer class, the model calculates percentage change in consumption for each rate block in each of the three years following the base year.

RESEARCH DESIGN

In normal use, the WATERATE model would be used to forecast changes over time in consumption and revenue for a utility implementing changes in water pricing structure, given best estimate assumptions regarding growth, inflation, elasticity responses of each customer class, and the degree to which long-term elasticity responses are recognized in the short run. The purpose of this analysis, however, is to determine the long-term elasticity effect (change in consumption) of alternative water pricing structures, given current rates for a sample of utilities within SJRWMD. This information can be used by SJRWMD to compare water conservation rate structures to other approaches available for reducing potable water consumption and determine which methods are likely to be more effective as part of an overall regulatory strategy. The following research design was used to achieve this purpose:

- Customer growth and inflation were set to zero to eliminate their effects.

- Revenue requirements were set equal to calculated base year revenue.

- Elasticity factors were set at the default calculation for the single family class, and were therefore calculated based on the property value distribution of each utility. Multiple family elasticity was set at zero, commercial at -0.25, and irrigation at -0.4, as recommended in the WATERATE software instructions.

- Since the purpose of the analysis is not to forecast consumption and revenue but to determine long-term elasticity response, 100 percent of the long-term response is assumed to occur in the first year of rate implementation.

- Each utility's actual rates were entered for the base year. Three alternative rate scenarios were then entered into the three subsequent years to determine their effect on consumption when compared to base year rates. Each scenario is described in detail in Table 2. In summary, they are:

  - Scenario 1 - effect of current conservation rates (or for utilities with uniform rates, a three block structure on the Orange County model)

  - Scenario 2 - effect of eliminating fixed charges

  - Scenario 3 - effect of a four block conservation rate structure

- Each scenario defines the number of blocks and the relationships among them. The actual rate level in each block is set so that the revenue generated approximates base year revenue. In keeping with the practice of most utilities, rates are rounded to the nearest penny, producing immaterial differences in revenue. This procedure effectively holds revenue constant for each scenario.

This research design has the effect of holding all factors other than rate structure and consumption constant, allowing a true long-term elasticity effect to be calculated in a manner that allows comparison among the utilities in the sample. While actual consumption and revenues will be affected on a year-to-year basis by extraneous variables such as weather, growth, and inflation, it is this long-term effect that represents the actual response to changes in rates and which should, therefore, drive regulatory policy.

Table 2. WATERATE model scenarios

Model Year[a]	Scenario Number	Scenario Description
1994/95	Baseline	Base Year Each utility's actual rates are entered and revenue requirements are calibrated to calculated revenue. For all subsequent scenarios rates are set to approximate revenue requirements in the base year.
1995/96	1	Effect of Conservation Rates - 3 Blocks If the utility used block rates in the base year, this scenario measures the change in consumption caused by those rates versus a uniform rate. If the utility used a uniform rate in the base year, this scenario measures the change in consumption caused by changing to a 3-block conservation rate structure based on the Orange County model.[b]
1996/97	2	Effect of Elimination of Fixed Charge This scenarios measures the change in consumption caused by eliminating all fixed charges and raising the uniform rate to make up the lost revenue.
1997/98	3	Effect of Conservation Rates - 4 Blocks This scenario measures the change in consumption caused by changing to a 4-block conservation rate structure based on the Orange County model.[b]

[a] The WATERATE model is designed to determine the progressive effects on consumption of a change or series of changes in rate structure for a single utility over a period of years. In this analysis we have used the first year as a baseline against which several alternative structures are measured as if they occurred in the same year. This approach filters out the effects of growth and inflation, thereby holding revenue requirements constant in order to examine the effect of rate structure changes on an average customer's monthly bill.

[b] The Orange County rate structure was selected by the SJRWMD Water Utility Advisory Group as a common basis for experimenting with the effects of conservation rates on consumption:

Block 1 = Base Rate
Block 2 = 133% of Block 1
Block 3 = 175% of Block 2
Block 4 = 125% of Block 3

DISCUSSION

RESULTS OF DATA COLLECTION

Property Value Data

The Phase I report emphasized the importance of property value data in properly calculating elasticity responses for each utility, but also pointed out the difficulty of acquiring accurate information in this category. However, the results of the Phase II data collection effort were successful. Property value averages in each of the three required ranges were obtained for all 25 utilities in the original sample. These are documented in Appendix A.

Data Provided By The Utilities

In the Phase I report, it was estimated that 16 of the 25 utilities would provide sufficient data to run the WATERATE model. However, only eight utilities responded fully to the data collection efforts. The eight utilities provide a good representation of all the utilities.

Simplifying Assumptions

In some cases where incomplete data were provided, simplifying assumptions were made that allowed the analysis to be completed. The most material of these were:

- Few of the utilities were able to provide a detailed bill frequency analysis. In order to maintain consistency, the WATERATE default values were used for all utilities modeled.

- Where outside-jurisdiction accounts were a small proportion of other accounts, and property values did not differ significantly, inside and outside customers were combined for purposes of the analysis. For those utilities with significant numbers of outside customers and/or significant differences in characteristics, only inside customers were used in the model.

- The portion of total revenue requirements varying with changes in usage was set to 10 percent for each utility, because few utilities could provide accurate information.

CHARACTERISTICS OF THE SAMPLE

Data sufficient both in quality and quantity to successfully run the WATERATE model were obtained from eight of the 25 utilities in the target population: Daytona Beach, New Smyrna Beach, Orange County, Port Orange, Sanford, Sanlando Utilities, Titusville, and Winter Park. Sanlando is an investor-owned utility regulated by the Florida Public Service Commission; all others are owned and operated by local governments, of which one (Orange County) is a charter county and all others are cities. For four of the utilities, differences between inside-City and outside-City customer characteristics and/or the relative large number of outside-City customers required that only inside-City customers be modeled in order to avoid distortion of results.

With one exception, in the base year the utility's rates from Fiscal Year 1994-95 were used as a basis from comparison with alternative rate structures. In the case of Daytona Beach, which is currently preparing a comprehensive rate study that will result in significant rate structure changes, the projected test year unit costs based on standard allocations were used to represent a baseline uniform rate. Since all results are expressed in relative terms, this approach provides comparable data while showing a more realistic scenario for that particular utility.

Significant input data and results from the WATERATE analysis are summarized in Table 3 and graphically presented in Figures 1 through 5. These utilities represent a broad range of characteristics that influence elasticity of demand. They range in size from approximately 60,000 to less than 10,000 customers, and from almost 10 billion gallons per year to less than 1 billion gallons per year in total water consumption. Based on the customers included for each utility,

Table 3. Significant input data and results from WATERATE model

Graph No.	Utility	Meters	Equivalent Residential Units[a]	Consumption (gpd)			Calculated Revenue ($)		Housing Values			Consumption Savings (Dissavings)[c]		
				Single Family[b]	Other	Total	Total	Fixed Charge	Low (%)	Medium (%)	High (%)	Scenario 1 (%)	Scenario 2 (%)	Scenario 3 (%)
1	Daytona Beach (IN)	18,902	32,499	993,651	2,089,730	3,083,381	4,294,082	871,529	27	45	28	2.7	-3.4	3.9
2	New Smyrna Beach	10,692	17,258	789,424	488,641	1,278,065	3,913,880	2,317,807	31	36	33	2.4	16.5	2.3
3	Orange County	59,693	65,598	6,477,334	3,056,443	9,533,777	15,973,819	4,118,782	28	37	35	4.3	0.9	3.9
4	Port Orange (IN)	20,082	20,082	724,884	178,884	903,768	3,538,354	1,747,134	11	54	35	0.3	1.6	0.2
5	Sanford (IN)	9,595	14,051	654,446	875,757	1,530,203	2,505,794	250,579	51	37	12	-4.2	-2.7	-3.6
6	Sanlando	9,637	16,419	2,342,686	293,328	2,636,014	1,835,113	833,428	9	35	56	4.6	10.4	5.2
7	Titusville (IN)	15,448	19,652	875,168	650,050	1,525,218	4,056,131	175,543	50	37	13	5.1	-4.4	0.3
8	Winter Park	21,847	30,564	1,695,136	1,538,358	3,233,494	4,936,600	1,634,176	9	20	71	5.0	1.6	1.0
9	Average[d]	20,737	27,015	1,819,091	1,146,399	2,965,490	5,131,722	1,493,622	27	38	35	3.5	1.8	2.7
	Lowest	9,595	14,051	654,446	178,884	903,768	1,835,113	175,543	9	20	12	-4.2	-4.4	-3.6
	Highest	59,693	65,598	6,477,334	3,056,443	9,533,777	15,973,819	4,118,782	51	54	71	5.1	16.5	5.2

[a] Defined in accordance with each utility's rate structure. Referred to as "Equivalent Meter Units" (EMUs) in the WATERATE model.
[b] Includes irrigation.
[c] Scenarios are defined as follows:
Scenario 1 - Effect of current conservation rate vs. a uniform rate; if the utility does not currently use conservation rates, the effect shown is a 3-block rate on the Orange County model vs. a uniform rate.
Scenario 2 - Effect of elimination of the fixed charge vs. a structure with the current fixed charge and a uniform rate.
Scenario 3 - Effect of a 4-block conservation rate structure on the Orange County model vs. current rates.
[d] Averages for consumption changes are weighted by total consumption.

Note: (IN) indicates that only inside-City customers were modeled.

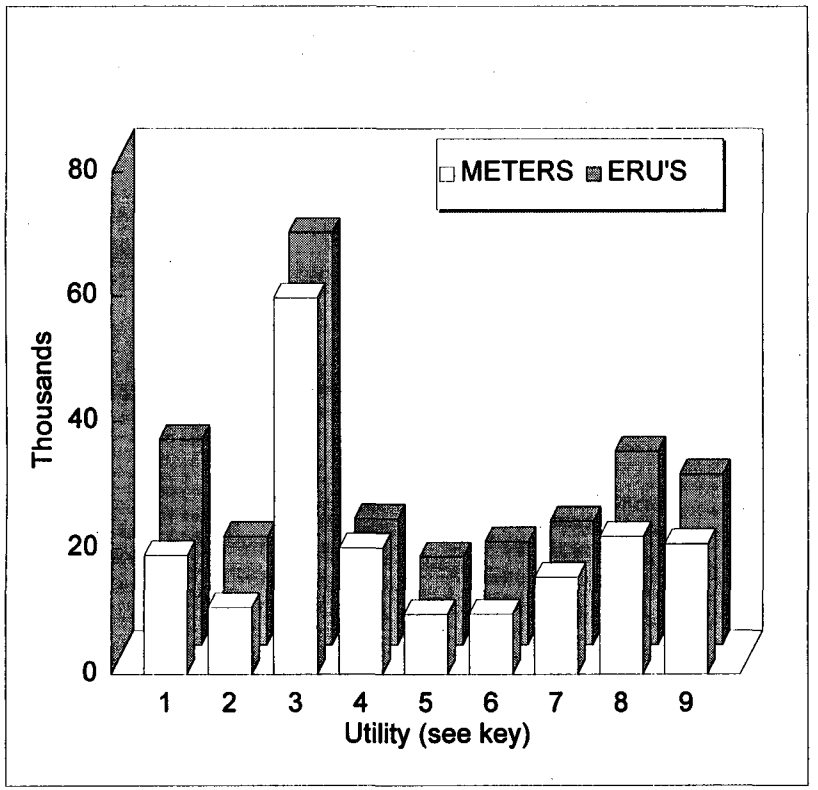


Figure 1. Number of meters and ERU's

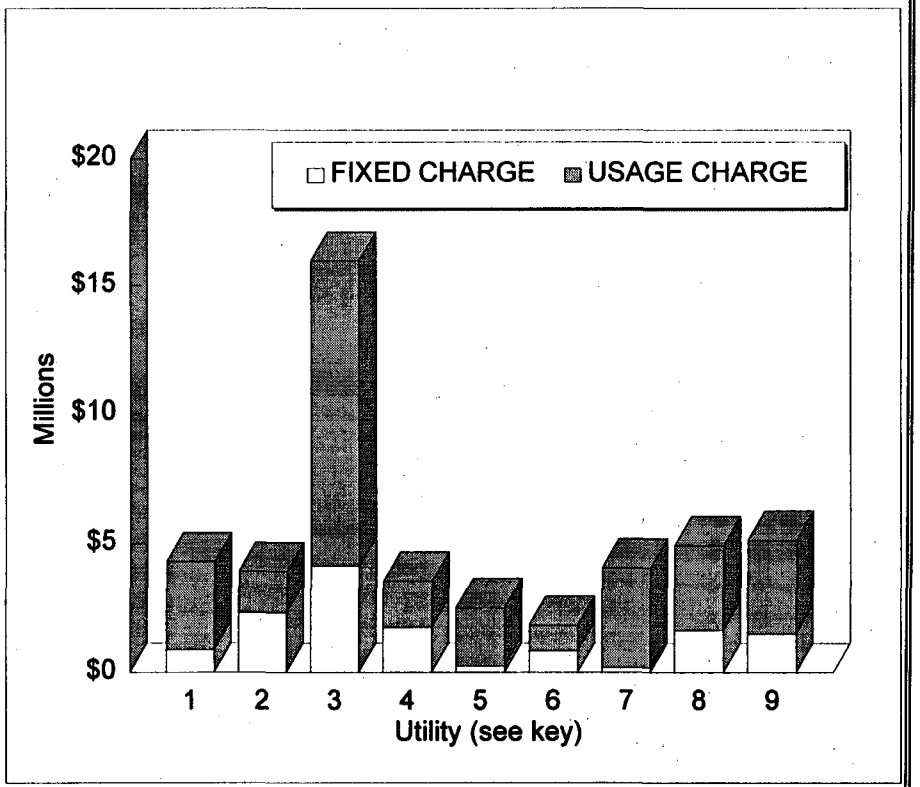


Figure 2. Calculated revenue

KEY:

1	DAYTONA BEACH (IN)	4	PORT ORANGE (IN)	7	TITUSVILLE (IN)
2	NEW SMYRNA	5	SANFORD (IN)	8	WINTER PARK
3	ORANGE COUNTY	6	SANLANDO	9	AVERAGE

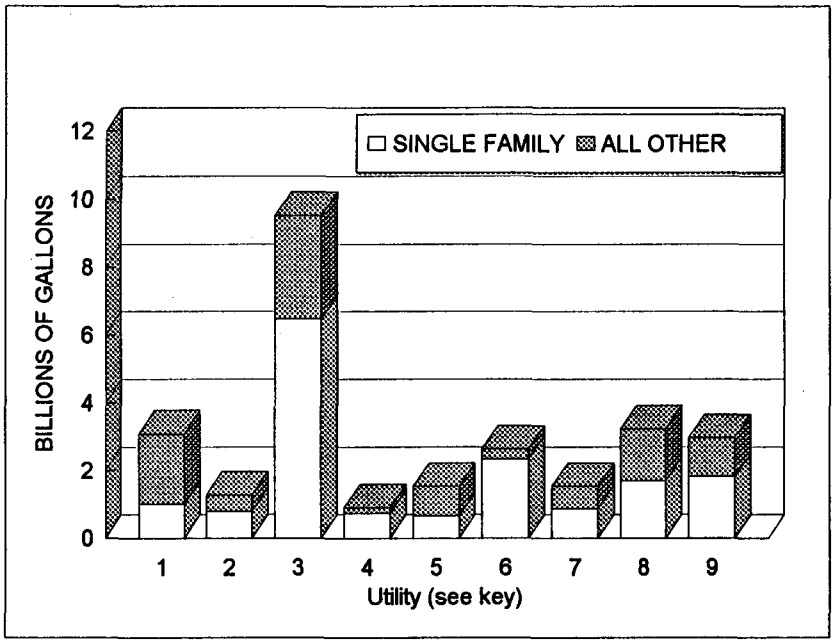


Figure 3. Annual water consumption

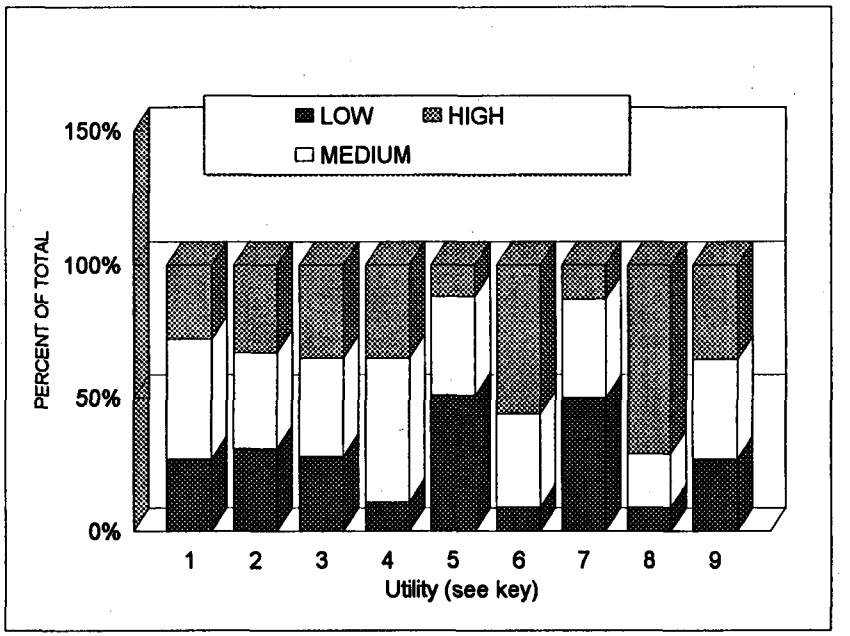
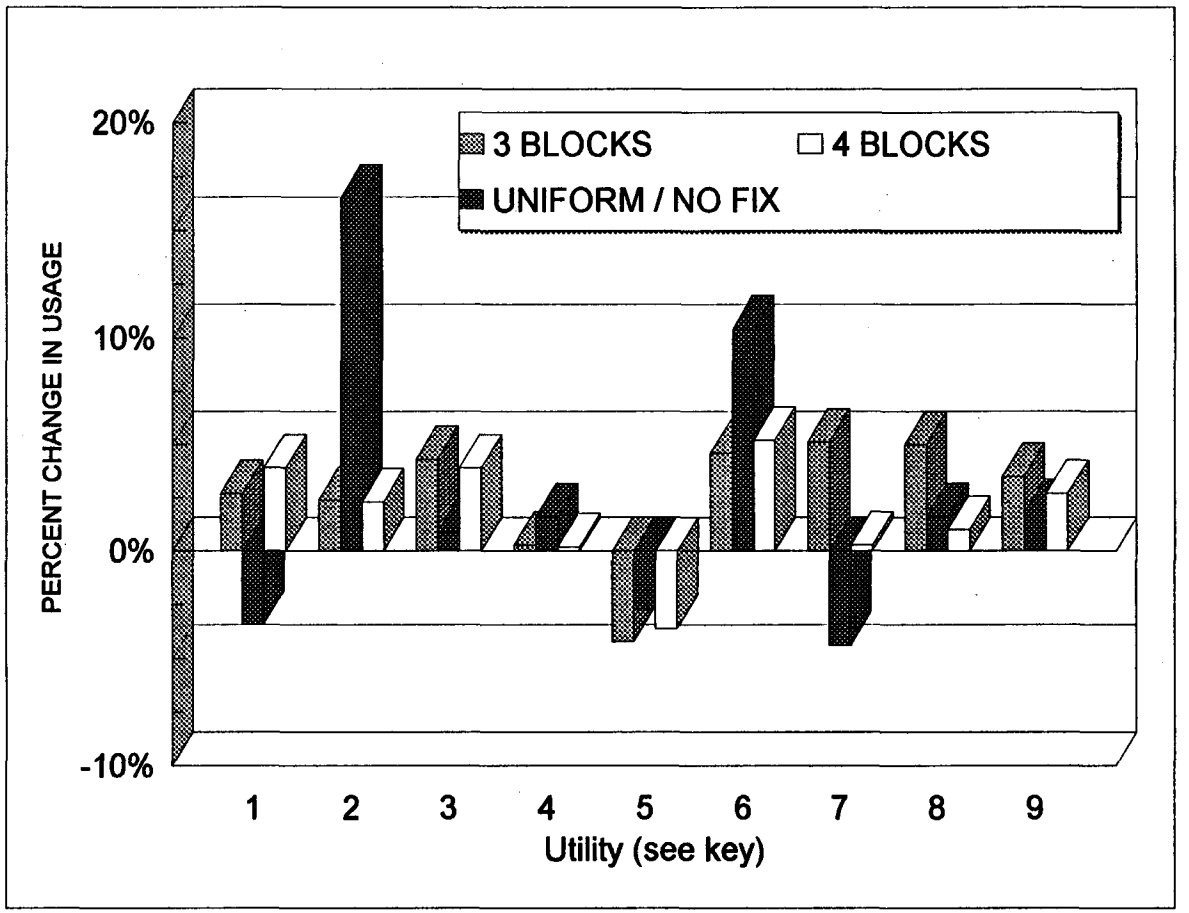


Figure 4. Housing values

KEY:

1	DAYTONA BEACH (IN)	4	PORT ORANGE (IN)	7	TITUSVILLE (IN)
2	NEW SMYRNA	5	SANFORD (IN)	8	WINTER PARK
3	ORANGE COUNTY	6	SANLANDO	9	AVERAGE



KEY:

1	DAYTONA BEACH (IN)
2	NEW SMYRNA
3	ORANGE COUNTY
4	PORT ORANGE (IN)
5	SANFORD (IN)
6	SANLANDO
7	TITUSVILLE (IN)
8	WINTER PARK
9	AVERAGE

Figure 5. Water savings (dissavings)

calculated revenue from water rates ranges from almost $16 million to less than $2 million annually.

In terms of variables directly influencing the modeled consumption changes, these utilities also vary significantly. The current fixed charge ranges from insignificant (Titusville and Daytona Beach, 4 percent and 20 percent respectively of total revenue) to extremely significant (New Smyrna Beach, 60 percent of total revenue). The percentage of single-family residential water consumption ranges from 32 percent (Daytona) to 89 percent (Sanlando). Housing values in the medium and high ranges vary from over 90 percent (Winter Park and Sanlando Utilities) to less than 50 percent (Titusville).

RESULTS OF ANALYSIS

General

Results of alternative rate structures shown in Table 3 are presented as Consumption Savings, expressed as a positive percentage of total base year consumption, or Consumption Dissavings, expressed as a negative percentage of total base year consumption. The ranges of results reveals the importance of the utility's specific current rate structure and customer characteristics in determining the outcome of a change in rate structure.

Scenario 1 modeled the effect of a conservation rate structure consisting of either (1) the utility's base year conservation rate structure, or (2) if the utility used uniform rates in the base year, a 3-block conservation rate structure based on the Orange County model. The average reduction in consumption for this alternative, weighted by each utility's total annual water consumption, was 3.5 percent. Consumption changes ranged from a 4.2 percent increase (dissavings) to a 5.1 percent decrease. The increase in consumption (Sanford) results from the interference of large usage charges for sewer, capped at 12,000 gallons of water consumption per month. Water conservation rates producing the same revenue as a uniform rate fall so low that relative to a uniform rate, demand for water increases. In the case of the largest decrease in consumption (Titusville), very high rates in the upper blocks produce a relatively significant effect.

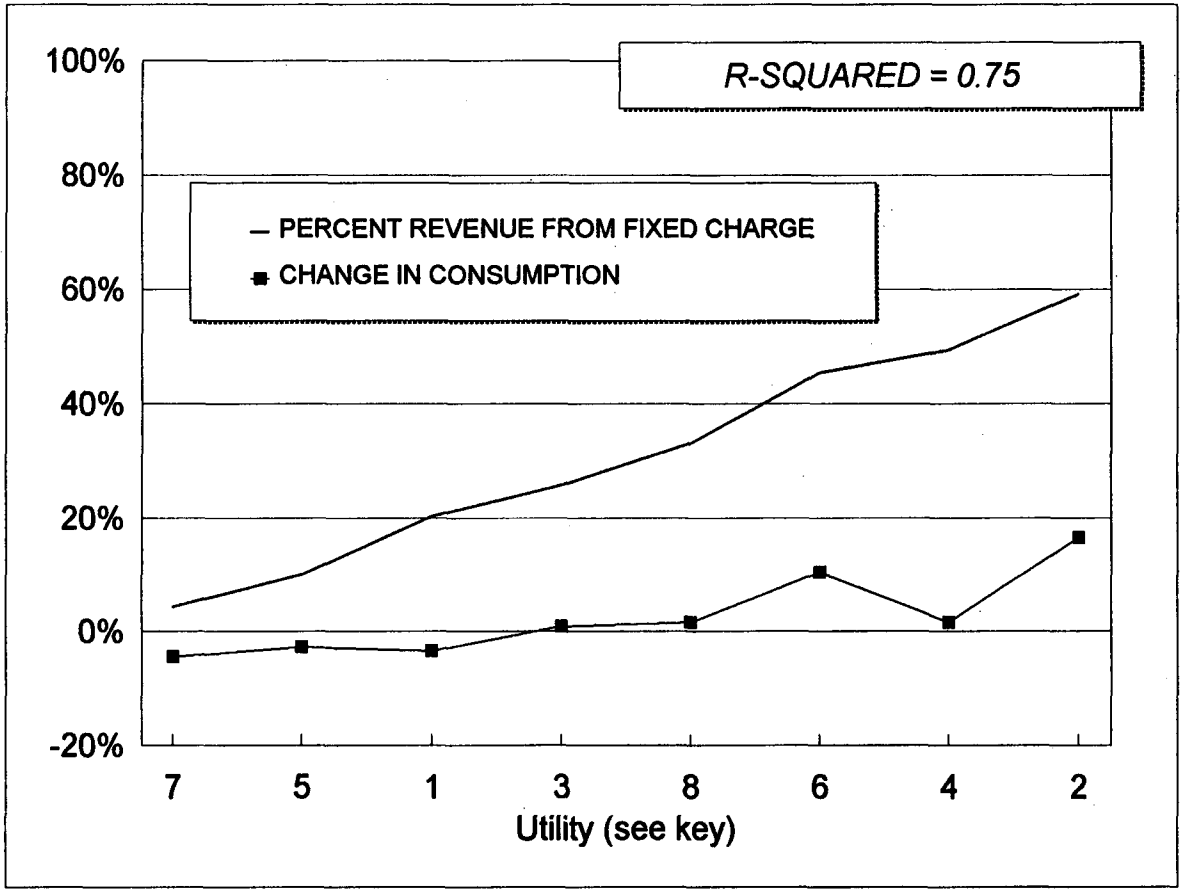
Scenario 2 modeled the effect of eliminating the fixed charge for each utility and setting a uniform usage rate that produces the same amount of revenue as the base year rates. Consumption changes among the sample utilities for this alternative range from 4.4 percent dissavings to 16.5 percent savings in water consumed. As shown in Figure 6, these results are highly correlated (R-squared = 0.75) with the percentage of total water rate revenue generated by the base year fixed charge: the lower the base year fixed charge, the greater the effect of its elimination, and vice versa.

Scenario 3 modeled the effect of implementing a 4-block conservation rate structure based on the Orange County model. Not surprisingly, the average results closely track the effects of the three-rate structure in Scenario 1. The relative results of Scenario 1 and Scenario 2 are somewhat clouded by the fact that actual conservation rates in place were used in Scenario 1 for those utilities employing them. In general, it is reasonable to conclude that the 4-block structure has a slightly greater conservation effect than the 3-block structure, all other things being equal.

City Of Daytona Beach

Rates. As discussed under Characteristics of the Sample, the City of Daytona Beach is currently preparing a comprehensive rate study that will result in signficant rate structure changes. For this reason, the utility's actual Fiscal Year 1994-95 rates were not used as a basis for comparison with alternative rate structures. Instead, the projected test year unit costs, based on standard cost allocations, were used to represent a baseline uniform rate. Since all results are expressed in relative terms, this approach provides comparable data while showing a more realistic scenario for the City of Daytona Beach.

A uniform rate structure for the City of Daytona Beach would consist of a fixed charge per account per month of $2.57, plus a fixed charge per Equivalent Meter Unit (EMU) of $0.74. The uniform monthly charge per 1,000 gallons of water usage would be $1.11 for water service and $3.95 for sewer service. The sewer volume charge would be capped at 12,000 gallons per month usage for single family



KEY:

1	DAYTONA BEACH (IN)
2	NEW SMYRNA
3	ORANGE COUNTY
4	PORT ORANGE (IN)
5	SANFORD (IN)
6	SANLANDO
7	TITUSVILLE (IN)
8	WINTER PARK
9	AVERAGE

Figure 6. Effect of fixed charge elimination on water savings

residential customers. This utility presents an interesting case because it currently stands at a real decision point, and the baseline and three alternative rate structure options are a matter of actual choice.

Housing values. Housing value data collected for Daytona Beach can be found on page 71 of Appendix A. With 45 percent of its single-family housing in the medium range, 27 percent in the low range, and 28 percent in the high range, Daytona Beach presents the most balanced housing value profile in the sample. This means that elasticity of demand will be moderate when compared to the other utilities, neither inelastic (predominantly low property values) or extremely sensitive to price changes (predominantly high property values).

Results. WATERATE model results for the City of Daytona Beach begin on page 77 of Appendix B. In Scenario 1, the rate structure changes from the baseline unform rate described above to a three-block structure based on the Orange County model described above. In addition, irrigation meters are burdened with the highest rate (Block 3) for all consumption. Multiple-family and commercial consumption continues to be billed at the average cost per 1,000 gallons. This results in a reduction in total consumption for the system of 2.7 percent, consisting of a 6.6 percent reduction for single family, a 15.1 percent reduction for irrigation customers, and no change for multiple-family or commercial.

In Scenario 2, all fixed charges are eliminated and the volume charge is increased from $1.11 to $1.50 per 1,000 gallons in order to produce the baseline amount of revenue. Overall, there is a 3.4 percent increase in consumption. This occurs because the effective rate for single-family users in the third block drops significantly, overcoming the conservation effect on large consumption commercial customers as they respond to an increase in their rate.

In Scenario 3, a fourth block rate is added. This slightly improves the elasticity effect compared to Scenario 1, with the reduction improving from 2.7 percent of total system consumption to 3.9 percent.

Summary. This utility illustrates the relative effects of the conservation rate scenarios on a utility that has made the decision to change its rate structure and is choosing among various alternatives. In this case, a four-block structure offers the largest overall reduction in consumption.

New Smyrna Beach

Rates. In the baseline case, New Smyrna Beach uses a three-block rate structure consisting of a fixed charge per account per month of $1.90, plus a fixed charge per EMU of $9.75. It should be noted that the EMU factors for each meter differ from the standard EMU factors used in the WATERATE model, which are based on Florida Public Service Commission rules. The monthly charge per 1,000 gallons of water usage is $1.05 through 7,000 gallons per month; $1.25 from 8,000 through 14,000 gallons per month, and $1.70 for all consumption over 14,000 gallons per month. The charge for sewer service is $1.55 per 1,000 gallons of water consumed monthly, with no cap for single-family residential customers.

Housing values. Housing values for New Smyrna Beach customers, as shown beginning on page 73 of Appendix A, are almost equally distributed among the low, medium and high groupings. Like Daytona Beach, this means that elasticity of demand will be moderate when compared to the other utilities, neither inelastic (predominantly low property values) or extremely sensitive to price changes (predominantly high property values).

Results. WATERATE model results for New Smyrna Beach begin on page 100 of Appendix B. In Scenario 1, the rate structure changes from the three-block structure described above to a uniform rate of $1.19 per 1,000 gallons. This change produces an increase in overall consumption of 2.4 percent, indicating that the utility's current conservation rate structure is providing a consumption reduction of that amount when compared to a uniform rate.

In Scenario 2, all fixed charges are eliminated and the volume charge is increased from $1.19 to $3.52 per 1,000 gallons in order to produce the baseline amount of revenue. Overall, there is a 16.5 percent decrease

in consumption. This occurs because the fixed rate for larger meters is extremely high. When the fixed charges are eliminated, these costs must be recovered from the volume charge, which increases significantly, shifting the burden from the larger to the smaller meters. Most of these are residential customers displaying high elasticity responses.

In Scenario 3, a fourth block rate is added. While this reduces consumption at the higher levels, it also provides additional revenue that reduces the rate at lower levels of consumption. The effects are roughly offsetting, and the total reduction in consumption is 2.3 percent, compared to 2.4 percent for the three-block structure.

Summary. This utility illustrates the effect of a high fixed charge on consumption. New Smyrna Beach's fixed charge revenue in the base year is about 60 percent of total calculated water revenue, the highest in the sample. For utilities with this sort of rate structure, reduction of the fixed charges will often be more effective in encouraging conservation than simply distributing the smaller amount of volume charge revenue among a number of blocks with increasing rates.

Orange County

Rates. In the baseline case, Orange County uses a two-block rate structure consisting of of a fixed charge per account per month of $2.64, plus a fixed charge per EMU of $2.83. The monthly charge per 1,000 gallons of water usage is $1.19 through 15,000 gallons per month and $1.79 for all consumption over 15,000 gallons per month. The charge for sewer service is $3.18 per 1,000 gallons of water consumed monthly, capped at 15,000 gallons per month for single-family residential customers.

Housing values. Housing values for Orange County customers are shown beginning on page 63 of Appendix A. Like New Smyrna Beach, the values are almost equally distributed among the low, medium, and high groupings, with a slight skewing toward the medium, (37 percent) and high (35 percent) categories. Once again, this means that elasticity of demand will be moderate when compared to the other utilities, neither inelastic (predominantly low property

values) or the extremely sensitive to price changes (predominantly high property values).

Results. WATERATE model results for Orange County begin on page 136 of Appendix B. In Scenario 1, the rate structure changes from the two-block structure described above to a uniform rate of $1.20 per 1,000 gallons.This change produces an increase in overall consumption of 4.3 percent, indicating that the utility's baseline conservation rate structure is providing a consumption reduction of that amount when compared to a uniform rate.

In Scenario 2, all fixed charges are eliminated and the uniform volume charge is increased from $1.20 to $1.69 per 1,000 gallons in order to produce the baseline amount of revenue. Overall, there is a 0.9 percent decrease in consumption..

In Scenario 3, Orange County's current four-block system is implemented. An additional consumption reduction of 3.9 percent over the baseline is realized.

Summary. The Orange County WATERATE model results illustrate that utilities with only moderate amounts of revenue allocated to the fixed charges (about 25 percent in this case) will not realize a signifcant effect from reduction or elimination of the fixed charge. Block rates, however, do have a positive effect: about 4.3 percent water savings for a two-block system, and an additional 3.9 percent for the current four-block system.

City of Port Orange

Rates. In the baseline case, Port Orange uses a three-block rate structure consisting of a fixed charge per account per month of $7.25, with no fixed charge per EMU. The monthly volume charge per 1,000 gallons of water usage is $0.75 through 2,000 gallons per month; $2.10 from 3,000 through 4,000 gallons per month, and $2.50 for all consumption over 4,000 gallons per month. The charge for sewer service is $3.25 per 1,000 gallons of water consumed monthly, with no cap for single-family residential customers. However, there is no sewer charge for the first 2,000 gallons of water consumption.

Housing values. Housing values for Port Orange customers, as shown beginnig on page 75 of Appendix A, cluster in the medium range (54 percent), with only a small proportion (11 percent) in the low range. Compared to the utilities discussed thus far, there should be a relatively higher elasticity of demand in response to price changes for Port Orange.

Results. WATERATE model results for Port Orange begin on page 153 of Appendix B. In Scenario 1, the rate structure changes from the three-block structure described above to a uniform rate of $1.98 per 1,000 gallons.This change produces essentially no change in comsumption. Upon close examination, it can be seen that Port Orange's three-block structure applies to very narrow ranges of consumption, essentially creating a flat rate after 2,000 gallons per month. Consequently, a change to a uniform rate has very little effect. In Scenario 2, all fixed charges and the volume charge is increased from $1.98 to $3.97 per 1,000 gallons in order to produce the baseline amount of revenue. Overall, there is only a 1.6 percent decrease in consumption., although Port Orange's fixed charge revenue constitutes approximately 50 percent of the total calculated water revenue. However, there is no fixed charge component that increases with meter size and consequently is directly correlated with consumption. Therefore removal of the fixed charge tends to have its most significant effect on the smaller meters, at low levels of consumption, where there is little elasticity of demand. The effect on larger meters, and therefore at higher levels of consumption, is very small.

In Scenario 3, a fourth block rate is added with no perceptible effect on consumption. This anomaly occurs because of the high sewer volume charge, which makes the additional water charge at higher levels of consumption relatively small in comparison to the original baseline.

Summary. This utility illustrates the importance of sewer volume charges in a conservation rate structure. In cases where the sewer volume charge is extremely high, the introduction of a moderate inclining block structure for water may have little or no effect on overall water consumption. The high sewer rate has, in effect, created a marginal price level for water consumption to which the customer

has already responded. All the elasticity of the system has been utilized.

City Of Sanford

Rates. In the baseline case, Sanford uses a two-block rate structure consisting of a fixed charge per account per month of $2.40, with a fixed charge per Equivalent Meter Unit (EMU) of $3.14. The monthly volume charge per 1,000 gallons of water usage is zero through 2,000 gallons per month and $1.45 for all consumption over 2,000 gallons per month. The charge for sewer service is $2.20 per 1,000 gallons of water consumed monthly through 2,000 gallons per month and $3.31 thereafter, with a cap for single-family residential customers at 12,000 gallons per month. This structure is essentially what is known as a "lifeline rate", with a low rate at low levels of consumption and a uniform rate thereafter.

Housing values. Housing values for Sanford customers, as shown beginning on page 50 of Appendix A, cluster in the low range (51 percent), with only a small proportion (12 percent) in the high range. Compared to the utilities discussed thus far, there should be a relatively lower elasticity of demand in response to price changes.

Results. WATERATE model results for Sanford begin on page 179 of Appendix B. In Scenario 1, the rate structure changes from the "lifeline rate" structure described above to a three-block structure based on the Orange County model (it should be noted that this structure incorporates a "lifeline rate" concept at the lower levels of consumption in order to shelter essential domestic consumption). The introduction of a volume charge in the first two thousand gallons per month range produces enough revenue to drive down the upper block rates below the uniform rate; consequently the change produces an increase in water usage of 4.2 percent.

In Scenario 2, all fixed charges are eliminated. Once again, the introduction of a charge in the first 2,000 gallons per month of consumption produces sufficient revenue to drive down the uniform rate, even without a fixed charge, to a level below the baseline case, resulting in an increase in water usage of 2.7 percent.

In Scenario 3, a four-block rate is introduced. Although this results in a higher rate than the baseline case for consumption above 25,000 gallons per month, only 3.4 percent of the single-family consumption falls in this range. For all lower consumption, the rate is lower than the uniform rate in the baseline case, causing water consumption to increase by 3.6 percent.

Summary. The Sanford case illustrates a problem with applying a pre-determined conservation rate structure and using a "revenue neutral" approach for a utility with a "lifeline rate" structure. Care must be taken to ensure that any conservation rate structure results in higher rates at the upper levels of consumption where irrigation can be assumed to occur. This argues for a highly empirical approach that experiements with various conservation rate structures, perhaps using the WATERATE model, to identify a structure that sends the desired price increase signals to a large group of customers with the discretion to change their consumption habits. "Cookbook" approaches can produce effects contrary to the goal of consumption reduction, as illustrated here.

Sanlando Utilities

Rates. In the baseline case, Sanlando uses a uniform rate structure consisting of a fixed charge per EMU per month of $4.23, with no fixed charge per account. The volume charge per 1,000 gallons of water usage is $0.38. The charge for sewer service is $1.33 per 1,000 gallons of water consumed monthly, with a cap for single-family residential customers at 10,000 gallons per month

Housing values. Housing values for Sanlando customers are shown beginning on page 51 of Appendix B. They are skewed strongly to the high range (56 percent), with only a small proportion (9 percent) in the low range. Compared to the utilities discussed thus far, there should be a relatively higher elasticity of demand in response to price changes.

Results. WATERATE model results for Sanlando are presented beginning on page 199 of Appendix B. In Scenario 1, the rate structure changes from the structure described above to a three-block

conservation rate structure based on the Orange County model. This produces water savings of 4.6 percent. Although Sanlando's rates are very low, high housing values result in relatively higher elasticity of demand. This higher elasticity applies to a single-family residential customer group that represents an extremely high proportion of total consumption (90 percent).

In Scenario 2, all fixed charges are eliminated and the volume charge is increased from $0.38 to $0.76 per 1,000 gallons in order to produce the baseline amount of revenue. Overall, there is a 10.4 percent decrease in consumption. This large effect results from a relatively high fixed charge revenue base (45 percent of total water revenue) driving the uniform rate to a level where significant numbers of single family residential customers in the high property value range receive a strong price signal.

Scenario 3 introduces the four-block rate, with the expected incremental improvement over the three-block rate: savings increase from 4.6 percent to 5.2 percent of total consumption.

Summary. This utility provides what appears to be an ideal profile for the implementation of conservation rates: high property values for a single family residential customer group that represents a significant proportion of the utility's total consumption. Even though rates are very low on an absolute basis when compared to other utilities, the conservation rate program can be expected to produce a successful result. Coupled with a reduction in fixed charges to a level that produces 20-25 percent rather than 45 percent of total revenue, the results could be fairly dramatic. However, Sanlando is an investor-owned utility regulated by the Florida Public Service Commission, and may be unable to implement conservation rates unless that agency changes its position on this matter.

City Of Titusville

Rates. In the baseline case, Titusville uses a four-block rate structure consisting of a fixed charge per account per month of $0.26, with a $0.54 fixed charge per EMU. The monthly volume charge per 1,000 gallons of water usage is $1.62 through 3,000 gallons per month; $2.41

from 3,000 through 15,000 gallons per month, $6.14 through 25,000 gallons per month, and $9.22 thereafter. The charge for sewer service is $5.25 per 1,000 gallons of water consumed monthly for the first 3,000 gallons per month and $6.85 thereafter. Sewer charges are capped at 15,000 gallons per month for single-family residential customers.

Housing values. Housing values for Titusville customers are shown beginning on page 69 of Appendix A. They cluster in the low range (50 percent), with only a small proportion (13 percent) in the high range. Compared to the utilities discussed thus far, there should be a relatively lower elasticity of demand in response to price changes.

Results. WATERATE model results for Titusville begin on page 219 of Appendix B. In Scenario 1, the rate structure changes from the four-block structure described above to a uniform rate of $2.43 per 1,000 gallons. This change back to a uniform rate indicates that the current Titusville rate structure has resulted in a 5.1 percent savings in water consumption.

In Scenario 2, all fixed charges are eliminated and the volume charge is increased from $2.43 to $2.56 per 1,000 gallons in order to produce the baseline amount of revenue. Because Titusville's fixed charges are so low, this has less of a conservation effect than the current inclining block rate structure. Shifting to this approach would increase water consumption by 4.4 percent.

Scenario 3 introduces a four-block rate following the Orange County model, with no perceptible effect on consumption. The higher charge at lower levels of consumption essentially offsets the lower rates at higher levels of consumption under this scenario.

Summary. Consumption under the experiemental scenarios produces the expected effects. A four-block system produces about a 5 percent reduction in consumption, and the low fixed charges make elimination or reduction of the fixed charge an ineffective approach.

City Of Winter Park

Rates. In the baseline case, Winter Park uses a three-block rate structure including a fixed charge per Equivalent Meter Unit (EMU) of $4.78. The monthly volume charge per 1,000 gallons of water usage is $0.54 through 6,000 gallons per month; $1.06 from 6,000 through 12,000 gallons per month, and $1.56 for all consumption over 12,000 gallons per month. The charge for sewer service is $3.11 per 1,000 gallons of water consumed monthly, with a 12,000 gallons per month cap for single-family residential customers.

Housing values. Housing values for Winter Park customers are shown on page 66 of Appendix A. They are highly skewed to the high range (71 percent), with only a small proportion (9 percent) in the low range. Compared to the utilities discussed thus far, there should be a relatively higher elasticity of demand in response to price changes.

Results. WATERATE model results for Winter Park begin on page 245 of Appendix B. In Scenario 1, the rate structure changes from the three-block structure described above to a uniform rate of $0.86 per 1,000 gallons. This change back to a uniform rate indicates that the current Winter Park rate structure has resulted in a 5 percent savings in water consumption

In Scenario 2, all fixed charges are eliminated and the volume charge is increased from $0.86 to $1.36 per 1,000 gallons in order to produce the baseline amount of revenue. Overall, there is a 1.6 percent additional decrease in consumption compared to the baseline. Although the uniform rate is lower at the higher levels of consumption, it is higher at the mid- to low levels, where more consumption occurs. As expected, this change is significant enough to slightly improve on the fixed charge/conservation rate combination in the baseline.

In Scenario 3, a four-block rate based on the Orange County model is introduced. The increase in rates at the higher level of consumption is significant enough to produce a slightly favorable result, with consumption dropping another 1 percent compared to the baseline.

Summary. The results for this utility produce no significant surprises. Conservation rates tend to produce about a 5 percent overall savings in consumption and, where fixed charges are significant, as in this case, elimination or reduction of the fixed charge can equal or exceed this effect.

CONCLUSIONS

The results of the analysis, as described in the previous section, lead to the following conclusions:

- The primary lasting conclusion that can be drawn from a utility-by-utility review of the modeled results is that individual circumstances have a high degree of influence on the effectiveness of conservation rate implementation. No standard solution emerges as a useful model for all utilities; rather, the importance of a case-by-case empirical approach, experimenting with different structures to reach an optimal solution, becomes clear.

- The conservation effect of inclining block rate structures varies considerably based on the utility's current rate structure. In general, little effect can be gained by requiring a utility with a 3-block structure to change to a 4-block structure.

- The sewer usage rate can interfere with the effects of conservation rates for water. This can be seen in the Sanford case, where dissavings in potable water actually result from block rate implementation.

- For utilities with high fixed charges, the greatest conservation effect can be achieved by elimination of that charge. However, this creates more volatility in the annual revenue stream.

- Conservation rates for the sample utilities tend, overall, to result in long-term water savings. However, these savings are not extremely large, tending to maximize at about 5 percent of total water consumption.

- The effects produced by the model are long-term, structural changes in the level of water consumption. Immediate short-term effects can vary significantly depending upon intervening effects such as weather and, in all probability, the general state of the economy. Effects on the utility's revenue stream will vary

depending upon the effects of inflation on costs and growth in the customer base.

RECOMMENDATIONS

In the context of overall regulatory policy, SJRWMD should consider the following:

- In the permitting process, make the requirement for implementation of conservation rates a "rebuttable presumption." That is, a utility would be required to implement conservation rates unless evidence is presented showing that no significant water savings would result. The WATERATE model could be used as the basis for this determination.

- Consider the promotion of fixed charge reduction as an alternative to conservation rates. This option produces significant long-term conservation effects for utilities whose current fixed charges are relatively large. However, since reduction of the fixed charge will increase the sensitivity of the utility's total revenue to changes in consumption caused by weather or the general state of the economy, this approach should be suggested as an optional alternative to implementation of conservation rates rather than mandated as a requirement in the permitting process.

- Compare expected water savings from conservation rate implementation to expected savings from other conservation-promoting approaches, which may be more deserving of promotion by SJRWMD.

- Continue to monitor the professional literature to identify further evidence of the effects of conservation rates on water usage, in the context of other alternative approaches, and periodically evaluate the status of conservation rate implementation by utilities in SJRWMD to determine the usefulness of future promotion through the regulatory process.

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Appendix A

Specific Property Value Data Collection

Specific Property Value Data Collection

Prepared for
St. Johns River Water Management District

by
Cynthia Griffin - Burton & Associates

January 1997

1

Objective

The objective of this portion of the Study was to collect and analyze specific property value data necessary for the price elasticity computations required for PHASE II of this Study.

Scope

The scope of this portion of PHASE II of this Study included the review and analysis of selected potable water utility service areas and the determination for each utility's service area's percentage of single family property values for the following three ranges: 1) Less than $50,000; 2) between $50,001 and $81,300, and 3) greater than $81,301.

Methodology

The methodology utilized in this portion of the PHASE II of this Study included:

1) The review and analysis of each of the following utilities' water system service areas, their configuration and service area boundaries;

Altamonte Springs Utility
Apopka Utility
Casselberry Utility
Cocoa Utility
Daytona Beach Utility
Deland Utility
Eustis Utility
Leesburg Utility
Maitland Utility
Mount Dora Utility
New Smyrna Beach Utility
Ocoee Utility
Orange County Utilities
Orlando Utilities Commission
Ormond Beach Utility
Oviedo Utility
Port Orange Utility
Sanford Utility
Sanlando Utility Corporation
Seminole County Utilities
Florida Water Services(So. States Utilities)
Titusville Utilities
Villages of Lake Utility
Winter Springs Utility
Winter Park Utility

2) The utilities listed on the previous page were then analyzed as to the percent of single-family homes within each utility's service area whose property values fell within the following valuation ranges:

Valuation Range 1	=	***less than $50,000***
Valuation Range 2	=	***$55,001 to $81,300***
Valuation Range 3	=	***Greater than $81,300***

To the extent that any or all of these utilities' service area boundaries included accounts outside of the city limits within which they were located, or did not include all accounts within the city limits, determination of such inclusions or exclusions were noted and further analyses were conducted.

These additional analyses included an assessment, by each utility, of the percentage of total customers served who were located outside city limits, and a determination of how many of those customers were residential single family customers. Then, with the assistance of the relative city and county planning departments and engineering staffs, a more precise description of the outside-city area served by each utility (where applicable) was obtained. This description of the mix of valuation and property-type in these outside-city service areas were then provided to the county property appraisers to analyze as to the range of single family home property values within each out-side city service area and the percent of single family property values within the above mentioned ranges.

A comparison was then made between the out-side city service area single family property value analysis results and the results of the analysis of unincorporated county single family property values to make the final determination as to the percent of single-family property within each utility's service area whose property values fell within the valuation ranges stated in 2) above.

Results

The results of this portion of PHASE II of this Study are presented below and on the following pages.

	Single Family Property Value Categories		
	≥ $55,000	$55,001 to $81,300	> $81,300
Seminole County -			
Altamonte Springs Utility			
% For Each Category			
Inside City Limits:	07%	39%	54%
Outside City Limits:	06.5%	30%	63.50%

	Single Family Property Value Categories		
	≧ $55,000	$55,001 to $81,300	> $81,300
Casselberry Utility			
% For Each Category			
Inside City Limits:	25%	52%	23%
Outside City Limits:	15.50%	36.50%	48%
Longwood Utility			
% For Each Category			
Utility Service Area:	14%	45%	41%
Lake Mary Utility			
% For Each Category			
Utility Service Area:	05%	07%	88%
Oviedo Utility			
% For Each Category			
Inside City Limits:	03%	28%	69%
Outside City Limits:	04.5%	24.50%	71%
Sanford Utility			
% For Each Category			
Inside City Limits:	51%	37%	12%
Outside City Limits:	34.35%	31.08%	34.57%
Sanlando Utility Corporation			
% For Each Category			
Utility Service Area:	09%	35%	56%
Seminole County			
% For Each Category	06%	21%	73%
Utility Service Area:			
Winter Springs Utility			
% For Each Category			
Inside City Limits:	09%	20%	71%
Outside City Limits:	07.50%	20.50%	72%
Lake County -			
Eustis Utility			
% For Each Category			
Inside City Limits:	09%	35%	56%
Outside City Limits:	10%	38.50%	51.50%
Leesburg Utility			
% For Each Category			
Inside City Limits:	07%	39%	54%
Outside City Limits:	09%	40.50%	50.50%

	Single Family Property Value Categories		
	≥ $55,000	$55,001 to $81,300	> $81,300
Mount Dora Utility			
% For Each Category			
Inside City Limits:	21%	13%	66%
Outside City Limits:	24.50%	24%	50.50%
Villages of Lake Utility			
% For Each Category			
Utility Service Area:	20%	52%	28%
Orange County -			
Apopka Utility			
% For Each Category			
Inside City Limits:	26%	43%	31%
Outside City Limits:	27%	40%	33%
Maitland Utility			
% For Each Category			
Inside City Limits:	21%	13%	66%
Outside City Limits:	24.50%	24%	50.50%
Ocoee Utility			
% For Each Category			
Inside City Limits:	37%	33%	30%
Outside City Limits:	32.50%	35%	32.50%
Orange County Utilities			
% For Each Category			
Utility Service Area:	28%	37%	35%
Orlando Utilities			
% For Each Category			
Inside City Limits:	37%	35%	28%
Outside City Limits:	32.50%	36%	31.50%
Florida Water Services Utilities			
% For Each Category			
Utility Service Area:	00%	00%	00%
Winter Park Utility			
% For Each Category			
Inside City Limits:	09%	20%	71%
Outside City Limits:	07.50%	20.50%	72%
Brevard County -			
Cocoa Utility			
% For Each Category			
Inside City Limits:	50%	37%	13%
Outside City Limits:	32.50%	38.50%	29%
Wholesale Customers:	21%	52%	27%
Titusville Utility			
% For Each Category			
Inside City Limits:	50%	35%	15%
Outside City Limits:	33.72%	29.82%	36.46%

	Single Family Property Value Categories		
	≤ $55,000	$55,001 to $81,300	> $81,300
Volusia County -			
Daytona Beach Utility			
% For Each Category			
Inside City Limits:	27.02%	44.78%	28.20%
Outside City Limits:	28.83%	41.37%	29.80%
Deland Utility			
% For Each Category			
Inside City Limits:	66.39%	20.84%	12.77%
Outside City Limits:	48.52%	29.40%	22.09%
New Smyrna Beach Utility			
% For Each Category			
Inside City Limits:	31.45%	33.58%	34.97%
Outside City Limits:	31.05%	35.77%	33.19%
Ormond Beach Utility			
% For Each Category			
Inside City Limits:	17.51%	36.30%	46.19%
Outside City Limits:	08%	20%	72%
Port Orange Utility			
% For Each Category			
Inside City Limits:	10.83%	54.29%	34.88%
Outside City Limits:	20.74%	46.12%	33.14%

Study Participants By County

Seminole County

Altamonte Springs
Casselberry
Oviedo
Sanford
Sanlando Utility Corporation
Seminole County
Winter Springs

Lake County

Eustis
Leesburg
Mount Dora
Villages of Lakes Utility

Orange County

Apopka
Maitland
Ocoee
Orange County Utilities
Orlando Utilities Commission
Southern States Utilities
Winter Park

Brevard County

Cocoa
Titusville

Volusia County

Daytona Beach
Deland
New Smyrna Beach
Ormond Beach
Port Orange

County Property Appraisers

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Lake County

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Tavares, FL 32778-7800
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(352) 343-9638

Orange County

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Orlando, FL 32801
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(407) 836-5029

Brevard County

Jim Ford
P O Drawer O
Titusville, FL 32781-0429
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Volusia County

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(904) 822-5063

SEMINOLE COUNTY

Utilities Within Seminole County

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Altamonte Springs Utility**

Potable Water System Service Area Description:

The Altamonte Springs potable water system service area includes all of Altamonte Springs and some portion of unincorporated Seminole County - primarily to the west-northwest of Altamonte Springs.

The mix of single family homes within the unincorporated county portion of the service area is varied and is best represented by the mix of valuations for single family homes presented on the Seminole County Unincorporated County data sheet of this Section which is as follows:

The Altamonte Springs potable water system

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	6.50%
$55,001 to $81,300	30.00%
Greater Than $81,300	63.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	7.00%
$55,001 to $81,300	39.00%
Greater Than $81,300	54.00%

Sources: City of Altamonte Springs Utility
City of Altamonte Springs Planning/Building/Zoning Department(s)
Seminole County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Oviedo Utility**

Potable Water System Service Area Description:

The Oviedo Utility's potable water service area is within the city limits of Oviedo, except for one enclave of which makes up less than 1% of the service area and is almost all single family homes valued under $55,000.

The City is currently attempting to annex this small enclave.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	4.50%
$55,001 to $81,300	24.50%
Greater Than $81,300	71.00%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	3.00%
$55,001 to $81,300	28.00%
Greater Than $81,300	69.00%

Sources: City of Oviedo Utility
City of Oviedo Planning/Building/Zoning Department(s)
Seminole County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Sanford Utility**

Potable Water System Service Area Description:

The City of Sanford Potable Water Utility Service Area's boundaries are Seminole Boulevard to the North, Lake Jessup to the South, I-4, Lake Mary Road, Mayfair Country Club and Seminole Community College to the West, and SR 46 to the St. Johns River to the East.

The Utility's service area includes all of the customers within the City limits and customers outside the City limits primarily to the SE of Sanford.

The Utility serves 8,185 single family water customers inside the City limits and approximately 1,000 single family water customers outside City limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	28.50%
$55,001 to $81,300	29.00%
Greater Than $81,300	42.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	51.00%
$55,001 to $81,300	37.00%
Greater Than $81,300	12.00%

Sources: City of Sanford Utility
City of Sanford Planning/Building/Zoning Department(s)
Seminole County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Sanlando Utility**

Potable Water System Service Area Description:

Sanlando Utility is a private utility which serves unincorporated Seminole County customers bordering Longwood and Altamonte Springs. More specifically the general service area runs North from I-4 across to Tequeta Investment Co., Inc. and GND Development Properties #22, then South to Markham Road, turning West to Wekiva Circle., then South again to Sand Lake Road to encompasses the Florida Conference Association of Seventh-Day Adventists properties and Post Lake LTD, continuing Northeast again to Wekiva Springs Drive, turning North again at Longwood Island back to the I-4 starting point.

Based on information from the Utility, and from the Seminole County Property Appraiser, and the Seminole County Planning/Growth Management Department, single family property value mix within the Utility's potable water service area is approximately that of unincorporated Seminole County.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Utility Service Area:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	9.00%
$55,001 to $81,300	35.00%
Greater Than $81,300	56.00%

Sources: Sanlando Utility
City of Altamonte Springs and Longwood Planning/Building/Zoning Department(s)
Seminole County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Seminole County Utilities**

Potable Water System Service Area Description:

The County Utility serves approximately 16,071 single family potable water customers.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	6.00%
$55,001 to $81,300	21.00%
Greater Than $81,300	73.00%

Sources: Seminole County Utility
Seminole County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Winter Springs Utility**

Potable Water System Service Area Description:

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	7.50%
$55,001 to $81,300	20.50%
Greater Than $81,300	72.00%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	9.00%
$55,001 to $81,300	20.00%
Greater Than $81,300	71.00%

Sources: City of Winter Springs Utility
City of Winter Springs Planning/Building/Zoning Department(s)
Seminole County Property Appraiser
Burton & Associates

LAKE COUNTY

Selected Utilities Within Lake County

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Eustis Utility**

Potable Water System Service Area Description:

The Eustis Utility serves customers inside as well as outside the City limits.

The Eustis Utility's Serve Area is described as follows: The boundary to the North runs along Orange Avenue between Oak Lane and S.R. 19, across to Florida Central Railroad, west along C.R. 452 and over to Sugarsand Road. The boundary to the West runs from C.R. 452 south on Fish Camp Road, then east Grand Island Shores Rd (including Indian Trail) to C.R. 44, heading southeast to C.R.452, turning south to SR 19, out Lake Shore Drive to Lake Hermossa, south to U.S. HWY. 441. U.S. Hwy 441 primarily makes up the Southern boundary of the Utility's Service Area, turning north at Gables Drive to begin the Eastern boundary. Moving up Gables to Waycross and over to Abrahms Road the boundary continues back to the north. Then it swings to the east at Lake Joanna Drive, and includes Parkview Avenue area, back north to Estes Road, west on Bates Avenue to C.R.44, the north, northwest to Pine Meadows Golf Course Road, then east to Fairway Drive. North on Fairway Drive to Oak Lane.

The Utility's service area extends over the city limits to the east and to the west, primarily.
Total single family customers served within the city limits are approximately 6,924 with approximately 944 single family customers served who are in unincorporated Lake County.

Percent Of Single Family Homes Located Within The Service Area

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	31.00%
$55,001 to $81,300	32.50%
Greater Than $81,300	36.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	33.00%
$55,001 to $81,300	41.00%
Greater Than $81,300	26.00%

Sources: City of Eustis Utility
City of Eustis Planning/Building/Zoning Department(s)
Lake County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Leesburg Utility**

Potable Water System Service Area Description:

Leesburg Utility serves customers inside and outside the City limits.

Approximately 8,246 single family customers are provided water by the Utility
5,343 of which reside inside the City limits with 2,903 residing in unincorporated county.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	54.50%
$55,001 to $81,300	20.50%
Greater Than $81,300	28.00%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	80.00%
$55,001 to $81,300	17.00%
Greater Than $81,300	29.00%

Sources: City of Leesburg Utility
City of Leesburg Planning/Building/Zoning Department(s)
Lake County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Mount Dora Utility**

Potable Water System Service Area Description:

The Mount Dora Utility's potable water service area includes all of Mount Dora city limits as well as several enclaves outside the city limits.

The Mount Dora Utility's potable water service area is as follows: The North boundary runs along US 441 including spurs of Crooked Lake Dr., Fidora Rd., 19A, and Kurt Street. The Western boundary includes the eastern shore of Lake Saunders , including Sounders Circle and Fairview Avenue. The Southern boundary runs from where Fairview Avenue connects with S.R. 452, east along the northern shore of Lake Dora, then south again to the City Limits. The Eastern boundary begins where Crane Avenue intersects with US 441 and runs north to the northeast corner of the city.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	24.50%
$55,001 to $81,300	21.50%
Greater Than $81,300	54.00%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	20.00%
$55,001 to $81,300	19.00%
Greater Than $81,300	61.00%

Sources: City of Mount Dora Utility
Lake County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Villages of Lake Utilities**

Potable Water System Service Area Description:

The Villages of Lake Utilities is a private utility which primarily serves the retirement. village called "The Villages located in the town of Lady Lake.

The Villages of Lake Utilities serve approximately 7,902 single family water customers.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Town of Lady Lake:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	33.00%
$55,001 to $81,300	41.00%
Greater Than $81,300	26.00%

Unincorporated Lake County:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	29.00%
$55,001 to $81,300	24.00%
Greater Than $81,300	47.00%

Utility Service Area:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	31.00%
$55,001 to $81,300	32.50%
Greater Than $81,300	36.50%

Sources: Villages of Lake Utility
City of Lady Lake Planning/Building/Zoning Department(s)
Lake County Property Appraiser
Burton & Associates

ORANGE COUNTY

Selected Utilities Within Orange County

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Apopka Utility**

Potable Water System Service Area Description:

The Apopka Utility provides potable water to all of the City of Apopka and a small portion of unincorporated Orange County. Approximately 75% of the Utilities water customers are located within the City limits while approximately 25% are located in unincorporated County.

The Apopka Utility Urban Service Area is bordered to the North by W. Pokan Road, to the West by Plymouth Sorrento Road, Schopke Lester Road, Boy Scout Blvd., Orange Avenue, and State Road 437. The Southern Boundary runs along Keene Road and then Foxcreek Lane, and finally turning North again along Mink Drive, across Big Lake Lane and Semoran Blvd., the up Thompson Road, across Pine Shadow Drive and finally connecting again to the starting point at Pokan Road.

The Utility serves a total of 10,753 residential customers, of which approximately 8,744 are single family units. Therefore, approximately 6558 single family customers are inside the City limits, leaving approximately 2,186 single family customers outside the City limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	27.00%
$55,001 to $81,300	40.00%
Greater Than $81,300	33.00%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	26.00%
$55,001 to $81,300	43.00%
Greater Than $81,300	31.00%

Sources: City of Apopka Utility
City of Apopka Planning/Building/Zoning Department(s)
Orange County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Maitland Utility**

Potable Water System Service Area Description:

The Maitland Utility's water system service area is the same as Maitland's city limits.

The total single family customers that the Utility serves is currently 3,039.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	21.00%
$55,001 to $81,300	13.00%
Greater Than $81,300	66.00%

Sources: City of Maitland Utility
Orange County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: Ocoee Utility

Potable Water System Service Area Description:

The Ocoee Utility Service Boundary only extends outside the city limits of Ocoee along East Crown Point Road up to Lake Apopka. This outside city service area extension includes segments of the following: Ocoee-Apopka Road; Demastus Road; CDG Landing; Fullers Cross Road, Ocoee-Clarcona Road; Greenwood; Butler; Anderson Place; Second, Third, Forth and Fifth Avenues; and 10th, 11th, 12th, 13th, 15th, 16th and 17th Avenues.

The Ocoee Utility Potable Water System serves approximately 5,148 single family water customers Approximately 4,122 of those single family water customers are located inside city limits with 1,026 single family water customers outside the city limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	32.50%
$55,001 to $81,300	35.00%
Greater Than $81,300	32.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	37.00%
$55,001 to $81,300	33.00%
Greater Than $81,300	30.00%

Sources: City of Ocoee Utility
City of Ocoee Planning Department
Orange County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Orange County Utility**

Potable Water System Service Area Description:

The Orange County Utilities Water Service Area includes all of unincorporated Orange County.

The Utility served 62,434 single family water customers as of 12/31/96.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	28.00%
$55,001 to $81,300	37.00%
Greater Than $81,300	35.00%

Sources: Orange County Utility
Orange County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Orlando Utilities**

Potable Water System Service Area Description:

The Orlando Utilities' Potable Water System's Service Area includes the following: Northern Boundary includes Hiawassee Road, Clarcona Ocoee Road, Edgewater Drive, Interstate 4, and Forthsyth Rd.; The Eastern Boundary includes Forsyth, Narcoosee, Eastern Beltway, and Kirby Smith Road; the Southern Boundary runs along the Orange County Line, up Boggy Creek Road and across John Young Parkway, South Orange Blossom Trail, and the Florida Turnpike; And the Western Boundary includes portions of Apopka Vineland Road, Dr. Phillips Blvd., the Florida Turnpike, and Hiawassee and Silver Star Roads.

The Orlando Utilities Potable Water System's service area includes the city limits of Orlando, and much of unincorporated Orange County. It also includes several wholesale customers (Such as portions of Winter Park) and other enclaves like Belle Isle.

The Commission provides potable water to approximately 37,679 single family customers within the City limits and approximately 51,161 customers outside the City limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	32.50%
$55,001 to $81,300	36.00%
Greater Than $81,300	31.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	37.00%
$55,001 to $81,300	35.00%
Greater Than $81,300	28.00%

Sources: Orlando Utilities Commission
City of Orlando Planning Department
Orange County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Florida Water Services**

Potable Water System Service Area Description:

Florida Water Services Utilities (previously known as Southern States Utilities)

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Inside Service Area:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	0.00%
$55,001 to $81,300	0.00%
Greater Than $81,300	0.00%

Sources: Florida Water Services

Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Winter Park Utility**

Potable Water System Service Area Description:

The Winter Park Utility service area for potable water includes the city limits of Winter Park as well as a considerable about of surrounding unincorporated Orange County.

The Utility serves approximately 7,319 water customers inside the city limits of Winter Park and approximately 9,473 customers outside the city limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	22.50%
$55,001 to $81,300	26.00%
Greater Than $81,300	51.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	17.00%
$55,001 to $81,300	15.00%
Greater Than $81,300	68.00%

Sources: City of Winter Park Utility
City of Winter Park Planning/Building/Zoning Department(s)
Seminole County Property Appraiser
Burton & Associates

BREVARD COUNTY

Selected Utilities Within Brevard County

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Cocoa Utility**

Potable Water System Service Area Description:

The Cocoa Utility's potable water system serves over 60,000 customers. In addition to customers inside the City limits of the City of Cocoa, the Utility also serves customers in several surrounding Cities, as well as other wholesale customers. The list of account is as follows:

City of Cocoa		5,825
Unincorporated County		14,005
Suntree Development		5,085
Cocoa Beach		3,652
Cape Canaveral		1,830
Port St. John		5,641
Rockledge		7,103
Merritt Island		12,730
	Total	36,040

Wholesale Customers:

NASA	commercial
Canaveral Air Force Station	wholesale
Patrick Airforce Base	wholesale
Titusville	wholesale
Combined To Total Approx.	24,000

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	32.50%
$55,001 to $81,300	38.50%
Greater Than $81,300	28.50%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	50.00%
$55,001 to $81,300	37.00%
Greater Than $81,300	13.00%

Wholesale Customers:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	21.00%
$55,001 to $81,300	52.00%
Greater Than $81,300	27.00%

Sources: City of Cocoa Utility
City of Cocoa Planning/Building/Zoning Department(s)
Brevard County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Titusville Utility**

Potable Water System Service Area Description:

The City of Titusville's Potable Water Utility Service Area's boundaries

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	33.72%
$55,001 to $81,300	29.82%
Greater Than $81,300	36.46%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	50.00%
$55,001 to $81,300	35.00%
Greater Than $81,300	15.00%

Sources: City of Titusville Utility
City of Titusville Planning/Building/Zoning Department(s)
Brevard County Property Appraiser
Burton & Associates

VOLUSIA COUNTY

Selected Utilities Within Volusia County

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Daytona Beach Utility**

Potable Water System Service Area Description:

The Daytona Beach Utility serves customers inside the City limits and outside City limits.

Approximately 34% of the total customer base is outside the City limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	28.83%
$55,001 to $81,300	41.37%
Greater Than $81,300	29.80%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	27.02%
$55,001 to $81,300	44.78%
Greater Than $81,300	28.20%

Sources: City of Daytona Beach Utility
City of Daytona Beach Planning/Building/Zoning Department(s)
Volusia County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Deland Utility**

Potable Water System Service Area Description:

The Deland Utility provides potable water to approximately 8,924 single family customers in side the City limits, and 3,982 single family customers in unincorporated Volusia County.

Refer to service area maps for specifics regarding service area.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	48.52%
$55,001 to $81,300	29.40%
Greater Than $81,300	22.09%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	66.39%
$55,001 to $81,300	20.84%
Greater Than $81,300	12.77%

Sources: City of Deland Utility
City of Deland Planning/Building/Zoning Department(s)
Volusia County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **New Smyrna Beach Utility**

Potable Water System Service Area Description:

The New Smyrna Beach Utility's potable water service area extends South to the City of Edgewater city limits, West to I-95, North to the city limits of Harbor Oaks, and East to the Atlantic Ocean. This service area extends past the city limits of New Smyrna Beach.

The total single family customers that the Utility serves is currently 9,247, of which 7,833 are in side the City limits.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	31.05%
$55,001 to $81,300	35.77%
Greater Than $81,300	33.19%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	31.45%
$55,001 to $81,300	33.58%
Greater Than $81,300	34.97%

Sources: City of New Smyrna Beach Utility
New Smyrna Beach Planning Department
Volusia County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Ormond Beach Utility**

Potable Water System Service Area Description:

The Ormond Beach Potable Water Utility serves all customers inside the Ormond Beach city limits and those outside city customers along the Atlantic Ocean across the Granada Bridge from East Granada Blvd. north to Ocean Air Terrace.

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	8.00%
$55,001 to $81,300	20.00%
Greater Than $81,300	72.00%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	17.51%
$55,001 to $81,300	36.30%
Greater Than $81,300	46.19%

Sources: Ormond Beach Utility
City of Ormond Beach Planning Department
Volusia County Property Appraiser
Burton & Associates

St. Johns River Water Management District

Investigation of Alternative Water Supply Strategies
Evaluation of Water Conservation Rate Structure - Phase II

Utility Name: **Port Orange Utility**

Potable Water System Service Area Description:

Percent Of Single Family Homes Located Within The Service Area Which Fall Within The Following Valuation Ranges:

Outside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	20.74%
$55,001 to $81,300	46.12%
Greater Than $81,300	33.14%

Inside-City Limits:

Valuation Range	*Percent of Service Area Single Family Homes*
Less Than $55,000	10.83%
$55,001 to $81,300	54.29%
Greater Than $81,300	34.88%

Sources: City of Port Orange Utility
City of Port Orange Planniing/Building/Zoning Department(s)
Volusia County Property Appraiser
Burton & Associates

Appendix B

Complete WATERATE Model Output For Each Utility

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Multiple Family	No	○ Seasonal Rates	
Commercial	No		CPI Inflation 0.0%
Res. Irrigation	No		
Comm. Irrigation	No		
	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1997 / 1998	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts (All Classes)

Meter Size	EMU Factor	# Meters 1997/98	Annual Growth %	# Meters 1998/99	# Meters 1999/00	# Meters 2000/01
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	16,803	0.0%	16,803	16,803	16,803
1"	2.5	961	0.0%	961	961	961
1.5"	5.0	362	0.0%	362	362	362
2"	8.0	516	0.0%	516	516	516
3"	15.0	102	0.0%	102	102	102
4"	25.0	92	0.0%	92	92	92
6"	50.0	63	0.0%	63	63	63
8"	80.0	0	0.0%	0	0	0
10"	125.0	3	0.0%	3	3	3
12"	215.0	0	0.0%	0	0	0
Total Meters		18,902		18,902	18,902	18,902
Total EMUs		32,499		32,499	32,499	32,499

Table 3a. Annual Water Use

User Class	1997/98 TG	Annual Growth %	Base Projections 1998/99 TG	1999/00 TG	2000/01 TG
Single Family	793,445	0.0%	793,445	793,445	793,445
Multiple Family	707,793	0.0%	707,793	707,793	707,793
Commercial	1,381,937	0.0%	1,381,937	1,381,937	1,381,937
Res. Irrigation	34,176	0.0%	34,176	34,176	34,176
Comm. Irrigation	166,030	0.0%	166,030	166,030	166,030
		0.0%			
Totals	3,083,381		3,083,381	3,083,381	3,083,381

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multiple Family Water Use Distribution (Annual)

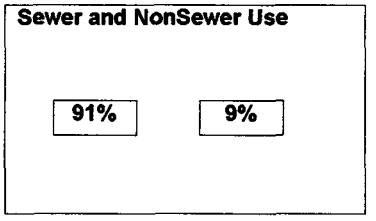

Table 3b. Commercial Water Use Distribution (Annual)

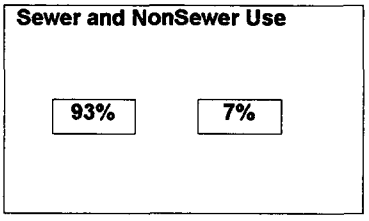

Table 3b. Res. Irrigation Water Use Distribution (Annual)

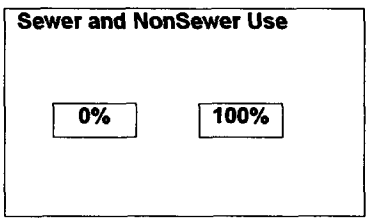

Table 3b. Comm. Irrigation Water Use Distribution (Annual)

Sewer and NonSewer Use	
0%	100%

Table 4. Revenue Requirements

Cost Component	1997/98	Annual Growth %	Base Projections 1998/99	1999/00	2000/01
Revenue Requirements From Rates	$4,294,082	0.0%	$4,294,082	$4,294,082	$4,294,082
Direct Short-Run Revenue Requirements	$429,408	0.0%	$429,408	$429,408	$429,408

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity	Short-Run Elasticity % of Long-Run Response	
Single Family	Default	1st Year	100%
Multiple Family	0.00	2nd Year	0%
Commercial	-0.25	3rd Year	0%
Res. Irrigation	-0.40	4th Year	0%
Comm. Irrigation	-0.40	Other Years	0%
	0.00	Total	100%

Single Family Elasticity

(●) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	27%
Medium Value	45%
High Value	28%
Total	100%

Table 6. Fixed Charges (All Classes)

Meter Size	Fixed Charge $/Month 1997/98	1998/99	1999/00	2000/01
5/8"	$3.31	$3.31	$0.00	$3.31
3/4"	$3.31	$3.31	$0.00	$3.31
1"	$4.42	$4.42	$0.00	$4.42
1.5"	$6.27	$6.27	$0.00	$6.27
2"	$8.49	$8.49	$0.00	$8.49
3"	$13.67	$13.67	$0.00	$13.67
4"	$21.07	$21.07	$0.00	$21.07
6"	$39.57	$39.57	$0.00	$39.57
8"	$61.77	$61.77	$0.00	$61.77
10"	$95.07	$95.07	$0.00	$95.07
12"	$161.67	$161.67	$0.00	$161.67
$/Account/Month	$2.57	$2.57	$0.00	$2.57
$/EMU/Month	$0.74	$0.74	$0.00	$0.74

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1996/97	1	0	3	$1.11	$3.95
	2	3	12	$1.11	$3.95
	3	12		$1.11	
	4				
	5				
	6				
1997/98	1	0	3	$1.11	$3.95
	2	3	12	$1.11	$3.95
	3	12		$1.11	
	4				
	5				
	6				
1998/99	1	0	3	$0.83	$3.95
	2	3	12	$1.11	$3.95
	3	12	25	$1.67	
	4	25		$1.67	
	5				
	6				
1999/00	1	0	3	$1.50	$3.95
	2	3	12	$1.51	$3.95
	3	12			
	4				
	5				
	6				
2000/01	1	0	3	$0.83	$3.95
	2	3	12	$1.10	$3.95
	3	12	25	$1.93	
	4	25		$2.41	
	5				
	6				

Table 7. Multiple Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1996/97	1	0		$1.11	$3.95
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.11	$3.95
	2				
	3				
	4				
	5				
	6				
1998/99	1	0		$1.11	$3.95
	2				
	3				
	4				
	5				
	6				
1999/00	1	0		$1.50	$3.95
	2				
	3				
	4				
	5				
	6				
2000/01	1	0		$1.10	$3.95
	2				
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1996/97	1	0		$1.11	$3.95
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.11	$3.95
	2				
	3				
	4				
	5				
	6				
1998/99	1	0		$1.11	$3.95
	2				
	3				
	4				
	5				
	6				
1999/00	1	0		$1.50	$3.95
	2				
	3				
	4				
	5				
	6				
2000/01	1	0		$1.10	$3.95
	2				
	3				
	4				
	5				
	6				

Table 7. Res. Irrigation Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1996/97	1	0		$1.11	
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.11	
	2				
	3				
	4				
	5				
	6				
1998/99	1	0		$1.67	
	2				
	3				
	4				
	5				
	6				
1999/00	1	0		$1.50	
	2				
	3				
	4				
	5				
	6				
2000/01	1	0		$1.93	
	2				
	3				
	4				
	5				
	6				

Table 7. Comm. Irrigation Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1996/97	1	0		$1.11	
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.11	
	2				
	3				
	4				
	5				
	6				
1998/99	1	0		$1.67	
	2				
	3				
	4				
	5				
	6				
1999/00	1	0		$1.50	
	2				
	3				
	4				
	5				
	6				
2000/01	1	0		$1.93	
	2				
	3				
	4				
	5				
	6				

Table 8. Revenue Summary

	1997/98	1998/99	1999/00	2000/01
Base Revenue Requirement	$4,294,082	$4,294,082	$4,294,082	$4,294,082
Price Elastic Change	$0	-$11,510	$14,484	-$16,744
Adjusted Revenue Requirement	$4,294,082	$4,282,572	$4,308,566	$4,277,338
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$582,938	$582,938	$0	$582,938
Meter Size Dependent	$288,591	$288,591	$0	$288,591
Subtotal	$871,529	$871,529	$0	$871,529
Quantity Charge				
Single Family	$880,724	$804,264	$970,742	$775,866
Multiple Family	$785,650	$785,650	$1,061,690	$778,572
Commercial	$1,533,950	$1,533,950	$2,026,760	$1,521,075
Res. Irrigation	$37,935	$48,447	$45,431	$52,832
Comm. Irrigation	$184,293	$235,361	$220,706	$256,663
Subtotal	$3,422,553	$3,407,672	$4,325,328	$3,385,008
Total Rate Revenues	$4,294,082	$4,279,201	$4,325,328	$4,256,537
Revenue Surplus (Shortfall)	$0	($3,371)	$16,762	($20,801)

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1998/99	Single Family	793,445	-52,388	-6.6%
	Multiple Family	707,793	0	0.0%
	Commercial	1,381,937	0	0.0%
	Res. Irrigation	34,176	-5,166	-15.1%
	Comm. Irrigation	166,030	-25,096	-15.1%
	Totals	3,083,381	-82,649	-2.7%
1999/00	Single Family	793,445	157,549	19.9%
	Multiple Family	707,793	0	0.0%
	Commercial	1,381,937	-30,764	-2.2%
	Res. Irrigation	34,176	-3,889	-11.4%
	Comm. Irrigation	166,030	-18,893	-11.4%
	Totals	3,083,381	104,003	3.4%
2000/01	Single Family	793,445	-81,247	-10.2%
	Multiple Family	707,793	0	0.0%
	Commercial	1,381,937	858	0.1%
	Res. Irrigation	34,176	-6,802	-19.9%
	Comm. Irrigation	166,030	-33,044	-19.9%
	Totals	3,083,381	-120,234	-3.9%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1998/99	1	0	3	33.8%	33.9%	0.1%
	2	3	12	47.2%	46.7%	-1.0%
	3	12	25	15.6%	11.2%	-27.9%
	4	25		3.4%	1.6%	-53.7%
	5					
	6					
1999/00	1	0	3	33.8%	33.9%	0.3%
	2	3	12	47.2%	47.3%	0.2%
	3	12		19.0%	38.6%	103.5%
	4					
	5					
	6					
2000/01	1	0	3	33.8%	33.9%	0.1%
	2	3	12	47.2%	46.3%	-1.8%
	3	12	25	15.6%	9.0%	-42.1%
	4	25		3.4%	0.5%	-84.3%
	5					
	6					

Table 10. Water Change by Block (Multiple Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1998/99	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1999/00	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
2000/01	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1998/99	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1999/00	1	0		100.0%	97.8%	-2.2%
	2					
	3					
	4					
	5					
	6					
2000/01	1	0		100.0%	100.1%	0.1%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Res. Irrigation)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1998/99	1	0		100.0%	84.9%	-15.1%
	2					
	3					
	4					
	5					
	6					
1999/00	1	0		100.0%	88.6%	-11.4%
	2					
	3					
	4					
	5					
	6					
2000/01	1	0		100.0%	80.1%	-19.9%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Comm. Irrigation)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1998/99	1	0		100.0%	84.9%	-15.1%
	2					
	3					
	4					
	5					
	6					
1999/00	1	0		100.0%	88.6%	-11.4%
	2					
	3					
	4					
	5					
	6					
2000/01	1	0		100.0%	80.1%	-19.9%
	2					
	3					
	4					
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Irrigation	Yes	○ Seasonal Rates	
Multifamily	No		CPI Inflation 0.0%
Commercial	No		
SF - Outside	Yes		
Irrig - Outside	Yes		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts (Single Family)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	7,314	0.0%	7,314	7,314	7,314
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	26	0.0%	26	26	26
1.5"	5.0	1	0.0%	1	1	1
2"	8.0	1	0.0%	1	1	1
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		7,342		7,342	7,342	7,342
Total EMUs		7,392		7,392	7,392	7,392

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Irrigation)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	335	0.0%	335	335	335
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	60	0.0%	60	60	60
1.5"	5.0	25	0.0%	25	25	25
2"	8.0	36	0.0%	36	36	36
3"	16.0	1	0.0%	1	1	1
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		457		457	457	457
Total EMUs		914		914	914	914

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Multifamily)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	3.0	209	0.0%	209	209	209
3/4"	1.0	0	0.0%	0	0	0
1"	6.8	17	0.0%	17	17	17
1.5"	5.0	6	0.0%	6	6	6
2"	37.8	26	0.0%	26	26	26
3"	62.3	26	0.0%	26	26	26
4"	83.2	12	0.0%	12	12	12
6"	122.3	4	0.0%	4	4	4
8"	0.0	0	0.0%	0	0	0
10"	0.0	0	0.0%	0	0	0
12"	0.0	0	0.0%	0	0	0
Total Meters		300		300	300	300
Total EMUs		4,863		4,863	4,863	4,863

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Commercial)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	873	0.0%	873	873	873
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	118	0.0%	118	118	118
1.5"	5.0	49	0.0%	49	49	49
2"	8.0	92	0.0%	92	92	92
3"	16.0	11	0.0%	11	11	11
4"	25.0	5	0.0%	5	5	5
6"	50.0	1	0.0%	1	1	1
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		1,149		1,149	1,149	1,149
Total EMUs		2,500		2,500	2,500	2,500

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (SF - Outside)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	1,414	0.0%	1,414	1,414	1,414
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	5	0.0%	5	5	5
1.5"	5.0	2	0.0%	2	2	2
2"	8.0	2	0.0%	2	2	2
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		1,423		1,423	1,423	1,423
Total EMUs		1,453		1,453	1,453	1,453

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Irrig - Outside)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	1	0.0%	1	1	1
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	3	0.0%	3	3	3
1.5"	5.0	3	0.0%	3	3	3
2"	8.0	14	0.0%	14	14	14
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		21		21	21	21
Total EMUs		136		136	136	136

Fixed charges vary by class?

○ No ◉ Yes

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	438,970	0.0%	438,970	438,970	438,970
Irrigation	205,386	0.0%	205,386	205,386	205,386
Multifamily	190,044	0.0%	190,044	190,044	190,044
Commercial	298,597	0.0%	298,597	298,597	298,597
SF - Outside	111,741	0.0%	111,741	111,741	111,741
Irrig - Outside	33,327	0.0%	33,327	33,327	33,327
Totals	1,278,065		1,278,065	1,278,065	1,278,065

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	182

Table 3b. Irrigation Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multifamily Water Use Distribution (Annual)

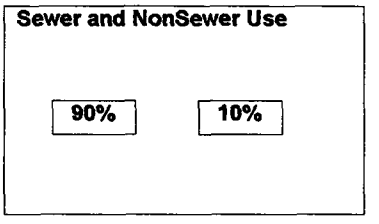

Table 3b. Commercial Water Use Distribution (Annual)

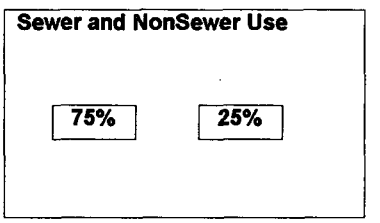

Table 3b. SF - Outside Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Irrig - Outside Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$3,913,880	0.0%	$3,913,880	$3,913,880	$3,913,880
Direct Short-Run Revenue Requirements	$391,388	0.0%	$391,388	$391,388	$391,388

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity
Single Family	DEFAULT
Irrigation	-0.40
Multifamily	0.00
Commercial	-0.25
SF - Outside	-0.32
Irrig - Outside	-0.40

Short-Run Elasticity % of Long-Run Response	
1st Year	100%
2nd Year	0%
3rd Year	0%
4th Year	0%
Other Years	0%
Total	100%

Single Family Elasticity

(◉) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	31%
Medium Value	36%
High Value	33%
Total	100%

Table 6. Fixed Charges (Single Family)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$11.65	$11.65	$0.00	$11.65
3/4"	$11.65	$11.65	$0.00	$11.65
1"	$26.28	$26.28	$0.00	$26.28
1.5"	$50.65	$50.65	$0.00	$50.65
2"	$79.90	$79.90	$0.00	$79.90
3"	$157.90	$157.90	$0.00	$157.90
4"	$245.65	$245.65	$0.00	$245.65
6"	$489.40	$489.40	$0.00	$489.40
8"	$781.90	$781.90	$0.00	$781.90
10"	$1,123.15	$1,123.15	$0.00	$1,123.15
12"	$2,098.15	$2,098.15	$0.00	$2,098.15
$/Account/Month	$1.90	$1.90	$0.00	$1.90
$/EMU/Month	$9.75	$9.75	$0.00	$9.75

Table 6. Fixed Charges (Irrigation)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$11.65	$11.65	$0.00	$11.65
3/4"	$11.65	$11.65	$0.00	$11.65
1"	$26.28	$26.28	$0.00	$26.28
1.5"	$50.65	$50.65	$0.00	$50.65
2"	$79.90	$79.90	$0.00	$79.90
3"	$157.90	$157.90	$0.00	$157.90
4"	$245.65	$245.65	$0.00	$245.65
6"	$489.40	$489.40	$0.00	$489.40
8"	$781.90	$781.90	$0.00	$781.90
10"	$1,123.15	$1,123.15	$0.00	$1,123.15
12"	$2,098.15	$2,098.15	$0.00	$2,098.15
$/Account/Month	$1.90	$1.90	$0.00	$1.90
$/EMU/Month	$9.75	$9.75	$0.00	$9.75

Table 6. Fixed Charges (Multifamily)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$31.15	$31.15	$0.00	$31.15
3/4"	$11.65	$11.65	$0.00	$11.65
1"	$68.20	$68.20	$0.00	$68.20
1.5"	$50.65	$50.65	$0.00	$50.65
2"	$370.45	$370.45	$0.00	$370.45
3"	$609.32	$609.32	$0.00	$609.32
4"	$813.10	$813.10	$0.00	$813.10
6"	$1,194.33	$1,194.33	$0.00	$1,194.33
8"	$1.90	$1.90	$0.00	$1.90
10"	$1.90	$1.90	$0.00	$1.90
12"	$1.90	$1.90	$0.00	$1.90
$/Account/Month	$1.90	$1.90	$0.00	$1.90
$/EMU/Month	$9.75	$9.75	$0.00	$9.75

Table 6. Fixed Charges (Commercial)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$11.65	$11.65	$0.00	$11.65
3/4"	$11.65	$11.65	$0.00	$11.65
1"	$26.28	$26.28	$0.00	$26.28
1.5"	$50.65	$50.65	$0.00	$50.65
2"	$79.90	$79.90	$0.00	$79.90
3"	$157.90	$157.90	$0.00	$157.90
4"	$245.65	$245.65	$0.00	$245.65
6"	$489.40	$489.40	$0.00	$489.40
8"	$781.90	$781.90	$0.00	$781.90
10"	$1,123.15	$1,123.15	$0.00	$1,123.15
12"	$2,098.15	$2,098.15	$0.00	$2,098.15
$/Account/Month	$1.90	$1.90	$0.00	$1.90
$/EMU/Month	$9.75	$9.75	$0.00	$9.75

Table 6. Fixed Charges (SF - Outside)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$14.57	$14.57	$0.00	$14.57
3/4"	$14.57	$14.57	$0.00	$14.57
1"	$32.86	$32.86	$0.00	$32.86
1.5"	$63.33	$63.33	$0.00	$63.33
2"	$99.90	$99.90	$0.00	$99.90
3"	$197.42	$197.42	$0.00	$197.42
4"	$307.13	$307.13	$0.00	$307.13
6"	$611.88	$611.88	$0.00	$611.88
8"	$977.58	$977.58	$0.00	$977.58
10"	$1,404.23	$1,404.23	$0.00	$1,404.23
12"	$2,623.23	$2,623.23	$0.00	$2,623.23
$/Account/Month	$2.38	$2.38	$0.00	$2.38
$/EMU/Month	$12.19	$12.19	$0.00	$12.19

Table 6. Fixed Charges (Irrig - Outside)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$14.57	$14.57	$0.00	$14.57
3/4"	$14.57	$14.57	$0.00	$14.57
1"	$32.86	$32.86	$0.00	$32.86
1.5"	$63.33	$63.33	$0.00	$63.33
2"	$99.90	$99.90	$0.00	$99.90
3"	$197.42	$197.42	$0.00	$197.42
4"	$307.13	$307.13	$0.00	$307.13
6"	$611.88	$611.88	$0.00	$611.88
8"	$977.58	$977.58	$0.00	$977.58
10"	$1,404.23	$1,404.23	$0.00	$1,404.23
12"	$2,623.23	$2,623.23	$0.00	$2,623.23
$/Account/Month	$2.38	$2.38	$0.00	$2.38
$/EMU/Month	$12.19	$12.19	$0.00	$12.19

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	7	$1.05	$1.55
	2	7	14	$1.25	$1.55
	3	14	25	$1.70	$1.55
	4	25		$1.70	$1.55
	5				
	6				
1994/95	1	0	7	$1.05	$1.55
	2	7	14	$1.25	$1.55
	3	14	25	$1.70	$1.55
	4	25		$1.70	$1.55
	5				
	6				
1995/96	1	0	7	$1.19	$1.55
	2	7	14	$1.19	$1.55
	3	14	25	$1.19	$1.55
	4	25		$1.19	$1.55
	5				
	6				
1996/97	1	0	7	$3.52	$1.55
	2	7	14	$3.52	$1.55
	3	14	25	$3.52	$1.55
	4	25		$3.52	$1.55
	5				
	6				
1997/98	1	0	7	$0.97	$1.55
	2	7	14	$1.29	$1.55
	3	14	25	$2.26	$1.55
	4	25		$2.83	$1.55
	5				
	6				

Table 7. Irrigation Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	7	$1.05	
	2	7	14	$1.25	
	3	14	25	$1.70	
	4	25		$1.70	
	5				
	6				
1994/95	1	0	7	$1.05	
	2	7	14	$1.25	
	3	14	25	$1.70	
	4	25		$1.70	
	5				
	6				
1995/96	1	0	7	$1.19	
	2	7	14	$1.19	
	3	14	25	$1.19	
	4	25		$1.19	
	5				
	6				
1996/97	1	0	7	$3.52	
	2	7	14	$3.52	
	3	14	25	$3.52	
	4	25		$3.52	
	5				
	6				
1997/98	1	0	7	$0.97	
	2	7	14	$1.29	
	3	14	25	$2.26	
	4	25		$2.83	
	5				
	6				

Table 7. Multifamily Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$1.25	$1.55
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$1.25	$1.55
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$1.19	$1.55
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$3.52	$1.55
	2				
	3				
	4				
	5				
	6				$3.26
1997/98	1	0		$1.29	$1.55
	2				
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$1.25	$1.55
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$1.25	$1.55
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$1.19	$1.55
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$3.52	$1.55
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.29	$1.55
	2				
	3				
	4				
	5				
	6				

Table 7. SF - Outside Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	7	$1.31	$1.94
	2	7	14	$1.56	$1.94
	3	14	25	$2.13	$1.94
	4	25		$2.14	$1.94
	5				
	6				
1994/95	1	0	7	$1.31	$1.94
	2	7	14	$1.56	$1.94
	3	14	25	$2.13	$1.94
	4	25		$2.13	$1.94
	5				
	6				
1995/96	1	0	7	$1.49	$1.94
	2	7	14	$1.49	$1.94
	3	14	25	$1.49	$1.94
	4	25		$1.49	$1.94
	5				
	6				
1996/97	1	0	7	$4.40	$1.94
	2	7	14	$4.40	$1.94
	3	14	25	$4.40	$1.94
	4	25		$4.40	$1.94
	5				
	6				
1997/98	1	0	7	$1.21	$1.94
	2	7	14	$1.61	$1.94
	3	14	25	$2.83	$1.94
	4	25		$3.54	$1.94
	5				
	6				

Table 7. Irrig - Outside Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	7	$1.31	
	2	7	14	$1.56	
	3	14	25	$2.13	
	4	25		$2.13	
	5				
	6				
1994/95	1	0	7	$1.31	
	2	7	14	$1.56	
	3	14	25	$2.13	
	4	25		$2.13	
	5				
	6				
1995/96	1	0	7	$1.49	
	2	7	14	$1.49	
	3	14	25	$1.49	
	4	25		$1.49	
	5				
	6				
1996/97	1	0	7	$4.40	
	2	7	14	$4.40	
	3	14	25	$4.40	
	4	25		$4.40	
	5				
	6				
1997/98	1	0	7	$1.21	
	2	7	14	$1.61	
	3	14	25	$2.83	
	4	25		$3.54	
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$3,913,880	$3,913,880	$3,913,880	$3,913,880
Price Elastic Change	$0	$9,387	-$64,553	-$9,019
Adjusted Revenue Requirement	$3,913,880	$3,923,267	$3,849,327	$3,904,861
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$252,095	$252,095	$0	$252,095
Meter Size Dependent	$2,065,712	$2,065,712	$0	$2,065,712
Subtotal	$2,317,807	$2,317,807	$0	$2,317,807
Quantity Charge				
Single Family	$525,352	$537,968	$1,302,745	$522,171
Irrigation	$244,368	$257,888	$493,703	$229,682
Multifamily	$237,555	$226,152	$668,955	$245,157
Commercial	$373,246	$357,886	$881,828	$383,406
SF - Outside	$166,032	$169,858	$411,803	$165,346
Irrig - Outside	$49,519	$52,362	$100,141	$46,544
Subtotal	$1,596,073	$1,602,115	$3,859,176	$1,592,307
Total Rate Revenues	$3,913,880	$3,919,922	$3,859,176	$3,910,114
Revenue Surplus (Shortfall)	$0	($3,345)	$9,849	$5,253

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	438,970	13,104	3.0%
	Irrigation	205,386	11,327	5.5%
	Multifamily	190,044	0	0.0%
	Commercial	298,597	2,148	0.7%
	SF - Outside	111,741	2,258	2.0%
	Irrig - Outside	33,327	1,815	5.4%
	Totals	1,278,065	30,652	2.4%
1996/97	Single Family	438,970	-68,872	-15.7%
	Irrigation	205,386	-65,129	-31.7%
	Multifamily	190,044	0	0.0%
	Commercial	298,597	-48,078	-16.1%
	SF - Outside	111,741	-18,149	-16.2%
	Irrig - Outside	33,327	-10,568	-31.7%
	Totals	1,278,065	-210,796	-16.5%
1997/98	Single Family	438,970	-13,164	-3.0%
	Irrigation	205,386	-10,408	-5.1%
	Multifamily	190,044	0	0.0%
	Commercial	298,597	-1,383	-0.5%
	SF - Outside	111,741	-2,811	-2.5%
	Irrig - Outside	33,327	-1,684	-5.1%
	Totals	1,278,065	-29,451	-2.3%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	62.5%	61.9%	-0.9%
	2	7	14	21.6%	21.9%	1.7%
	3	14	25	11.8%	13.6%	15.4%
	4	25		4.2%	5.6%	32.7%
	5					
	6					
1996/97	1	0	7	62.5%	56.5%	-9.6%
	2	7	14	21.6%	16.6%	-22.8%
	3	14	25	11.8%	9.0%	-23.3%
	4	25		4.2%	2.1%	-49.2%
	5					
	6					
1997/98	1	0	7	62.5%	62.8%	0.5%
	2	7	14	21.6%	21.3%	-1.1%
	3	14	25	11.8%	10.3%	-12.3%
	4	25		4.2%	2.5%	-39.3%
	5					
	6					

Table 10. Water Change by Block (Irrigation)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	63.5%	62.2%	-2.0%
	2	7	14	21.7%	22.3%	3.1%
	3	14	25	11.5%	14.8%	29.2%
	4	25		3.4%	6.1%	81.7%
	5					
	6					
1996/97	1	0	7	63.5%	49.8%	-21.5%
	2	7	14	21.7%	12.3%	-43.1%
	3	14	25	11.5%	5.5%	-52.2%
	4	25		3.4%	0.6%	-81.2%
	5					
	6					
1997/98	1	0	7	63.5%	64.2%	1.2%
	2	7	14	21.7%	21.1%	-2.5%
	3	14	25	11.5%	8.4%	-26.5%
	4	25		3.4%	1.1%	-66.2%
	5					
	6					

Table 10. Water Change by Block (Multifamily)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	100.7%	0.7%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	83.9%	-16.1%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	99.5%	-0.5%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (SF - Outside)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	63.5%	63.0%	-0.7%
	2	7	14	21.7%	21.9%	1.0%
	3	14	25	11.5%	12.8%	11.6%
	4	25		3.4%	4.3%	27.3%
	5					
	6					
1996/97	1	0	7	63.5%	57.4%	-9.6%
	2	7	14	21.7%	16.4%	-24.1%
	3	14	25	11.5%	8.2%	-28.1%
	4	25		3.4%	1.7%	-50.9%
	5					
	6					
1997/98	1	0	7	63.5%	63.7%	0.4%
	2	7	14	21.7%	21.5%	-0.8%
	3	14	25	11.5%	10.1%	-11.6%
	4	25		3.4%	2.2%	-36.3%
	5					
	6					

Table 10. Water Change by Block (Irrig - Outside)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	63.5%	62.2%	-2.1%
	2	7	14	21.7%	22.3%	2.9%
	3	14	25	11.5%	14.8%	29.3%
	4	25		3.4%	6.2%	81.9%
	5					
	6					
1996/97	1	0	7	63.5%	49.8%	-21.5%
	2	7	14	21.7%	12.3%	-43.1%
	3	14	25	11.5%	5.5%	-52.1%
	4	25		3.4%	0.6%	-81.1%
	5					
	6					
1997/98	1	0	7	63.5%	64.2%	1.2%
	2	7	14	21.7%	21.1%	-2.5%
	3	14	25	11.5%	8.4%	-26.5%
	4	25		3.4%	1.1%	-66.1%
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Multiple Family	Yes	○ Seasonal Rates	
Commercial	Yes		CPI Inflation 0.0%
	No		
	No		
	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	58,670	0.0%	58,670	58,670	58,670
1"	2.5	429	0.0%	429	429	429
1.5"	5.0	194	0.0%	194	194	194
2"	8.0	290	0.0%	290	290	290
3"	16.0	75	0.0%	75	75	75
4"	25.0	19	0.0%	19	19	19
6"	50.0	13	0.0%	13	13	13
8"	80.0	3	0.0%	3	3	3
10"	125.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		59,693		59,693	59,693	59,693
Total EMUs		65,598		65,598	65,598	65,598

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	6,477,334	0.0%	6,477,334	6,477,334	6,477,334
Multiple Family	733,429	0.0%	733,429	733,429	733,429
Commercial	2,323,014	0.0%	2,323,014	2,323,014	2,323,014
		0.0%			
		0.0%			
		0.0%			
Totals	9,533,777		9,533,777	9,533,777	9,533,777

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multiple Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Commercial Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$15,973,819	0.0%	$15,973,819	$15,973,819	$15,973,819
Direct Short-Run Revenue Requirements	$1,597,382	0.0%	$1,597,382	$1,597,382	$1,597,382

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity	Short-Run Elasticity % of Long-Run Response	
Single Family	Default	1st Year	100%
Multiple Family	0.00	2nd Year	0%
Commercial	-0.25	3rd Year	0%
	0.00	4th Year	0%
	0.00	Other Years	0%
	0.00	Total	100%

Single Family Elasticity

(●) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	28%
Medium Value	37%
High Value	35%
Total	100%

Table 6. Fixed Charges (All Classes)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$5.47	$5.47	$0.00	$5.47
3/4"	$5.47	$5.47	$0.00	$5.47
1"	$9.72	$9.72	$0.00	$9.72
1.5"	$16.79	$16.79	$0.00	$16.79
2"	$25.28	$25.28	$0.00	$25.28
3"	$47.92	$47.92	$0.00	$47.92
4"	$73.39	$73.39	$0.00	$73.39
6"	$144.14	$144.14	$0.00	$144.14
8"	$229.04	$229.04	$0.00	$229.04
10"	$356.39	$356.39	$0.00	$356.39
12"	$611.09	$611.09	$0.00	$611.09
$/Account/Month	$2.64	$2.64	$0.00	$2.64
$/EMU/Month	$2.83	$2.83	$0.00	$2.83

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	3	$1.19	$3.18
	2	3	15	$1.19	$3.18
	3	15	30	$1.79	
	4	30		$1.79	
	5				
	6				
1994/95	1	0	3	$1.19	$3.18
	2	3	15	$1.19	$3.18
	3	15	30	$1.79	
	4	30		$1.79	
	5				
	6				
1995/96	1	0	3	$1.20	$3.18
	2	3	15	$1.20	$3.18
	3	15	30	$1.20	
	4	30		$1.20	
	5				
	6				
1996/97	1	0	3	$1.69	$3.18
	2	3	15	$1.69	$3.18
	3	15	30	$1.69	
	4	30		$1.69	
	5				
	6				
1997/98	1	0	3	$1.01	$3.18
	2	3	15	$1.34	$3.18
	3	15	30	$2.35	
	4	30		$2.94	
	5				
	6				

Table 7. Multiple Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	3	$1.19	$3.18
	2	3	15	$1.19	$3.18
	3	15	30	$1.19	$3.18
	4	30		$1.19	$3.18
	5				
	6				
1994/95	1	0	3	$1.19	$3.18
	2	3	15	$1.19	$3.18
	3	15	30	$1.19	$3.18
	4	30		$1.19	$3.18
	5				
	6				
1995/96	1	0	3	$1.20	$3.18
	2	3	15	$1.20	$3.18
	3	15	30	$1.20	$3.18
	4	30		$1.20	$3.18
	5				
	6				
1996/97	1	0	3	$1.69	$3.18
	2	3	15	$1.69	$3.18
	3	15	30	$1.69	$3.18
	4	30		$1.69	$3.18
	5				
	6				
1997/98	1	0	3	$1.01	$3.18
	2	3	15	$1.34	$3.18
	3	15	30	$1.34	$3.18
	4	30		$1.34	$3.18
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	3	$1.19	$3.18
	2	3	15	$1.19	$3.18
	3	15	30	$1.19	$3.18
	4	30		$1.19	$3.18
	5				
	6				
1994/95	1	0	3	$1.19	$3.18
	2	3	15	$1.19	$3.18
	3	15	30	$1.19	$3.18
	4	30		$1.19	$3.18
	5				
	6				
1995/96	1	0	3	$1.20	$3.18
	2	3	15	$1.20	$3.18
	3	15	30	$1.20	$3.18
	4	30		$1.20	$3.18
	5				
	6				
1996/97	1	0	3	$1.69	$3.18
	2	3	15	$1.69	$3.18
	3	15	30	$1.69	$3.18
	4	30		$1.69	$3.18
	5				
	6				
1997/98	1	0	3	$1.01	$3.18
	2	3	15	$1.34	$3.18
	3	15	30	$1.34	$3.18
	4	30		$1.34	$3.18
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$15,973,819	$15,973,819	$15,973,819	$15,973,819
Price Elastic Change	$0	$68,115	-$14,648	-$63,016
Adjusted Revenue Requirement	$15,973,819	$16,041,934	$15,959,171	$15,910,803
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$1,891,074	$1,891,074	$0	$1,891,074
Meter Size Dependent	$2,227,708	$2,227,708	$0	$2,227,708
Subtotal	$4,118,782	$4,118,782	$0	$4,118,782
Quantity Charge				
Single Family	$8,217,869	$8,262,240	$10,904,226	$8,028,093
Multiple Family	$872,781	$880,115	$1,239,495	$900,925
Commercial	$2,764,387	$2,786,018	$3,820,610	$2,829,719
Subtotal	$11,855,037	$11,928,373	$15,964,331	$11,758,737
Total Rate Revenues	$15,973,819	$16,047,155	$15,964,331	$15,877,519
Revenue Surplus (Shortfall)	$0	$5,221	$5,160	($33,284)

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	6,477,334	407,866	6.3%
	Multiple Family	733,429	0	0.0%
	Commercial	2,323,014	-1,332	-0.1%
	Totals	9,533,777	406,534	4.3%
1996/97	Single Family	6,477,334	-25,129	-0.4%
	Multiple Family	733,429	0	0.0%
	Commercial	2,323,014	-62,298	-2.7%
	Totals	9,533,777	-87,427	-0.9%
1997/98	Single Family	6,477,334	-358,411	-5.5%
	Multiple Family	733,429	0	0.0%
	Commercial	2,323,014	-17,693	-0.8%
	Totals	9,533,777	-376,104	-3.9%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs		Base % Sold	New % Sold	% Change
		Min	Max			
1995/96	1	0	3	33.8%	33.9%	0.1%
	2	3	15	53.1%	53.2%	0.2%
	3	15	30	11.6%	16.0%	38.5%
	4	30		1.6%	3.3%	110.1%
	5					
	6					
1996/97	1	0	3	33.8%	33.7%	-0.4%
	2	3	15	53.1%	51.9%	-2.2%
	3	15	30	11.6%	12.3%	6.1%
	4	30		1.6%	1.8%	13.7%
	5					
	6					
1997/98	1	0	3	33.8%	33.8%	0.1%
	2	3	15	53.1%	52.3%	-1.3%
	3	15	30	11.6%	8.0%	-30.8%
	4	30		1.6%	0.3%	-82.3%
	5					
	6					

Table 10. Water Change by Block (Multiple Family)

Year	Block	TGs		Base	New	%
		Min	Max	% Sold	% Sold	Change
1995/96	1	0	3	33.8%	33.8%	0.0%
	2	3	15	53.1%	53.1%	0.0%
	3	15	30	11.6%	11.6%	0.0%
	4	30		1.6%	1.6%	0.0%
	5					
	6					
1996/97	1	0	3	33.8%	33.8%	0.0%
	2	3	15	53.1%	53.1%	0.0%
	3	15	30	11.6%	11.6%	0.0%
	4	30		1.6%	1.6%	0.0%
	5					
	6					
1997/98	1	0	3	33.8%	33.8%	0.0%
	2	3	15	53.1%	53.1%	0.0%
	3	15	30	11.6%	11.6%	0.0%
	4	30		1.6%	1.6%	0.0%
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	3	33.8%	33.8%	0.0%
	2	3	15	53.1%	53.0%	-0.1%
	3	15	30	11.6%	11.5%	-0.1%
	4	30		1.6%	1.6%	-0.3%
	5					
	6					
1996/97	1	0	3	33.8%	33.7%	-0.5%
	2	3	15	53.1%	51.5%	-2.9%
	3	15	30	11.6%	10.8%	-6.5%
	4	30		1.6%	1.4%	-13.5%
	5					
	6					
1997/98	1	0	3	33.8%	33.8%	0.0%
	2	3	15	53.1%	52.6%	-0.9%
	3	15	30	11.6%	11.3%	-2.0%
	4	30		1.6%	1.5%	-4.2%
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Multiple Family	Yes	○ Seasonal Rates	
Commercial	Yes		CPI Inflation 0.0%
Campgrnd/RV	Yes		
	No		
	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts (Single Family)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	16,885	0.0%	16,885	16,885	16,885
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	0	0.0%	0	0	0
1.5"	5.0	0	0.0%	0	0	0
2"	8.0	0	0.0%	0	0	0
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		16,885		16,885	16,885	16,885
Total EMUs		16,885		16,885	16,885	16,885

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Multiple Family)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	1,890	0.0%	1,890	1,890	1,890
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	0	0.0%	0	0	0
1.5"	5.0	0	0.0%	0	0	0
2"	8.0	0	0.0%	0	0	0
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		1,890		1,890	1,890	1,890
Total EMUs		1,890		1,890	1,890	1,890

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Commercial)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	580	0.0%	580	580	580
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	0	0.0%	0	0	0
1.5"	5.0	0	0.0%	0	0	0
2"	8.0	0	0.0%	0	0	0
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		580		580	580	580
Total EMUs		580		580	580	580

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Campgrnd/RV)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	727	0.0%	727	727	727
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	0	0.0%	0	0	0
1.5"	5.0	0	0.0%	0	0	0
2"	8.0	0	0.0%	0	0	0
3"	16.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		727		727	727	727
Total EMUs		727		727	727	727

Fixed charges vary by class?

○ No ◉ Yes

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	724,884	0.0%	724,884	724,884	724,884
Multiple Family	56,376	0.0%	56,376	56,376	56,376
Commercial	112,812	0.0%	112,812	112,812	112,812
Campgrnd/RV	9,696	0.0%	9,696	9,696	9,696
		0.0%			
		0.0%			
Totals	903,768		903,768	903,768	903,768

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multiple Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Commercial Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Campgrnd/RV Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$3,538,354	0.0%	$3,538,354	$3,538,354	$3,538,354
Direct Short-Run Revenue Requirements	$353,835	0.0%	$353,835	$353,835	$353,835

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity
Single Family	Default
Multiple Family	0.00
Commercial	-0.25
Campgrnd/RV	0.00
	0.00
	0.00

Short-Run Elasticity % of Long-Run Response	
1st Year	100%
2nd Year	0%
3rd Year	0%
4th Year	0%
Other Years	0%
Total	100%

Single Family Elasticity

(◉) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	11%
Medium Value	54%
High Value	35%
Total	100%

Table 6. Fixed Charges (Single Family)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$7.25	$7.25	$0.00	$7.25
3/4"	$7.25	$7.25	$0.00	$7.25
1"	$7.25	$7.25	$0.00	$7.25
1.5"	$7.25	$7.25	$0.00	$7.25
2"	$7.25	$7.25	$0.00	$7.25
3"	$7.25	$7.25	$0.00	$7.25
4"	$7.25	$7.25	$0.00	$7.25
6"	$7.25	$7.25	$0.00	$7.25
8"	$7.25	$7.25	$0.00	$7.25
10"	$7.25	$7.25	$0.00	$7.25
12"	$7.25	$7.25	$0.00	$7.25
$/Account/Month	$7.25	$7.25	$0.00	$7.25
$/EMU/Month	$0.00	$0.00	$0.00	$0.00

Table 6. Fixed Charges (Multiple Family)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$7.25	$7.25	$0.00	$7.25
3/4"	$7.25	$7.25	$0.00	$7.25
1"	$7.25	$7.25	$0.00	$7.25
1.5"	$7.25	$7.25	$0.00	$7.25
2"	$7.25	$7.25	$0.00	$7.25
3"	$7.25	$7.25	$0.00	$7.25
4"	$7.25	$7.25	$0.00	$7.25
6"	$7.25	$7.25	$0.00	$7.25
8"	$7.25	$7.25	$0.00	$7.25
10"	$7.25	$7.25	$0.00	$7.25
12"	$7.25	$7.25	$0.00	$7.25
$/Account/Month	$7.25	$7.25	$0.00	$7.25
$/EMU/Month	$0.00	$0.00	$0.00	$0.00

Table 6. Fixed Charges (Commercial)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$7.25	$7.25	$0.00	$7.25
3/4"	$7.25	$7.25	$0.00	$7.25
1"	$7.25	$7.25	$0.00	$7.25
1.5"	$7.25	$7.25	$0.00	$7.25
2"	$7.25	$7.25	$0.00	$7.25
3"	$7.25	$7.25	$0.00	$7.25
4"	$7.25	$7.25	$0.00	$7.25
6"	$7.25	$7.25	$0.00	$7.25
8"	$7.25	$7.25	$0.00	$7.25
10"	$7.25	$7.25	$0.00	$7.25
12"	$7.25	$7.25	$0.00	$7.25
$/Account/Month	$7.25	$7.25	$0.00	$7.25
$/EMU/Month	$0.00	$0.00	$0.00	$0.00

Table 6. Fixed Charges (Campgrnd/RV)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$7.25	$7.25	$0.00	$7.25
3/4"	$7.25	$7.25	$0.00	$7.25
1"	$7.25	$7.25	$0.00	$7.25
1.5"	$7.25	$7.25	$0.00	$7.25
2"	$7.25	$7.25	$0.00	$7.25
3"	$7.25	$7.25	$0.00	$7.25
4"	$7.25	$7.25	$0.00	$7.25
6"	$7.25	$7.25	$0.00	$7.25
8"	$7.25	$7.25	$0.00	$7.25
10"	$7.25	$7.25	$0.00	$7.25
12"	$7.25	$7.25	$0.00	$7.25
$/Account/Month	$7.25	$7.25	$0.00	$7.25
$/EMU/Month	$0.00	$0.00	$0.00	$0.00

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2	$0.75	
	2	2	4	$2.10	$3.25
	3	4		$2.50	$3.25
	4				
	5				
	6				
1994/95	1	0	2	$0.75	
	2	2	4	$2.10	$3.25
	3	4		$2.50	$3.25
	4				
	5				
	6				
1995/96	1	0	2	$1.98	$3.25
	2	2		$1.98	$3.25
	3				
	4				
	5				
	6				$1.68
1996/97	1	0	2	$3.97	$3.25
	2	2		$3.97	$3.25
	3				
	4				
	5				
	6				
1997/98	1	0	7	$1.53	$3.25
	2	7	14	$2.03	$3.25
	3	14	25	$3.55	$3.25
	4	25		$4.44	$3.25
	5				
	6				

Table 7. Multiple Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2	$1.60	
	2	2		$1.60	$3.25
	3				
	4				
	5				
	6				
1994/95	1	0	2	$1.60	
	2	2		$1.60	$3.25
	3				
	4				
	5				
	6				
1995/96	1	0	2	$1.98	$3.25
	2	2		$1.98	$3.25
	3				
	4				
	5				
	6				
1996/97	1	0	2	$3.97	$3.25
	2	2		$3.97	$3.25
	3				
	4				
	5				
	6				
1997/98	1	0	2	$2.03	$3.25
	2	2		$2.03	$3.25
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2	$0.75	
	2	2	4	$2.10	$3.25
	3	4		$2.50	$3.25
	4				
	5				
	6				
1994/95	1	0	2	$0.75	
	2	2	4	$2.10	$3.25
	3	4		$2.50	$3.25
	4				
	5				
	6				
1995/96	1	0	2	$1.98	$3.25
	2	2		$1.98	$3.25
	3				
	4				
	5				
	6				
1996/97	1	0	2	$3.97	$3.25
	2	2		$3.97	$3.25
	3				
	4				
	5				
	6				
1997/98	1	0	2	$2.03	$3.25
	2	2		$2.03	$3.25
	3				
	4				
	5				
	6				

Table 7. Campgrnd/RV Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2	$1.60	
	2	2		$1.60	$3.25
	3				
	4				
	5				
	6				
1994/95	1	0	2	$1.60	
	2	2		$1.60	$3.25
	3				
	4				
	5				
	6				
1995/96	1	0	2	$1.98	$3.25
	2	2		$1.98	$3.25
	3				
	4				
	5				
	6				
1996/97	1	0	2	$3.97	$3.25
	2	2		$3.97	$3.25
	3				
	4				
	5				
	6				
1997/98	1	0	2	$2.03	$3.25
	2	2		$2.03	$3.25
	3				
	4				
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$3,538,354	$3,538,354	$3,538,354	$3,538,354
Price Elastic Change	$0	$1,130	-$5,766	$611
Adjusted Revenue Requirement	$3,538,354	$3,539,484	$3,532,588	$3,538,965
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$1,747,134	$1,747,134	$0	$1,747,134
Meter Size Dependent	$0	$0	$0	$0
Subtotal	$1,747,134	$1,747,134	$0	$1,747,134
Quantity Charge				
Single Family	$1,458,519	$1,437,089	$2,846,930	$1,425,288
Multiple Family	$90,202	$111,624	$223,813	$114,443
Commercial	$226,986	$227,265	$420,260	$232,448
Campgrnd/RV	$15,514	$19,198	$38,493	$19,683
Subtotal	$1,791,220	$1,795,177	$3,529,495	$1,791,862
Total Rate Revenues	$3,538,354	$3,542,311	$3,529,495	$3,538,996
Revenue Surplus (Shortfall)	$0	$2,827	($3,093)	$31

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	724,884	919	0.1%
	Multiple Family	56,376	0	0.0%
	Commercial	112,812	1,968	1.7%
	Campgrnd/RV	9,696	0	0.0%
	Totals	903,768	2,887	0.3%
1996/97	Single Family	724,884	-7,773	-1.1%
	Multiple Family	56,376	0	0.0%
	Commercial	112,812	-6,953	-6.2%
	Campgrnd/RV	9,696	0	0.0%
	Totals	903,768	-14,726	-1.6%
1997/98	Single Family	724,884	-133	0.0%
	Multiple Family	56,376	0	0.0%
	Commercial	112,812	1,695	1.5%
	Campgrnd/RV	9,696	0	0.0%
	Totals	903,768	1,562	0.2%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs		Base % Sold	New % Sold	% Change
		Min	Max			
1995/96	1	0	2	23.4%	22.7%	-2.8%
	2	2		76.6%	77.4%	1.0%
	3					
	4					
	5					
	6					
1996/97	1	0	2	23.4%	22.7%	-2.9%
	2	2		76.6%	76.2%	-0.5%
	3					
	4					
	5					
	6					
1997/98	1	0	7	63.5%	63.3%	-0.3%
	2	7	14	21.7%	22.0%	1.3%
	3	14	25	11.5%	11.4%	-0.7%
	4	25		3.4%	3.3%	-1.6%
	5					
	6					

Table 10. Water Change by Block (Multiple Family)

Year	Block	TGs		Base % Sold	New % Sold	% Change
		Min	Max			
1995/96	1	0	2	23.4%	23.4%	0.0%
	2	2		76.6%	76.6%	0.0%
	3					
	4					
	5					
	6					
1996/97	1	0	2	23.4%	23.4%	0.0%
	2	2		76.6%	76.6%	0.0%
	3					
	4					
	5					
	6					
1997/98	1	0	2	23.4%	23.4%	0.0%
	2	2		76.6%	76.6%	0.0%
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	2	23.4%	22.9%	-2.1%
	2	2		76.6%	78.9%	2.9%
	3					
	4					
	5					
	6					
1996/97	1	0	2	23.4%	22.8%	-2.7%
	2	2		76.6%	71.1%	-7.2%
	3					
	4					
	5					
	6					
1997/98	1	0	2	23.4%	22.9%	-2.1%
	2	2		76.6%	78.6%	2.6%
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Campgrnd/RV)

Year	Block	TGs		Base	New	%
		Min	Max	% Sold	% Sold	Change
1995/96	1	0	2	23.4%	23.4%	0.0%
	2	2		76.6%	76.6%	0.0%
	3					
	4					
	5					
	6					
1996/97	1	0	2	23.4%	23.4%	0.0%
	2	2		76.6%	76.6%	0.0%
	3					
	4					
	5					
	6					
1997/98	1	0	2	23.4%	23.4%	0.0%
	2	2		76.6%	76.6%	0.0%
	3					
	4					
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Multiple Family	Yes	○ Seasonal Rates	
Commercial	Yes		CPI Inflation 0.0%
Irrigation	Yes		
	No		
	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	9,181	0.0%	9,181	9,181	9,181
1"	2.0	143	0.0%	143	143	143
1.5"	4.0	85	0.0%	85	85	85
2"	6.0	144	0.0%	144	144	144
3"	20.0	3	0.0%	3	3	3
4"	45.0	12	0.0%	12	12	12
6"	80.0	13	0.0%	13	13	13
8"	120.0	12	0.0%	12	12	12
10"	150.0	2	0.0%	2	2	2
12"	200.0	0	0.0%	0	0	0
Total Meters		9,595		9,595	9,595	9,595
Total EMUs		14,051		14,051	14,051	14,051

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	654,446	0.0%	695,262	695,262	695,262
Multiple Family	244,881	0.0%	518,272	518,272	518,272
Commercial	621,234	0.0%	635,152	635,152	635,152
Irrigation	9,642	0.0%	246,943	246,943	246,943
		0.0%			
		0.0%			
Totals	1,530,203		2,095,629	2,095,629	2,095,629

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multiple Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Commercial Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Irrigation Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$2,505,794	0.0%	$2,505,794	$2,505,794	$2,505,794
Direct Short-Run Revenue Requirements	$250,579	0.0%	$250,579	$250,579	$250,579

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity
Single Family	Default
Multiple Family	0.00
Commercial	-0.25
Irrigation	-0.40
	0.00
	0.00

Short-Run Elasticity % of Long-Run Response	
1st Year	100%
2nd Year	0%
3rd Year	0%
4th Year	0%
Other Years	0%
Total	100%

Single Family Elasticity

(◉) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	51%
Medium Value	37%
High Value	12%
Total	100%

Table 6. Fixed Charges (All Classes)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$5.54	$5.54	$0.00	$5.54
3/4"	$5.54	$5.54	$0.00	$5.54
1"	$8.68	$8.68	$0.00	$8.68
1.5"	$14.96	$14.96	$0.00	$14.96
2"	$21.24	$21.24	$0.00	$21.24
3"	$65.20	$65.20	$0.00	$65.20
4"	$143.70	$143.70	$0.00	$143.70
6"	$253.60	$253.60	$0.00	$253.60
8"	$379.20	$379.20	$0.00	$379.20
10"	$473.40	$473.40	$0.00	$473.40
12"	$630.40	$630.40	$0.00	$630.40
$/Account/Month	$2.40	$2.40	$0.00	$2.40
$/EMU/Month	$3.14	$3.14	$0.00	$3.14

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2		$2.20
	2	2	12	$1.45	$3.31
	3	12		$1.45	
	4				
	5				
	6				
1994/95	1	0	2		$2.20
	2	2	12	$1.45	$3.31
	3	12		$1.45	
	4				
	5				
	6				
1995/96	1	0	7	$0.59	$3.31
	2	7	12	$0.79	$3.31
	3	12	25	$1.39	
	4	25		$1.39	
	5				
	6				
1996/97	1	0	12	$1.17	$3.31
	2	12		$1.17	
	3				
	4				
	5				
	6				
1997/98	1	0	7	$0.59	$3.31
	2	7	12	$0.79	$3.31
	3	12	25	$1.39	
	4	25		$1.74	
	5				
	6				

Table 7. Multiple Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2		$2.20
	2	2		$1.45	$3.31
	3				
	4				
	5				
	6				
1994/95	1	0	2		$2.20
	2	2		$1.45	$3.31
	3				
	4				
	5				
	6				
1995/96	1	0		$0.79	$3.31
	2				
	3				
	4				
	5				
	6				$0.79
1996/97	1	0		$1.17	$3.31
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$0.79	$3.31
	2				
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2		$2.20
	2	2		$1.45	$3.31
	3				
	4				
	5				
	6				
1994/95	1	0	2		$2.20
	2	2		$1.45	$3.31
	3				
	4				
	5				
	6				
1995/96	1	0		$0.79	$3.31
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$1.17	$3.31
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$0.79	$3.31
	2				
	3				
	4				
	5				
	6				

Table 7. Irrigation Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	2		
	2	2		$1.45	
	3				
	4				
	5				
	6				
1994/95	1	0	2		
	2	2		$1.45	
	3				
	4				
	5				
	6				
1995/96	1	0	7	$0.59	
	2	7	14	$0.79	
	3	14	25	$1.39	
	4	25		$1.39	
	5				
	6				
1996/97	1	0		$1.17	
	2				
	3				
	4				
	5				
	6				
1997/98	1	0	7	$0.59	
	2	7	14	$0.79	
	3	14	25	$1.39	
	4	25		$1.74	
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$2,505,794	$2,505,794	$2,505,794	$2,505,794
Price Elastic Change	$0	$10,588	$6,841	$9,067
Adjusted Revenue Requirement	$2,505,794	$2,516,382	$2,512,635	$2,514,861
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$276,336	$276,336	$0	$276,336
Meter Size Dependent	$529,442	$529,442	$0	$529,442
Subtotal	$805,778	$805,778	$0	$805,778
Quantity Charge				
Single Family	$727,073	$553,908	$845,988	$546,896
Multiple Family	$272,056	$409,435	$606,378	$409,435
Commercial	$690,175	$519,734	$752,801	$519,734
Irrigation	$10,712	$225,928	$313,662	$223,442
Subtotal	$1,700,016	$1,709,004	$2,518,829	$1,699,507
Total Rate Revenues	$2,505,794	$2,514,782	$2,518,829	$2,505,285
Revenue Surplus (Shortfall)	$0	($1,600)	$6,194	($9,576)

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	695,262	14,169	2.0%
	Multiple Family	518,272	0	0.0%
	Commercial	635,152	22,739	3.6%
	Irrigation	246,943	51,645	20.9%
	Totals	2,095,629	88,553	4.2%
1996/97	Single Family	695,262	27,804	4.0%
	Multiple Family	518,272	0	0.0%
	Commercial	635,152	8,268	1.3%
	Irrigation	246,943	21,144	8.6%
	Totals	2,095,629	57,216	2.7%
1997/98	Single Family	695,262	4,785	0.7%
	Multiple Family	518,272	0	0.0%
	Commercial	635,152	22,739	3.6%
	Irrigation	246,943	48,306	19.6%
	Totals	2,095,629	75,829	3.6%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	63.5%	64.1%	0.9%
	2	7	12	17.5%	18.2%	3.8%
	3	12	25	15.6%	16.1%	3.5%
	4	25		3.4%	3.6%	7.7%
	5					
	6					
1996/97	1	0	12	81.0%	81.2%	0.2%
	2	12		19.0%	22.8%	20.2%
	3					
	4					
	5					
	6					
1997/98	1	0	7	63.5%	64.0%	0.9%
	2	7	12	17.5%	18.2%	3.7%
	3	12	25	15.6%	16.0%	2.8%
	4	25		3.4%	2.4%	-28.2%
	5					
	6					

Table 10. Water Change by Block (Multiple Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	103.6%	3.6%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	101.3%	1.3%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	103.6%	3.6%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Irrigation)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	63.5%	71.4%	12.5%
	2	7	14	21.7%	32.4%	49.7%
	3	14	25	11.5%	13.4%	17.2%
	4	25		3.4%	3.7%	8.0%
	5					
	6					
1996/97	1	0		100.0%	108.6%	8.6%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0	7	63.5%	71.4%	12.4%
	2	7	14	21.7%	32.4%	49.6%
	3	14	25	11.5%	13.3%	16.3%
	4	25		3.4%	2.4%	-28.0%
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Irrigation	Yes	○ Seasonal Rates	
Multifamily	No		CPI Inflation 0.0%
Commercial	No		
	No		
	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts (All Classes)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	6,142	0.0%	6,142	6,142	6,142
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	3,202	0.0%	3,202	3,202	3,202
1.5"	5.0	145	0.0%	145	145	145
2"	8.0	121	0.0%	121	121	121
3"	16.0	19	0.0%	19	19	19
4"	25.0	5	0.0%	5	5	5
6"	50.0	3	0.0%	3	3	3
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		9,637		9,637	9,637	9,637
Total EMUs		16,419		16,419	16,419	16,419

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	2,166,615	0.0%	2,166,615	2,166,615	2,166,615
Irrigation	176,071	0.0%	176,071	176,071	176,071
Multifamily	146,664	0.0%	146,664	146,664	146,664
Commercial	146,664	0.0%	146,664	146,664	146,664
		0.0%			
		0.0%			
Totals	2,636,014		2,636,014	2,636,014	2,636,014

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	182

Table 3b. Irrigation Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multifamily Water Use Distribution (Annual)

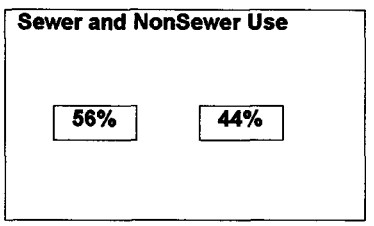

Table 3b. Commercial Water Use Distribution (Annual)

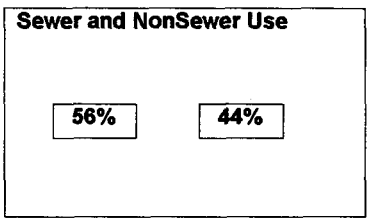

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$1,835,113	0.0%	$1,835,113	$1,835,113	$1,835,113
Direct Short-Run Revenue Requirements	$326,956	0.0%	$326,956	$326,956	$326,956

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity
Single Family	DEFAULT
Irrigation	-0.40
Multifamily	0.00
Commercial	-0.25
	0.00
	0.00

Short-Run Elasticity % of Long-Run Response	
1st Year	100%
2nd Year	0%
3rd Year	0%
4th Year	0%
Other Years	0%
Total	100%

Single Family Elasticity

◉ Default

○ User Specified

Single Family Property Values for Default Calculation

Low Value	9%
Medium Value	35%
High Value	56%
Total	100%

Table 6. Fixed Charges (All Classes)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$4.23	$4.23	$0.00	$4.23
3/4"	$4.23	$4.23	$0.00	$4.23
1"	$10.58	$10.58	$0.00	$10.58
1.5"	$21.15	$21.15	$0.00	$21.15
2"	$33.84	$33.84	$0.00	$33.84
3"	$67.68	$67.68	$0.00	$67.68
4"	$105.75	$105.75	$0.00	$105.75
6"	$211.50	$211.50	$0.00	$211.50
8"	$338.40	$338.40	$0.00	$338.40
10"	$486.45	$486.45	$0.00	$486.45
12"	$909.45	$909.45	$0.00	$909.45
$/Account/Month	$0.00	$0.00	$0.00	$0.00
$/EMU/Month	$4.23	$4.23	$0.00	$4.23

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	7	$0.38	$1.33
	2	7	10	$0.38	$1.33
	3	10	14	$0.38	
	4	14	25	$0.38	
	5	25		$0.38	
	6				
1994/95	1	0	7	$0.38	$1.33
	2	7	10	$0.38	$1.33
	3	10	14	$0.38	
	4	14	25	$0.38	
	5	25		$0.38	
	6				
1995/96	1	0	7	$0.33	$1.33
	2	7	10	$0.44	$1.33
	3	10	14	$0.44	
	4	14	25	$0.77	
	5	25		$0.77	
	6				
1996/97	1	0	7	$0.76	$1.33
	2	7	10	$0.76	$1.33
	3	10	14	$0.76	
	4	14	25	$0.76	
	5	25		$0.76	
	6				
1997/98	1	0	7	$0.32	$1.33
	2	7	10	$0.43	$1.33
	3	10	14	$0.43	
	4	14	25	$0.75	
	5	25		$0.94	
	6				

Table 7. Irrigation Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	7	$0.38	
	2	7	14	$0.38	
	3	14	25	$0.38	
	4	25		$0.38	
	5				
	6				
1994/95	1	0	7	$0.38	
	2	7	14	$0.38	
	3	14	25	$0.38	
	4	25		$0.38	
	5				
	6				
1995/96	1	0	7	$0.33	
	2	7	10	$0.44	
	3	10	14	$0.44	
	4	14	25	$0.77	
	5	25		$0.77	
	6				
1996/97	1	0	7	$0.76	
	2	7	14	$0.76	
	3	14	25	$0.76	
	4	25		$0.76	
	5			$0.76	
	6				
1997/98	1	0	7	$0.32	
	2	7	10	$0.43	
	3	10	14	$0.43	
	4	14	25	$0.75	
	5	25		$0.94	
	6				

Table 7. Multifamily Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$0.38	$1.60
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$0.38	$1.60
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$0.33	$1.60
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$0.76	$1.60
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$0.43	$1.60
	2				
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$0.38	$1.60
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$0.38	$1.60
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$0.33	$1.60
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$0.76	$1.60
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$0.43	$1.60
	2				
	3				
	4				
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$1,835,113	$1,835,113	$1,835,113	$1,835,113
Price Elastic Change	$0	-$14,981	-$34,035	-$16,904
Adjusted Revenue Requirement	$1,835,113	$1,820,132	$1,801,078	$1,818,209
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$0	$0	$0	$0
Meter Size Dependent	$833,428	$833,428	$0	$833,428
Subtotal	$833,428	$833,428	$0	$833,428
Quantity Charge				
Single Family	$823,314	$839,971	$1,481,087	$815,559
Irrigation	$66,907	$60,669	$101,328	$58,541
Multifamily	$55,732	$48,399	$111,465	$63,066
Commercial	$55,732	$49,341	$100,945	$61,998
Subtotal	$1,001,685	$998,381	$1,794,824	$999,163
Total Rate Revenues	$1,835,113	$1,831,809	$1,794,824	$1,832,591
Revenue Surplus (Shortfall)	$0	$11,677	($6,254)	$14,382

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	2,166,615	-105,656	-4.9%
	Irrigation	176,071	-17,982	-10.2%
	Multifamily	146,664	0	0.0%
	Commercial	146,664	2,854	1.9%
	Totals	2,636,014	-120,783	-4.6%
1996/97	Single Family	2,166,615	-217,816	-10.1%
	Irrigation	176,071	-42,745	-24.3%
	Multifamily	146,664	0	0.0%
	Commercial	146,664	-13,842	-9.4%
	Totals	2,636,014	-274,403	-10.4%
1997/98	Single Family	2,166,615	-115,724	-5.3%
	Irrigation	176,071	-18,075	-10.3%
	Multifamily	146,664	0	0.0%
	Commercial	146,664	-2,483	-1.7%
	Totals	2,636,014	-136,282	-5.2%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs		Base % Sold	New % Sold	% Change
		Min	Max			
1995/96	1	0	7	62.5%	62.7%	0.4%
	2	7	10	12.0%	11.8%	-1.8%
	3	10	14	9.6%	9.0%	-5.7%
	4	14	25	11.8%	9.1%	-23.0%
	5	25		4.2%	2.5%	-40.0%
	6					
1996/97	1	0	7	62.5%	59.9%	-4.2%
	2	7	10	12.0%	10.4%	-13.1%
	3	10	14	9.6%	7.9%	-16.8%
	4	14	25	11.8%	9.1%	-22.5%
	5	25		4.2%	2.5%	-39.2%
	6					
1997/98	1	0	7	62.5%	62.8%	0.5%
	2	7	10	12.0%	11.9%	-1.3%
	3	10	14	9.6%	9.1%	-4.9%
	4	14	25	11.8%	9.0%	-23.7%
	5	25		4.2%	1.9%	-54.2%
	6					

Table 10. Water Change by Block (Irrigation)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	7	63.5%	64.8%	2.0%
	2	7	10	12.1%	11.4%	-6.3%
	3	10	14	9.6%	7.4%	-22.9%
	4	14	25	11.5%	5.6%	-51.0%
	5	25		3.4%	0.7%	-80.0%
	6					
1996/97	1	0	7	63.5%	55.3%	-12.9%
	2	7	14	21.7%	14.0%	-35.4%
	3	14	25	11.5%	5.7%	-50.3%
	4	25		3.4%	0.7%	-79.3%
	5					
	6					
1997/98	1	0	7	63.5%	65.1%	2.6%
	2	7	10	12.1%	11.5%	-4.8%
	3	10	14	9.6%	7.6%	-20.6%
	4	14	25	11.5%	5.1%	-55.2%
	5	25		3.4%	0.4%	-89.5%
	6					

Table 10. Water Change by Block (Multifamily)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	101.9%	1.9%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	90.6%	-9.4%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	98.3%	-1.7%
	2					
	3					
	4					
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Multiple Family	Yes	○ Seasonal Rates	
Comm 5/8"	Yes		CPI Inflation 0.0%
Commercial	No		
	No		
	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts (Single Family)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	13,503	0.0%	13,503	13,503	13,503
1"	2.5	246	0.0%	246	246	246
1.5"	5.0	12	0.0%	12	12	12
2"	8.0	11	0.0%	11	11	11
3"	15.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		13,772		13,772	13,772	13,772
Total EMUs		14,266		14,266	14,266	14,266

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Multiple Family)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	51	0.0%	51	51	51
1"	2.5	27	0.0%	27	27	27
1.5"	5.0	60	0.0%	60	60	60
2"	8.0	80	0.0%	80	80	80
3"	15.0	12	0.0%	12	12	12
4"	25.0	10	0.0%	10	10	10
6"	50.0	1	0.0%	1	1	1
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		241		241	241	241
Total EMUs		1,539		1,539	1,539	1,539

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Comm 5/8")

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	920	0.0%	920	920	920
1"	2.5	0	0.0%	0	0	0
1.5"	5.0	0	0.0%	0	0	0
2"	8.0	0	0.0%	0	0	0
3"	15.0	0	0.0%	0	0	0
4"	25.0	0	0.0%	0	0	0
6"	50.0	0	0.0%	0	0	0
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		920		920	920	920
Total EMUs		920		920	920	920

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Commercial)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	0	0.0%	0	0	0
1"	2.5	248	0.0%	248	248	248
1.5"	5.0	101	0.0%	101	101	101
2"	8.0	134	0.0%	134	134	134
3"	15.0	17	0.0%	17	17	17
4"	25.0	11	0.0%	11	11	11
6"	50.0	4	0.0%	4	4	4
8"	80.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		515		515	515	515
Total EMUs		2,927		2,927	2,927	2,927

Fixed charges vary by class?

○ No ◉ Yes

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	875,168	0.0%	875,168	875,168	875,168
Multiple Family	191,640	0.0%	191,640	191,640	191,640
Comm 5/8"	110,400	0.0%	110,400	110,400	110,400
Commercial	348,010	0.0%	348,010	348,010	348,010
		0.0%			
		0.0%			
Totals	1,525,218		1,525,218	1,525,218	1,525,218

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Multiple Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Comm 5/8" Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. Commercial Water Use Distribution (Annual)

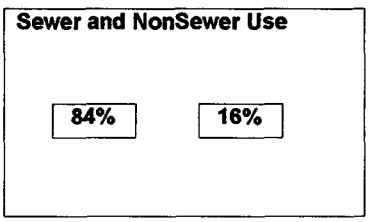

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$4,056,131	0.0%	$4,056,131	$4,056,131	$4,056,131
Direct Short-Run Revenue Requirements	$405,613	0.0%	$405,613	$405,613	$405,613

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity
Single Family	Default
Multiple Family	0.00
Comm 5/8"	-0.25
Commercial	-0.25
	0.00
	0.00

Short-Run Elasticity % of Long-Run Response	
1st Year	100%
2nd Year	0%
3rd Year	0%
4th Year	0%
Other Years	0%
Total	100%

Single Family Elasticity

(◉) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	50%
Medium Value	37%
High Value	13%
Total	100%

Table 6. Fixed Charges (Single Family)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$0.80	$0.80	$0.00	$0.80
3/4"	$0.80	$0.80	$0.00	$0.80
1"	$1.61	$1.61	$0.00	$1.61
1.5"	$2.96	$2.96	$0.00	$2.96
2"	$4.58	$4.58	$0.00	$4.58
3"	$8.36	$8.36	$0.00	$8.36
4"	$13.76	$13.76	$0.00	$13.76
6"	$27.26	$27.26	$0.00	$27.26
8"	$43.46	$43.46	$0.00	$43.46
10"	$62.36	$62.36	$0.00	$62.36
12"	$116.36	$116.36	$0.00	$116.36
$/Account/Month	$0.26	$0.26	$0.00	$0.26
$/EMU/Month	$0.54	$0.54	$0.00	$0.54

Table 6. Fixed Charges (Multiple Family)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$0.80	$0.80	$0.00	$0.80
3/4"	$0.80	$0.80	$0.00	$0.80
1"	$1.61	$1.61	$0.00	$1.61
1.5"	$2.96	$2.96	$0.00	$2.96
2"	$4.58	$4.58	$0.00	$4.58
3"	$8.36	$8.36	$0.00	$8.36
4"	$13.76	$13.76	$0.00	$13.76
6"	$27.26	$27.26	$0.00	$27.26
8"	$43.46	$43.46	$0.00	$43.46
10"	$62.36	$62.36	$0.00	$62.36
12"	$116.36	$116.36	$0.00	$116.36
$/Account/Month	$0.26	$0.26	$0.00	$0.26
$/EMU/Month	$0.54	$0.54	$0.00	$0.54

Table 6. Fixed Charges (Comm 5/8")

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$0.80	$0.80	$0.00	$0.80
3/4"	$0.80	$0.80	$0.00	$0.80
1"	$1.61	$1.61	$0.00	$1.61
1.5"	$2.96	$2.96	$0.00	$2.96
2"	$4.58	$4.58	$0.00	$4.58
3"	$8.36	$8.36	$0.00	$8.36
4"	$13.76	$13.76	$0.00	$13.76
6"	$27.26	$27.26	$0.00	$27.26
8"	$43.46	$43.46	$0.00	$43.46
10"	$62.36	$62.36	$0.00	$62.36
12"	$116.36	$116.36	$0.00	$116.36
$/Account/Month	$0.26	$0.26	$0.00	$0.26
$/EMU/Month	$0.54	$0.54	$0.00	$0.54

Table 6. Fixed Charges (Commercial)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$0.80	$0.80	$0.00	$0.80
3/4"	$0.80	$0.80	$0.00	$0.80
1"	$1.61	$1.61	$0.00	$1.61
1.5"	$2.96	$2.96	$0.00	$2.96
2"	$4.58	$4.58	$0.00	$4.58
3"	$8.36	$8.36	$0.00	$8.36
4"	$13.76	$13.76	$0.00	$13.76
6"	$27.26	$27.26	$0.00	$27.26
8"	$43.46	$43.46	$0.00	$43.46
10"	$62.36	$62.36	$0.00	$62.36
12"	$116.36	$116.36	$0.00	$116.36
$/Account/Month	$0.26	$0.26	$0.00	$0.26
$/EMU/Month	$0.54	$0.54	$0.00	$0.54

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	3	$1.62	$5.25
	2	3	15	$2.41	$6.85
	3	15	25	$6.14	
	4	25		$9.22	
	5				
	6				
1994/95	1	0	3	$1.62	$5.25
	2	3	15	$2.41	$6.85
	3	15	25	$6.14	
	4	25		$9.22	
	5				
	6				
1995/96	1	0	3	$2.43	$5.25
	2	3	15	$2.43	$6.85
	3	15		$2.43	
	4				
	5				
	6				
1996/97	1	0	3	$2.56	$5.25
	2	3	15	$2.56	$6.85
	3	15		$2.56	
	4				
	5				
	6				
1997/98	1	0	3	$1.87	$5.25
	2	3	15	$2.49	$6.85
	3	15	25	$4.36	
	4	25		$5.45	
	5				
	6				

Table 7. Multiple Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	3	$1.62	$5.25
	2	3		$2.41	$6.85
	3				
	4				
	5				
	6				
1994/95	1	0	3	$1.62	$5.25
	2	3		$2.41	$6.85
	3				
	4				
	5				
	6				
1995/96	1	0	3	$2.43	$5.25
	2	3		$2.43	$6.85
	3				
	4				
	5				
	6				
1996/97	1	0	3	$2.56	$5.25
	2	3		$2.56	$6.85
	3				
	4				
	5				
	6				
1997/98	1	0	3	$2.49	$5.25
	2	3		$2.49	$6.85
	3				
	4				
	5				
	6				

Table 7. Comm 5/8" Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	3	$1.62	$5.25
	2	3		$2.41	$6.85
	3				
	4				
	5				
	6				
1994/95	1	0	3	$1.62	$5.25
	2	3		$2.41	$6.85
	3				
	4				
	5				
	6				
1995/96	1	0	3	$2.43	$5.25
	2	3		$2.43	$6.85
	3				
	4				
	5				
	6				
1996/97	1	0	3	$2.56	$5.25
	2	3		$2.56	$6.85
	3				
	4				
	5				
	6				
1997/98	1	0	3	$2.49	$5.25
	2	3		$2.49	$6.85
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$2.41	$6.85
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$2.41	$6.85
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$2.43	$6.85
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$2.56	$6.85
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$2.49	$6.85
	2				
	3				
	4				
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$4,056,131	$4,056,131	$4,056,131	$4,056,131
Price Elastic Change	$0	$20,522	$17,648	$1,132
Adjusted Revenue Requirement	$4,056,131	$4,076,653	$4,073,779	$4,057,263
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$48,198	$48,198	$0	$48,198
Meter Size Dependent	$127,345	$127,345	$0	$127,345
Subtotal	$175,543	$175,543	$0	$175,543
Quantity Charge				
Single Family	$2,394,680	$2,315,295	$2,416,940	$2,268,231
Multiple Family	$410,641	$465,685	$490,598	$477,184
Comm 5/8"	$236,562	$267,816	$281,152	$273,981
Commercial	$838,704	$845,000	$885,751	$863,844
Subtotal	$3,880,588	$3,893,795	$4,074,441	$3,883,240
Total Rate Revenues	$4,056,131	$4,069,338	$4,074,441	$4,058,783
Revenue Surplus (Shortfall)	$0	($7,315)	$662	$1,520

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	875,168	77,628	8.9%
	Multiple Family	191,640	0	0.0%
	Comm 5/8"	110,400	-188	-0.2%
	Commercial	348,010	-274	-0.1%
	Totals	1,525,218	77,167	5.1%
1996/97	Single Family	875,168	68,949	7.9%
	Multiple Family	191,640	0	0.0%
	Comm 5/8"	110,400	-575	-0.5%
	Commercial	348,010	-2,014	-0.6%
	Totals	1,525,218	66,360	4.4%
1997/98	Single Family	875,168	5,710	0.7%
	Multiple Family	191,640	0	0.0%
	Comm 5/8"	110,400	-367	-0.3%
	Commercial	348,010	-1,085	-0.3%
	Totals	1,525,218	4,258	0.3%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs		Base	New	%
		Min	Max	% Sold	% Sold	Change
1995/96	1	0	3	33.8%	33.9%	0.2%
	2	3	15	53.1%	53.3%	0.4%
	3	15		13.1%	21.7%	65.5%
	4					
	5					
	6					
1996/97	1	0	3	33.8%	33.9%	0.1%
	2	3	15	53.1%	53.2%	0.3%
	3	15		13.1%	20.8%	58.4%
	4					
	5					
	6					
1997/98	1	0	3	33.8%	33.8%	0.0%
	2	3	15	53.1%	53.1%	0.0%
	3	15	25	9.7%	10.3%	5.7%
	4	25		3.4%	3.5%	2.8%
	5					
	6					

Table 10. Water Change by Block (Multiple Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	3	33.8%	33.8%	0.0%
	2	3		66.2%	66.2%	0.0%
	3					
	4					
	5					
	6					
1996/97	1	0	3	33.8%	33.8%	0.0%
	2	3		66.2%	66.2%	0.0%
	3					
	4					
	5					
	6					
1997/98	1	0	3	33.8%	33.8%	0.0%
	2	3		66.2%	66.2%	0.0%
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Comm 5/8")

Year	Block	TGs		Base % Sold	New % Sold	% Change
		Min	Max			
1995/96	1	0	3	33.8%	33.7%	-0.4%
	2	3		66.2%	66.1%	-0.1%
	3					
	4					
	5					
	6					
1996/97	1	0	3	33.8%	33.7%	-0.4%
	2	3		66.2%	65.8%	-0.6%
	3					
	4					
	5					
	6					
1997/98	1	0	3	33.8%	33.7%	-0.4%
	2	3		66.2%	66.0%	-0.3%
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	99.9%	-0.1%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	99.4%	-0.6%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	99.7%	-0.3%
	2					
	3					
	4					
	5					
	6					

Table 1. General Information

Enter Customer Classes	Block Rates?	Seasonal Rates?	Default Annual Rate of:
Single Family	Yes	◉ Annual Rates	Account Growth 0.0%
Multifamily	No	○ Seasonal Rates	
Commercial	No		CPI Inflation 0.0%
SF - Outside	Yes		
MF - Outside	No		
Comm - Outside	No		

Year Type?	Base Year?	Water Unit?
◉ Fiscal	1994 / 1995	○ Ccf (100 Cubic Feet)
○ Calendar		◉ TG (1,000 Gallons)

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Table 2. Water Accounts (Single Family)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	7,357	0.0%	7,357	7,357	7,357
1"	2.5	1,028	0.0%	1,028	1,028	1,028
1.5"	5.0	60	0.0%	60	60	60
2"	7.9	10	0.0%	10	10	10
3"	15.8	0	0.0%	0	0	0
4"	24.7	0	0.0%	0	0	0
6"	49.4	0	0.0%	0	0	0
8"	90.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		8,455		8,455	8,455	8,455
Total EMUs		10,306		10,306	10,306	10,306

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Multifamily)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	181	0.0%	181	181	181
1"	2.5	139	0.0%	139	139	139
1.5"	5.0	27	0.0%	27	27	27
2"	8.0	26	0.0%	26	26	26
3"	16.0	0	0.0%	0	0	0
4"	25.0	2	0.0%	2	2	2
6"	50.0	1	0.0%	1	1	1
8"	80.0	1	0.0%	1	1	1
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		377		377	377	377
Total EMUs		1,052		1,052	1,052	1,052

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Commercial)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	804	0.0%	804	804	804
1"	2.5	332	0.0%	332	332	332
1.5"	5.0	175	0.0%	175	175	175
2"	7.9	116	0.0%	116	116	116
3"	15.8	2	0.0%	2	2	2
4"	24.7	3	0.0%	3	3	3
6"	49.4	1	0.0%	1	1	1
8"	90.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		1,433		1,433	1,433	1,433
Total EMUs		3,581		3,581	3,581	3,581

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (SF - Outside)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	9,646	0.0%	9,646	9,646	9,646
1"	2.5	74	0.0%	74	74	74
1.5"	5.0	2	0.0%	2	2	2
2"	7.9	0	0.0%	0	0	0
3"	15.8	0	0.0%	0	0	0
4"	24.7	0	0.0%	0	0	0
6"	49.4	0	0.0%	0	0	0
8"	90.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		9,722		9,722	9,722	9,722
Total EMUs		9,841		9,841	9,841	9,841

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (MF - Outside)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	28	0.0%	28	28	28
1"	2.5	309	0.0%	309	309	309
1.5"	5.0	180	0.0%	180	180	180
2"	7.9	75	0.0%	75	75	75
3"	15.8	1	0.0%	1	1	1
4"	24.7	0	0.0%	0	0	0
6"	49.4	3	0.0%	3	3	3
8"	90.0	3	0.0%	3	3	3
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		599		599	599	599
Total EMUs		2,727		2,727	2,727	2,727

Fixed charges vary by class?

○ No ◉ Yes

Table 2. Water Accounts (Comm - Outside)

Meter Size	EMU Factor	# Meters 1994/95	Annual Growth %	# Meters 1995/96	# Meters 1996/97	# Meters 1997/98
5/8"	1.0	0	0.0%	0	0	0
3/4"	1.0	731	0.0%	731	731	731
1"	2.5	275	0.0%	275	275	275
1.5"	5.0	164	0.0%	164	164	164
2"	7.9	84	0.0%	84	84	84
3"	15.8	2	0.0%	2	2	2
4"	24.7	5	0.0%	5	5	5
6"	49.4	0	0.0%	0	0	0
8"	90.0	0	0.0%	0	0	0
10"	115.0	0	0.0%	0	0	0
12"	215.0	0	0.0%	0	0	0
Total Meters		1,261		1,261	1,261	1,261
Total EMUs		3,057		3,057	3,057	3,057

Fixed charges vary by class?

○ No ◉ Yes

Table 3a. Annual Water Use

User Class	1994/95 TG	Annual Growth %	Base Projections 1995/96 TG	1996/97 TG	1997/98 TG
Single Family	823,904	0.0%	823,904	823,904	823,904
Multifamily	180,529	0.0%	180,529	180,529	180,529
Commercial	397,214	0.0%	397,214	397,214	397,214
SF - Outside	871,232	0.0%	871,232	871,232	871,232
MF - Outside	565,788	0.0%	565,788	565,788	565,788
Comm - Outside	394,827	0.0%	394,827	394,827	394,827
Totals	3,233,494		3,233,494	3,233,494	3,233,494

Table 3b. Single Family Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	182

Table 3b. Multifamily Water Use Distribution (Annual)

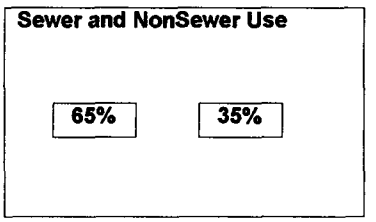

Table 3b. Commercial Water Use Distribution (Annual)

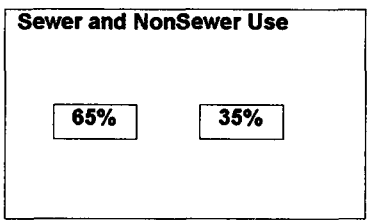

Table 3b. SF - Outside Water Use Distribution (Annual)

BIN	TG/Month		# of Bills	
	MIN	MAX	Sewer	Non-Sewer
1	0	1	675	0
2	1	2	2,851	0
3	2	3	4,272	0
4	3	4	4,291	0
5	4	5	4,497	0
6	5	6	4,474	0
7	6	7	3,434	0
8	7	8	2,931	0
9	8	9	2,510	0
10	9	10	1,915	0
11	10	11	1,430	0
12	11	12	1,304	0
13	12	13	1,008	0
14	13	14	825	0
15	14	15	737	0
16	15	16	614	0
17	16	17	534	0
18	17	18	500	0
19	18	19	430	0
20	19	20	410	0
21	20	21	336	0
22	21	22	269	0
23	22	23	276	0
24	23	24	273	0
25	24	25	405	0
26	25	26	149	0
27	26	27	218	0
28	27	28	155	0
29	28	29	139	0
30	29	30	156	0
31	30	31	98	0
32	31	32	90	0
33	32	33	106	0
34	33	34	76	0
35	34	35	66	0
36	35	36	67	0
37	36	37	63	0
38	37	38	51	0
39	38	39	40	0
40	39	46	245	0

Table 3b. MF - Outside Water Use Distribution (Annual)

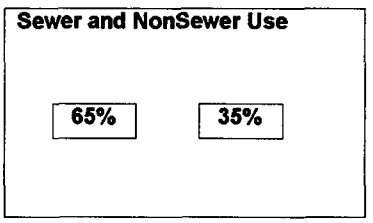

Table 3b. Comm - Outside Water Use Distribution (Annual)

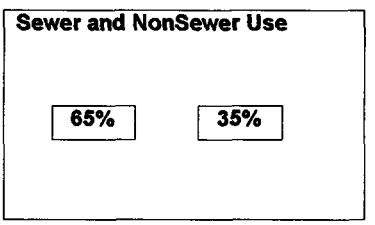

Table 4. Revenue Requirements

Cost Component	1994/95	Annual Growth %	Base Projections 1995/96	1996/97	1997/98
Revenue Requirements From Rates	$4,936,600	0.0%	$4,936,600	$4,936,600	$4,936,600
Direct Short-Run Revenue Requirements	$493,660	0.0%	$493,660	$493,660	$493,660

Table 5. Price Elasticities

User Class	Long-Run Price Elasticity
Single Family	DEFAULT
Multifamily	0.00
Commercial	-0.25
SF - Outside	-0.32
MF - Outside	0.00
Comm - Outside	-0.25

Short-Run Elasticity % of Long-Run Response	
1st Year	100%
2nd Year	0%
3rd Year	0%
4th Year	0%
Other Years	0%
Total	100%

Single Family Elasticity

(●) Default

( ) User Specified

Single Family Property Values for Default Calculation

Low Value	9%
Medium Value	20%
High Value	71%
Total	100%

Table 6. Fixed Charges (Single Family)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$3.82	$3.82	$0.00	$3.82
3/4"	$3.82	$3.82	$0.00	$3.82
1"	$9.55	$9.55	$0.00	$9.55
1.5"	$19.10	$19.10	$0.00	$19.10
2"	$30.18	$30.18	$0.00	$30.18
3"	$60.36	$60.36	$0.00	$60.36
4"	$94.35	$94.35	$0.00	$94.35
6"	$188.71	$188.71	$0.00	$188.71
8"	$343.80	$343.80	$0.00	$343.80
10"	$439.30	$439.30	$0.00	$439.30
12"	$821.30	$821.30	$0.00	$821.30
$/Account/Month	$0.00	$0.00	$0.00	$0.00
$/EMU/Month	$3.82	$3.82	$0.00	$3.82

Table 6. Fixed Charges (Multifamily)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$3.82	$3.82	$0.00	$3.82
3/4"	$3.82	$3.82	$0.00	$3.82
1"	$9.55	$9.55	$0.00	$9.55
1.5"	$19.10	$19.10	$0.00	$19.10
2"	$30.56	$30.56	$0.00	$30.56
3"	$61.12	$61.12	$0.00	$61.12
4"	$95.50	$95.50	$0.00	$95.50
6"	$191.00	$191.00	$0.00	$191.00
8"	$305.60	$305.60	$0.00	$305.60
10"	$439.30	$439.30	$0.00	$439.30
12"	$821.30	$821.30	$0.00	$821.30
$/Account/Month	$0.00	$0.00	$0.00	$0.00
$/EMU/Month	$3.82	$3.82	$0.00	$3.82

Table 6. Fixed Charges (Commercial)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$3.82	$3.82	$0.00	$3.82
3/4"	$3.82	$3.82	$0.00	$3.82
1"	$9.55	$9.55	$0.00	$9.55
1.5"	$19.10	$19.10	$0.00	$19.10
2"	$30.18	$30.18	$0.00	$30.18
3"	$60.36	$60.36	$0.00	$60.36
4"	$94.35	$94.35	$0.00	$94.35
6"	$188.71	$188.71	$0.00	$188.71
8"	$343.80	$343.80	$0.00	$343.80
10"	$439.30	$439.30	$0.00	$439.30
12"	$821.30	$821.30	$0.00	$821.30
$/Account/Month	$0.00	$0.00	$0.00	$0.00
$/EMU/Month	$3.82	$3.82	$0.00	$3.82

Table 6. Fixed Charges (SF - Outside)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$4.78	$4.78	$0.00	$4.78
3/4"	$4.78	$4.78	$0.00	$4.78
1"	$11.95	$11.95	$0.00	$11.95
1.5"	$23.90	$23.90	$0.00	$23.90
2"	$37.76	$37.76	$0.00	$37.76
3"	$75.52	$75.52	$0.00	$75.52
4"	$118.07	$118.07	$0.00	$118.07
6"	$236.13	$236.13	$0.00	$236.13
8"	$430.20	$430.20	$0.00	$430.20
10"	$549.70	$549.70	$0.00	$549.70
12"	$1,027.70	$1,027.70	$0.00	$1,027.70
$/Account/Month	$0.00	$0.00	$0.00	$0.00
$/EMU/Month	$4.78	$4.78	$0.00	$4.78

Table 6. Fixed Charges (MF - Outside)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$7.16	$7.16	$0.00	$7.16
3/4"	$7.16	$7.16	$0.00	$7.16
1"	$14.33	$14.33	$0.00	$14.33
1.5"	$26.28	$26.28	$0.00	$26.28
2"	$40.14	$40.14	$0.00	$40.14
3"	$77.90	$77.90	$0.00	$77.90
4"	$120.45	$120.45	$0.00	$120.45
6"	$238.51	$238.51	$0.00	$238.51
8"	$432.58	$432.58	$0.00	$432.58
10"	$552.08	$552.08	$0.00	$552.08
12"	$1,030.08	$1,030.08	$0.00	$1,030.08
$/Account/Month	$2.38	$2.38	$0.00	$2.38
$/EMU/Month	$4.78	$4.78	$0.00	$4.78

Table 6. Fixed Charges (Comm - Outside)

Meter Size	Fixed Charge $/Month 1994/95	1995/96	1996/97	1997/98
5/8"	$7.16	$7.16	$0.00	$7.16
3/4"	$7.16	$7.16	$0.00	$7.16
1"	$14.33	$14.33	$0.00	$14.33
1.5"	$26.28	$26.28	$0.00	$26.28
2"	$40.14	$40.14	$0.00	$40.14
3"	$77.90	$77.90	$0.00	$77.90
4"	$120.45	$120.45	$0.00	$120.45
6"	$238.51	$238.51	$0.00	$238.51
8"	$432.58	$432.58	$0.00	$432.58
10"	$552.08	$552.08	$0.00	$552.08
12"	$1,030.08	$1,030.08	$0.00	$1,030.08
$/Account/Month	$2.38	$2.38	$0.00	$2.38
$/EMU/Month	$4.78	$4.78	$0.00	$4.78

Table 7. Single Family Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	6	$0.54	$3.11
	2	6	12	$1.06	$3.11
	3	12	25	$1.56	
	4	25		$1.56	
	5				
	6				
1994/95	1	0	6	$0.54	$3.11
	2	6	12	$1.06	$3.11
	3	12	25	$1.56	
	4	25		$1.56	
	5				
	6				
1995/96	1	0	6	$0.86	$3.11
	2	6	12	$0.86	$3.11
	3	12	25	$0.86	
	4	25		$0.86	
	5				
	6				
1996/97	1	0	6	$1.36	$3.11
	2	6	12	$1.36	$3.11
	3	12	25	$1.36	
	4	25		$1.36	
	5				
	6				
1997/98	1	0	6	$0.68	$3.11
	2	6	12	$0.90	$3.11
	3	12	25	$1.56	
	4	25		$1.95	
	5				
	6				

Table 7. Multifamily Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$1.06	$3.11
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$1.06	$3.11
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$0.86	$3.11
	2				
	3				
	4				
	5				
	6				$1.17
1996/97	1	0		$1.36	$3.11
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$0.90	$3.11
	2				
	3				
	4				
	5				
	6				

Table 7. Commercial Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$0.80	$3.11
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$0.80	$3.11
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$0.86	$3.11
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$1.36	$3.11
	2				
	3				
	4				
	5				
	6				$3.26
1997/98	1	0		$0.90	$3.11
	2				
	3				
	4				
	5				
	6				

Table 7. SF - Outside Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0	6	$0.68	$3.11
	2	6	12	$1.33	$3.11
	3	12	25	$1.95	
	4	25		$1.95	
	5				
	6				
1994/95	1	0	6	$0.68	$3.11
	2	6	12	$1.33	$3.11
	3	12	25	$1.95	
	4	25		$1.95	
	5				
	6				$0.13
1995/96	1	0	6	$1.08	$3.11
	2	6	12	$1.08	$3.11
	3	12	25	$1.08	
	4	25		$1.08	
	5				
	6				
1996/97	1	0	6	$1.70	$3.11
	2	6	12	$1.70	$3.11
	3	12	25	$1.70	
	4	25		$1.70	
	5				
	6				
1997/98	1	0	6	$0.85	$3.11
	2	6	12	$1.12	$3.11
	3	12	25	$1.95	
	4	25		$2.43	
	5				
	6				

Table 7. MF - Outside Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$1.33	$3.11
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$1.33	$3.11
	2				
	3				
	4				
	5				
	6				
1995/96	1	0		$1.08	$3.11
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$1.70	$3.11
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.12	$3.11
	2				
	3				
	4				
	5				
	6				

Table 7. Comm - Outside Water and Sewer Prices (Annual)

Year	Block	TGs		Price $/Unit	
		Min	Max	Water	Sewer
1993/94	1	0		$1.00	$3.89
	2				
	3				
	4				
	5				
	6				
1994/95	1	0		$1.00	$3.89
	2				
	3				
	4				
	5				
	6				$1.09
1995/96	1	0		$1.08	$3.89
	2				
	3				
	4				
	5				
	6				
1996/97	1	0		$1.70	$3.89
	2				
	3				
	4				
	5				
	6				
1997/98	1	0		$1.12	$3.89
	2				
	3				
	4				
	5				
	6				

Table 8. Revenue Summary

	1994/95	1995/96	1996/97	1997/98
Base Revenue Requirement	$4,936,600	$4,936,600	$4,936,600	$4,936,600
Price Elastic Change	$0	$24,929	-$7,661	-$4,715
Adjusted Revenue Requirement	$4,936,600	$4,961,529	$4,928,939	$4,931,885
Revenues from Proposed Rates				
Fixed Monthly Service Charge				
Meter Size Independent	$53,122	$53,122	$0	$53,122
Meter Size Dependent	$1,581,054	$1,581,054	$0	$1,581,054
Subtotal	$1,634,176	$1,634,176	$0	$1,634,176
Quantity Charge				
Single Family	$712,288	$782,070	$1,125,281	$737,428
Multifamily	$191,361	$155,255	$245,519	$162,476
Commercial	$317,771	$338,607	$505,041	$352,381
SF - Outside	$933,679	$1,032,704	$1,477,474	$972,317
MF - Outside	$752,498	$611,051	$961,840	$633,683
Comm - Outside	$394,827	$422,432	$627,515	$436,124
Subtotal	$3,302,424	$3,342,120	$4,942,670	$3,294,407
Total Rate Revenues	$4,936,600	$4,976,296	$4,942,670	$4,928,583
Revenue Surplus (Shortfall)	$0	$14,767	$13,731	($3,302)

Table 9. Water Summary (Annual)

		Base Water Projection TG	Price Elastic Change TG	Price Elastic Change %
1995/96	Single Family	823,904	85,480	10.4%
	Multifamily	180,529	0	0.0%
	Commercial	397,214	-3,485	-0.9%
	SF - Outside	871,232	84,976	9.8%
	MF - Outside	565,788	0	0.0%
	Comm - Outside	394,827	-3,686	-0.9%
	Totals	3,233,494	163,284	5.0%
1996/97	Single Family	823,904	3,508	0.4%
	Multifamily	180,529	0	0.0%
	Commercial	397,214	-25,860	-6.5%
	SF - Outside	871,232	-2,130	-0.2%
	MF - Outside	565,788	0	0.0%
	Comm - Outside	394,827	-25,701	-6.5%
	Totals	3,233,494	-50,182	-1.6%
1997/98	Single Family	823,904	-12,395	-1.5%
	Multifamily	180,529	0	0.0%
	Commercial	397,214	-5,680	-1.4%
	SF - Outside	871,232	-7,379	-0.8%
	MF - Outside	565,788	0	0.0%
	Comm - Outside	394,827	-5,431	-1.4%
	Totals	3,233,494	-30,885	-1.0%

Table 10. Water Change by Block (Single Family)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	6	56.9%	56.4%	-1.0%
	2	6	12	23.0%	23.7%	3.1%
	3	12	25	15.9%	21.9%	37.8%
	4	25		4.2%	8.4%	100.7%
	5					
	6					
1996/97	1	0	6	56.9%	55.3%	-2.7%
	2	6	12	23.0%	22.4%	-2.7%
	3	12	25	15.9%	17.6%	10.5%
	4	25		4.2%	5.1%	22.4%
	5					
	6					
1997/98	1	0	6	56.9%	56.6%	-0.6%
	2	6	12	23.0%	23.4%	1.8%
	3	12	25	15.9%	15.8%	-1.0%
	4	25		4.2%	2.8%	-33.9%
	5					
	6					

Table 10. Water Change by Block (Multifamily)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Commercial)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	99.1%	-0.9%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	93.5%	-6.5%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	98.6%	-1.4%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (SF - Outside)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0	6	57.8%	57.3%	-1.0%
	2	6	12	23.2%	23.8%	2.8%
	3	12	25	15.6%	21.4%	37.0%
	4	25		3.4%	7.3%	115.6%
	5					
	6					
1996/97	1	0	6	57.8%	56.2%	-2.8%
	2	6	12	23.2%	22.5%	-3.1%
	3	12	25	15.6%	16.9%	8.7%
	4	25		3.4%	4.1%	21.4%
	5					
	6					
1997/98	1	0	6	57.8%	57.5%	-0.5%
	2	6	12	23.2%	23.6%	2.0%
	3	12	25	15.6%	15.5%	-0.4%
	4	25		3.4%	2.4%	-27.8%
	5					
	6					

Table 10. Water Change by Block (MF - Outside)

Year	Block	TGs		Base % Sold	New % Sold	% Change
		Min	Max			
1995/96	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	100.0%	0.0%
	2					
	3					
	4					
	5					
	6					

Table 10. Water Change by Block (Comm - Outside)

Year	Block	TGs Min	TGs Max	Base % Sold	New % Sold	% Change
1995/96	1	0		100.0%	99.1%	-0.9%
	2					
	3					
	4					
	5					
	6					
1996/97	1	0		100.0%	93.5%	-6.5%
	2					
	3					
	4					
	5					
	6					
1997/98	1	0		100.0%	98.6%	-1.4%
	2					
	3					
	4					
	5					
	6					